

Research Report 67

# Beyond the Firm

An assessment of business linkages and networks in Australia

Australian Government Publishing Service  
Canberra

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ISBN

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Cover design based on original idea by Carla Worsley

Produced by the Australian Government Publishing Service

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# Report at a glance

## ***What are business linkages and networks?***

Business linkages and networks ('business cooperation') are defined as special relationships between at least two firms that are beyond normal market transactions and have some permanence. Cooperating firms work together for a common aim and share information and resources and/or jointly undertake tasks.

## ***Many firms cooperate***

Around one-third of firms are involved in 'core' forms of cooperation (for example, joint ventures, preferred customer and supplier agreements), while up to two-thirds engage in either 'core' or 'marginal' forms (feedback and forecasting).

## ***Firms usually have several cooperative arrangements***

The average number of arrangements per cooperating firm is close to three. Approximately 30 per cent of firms have one key arrangement only. Almost half have two to four arrangements and 25 per cent have five to ten cooperative arrangements.

## ***Most cooperation involves just two firms***

While most firms have more than one cooperative arrangement, most arrangements are with just one other firm. Only one-third of cooperating firms have network-type arrangements with many partners.

## ***Most cooperation occurs for strategic reasons***

The majority of cooperative arrangements come into existence as part of an overall business strategy. Business cooperation has become another strategic tool for managers to use to increase their firms' capabilities and improve performance.

## ***All types of firms cooperate, but some more than others***

All types of firms engage in cooperation. However, those *most likely* to cooperate are large firms, high growth firms, high tech firms, exporters and firms producing capital goods. Firms that tend to cooperate the most also tend to benefit the most.

## ***Firms benefit from both market-related gains and efficiency improvements***

Around 75 per cent of cooperating firms get *major or critical* benefits from their linkages and networks. The firms *most likely* to benefit from cooperation do so through accessing new markets and finding new customers and suppliers. Other firms use cooperative arrangements for efficiency reasons such as improving production processes and accessing technology.

## ***Many benefits of cooperation are unanticipated 'spin-offs'***

Firms have particular aims when they enter cooperative arrangements (for example, accessing new markets). However, many of the benefits of business cooperation arise unexpectedly as 'spin-offs' – most commonly, market knowledge, improved production processes, product development and improved quality.

***Overseas links offer more***

Firms with an overseas focus (those in a cooperative arrangement with an overseas firm or cooperating firms with a high reliance on exports) appear to be the most likely to receive large benefits from business cooperation.

***The more intensely a firm cooperates, the more it benefits***

There is a strong relationship between a high degree of involvement in cooperation and a high level of benefits. First, firms with large numbers of arrangements are likely to benefit the most. Second, firms in network-type arrangements benefit more than firms in one-to-one linkages. Third, the benefits of formal arrangements are far in excess of informal, looser arrangements.

***Cooperation plays a significant role in improving performance and competitiveness***

Almost three-quarters of firms increase sales as a direct result of their key arrangement and well over half post higher profits. A majority of firms use their key arrangement to improve competitiveness in technology, quality and customer service.

***The problems of cooperation are easily outweighed by the benefits***

For every firm experiencing two or more major problems from cooperation, there are four that get two or more major benefits. Firms encountering the most problems usually obtain the most benefits. The additional time required to manage arrangements is the biggest problem firms face.

***Cooperation sometimes fails, but most firms try again***

Almost half the firms that have abandoned cooperative arrangements indicated lack of trust and loss of control as the major reasons for termination. Around three-quarters of the firms that have abandoned arrangements are currently involved in other cooperative arrangements.

***Non-cooperating firms have a key concern***

The fear of losing control is the biggest single reason why some firms have never entered into cooperative arrangements.

***External assistance has positive impacts***

External assistance has a positive effect on the performance of cooperative arrangements. Firms receiving either government or industry association help with their linkages and networks are more likely to benefit than non-assisted firms.

***Summary***

Overall, inter-firm cooperation in Australia is alive and well. It is clearly beneficial and effective for most firms that participate. It improves their capabilities and competitiveness. We believe there is a role for governments in 'greasing the wheels' of cooperation by encouraging the development of closer inter-firm linkages and business networks. Accordingly, the report makes a number of recommendations about the government's approach to business cooperation.

# Overview

Some people see the business world as a jungle. Predators prowl, the weak die – each firm is pitted against each other in a relentless battle. This is, of course, a myth. Firms often cooperate with each other – albeit in a hard-headed calculating way.

*We define business cooperation as special relationships between at least two firms that are beyond normal market transactions and have some permanence*

This report is about this other, rather neglected, ‘law of the jungle’: business cooperation. We look at who cooperates ; how they do it; why they do it, and its impact on the bottom line. We also look at the problems. Finally we ask whether there are any implications for government industry policy.

This is a comprehensive study. We use information from over one thousand firms in five industries across Australia. We also spoke to federal and state departments, who run programs to encourage networks, to industry associations and universities.

## The nature of business cooperation

We found that business cooperation is an important business strategy. While some business cooperation arises incidentally in the course of business, the majority comes into existence as part of an overall strategy. Business cooperation has become another strategic tool in management kit bags. It increases a firm’s capabilities and improves performance. But what is business cooperation?

‘Business cooperation’ is used in the report to encompass particular types of business linkages and networks. The relationships between firms can be thought of as ranging along a continuum from cursory and arm’s length in character to close and highly cooperative. This study tried to capture the various forms of cooperative relationships on this continuum. We define business cooperation as special relationships between at least two firms that are beyond normal market transactions and have some permanence. Cooperating firms work together for a common aim and share information and resources and/or jointly undertake tasks.

We identify two types of cooperation: ‘core’ and ‘marginal’. Examples of core cooperative arrangements are preferred customer and supplier agreements, joint ventures, partnerships and business networks. Marginal business cooperation includes such things as feedback and forecasting.

*Around one-third of firms are involved in substantial forms of cooperation*

The data and analysis in this report mainly relate to the core forms of business cooperation. Close to one-third of Australian manufacturing firms are currently involved in core forms of business cooperation. Up to two-thirds engage in *either* core or marginal forms. One-third of Australian manufacturers are not involved in any form of business cooperation. These firms apparently conduct all their business operations at arm’s length.

## Which firms cooperate?

What sort of firms cooperate? What factors influence the tendency to cooperate? Do some industries have higher levels of business cooperation?

To examine whether there are any systematic differences between cooperating and non-cooperating firms, we looked at how cooperation

varied with orthodox and easy-to-measure characteristics of firms. These are industry, size, age, growth rate, export orientation, product type, nature of technology, ownership and degree of competition.

The high tech industries, Information technology and telecommunications (IT&T) and Scientific and medical (Sci/med), have above average proportions of cooperating firms. The low tech Clothing and footwear industry has a below average level of cooperation. Other types of firms more likely to be involved in cooperative business arrangements are large firms, high growth firms, high tech firms, exporters and capital goods producing firms (Figure 1).

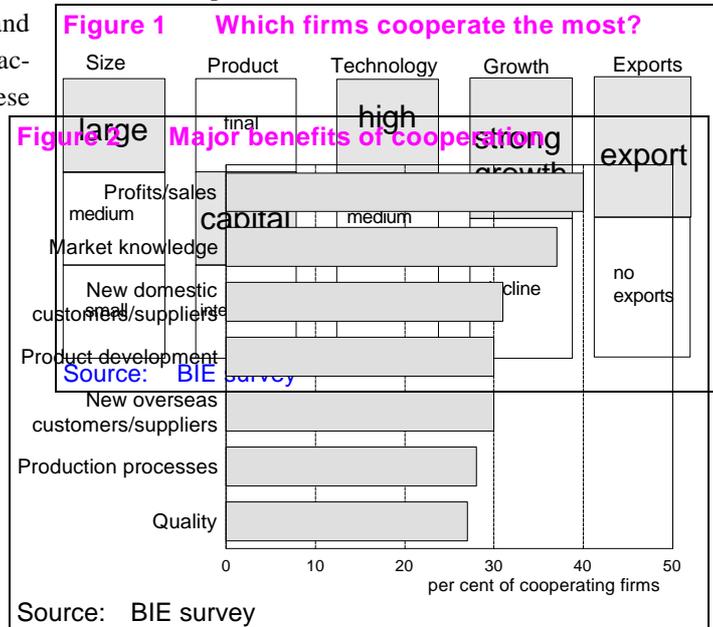
Putting these factors together indicates that cooperation is more relevant and more applicable to firms involved in producing sophisticated and complex goods (which are often exported). Fast and accurate information flows between these firms are vital, given the high rates of technological innovation, the importance of reputation and the high cost of product failure.

However, these results should not be taken to imply that business cooperation is not occurring elsewhere. They only indicate a greater tendency for some firms to engage in cooperation. Smaller, low tech firms, for example, may not be *as likely* to cooperate with other firms but many *are* in fact involved in cooperative arrangements.

## How do firms cooperate?

How do firms cooperate exactly? With whom do they cooperate? Do firms mainly formalise their cooperative arrangements or are they happy to do business on an informal basis? How many cooperative arrangements do they have?

erative arrangements do they have?



*Most cooperative arrangements involve just two firms*

Over 80 per cent of cooperative arrangements involve just two firms (for example, a firm working closely with one of its customers or suppliers). Almost 90 per cent of coop-

erating firms have at least one of these single partner arrangements and two-thirds cooperate *solely* on this basis. The other one-third of firms have multi-partner, or network-type, arrangements.

*Firms cooperate fairly evenly with customers, suppliers and other firms*

Firms cooperate fairly evenly with customers, suppliers and 'other firms' (such as competitors and distributors). About 60 per cent of cooperating firms have customer arrangements and 55 per cent have arrangements with both suppliers and 'other' firms. Around 45 per cent of cooperating firms have linkages with more than one of these groups.

Interestingly, there is little difference in the proportions of cooperating firms with formal arrangements (usually involving a legal contract) and informal arrangements (based on trust and reputation). Around 75 per cent of firms have formal arrangements while 70 per cent have in-

formal ones. Almost half have *both* formal and informal arrangements.

Just over one-third of cooperating firms have linkages with firms located overseas. Approximately 20 per cent of firms have arrangements with both overseas and domestic firms.

What does all this cooperation with different parties add up to in terms of numbers of arrangements per firm? Approximately 30 per cent of firms cooperate on the basis of one key arrangement only, almost half have two to four arrangements and 25 per cent have five to ten cooperative arrangements. The average number of arrangements per firm is close to three.

### Benefits of cooperation

Virtually all firms receive *some* benefits from cooperating with other firms. This is only to be expected. In order to discover the areas where business cooperation is having its greatest impacts on firm performance, we focused only on the *major* and *critical* benefits.

Around 75 per cent of cooperating firms obtain major or critical benefits from their cooperative activities. The two most common benefits are increased profits and/or sales and enhanced market knowledge (Figure 2). The fact that profits/sales heads the list demonstrates that many firms are able to judge clearly the positive impact of cooperation on order books and profits.

*75 per cent of firms get major or critical benefits*

Market knowledge is mainly an unanticipated spin-off of cooperative activities. Firms do not take the trouble to strike up cooperative arrangements just to learn about their markets. They have other more concrete things in mind, but by linking with other firms they gain invaluable knowledge. This and other spin-off benefits (improved production processes, improved quality, and product development) are a feature of most cooperative arrangements.

*Some benefits are actively sought and others are spin-offs*

The next most important benefits are the ‘market-related’ aspects of business cooperation – gaining *new* customers and suppliers both at home and overseas. This firmly highlights cooperation as a central business strategy in accessing new markets and finding key suppliers.

Business cooperation is often used to improve or develop new products, which is at the heart of many firms’ innovation activities. Firms also obtain significant benefits from technology access and better production processes.

Taken as a whole, a larger number of firms enter cooperative arrangements for market-related reasons. Cost and efficiency factors, while important to many firms, take second place overall.

*Firms benefit from both market-related gains and production efficiency improvements*

### Different firms, different benefits

Just as some firms are more likely to cooperate in the first place, some firms are more likely to obtain key benefits from their cooperative arrangements. Not surprisingly, there is a strong relationship between the benefits of cooperation and the tendency for different firms to form cooperative arrangements.

Thus, the firms most likely to benefit from business cooperation activities are:

- IT&T and Scientific/medical firms
- large firms
- exporting firms
- high tech firms.

Firms with a high reliance on exports in turnover are *particularly* likely to obtain high benefits.

The four leading benefits of cooperation for large, exporting and high tech firms are the same for all three. These are increased profits/sales, market knowledge, new overseas customers/suppliers and product development.

*There is a strong relationship between the benefits of cooperation and the tendency to form arrangements*

The impact of cooperation on efficiency is significant for some firms. Clothing and footwear firms, for example, rate improved production processes as the most important cooperation benefit. They also see improved work practices and quality as leading benefits.

Young firms too obtain major benefits from improved production processes. Firms are apparently more focused on developing linkages to assist with their basic operational procedures in the early years. They aim to be competitive by producing as efficiently as possible.

The major message coming from the study is that all firms can get something from cooperative arrangements. While some firms may not gain as much as others, business cooperation nevertheless appears to be a worthwhile exercise for most participants.

#### **Benefits vary by arrangements**

So much for the firms, but what about the types of arrangement?

To begin with, the more intensely a firm cooperates, the greater are the benefits. Intensity is measured by formality, number of firms in the arrangement and number of arrangements.

Firms focussed on formal arrangements are far more likely to receive major/critical benefits than those with informal ones. As well, the more arrangements a firm has, the more opportunity it has to obtain benefits across a diverse range.

*The more intensely a firm cooperates, the greater are the benefits*

Multi-partner linkages, such as AusIndustry's business networks, appear to provide higher benefits overall than arrangements with single partners. Firms in networks may be more focused on prospective benefits and have generally put their arrangements together with very specific objectives in mind. They place a strong emphasis on accessing new markets. A notable feature of

single-partner arrangements is that they are much more likely than multi-partner arrangements to result in improved production processes.

Other than the intensity of arrangements, benefits also vary according to the nature of cooperation partners. We find little difference in the *magnitude* of benefits obtained through relationships with customers or suppliers or other firms. Some substantial differences do however occur in the *nature* of the benefits.

*Customer and supplier arrangements offer similar levels of benefits, but different types*

The results show more of a tendency towards efficiency benefits in supplier links and market benefits in customer links. Firms with supplier arrangements get the greatest benefits out of improved quality and technology access. Firms with customer linkages benefit most from market knowledge and new customers and/or suppliers (both domestic and overseas).

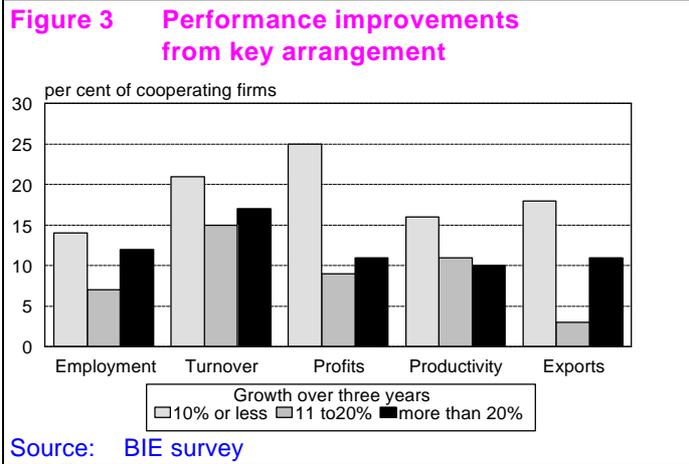
Australian firms which form cooperative arrangements with firms overseas are much more likely to obtain major benefits from cooperation than those which rely solely on linkages with local firms. The most important benefit for firms with overseas arrangements is the opportunity provided by cooperation to access new customers and suppliers overseas.

All in all, the greatest determinant of whether or not a firm will receive high benefits from cooperation is an *overseas focus*. This focus is manifested either as exporting or as an explicit cooperative link overseas.

*Firms with overseas linkages obtain high benefits*

#### **Performance and competitiveness**

As well as measuring the broad benefits of cooperation, we examined the impact of cooperation on firm performance and competitiveness. We assessed five performance measures (turnover, profits, productivity, exports and employment)



of only one cooperative arrangement. As the average cooperating firm has three arrangements, the overall effect of cooperation on firm performance will be greater.

Cooperation with customers and with overseas and interstate firms has the most favourable impacts on turnover and profits. Large firms and high growth firms are also more likely to perform better in these areas. High growth firms and IT&T firms are the most likely to increase exports through their key cooperative arrangements.

and four competitiveness measures (technology, quality, pricing and customer service).

These measures were assessed for each firm's most important, or 'key' cooperative arrangement.

Overall, business cooperation plays a significant role in improving the performance and competitiveness of Australian manufacturing firms.

Looking more closely at these impacts:

- almost three-quarters of cooperating firms have increased their turnover;
- over half have posted higher profits;
- between 40–50 per cent of firms believe their key arrangement has had a positive impact on both productivity and employment; and
- 55 per cent of exporters have achieved higher exports.

*A majority of firms experienced positive impacts in seven of nine performance/competitiveness indicators through cooperation*

The magnitude of the performance impacts provides a clearer indication of the effects of cooperation (Figure 3). For example, one in six firms has experienced an increase in turnover of more than 20 per cent over three years as a direct result of their key arrangement.

While some of these impacts may seem relatively minor in percentage terms it should be remembered that we are talking about the direct impacts

Business cooperation also improves a firm's competitive position. A majority of firms have used their key arrangement to improve their technology, quality and customer service, while 40 per cent increased their price competitiveness.

**Problems, failures and impediments**

Cooperation seems to work well for most firms that try it. Or does it?

*The problems of cooperation are outweighed by benefits by a big margin*

As well as looking at benefits, we also examine some of the negative aspects of business cooperation. What problems are firms experiencing with their cooperative arrangements?

As a general point, the proportion of firms experiencing major problems with their cooperative arrangements tends to be much smaller than the proportions of firms obtaining major benefits.

On average, the likelihood of a firm obtaining major benefits in its business cooperation dealings is around two and a half times greater than its chances of encountering major problems. In addition, the chances of firms obtaining two or more major benefits are four times greater than the chances of experiencing two or more major problems. These are important findings and firmly place in context the 'costs' of cooperation.

*Those who experience the greatest problems usually experience the greatest benefits*

Interestingly, firms with the most problems usually obtain the most benefits. Large firms, exporters, firms with overseas linkages and firms with many arrangements fall into this category. These firms tend to regard cooperation as a natural way of doing business. They have a greater commitment to linkages. They expect and receive significant benefits from cooperation and in return have to face considerable problems along the way.

Additional time commitments stand out as the major problem. Almost two-thirds of firms report some difficulties in finding the extra time to manage cooperative arrangements. A second group of problems affect around one-half of cooperating firms. These are concerns about the financial costs and disclosure of commercial secrets, administrative and/or legal matters and personality difficulties. At a lower level, around 40 per cent of firms have some cooperation problems relating to loss of control and lack of trust.

*Additional time commitments stand out as the major problem*

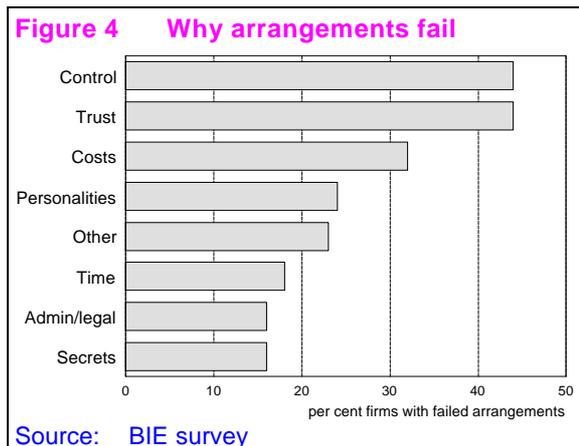
In the hectic world of modern commerce, the scarcity of time obviously preys on the minds of managers. At the other end of the scale firms are apparently not over-concerned about trust and control – two aspects sometimes seen as important barriers to business cooperation.

It may be, however, that a lot of the time taken up by cooperative arrangements goes towards building trust and trying to maintain control. Thus, trust and control do not appear as major problems because firms work hard to overcome any problems which arise.

*Lack of trust and loss of control are the two outstanding reasons for cooperation failure*

This hypothesis receives support when we turn to look at the reasons for ‘cooperation failure’ – situations where problems become so large and unmanageable that firms are forced to abandon a cooperative arrangement (see Figure 4). Lack of trust and fear of losing control are the two outstanding reasons for cooperation failure. The only other notable major cause of failure is the high financial costs of the arrangement.

The inability to trust linkage partners and fear of losing control both relate to uncertainty and uneasiness in dealing with other firms. Some of this may be due to mismatching of firms or a failure to establish basic communication channels. Whatever the explanation there is a clear lesson from failed arrangements for firms already involved in, or about to embrace, business cooperation. They need to work hard on trust and sharing partnership responsibilities.



Interestingly, around three-quarters of firms which have previously abandoned cooperative arrangements are currently involved in other cooperative arrangements.

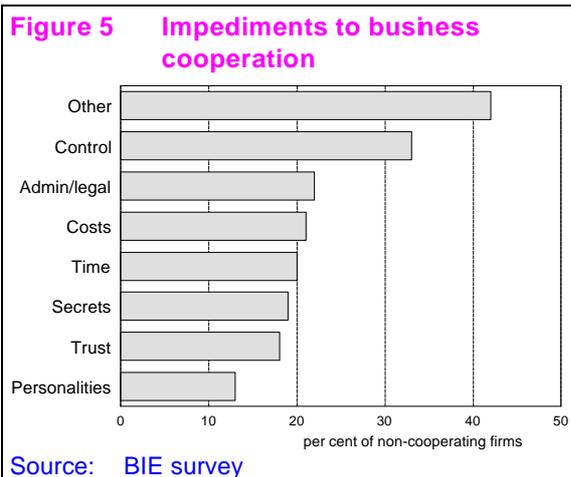
Around one-third of Australian firms are involved in core forms of cooperation. It is clear that cooperation offers significant benefits. So why don't more firms have cooperative arrangements? To gain an insight we examined the reasons why firms had not established arrangements.

We found that fear of losing control is the biggest single impediment to cooperation (Figure 5). The wish to remain independent and retain complete control of business operations are the issues at

stake. To the extent it is a major reason for linkages failing, this fear is somewhat justified.

*Fear of losing control is the biggest single impediment to cooperation*

Over 40 per cent of firms which have never adopted a cooperative arrangement cited a variety of ‘other’ reasons for their behaviour.



For about half of these firms inter-firm cooperation is ‘not required’ or thought to be ‘not applicable’. However, the other half of this group could be amenable to business cooperation given the right circumstances. These firms stated that the opportunity had not arisen or they were waiting to be approached, or indeed they had never considered cooperation as a business strategy.

### Role of external assistance

Many cooperating firms did not realise how large the benefits of cooperation were until *after* they had formed an arrangement. This suggests that some of the non-cooperating firms miss out on a valuable business strategy through ignorance about its benefits. They may also be ill informed about *how* to form a worthwhile cooperative arrangement, or find it hard to *identify* the best possible partner.

These information requirements are all potential avenues for government assistance. Governments can also take a more direct role in assisting firms through, for example, financial assistance or matchmaking activities. They can also provide

facilitators to ‘kick-start’ cooperative arrangements.

*External assistance has positive impacts on business cooperation*

Governments and other agencies such as industry associations already provide various forms of informational and direct assistance to help firms with linkages and networks.

Firms receiving help with their cooperative arrangements, from either governments or industry associations, are much more likely to benefit than non-assisted firms.

### Conclusion

The evidence presented in this study indicates that business cooperation works well. It is clearly beneficial to firms. It improves their capabilities and competitiveness. We believe there is a role for governments in ‘greasing the wheels’ of business cooperation by encouraging the development of inter-firm linkages and business networks. Accordingly, the report makes a number of recommendations about the government’s approach to business cooperation.

For the most part, business cooperation can be best encouraged through the provision of better information for firms. Most of the initiatives outlined below belong in this category. However, we believe there may also be scope for new direct assistance measures to encourage the development of one-to-one cooperative arrangements.

### Recommendations

- 1 In designing and marketing industry programs, policy makers and program designers/deliverers should take into account the potential role of business linkages and networks as means by which the program objectives can be assisted.
- 2 In encouraging further business cooperation, the government should consider providing information to firms. Information can help address the information deficiencies identified in the study, can reach a

- wider audience and is preferred by most firms. There is a weaker basis for some form of direct assistance aimed at one-to-one cooperative arrangements.
- 3 In support of the Business Networks Program, AusIndustry should supplement its information material about the program with new data highlighting the many benefits of networks. The role of network facilitators needs to be marketed if they are to become acceptable to a wider range of firms.
  - 4 AusIndustry should develop a new program to promote one-to-one cooperative arrangements between firms and their customers, suppliers and others. This *Business Linkages Program* would emphasise information dissemination. There might also be a limited role for direct assistance.
  - 5 The first component of the AusIndustry *Business Linkages Program* should be a new information program. The program would mainly aim to disseminate information to firms on the benefits of one-to-one cooperative arrangements and provide information and advice on forming closer relationships with customers, suppliers and others.
  - 6 A second component of the new *Business Linkages Program* could be the provision of consultant advice to suitable firms about a business cooperation strategy. This would include the development of a 'cooperation plan'.
  - 7 A third component of the new *Business Linkages Program* could be advice to firms on how to form and maintain 'best practice' one-to-one cooperative arrangements.
  - 8 There should be close liaison between AusIndustry and Austrade on aspects of the new *Business Linkages Program* which relate to exporters, and Australian firms with overseas customers, suppliers or distributors.
  - 9 AusIndustry should seek the cooperation of other major industry assistance agencies – industry associations, business organisations and business advisers – in designing and implementing its new *Business Linkages Program*.
  - 10 It is envisaged that the financial arrangements for assisting firms under the *Business Linkages Program* would involve a government subsidy along the lines of current NIES enterprise improvement programs. However, the government could also consider introducing a 'contingent reimbursement scheme' to fund elements of the program.
  - 11 AusIndustry and Austrade, in conjunction with industry associations and business organisations, could consider expanding their efforts in identifying partners, business opportunities and markets for SMEs interested in business cooperation. They could develop and disseminate more comprehensive listings of opportunities through electronic programs such as *BizLink*.
  - 12 The government could consider creating an electronic 'cooperation network' linking all the key cooperation assistance agencies. The network would provide a forum to monitor and exchange up-to-date information relating to matchmaking, opportunities, case studies, financial assistance, training and so on. In addition, the government could assist the spread of inter-firm cooperation by encouraging computerisation in SMEs and providing information to firms on available electronic

networks and other relevant on-line services.

# 1 Introduction

## 1.1 Background

Economists are generally wary of cooperation between firms. More than two centuries ago, the ever-observant Adam Smith (1776) wrote that:

“people of the same trade seldom meet together, even for merriment and diversion, but the conversation ends in a conspiracy against the public, or in some contrivance to raise prices

Indeed, the study of collusive and anti-competitive behaviour dominates the economic and public policy literature dealing with cooperative behaviour. This is an important and pathological vein of cooperative behaviour – and all nations have laws to deal with it. It is not the subject of this report.

Instead, we look at cooperation as a tool for increased business efficiency. There are around about 350,000 private businesses in Australia.<sup>1</sup> Each of them is really an experimental configuration of resources: people, knowledge, machinery and routines bundled in a particular way. Some experiments – some configurations – work better than others. Those firms flourish. Others work badly. Those firms die. Successful configurations rely principally on two things:

- **having the right information.** Before the first bolt is tightened, the set, or computer booted, a firm acquires information on *how* to produce and for *whom*;
- **the scale of the firm must fit the technology.** You cannot, for example, be a competitive small steel producer.

By cooperating firms can learn about better configurations more quickly than simply learning by doing – they tap into the best results of the vast numbers of experiments being conducted around them. Cooperating firms can also strengthen their technological capabilities, or achieve together economies of scale unavailable at the firm level.

The increasing use of linkages and networks by firms may in some ways represent a more fundamental shift in the way modern firms are organising their business activities. The traditional concept of the firm as a stand-alone entity incorporating the ownership of a set bundle of resources, is giving way to firms which maintain core activities but increasingly look outwards to access information, capabilities and resources. This is blurring the set boundaries of the firm. Accordingly, business cooperation may be a vehicle for what could well be a fundamental decline in the ‘optimal’ size of the firm.

This report assesses the current role and significance of business cooperation in Australian industry. Business cooperation is used in this report to encompass particular types of business linkages and networks – special ones which are beyond normal market transactions. The study is timely in view of the increasing recognition being given to business linkages and networks by key players such as governments, business organisations and industry associations.

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<sup>1</sup> In 1991-92 there were 340,000 private non-agricultural businesses (ABS, *Small Business in Australia*, 1993, Cat. No. 1321.0).

## 1.2 The policy setting

Firms will not automatically form cooperative business arrangements even when they would be ultimately beneficial. The federal government has recognised this, most notably for firm networks. For example, the Business Networks Program, run by the Department of Industry, Science and Technology (DIST), aims to encourage SMEs to participate in formal networks to enhance their competitiveness and capabilities. In this program a network is classified as a grouping of at least three companies cooperating in purchasing, production, distribution or marketing of goods or services.

DIST and other federal departments also run other programs aimed at forming and maintaining cooperative business arrangements. These programs have at heart the idea that firms exchange information and capabilities as well as goods and services – so that cooperation can enhance firm competitiveness. Examples include the Partnerships for Development Program and the Best Practice Demonstration Program.

## 1.3 Key objectives of the study

Despite the increasing awareness of business linkages and networks in Australia, and government involvement in some areas, there is still little known about the full extent of business cooperation across Australian industry and the factors driving it.

Other studies have provided partial accounts of particular areas of cooperation. However, despite a suspicion as to the increasing importance of inter-firm cooperation, and some recognition of the changing role of the traditional firm, there is a lack of detailed empirical work which could inform policy making in this area.

This study is essentially a ‘stocktake’ of business cooperation in Australia and an assessment of its impact on firms. How are firms using cooperation as a business strategy? What is the extent of business cooperation and what is its impact on firm performance? Governments need an up-to-date assessment of current cooperative arrangements to develop appropriate policies and programs for business infrastructure.

The major aims of the study can be summarised as follows:

- to document and describe the nature and extent of business cooperation in Australia;
- to discover which firms engage in various forms of cooperation;
- to measure the benefits of cooperation;
- to assess the effect of cooperative arrangements on firm performance;
- to establish relationships between types of cooperation, different firm characteristics and firm performance;
- to discover the key problems and impediments associated with business cooperation;
- to discuss the role of governments and other bodies such as industry associations; and
- to assist with the future formulation of industry policies and the delivery of industry programs related to business cooperation.

## 1.4 Methodology

The major data source for the study was a mail-out survey of 5000 firms, of which 1300 responded. These firms operate in five industries; namely, Clothing and footwear, Engineering, Information Technology & Telecommunications (IT&T), Processed foods and beverages (Food), and Scientific and medical equipment (Sci/med). The industries are a balance of 'old' and 'new', and grouped together can be considered to be broadly representative of Australian industry. Background information on these industries is provided in Appendix B.

The survey sought information on the nature and extent of cooperative arrangements, areas in which firms cooperate, benefits and costs of inter-firm cooperation, the importance of inter-firm linkages to firm performance, and the role of governments and industry associations. The survey form is reproduced in Appendix A.

The BIE was responsible for the survey questions and design. The Australian Bureau of Statistics assisted by mailing out survey forms, processing the raw data and providing general statistical advice. We developed the survey questions from an extensive set of hypotheses, which we pre-tested on a pilot group of firms.

As far as possible, the survey contained questions to allow the objective measurements of the strength of cooperative arrangements and their importance in business performance. We checked the accuracy of the survey responses by conducting a follow-up telephone survey of 100 respondents to the original survey. Finally, we undertook a non-respondent survey of 100 firms to check how representative the survey responses were of the whole firm population.

In addition to the surveys, the study team conducted face-to-face interviews with approximately 40 firms across the selected industries. These interviews explored more thoroughly some of the key issues covered in the surveys.

The firms interviewed were involved in at least one major cooperative business arrangement with one or more firms, and ranged in size from very small (under 10 employees) to large firms with several hundred employees. Firms from each of the mainland states were selected for interview. Several firms were also involved in government-assisted business networks.

The other major data source for the study was information obtained from National Industry Extension Service (NIES) state officers and other state government officials about government assistance in each state. An important element of this was statistical information relating to the number of government-assisted

networks and their structure. Appendix F provides a taxonomy of these networks, including data on the number of firms, the relationships between firms, the type of products and the focus of the networks.

Additionally, we canvassed the views of industry bodies and associations. The BIE sought their opinions on their own role and that of government in business cooperation, as well as their feel for the importance of business cooperation to firms. Finally, academics from several research areas provided input to the more theoretical aspects of the topic. Further details of the methodology are contained in Appendix A.

## 1.5 Outline of report

The report is divided into four parts. Part A consists of Chapters 2–5 and looks at the basic facts about business cooperation in Australia and provides answers to gaps in current knowledge. Who cooperates? How? Why? Chapter 2 provides a brief overview of what we mean by business cooperation and how pervasive it is in Australian industry. Chapter 3 provides a theoretical discussion of the reasons why firms might want to form cooperative arrangements. The hypotheses developed in this chapter are tested in Chapter 4 where we pose the question of whether some types of firms are more likely to cooperate. We examine the relationship between firm characteristics such as size, age and ownership and the tendency to participate in business cooperation. Chapter 5 completes Part A by considering the various forms of cooperation (for example, customer and supplier relationships) and their relative frequency.

Part B of the report consists of Chapters 6–9 and examines the positive impacts of business cooperation. In Chapter 6 we provide a brief overview of the benefits which firms obtain from their cooperative arrangements. In the next two chapters we examine how different types of firms (Chapter 7) and cooperative arrangements (Chapter 8) are associated with different types and degrees of benefit. In Chapter 9, we analyse the impact of firms' most important, or 'key', cooperative business arrangement on their performance and competitiveness.

Following the discussion of positive business cooperation effects in Part B, the focus of Part C switches to some of the 'downside' aspects of business cooperation. In Chapter 10 we examine the problems faced by firms within their cooperative arrangements, while in Chapter 11 we look at the reasons why business cooperation sometimes fails. A significant number of firms do not engage in business cooperation at all. We discuss their impediments to cooperation in Chapter 12.

The final part of the report, Part D, looks at the role of government (and other external agencies such as industry associations) in supporting business cooperation. Chapter 13 examines current forms of assistance and discusses the views of both cooperating and non-cooperating firms on their preferred forms of external assistance. In Chapter 14 we assess the implications of the report's findings for policy makers and put forward a number of recommendations. Finally, in Appendices A through G we provide a range of information supplementary to the material discussed in the main body of the report.



# Part A Nature and extent of cooperation

Part A provides some facts on the business cooperation currently occurring in Australia. It seeks to answer several questions – what is cooperation, why does it occur, how does it occur and which firms are involved?

Business cooperation is defined using a continuum showing the range of intensity of dealings between firms, from non-cooperation (arm's length relationships) to highly cooperative arrangements. Once the term cooperation is understood, the next question examined is how much is occurring. An overview is presented of the level of cooperation undertaken by manufacturing firms, pointing out which forms of cooperation are most prevalent and the increasing role cooperation is playing as a business strategy.

The next section explores the reasons behind the decisions of firms to cooperate, and to do so through particular modes of cooperation. It examines how business cooperation can and should work in theory and provides some practical examples.

The level of cooperation undertaken by Australian manufacturing firms is then considered in terms of the characteristics of the firms cooperating and the forms of their cooperative arrangements. Are some firms more likely to cooperate than others? Do firms prefer to cooperate with customers, suppliers or other firms? Are formal or informal cooperative arrangements more common? Does the size of the firm or the products they produce affect the level and form of cooperation undertaken?

The structure of Part A is as follows. Chapter 2 provides an overview of the definition of cooperation as used in this study, as well as giving an indication of the level of business cooperation undertaken by Australian manufacturing firms. In Chapter 3 the reasons why these firms may wish to cooperate with other firms are scrutinised. The characteristics commonly possessed by cooperating firms are highlighted in Chapter 4. Finally, once the firms most likely to cooperate have been identified, it remains to examine the various ways they cooperate. This is the subject matter of Chapter 5.



## 2 Setting the scene

This chapter sets the scene for the remainder of the report by defining cooperation (Section 2.1) and providing a brief overview of how much cooperation is occurring (Section 2.2). The changing role of cooperation in Australian industry is then briefly examined in terms of its frequency and its use as a business strategy (Section 2.3). Finally, the chapter is summarised in Section 2.4.

### 2.1 Defining business cooperation

#### 2.1.1 *The cooperation continuum*

What exactly do we mean by ‘business cooperation’ and ‘cooperative business arrangements’?

Business cooperation in this study is about firms looking outside the firm boundaries to supply a need, either that the firm cannot meet itself or which can be supplied more efficiently and effectively by others. The common theme with all cooperative arrangements is that they involve some degree of working together for a common aim and embody the concepts of sharing resources and jointly undertaking tasks.

However, it is often difficult, at the boundaries, to distinguish cooperative from non-cooperative behaviour – trying to tell a cooperative firm from a non-cooperative firm is somewhat like trying to distinguish a trunk from a nose. These uncertainties about the boundaries of cooperation pose a problem for any rigorous study of firm linkages. We must set the limits of what we are studying.

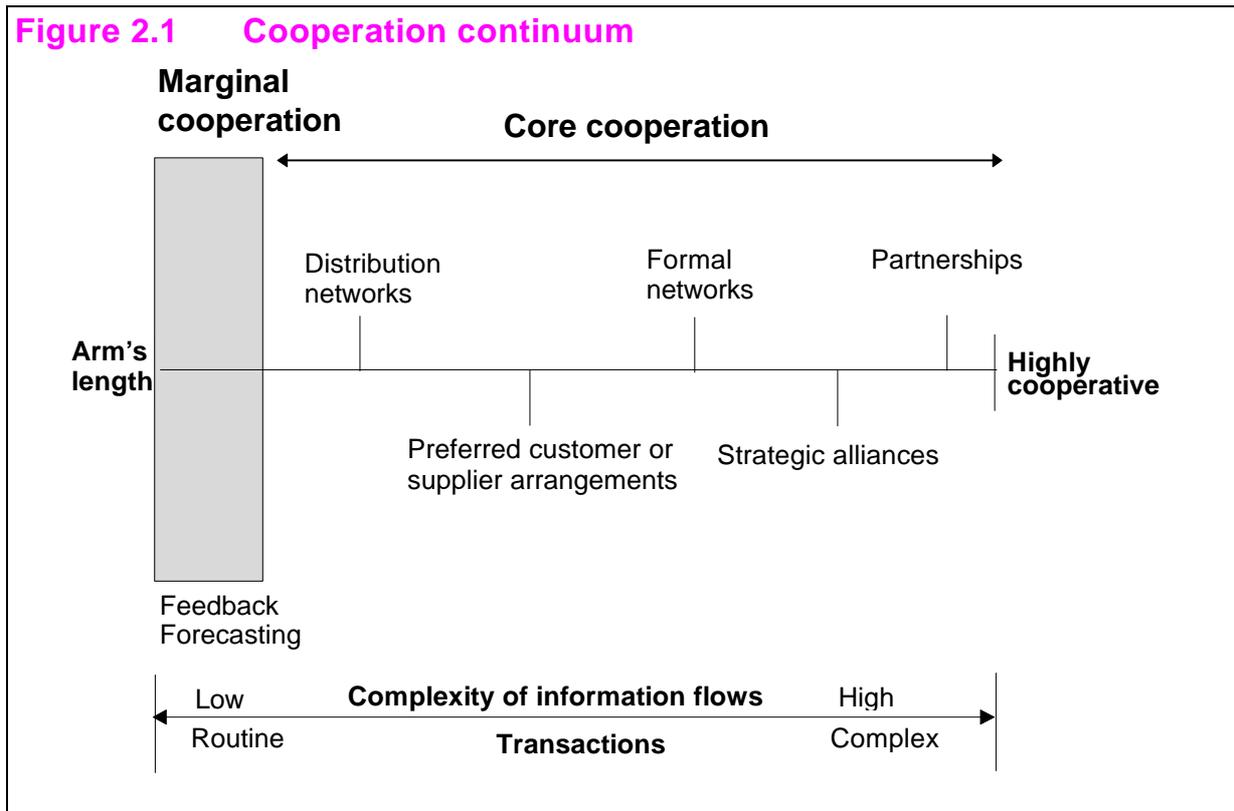
We know that relationships between firms range along a continuum from cursory and arm’s length in character, to close and highly cooperative<sup>1</sup> (Figure 2.1). For example a pure market transaction, where the only exchange is money for a good or service bought, is an arm’s length transaction. On the other hand, two firms working closely together on a research project and sharing staff and facilities is highly cooperative. In between there is a vast region.

For the purposes of this study, we regard any form of relationship outside arm’s length – that is anywhere on the cooperation continuum – as cooperative behaviour or business cooperation. We formally define business cooperation as *special relationships between at least two firms that are beyond normal market transactions and have some permanence.*

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<sup>1</sup> The forms of cooperation shown on the continuum are indicative of their proximity to ‘arm’s length’ and ‘highly cooperative’. However, the diagram is not intended to show these precisely or to make definitive judgements about the degree of cooperation occurring in individual modes along the continuum.

**Figure 2.1 Cooperation continuum**



The continuum distinguishes ‘core’ and ‘marginal’ forms of business cooperation. Examples of core cooperative arrangements can be partnerships, joint ventures, business networks and preferred customer and supplier agreements. The forms of cooperation shown on the right hand side of the continuum are solid examples of cooperative business arrangements – they tend to involve more complex information flows and elaborate transactions than arm’s length relations or very simple linkages.

However, business cooperation can also take much more subtle forms. ‘Marginal’ business cooperation includes such things as feedback, forward planning and forecasting. Forecasting, for example, might involve a supplier discussing with a customer the expected output of the customer over a 12-month period. There is no contract, no agreement on price and no legal obligation for the customer to buy specified amounts (or even buy at all from the supplier in question). However, both supplier and customer can benefit from this form of cooperation, so long as there is an understanding that ‘in the normal course of events’ the two firms will continue to do business with each other. The supplier has reasonable expectations of production levels and organises resource use accordingly - improved production processes can increase efficiency and reduce costs. The customer, on the other hand, expects to have a certain level of inputs available at the time required.

At the extreme left hand end of the cooperation continuum, the boundaries between marginal cooperation and arm’s length arrangements can be hazy. In reality, there is no single line which distinctly delineates the two and the classification of an arrangement as a cooperative one will often depend on the specific circumstances.

Even some of the apparently ‘core’ forms may not really involve cooperation. Distribution networks are good examples. If a firm has a distributor which simply receives its goods and sells them to retailers, there is

no cooperative business arrangement as defined above. The firm and its distributors are working on an arm's length basis. On the other hand, business cooperation *would* be present if the distributor were to provide advice on how the supplier could enhance the product, or improve delivery and distribution. The firms are working closely together for their mutual benefit.

The aim of the study is to examine the *significant* forms of cooperation used by firms. For this reason, we do not examine sporadically shared information or very short term and circumscribed links in this report, even though these are unquestionably cooperative.

### 2.1.2 The boundaries of cooperative behaviour

We wanted to understand how some of our results changed when we varied the boundaries of what we defined as *significant* cooperative behaviour. Both face-to-face interviews with around 40 firms and a follow-up telephone survey of 100 firms (see Appendix A) revealed how sensitive an audit of cooperative behaviour is to changes in these boundaries.

The follow-up telephone survey was particularly revealing as this involved firms which indicated in the mail survey that they had *no* cooperative business arrangements. However, when it was indicated to firms that cooperation could include various soft forms of arrangements, half of these firms revealed that they actually had cooperative arrangements. Not surprisingly, this 'new found' cooperation was primarily either at the left hand extreme of the cooperative continuum, where it is hard to distinguish standard commercial arm's length relationships from those which involve cooperation, or involved highly informal forms of cooperation such as *ad hoc* information sharing.

If the definition of cooperation embraces these marginal areas, the number of firms recorded as cooperating rises markedly. This sensitivity to minor changes in definition partly explains why different studies have found such variations in the proportion of firms which cooperate.

Taxonomy is the art of subtle but valuable distinctions. If we make our definition of business cooperation broad, then we would describe so many behaviours as cooperative that the term starts to lose descriptive value. If, on the contrary we use a much narrower definition, we would be like a botanist interested in understanding trees but only ever looking at oaks!

In this study we have focussed on forms of cooperative behaviour we think are useful to analyse – that is we have concentrated on a core of cooperative behaviours as described in the mail survey (Appendix A). Unless otherwise stated, wherever we use the term 'cooperating firms' this refers to firms with at least one **core** cooperative arrangement (as shown in Figure 2.1). Or to apply a more colourful metaphor to our taxonomic problem – noses have to be pretty long before we call them trunks!

#### Box 2.1 Defining business cooperation

*Business cooperation (incorporating business linkages and networks) is defined as special relationships between at least two firms that are beyond normal market transactions and have some permanence.*

*The types of cooperative arrangements are varied. However, they can be grouped into two main types 'core' cooperation and 'marginal' cooperation.*

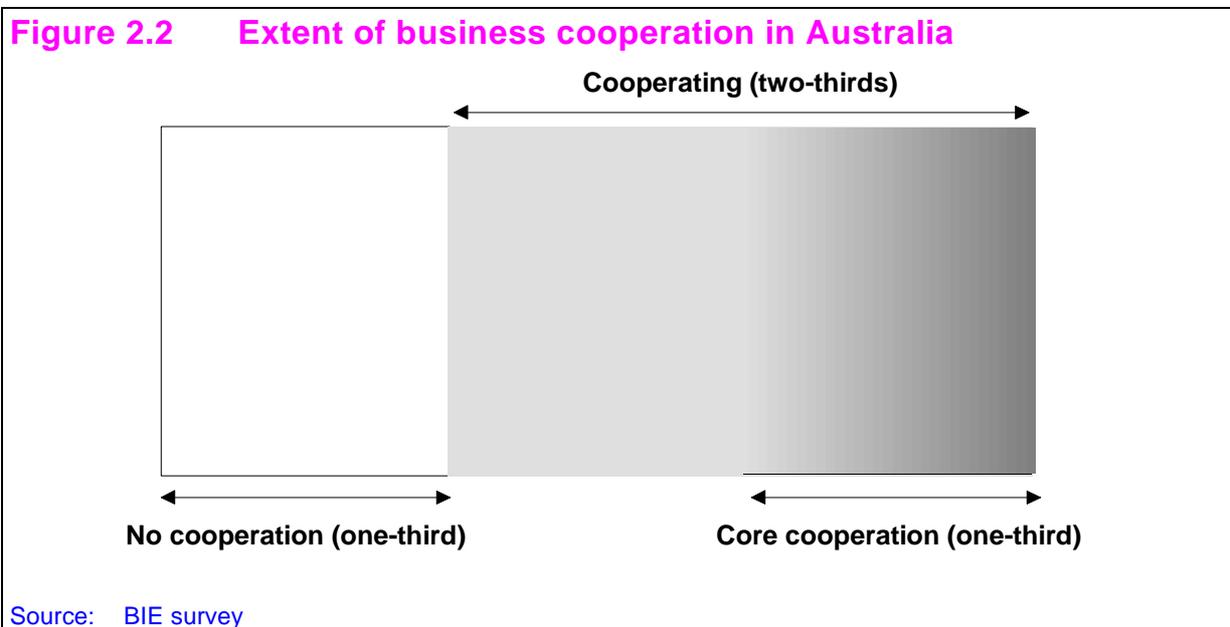
*In this study we have focussed the analysis on the substantive, or core, forms of business cooperation. 'Cooperating firms' in the study are firms with at least one core cooperative arrangement.*

## 2.2 How much cooperation is occurring and in what forms?

### 2.2.1 How extensive is business cooperation?

The results of the mail survey indicate that around 40 per cent of Australian manufacturing firms are currently involved in core forms of business cooperation. However, this figure overestimates overall cooperation among Australian firms. When the non-respondent and telephone follow-up survey results are taken into account, it is estimated that the ‘true’ proportion of firms engaged in core cooperation may be around one-third (see Appendix A).

*Accordingly, it can be stated with a reasonable degree of certainty that close to one-third of Australian manufacturing firms are currently involved in substantial forms of business cooperation (Figure 2.2).*



The proportion of firms involved in *any* form of business cooperation (that is, core *or* marginal cooperative arrangements) is less certain. However adjusting the mail survey results, to reflect the findings of the non-respondent and follow-up telephone surveys, leads to the conclusion that up to two-thirds of firms engage in either core or marginal forms of business cooperation (see Appendix A).

The implication of these findings, of course, is that one-third of Australian manufacturers are not involved in any form of business cooperation at all. These firms apparently conduct *all* their business operations on an arm’s length basis.

As noted in Section 2.1.2, the analysis of ‘cooperating firms’ in this report, unless otherwise stated, refers only to those firms with core cooperative arrangements. This is essentially because the bulk of the analysis is based on the mail survey results, in which firms tended to ignore marginal forms of business cooperation.

The proportions of cooperating and non-cooperating firms in the remainder of this report are based on mail survey responses only and are *not* adjusted for non-response bias. This means the ‘all industries’ average

extent of cooperation in subsequent chapters is 40 per cent and not one-third as shown in Figure 2.2. All comparisons must be made against the 40 per cent benchmark<sup>2</sup>.

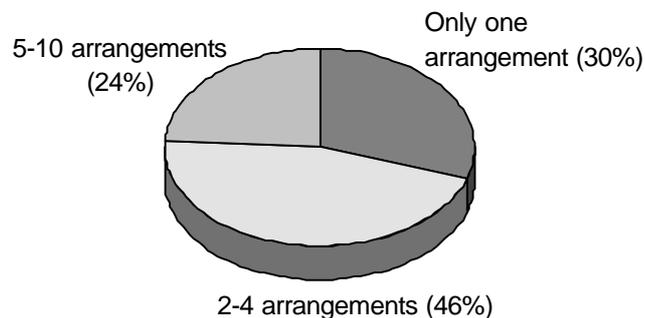
### 2.2.2 How many arrangements do firms have?

The number of arrangements that firms have is a key indicator of how firms approach cooperation. Do most firms have several, or do most have just one important arrangement?

To allow for comparisons, firms have been split into three groups according to the number of their cooperative arrangements – those with only one arrangement, those with two to four, and finally those with between five and ten arrangements (Figure 2.3). Those with more than ten arrangements have been excluded from analysis as it is unlikely that all these would be cooperative business arrangements (that is, some are probably arm's length relationships). The mean number of arrangements for one firm to have is close to three; however, around 30 per cent have only one and one quarter have between five and ten.

It takes a certain degree of skill to be able to balance the competing needs and demands of a multiple number of cooperative business arrangements. Each cooperative arrangement requires a certain input of resources such as time and money. This means that for a firm of a given size there could be a hypothetical maximum number of arrangements it would be feasible to enter at the one time. The case of Australian company Pan Bio illustrates this point (Box 2.2).

**Figure 2.3** Number of cooperative arrangements<sup>(a)</sup>



Note: (a) There were 53 firms who claimed to have more than 10 arrangements, but these have been excluded as it is believed they have included many arm's length relationships with customers and suppliers.

Source: BIE survey

#### Box 2.2 Pan Bio – Know your limits

*Pan Bio is a privately-owned Australian company in the Sci/med industry which has been growing at over 50 per cent per year for the last five years. Its impressive performance resulted in Pan Bio being a regional winner in the Queensland Small Business Awards.*

*The Managing Director of this successful company noted the benefits the company had gained through working with other companies and particularly through its upstream links.*

<sup>2</sup> The scale of the non-response survey necessary to provide the bias adjustments for every different kind of firm or cooperative arrangement would be prohibitively large. Rather than to impose the across-the-board downward adjustment representing the difference between one-third and 40 per cent (regardless of whether it actually describes the bias for a particular group of firms), we consider it better to use the unadjusted data.

*Market direction has been provided by multinationals and other international contacts, while close relationships with ‘lighthouse’ customers and their CEOs often result in new product development ideas.*

*However, he made the cautionary note that he felt his company, like many others, needed to be careful not to get involved in so many cooperative arrangements that it would be unable to meet all the associated commitments.*

Source: BIE interview

### 2.2.3 Which cooperative arrangements are most prevalent?

The analysis of cooperation in the report is focused on the firm – for example, what proportion of firms have formal arrangements. But there is another way of looking at the data – that is, from the perspective of the arrangements themselves. Thus we might ask, of all the cooperative arrangements identified in the survey responses, what proportion are formal and informal?

This way of looking at arrangements may be useful as it indicates which types are most commonly used. Table 2.1 gives the proportion of total cooperative arrangements in a number of categories.

The only even split is between formal and informal arrangements. All the other types of arrangements demonstrate a leaning by firms towards a particular type. Customer links are slightly more common than supplier arrangements, while arrangements with firms other than customers/suppliers are least common.

**Table 2.1 Summary of arrangement types**

<i>Type of arrangement (a)</i>	<i>Proportion of arrangements (b)</i>
Formal	50
Informal	50
Customer	40
Supplier	33
Other	27
One other firm	84
Two or more other firms	16
Overseas firm	11
Domestic firm	89

Note: (a) These terms are explained in the Glossary.  
(b) These figures have been weighted by industry

Source: BIE survey

The majority of cooperative arrangements comprise just two firms (84 per cent). These one-to-one arrangements involve firms cooperating with a customer, or a supplier, or some other firm such as a distributor or competitor.

Not surprisingly, the vast majority of business cooperation occurs with other domestic companies. Only 11 per cent of arrangements involve an overseas partner. However, this is likely to be an underestimate as

survey respondents were not questioned about the number of arrangements they had involving overseas partners<sup>3</sup>.

The prevalence of the various types of cooperative business arrangements is shown in more detail in Appendix C.

While we analyse business cooperation in subsequent chapters in terms of both firms and arrangements, our principal focus is on firms. This is because policy makers are interested in how *firms* use cooperation, and in the associated benefits and costs.

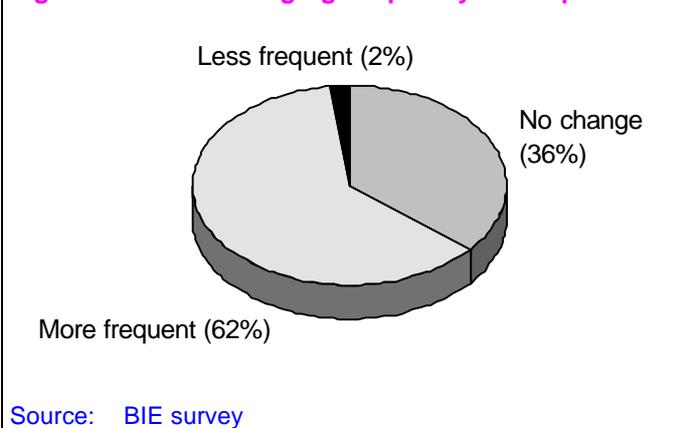
## 2.3 The changing role of business cooperation

### 2.3.1 Changing frequency of cooperation

Has cooperation suddenly become more widespread, or has the current level of cooperation always occurred? Perhaps business cooperation is only a short term fad? Respondents to the BIE survey were asked for their views on the changes in the frequency of cooperative business arrangements.

Figure 2.4 presents an overview of the changing role of cooperation. Around two-thirds of respondents believe that cooperative arrangements are now used more frequently in business.

**Figure 2.4 The changing frequency of cooperation**



Firms give different reasons for the rising tide of cooperation. Some firms think it is a function of the industry in which they are located. Others relate it more to the firm's stage of development. For example, an established firm winning major new contracts might decide it was high time it built up relationships and trust with its suppliers.

Another view coming through from the firm interviews is that firms are having to try harder to compete and survive and that cooperation is part of that increased effort. Whereas in the 1980s many firms thought

they could do things alone, they now realise that they cannot do everything efficiently by themselves (Box 2.3).

#### Box 2.3 The need to work with other firms

*NetComm Ltd is a designer, manufacturer and marketer of high performance PC communications products and telecommunications access services for the Internet information super highway. Since the company's establishment in 1982, NetComm has built itself into a specialist provider of sophisticated communications products and services. It is the clear market leader in its industry segment.*

<sup>3</sup> Firms were only asked to indicate whether they had overseas-based firms in any of their cooperative arrangements.

*Part of NetComm's success has been built on its cooperative arrangements with other firms. In its earliest days the company believed it could succeed by going it alone, but later came to recognise the importance of a few critical linkages (supplier arrangements and joint ventures). NetComm noted that with technology moving so fast it was imperative for firms to form cooperative arrangements to keep pace with developments. Individual firms generally do not have the required resources, the intellectual capacity or the necessary management skills to be able to succeed alone.*

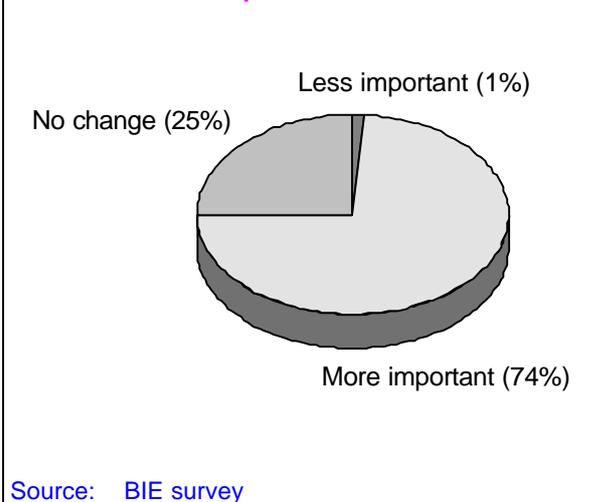
Source: BIE interview

### 2.3.2 Cooperation as a business strategy

Cooperative arrangements are becoming more common than previously. But how many firms regard cooperation as an important part of their overall business strategies?

Figure 2.5 shows that almost three-quarters of cooperating firms do in fact believe that cooperation has become more strategically important. Most other firms think that cooperation is no more or less strategically important than in the recent past, with only 1 per cent thinking it less important than before.

**Figure 2.5 The changing strategic importance of cooperation**



Source: BIE survey

The other interesting question relating to the increased frequency of cooperation is how much of this is due to conscious decisions on the part of firms to pursue closer cooperation with other firms. Just because cooperation is now seen as being more strategically important does not necessarily mean firms went hunting for closer ties in the first place. Is there a feeling by some firms that a greater emphasis on business cooperation in their industry came about incidentally during the course of business?

The majority of the firms interviewed noted that most or all of their cooperative arrangements had come about as part of an overall strategy. Strategic decisions were taken, for example, to

'lock in' preferred suppliers or to build a close relationship with a key customer. Alliances with firms other than customers and suppliers were almost always planned and carefully executed. Occasionally, though, some very good and enduring partnerships arise fortuitously in the course of business (Box 2.4).

#### Box 2.4 How cooperative arrangements begin

*Seekers Australia Ltd is a successful Western Australian manufacturer of swimwear and casual wear with a reputation for fine quality products. The company has won design awards in four of the past five years.*

*Seekers is a major player in the Australian market but developed a business plan to look for the potential to increase its sales overseas. As part of this plan it sought cooperative arrangements with companies in various countries including the USA, New Zealand, Thailand*

*and South Africa. Some of these involve overseas companies manufacturing Seekers' products under licence, but most are with distributors.*

*One of Seekers' key cooperative arrangements, however, arose through the recommendation of a leading Australian retail chain handling Seekers' products. The retail store indicated to US swimwear giant, Jantzen, that it was impressed with Seekers and suggested Jantzen should approach the West Australian firm to negotiate a licensing agreement for the Australian market.*

Source: BIE interview

## 2.4 Summary

This chapter provides the setting for the remainder of the report. We have defined what we mean by business cooperation and cooperative arrangements – special relationships between at least two firms that are beyond normal arm's length transactions and have some permanence.

We found that around one-third of firms are involved in substantial or core forms of cooperation, while up to two-thirds of firms engage in some form of cooperative activity (that is, core or marginal forms of cooperation). Accordingly, one-third of Australian firms are not involved in any form of business cooperation at all. These firms apparently conduct all their business operations at arm's length.

On average, cooperating firms have three core cooperative arrangements – but approximately 30 per cent of firms have just one arrangement and 25 per cent have five to ten arrangements. The vast majority of business cooperation occurs in the form of one-to-one arrangements (that is, involving just two firms) and most is with other Australian firms. Arrangements with customers are the most common form of cooperation.

We also noted the important strategic role of business cooperation and how firms are increasingly turning to cooperation. While some cooperative arrangements arise incidentally in the course of business, the majority come into existence as part of an overall business strategy. Three-quarters of cooperating firms believe cooperation is now more strategically important than previously. In addition, almost two-thirds believe that cooperative arrangements are now used more frequently in business.

Now that we have set the scene, it is time to look beyond these basic facts and consider why firms should want to cooperate, which ones will cooperate most and how different firms cooperate in different ways. These issues are the subjects of the following three chapters.

## 3 Why do firms cooperate?

War has often given business its metaphors. Firms ‘battle it out’ in ‘market wars’; they move in ‘for the kill’ in takeovers; products ‘assault’ the market<sup>1</sup>. This makes business enterprises look like Rambo in their penchant for individual aggression.

There is, however, another side to business. Successful businesses are still like Rambo in their single-minded pursuit of increased competitiveness, but unlike their macho movie counterpart they sometimes find it profitable to hold hands with each other. There can be a hard-headed *cooperative* vein to successful business.

While the majority of Australian firms do not cooperate in a substantive way with other firms, about one third of firms do. What are the reasons behind their decision to cooperate? What are the modes of cooperation?

There are three sections in the chapter. In Section 3.1, we examine why firms cooperate. In Section 3.2, we look at the tiers and intensities of business cooperation. Section 3.3 provides a synopsis of the findings of this chapter.

### 3.1 Reasons for business cooperation

#### 3.1.1 The function of cooperation

One way of looking at any economy is to see it as a vast and complex configuration of scarce resources; raw materials, people, machines, knowledge and infrastructure are brought together in a myriad of ways to produce the goods, services and other outcomes we want. In any dynamic economy, this configuration is essentially experimental. We are always looking for better ways of combining these resources to give better outcomes.

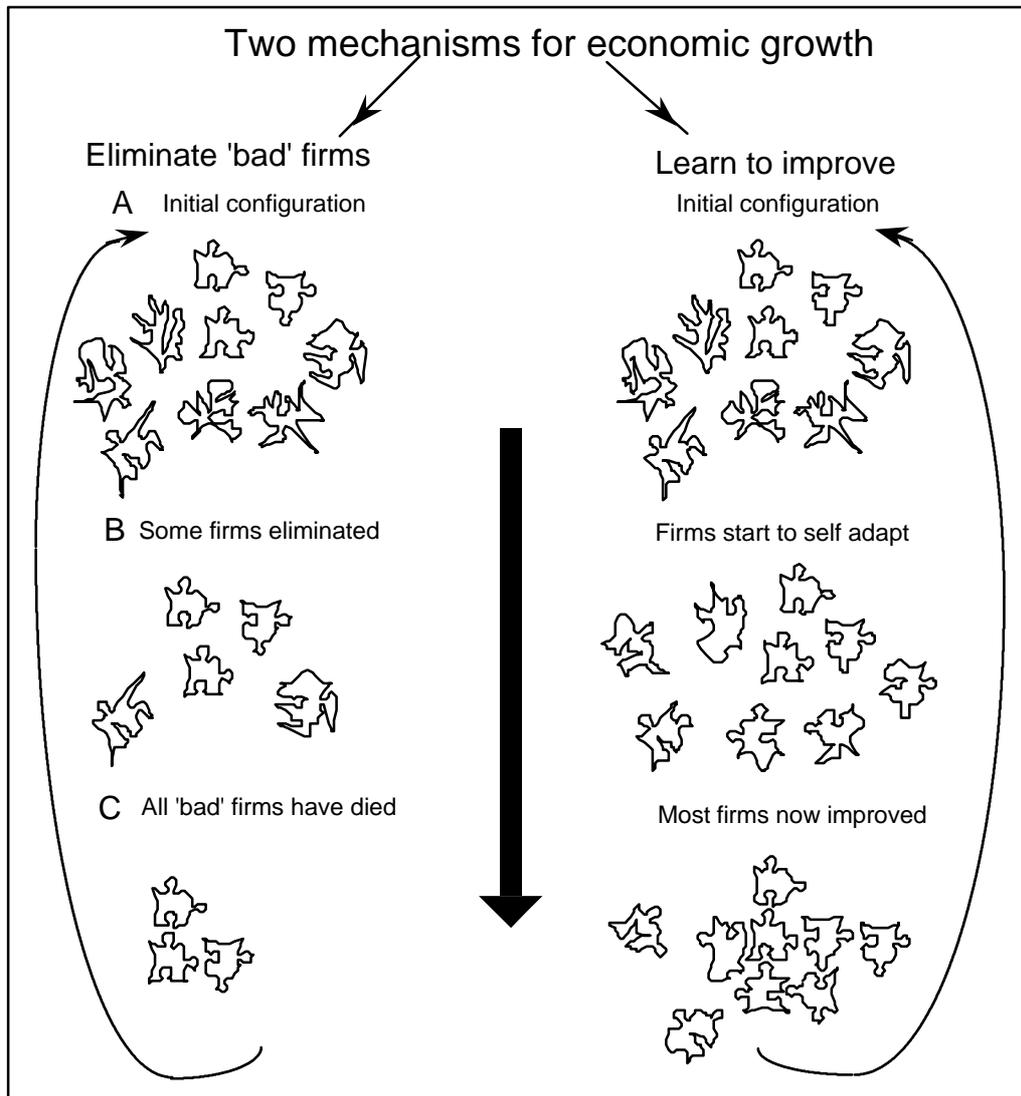
We can think of all sorts of methods for trying to find better ways of reconfiguring resources. For example, all the disparate bits of the economy could be juggled about in a giant randomising machine. It is (remotely) possible that the resulting configuration would be better, but far more likely that unproductive or impossible configurations would emerge, like trying to make steel from bananas or similarly absurd combinations.

Modern economies have found more efficient ways to encourage better configurations (Figure 3.1). One invention is the firm. Firms are groups of one or more individuals who try out a particular way of doing things. Then, by having competition, inefficient or unresponsive firms die in a process akin to ‘natural selection’, leaving high quality survivors and better ways of doing things. The survivors form a naturally interlocking system – with good firms not only being internally efficient but also having clear complementarities with other firms. Transactions between survivors are easier than those between members of the ill-adapted group. The whole is greater than the sum of the parts – hence the jigsaw analogy in the diagram.

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<sup>1</sup> Any business newspaper or magazine affords ready examples. For example, ‘Brereton relaxed about air fight’, *Australian Financial Review*24/4/95, ‘It’s war! Well..virtually’, *Australian Financial Review*25/4/95.

**Figure 3.1 How we do things better**



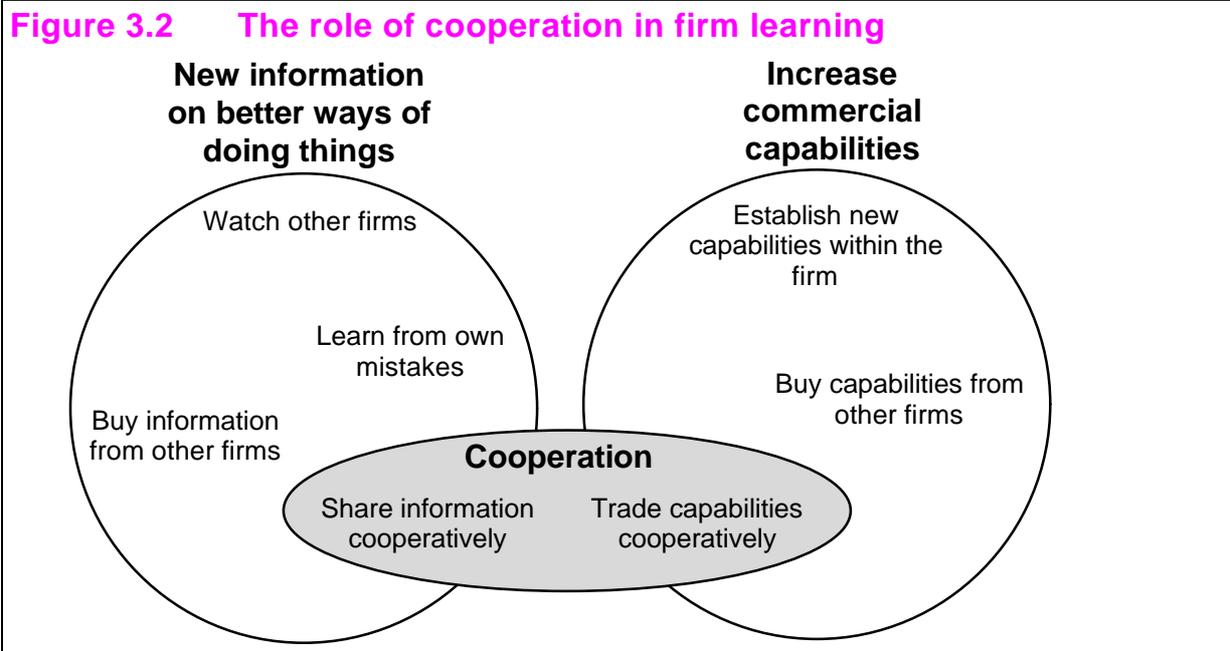
Note: The 'good' firms are represented by jigsaw shaped pieces which interlock easily, while 'bad' firms are represented by other, non-interlocking, almost random shapes.

The better techniques for doing things are the equivalent to genes in the biological story of natural selection. The people who run good firms will eventually die, but their accumulated expertise is either passed on directly to other employees or survives in institutional arrangements or manuals (Nelson and Winter, 1982). However this Darwinian process of competition, if working alone, might be quite protracted, because it takes time to eliminate the 'bad' firms.

But there is a second mechanism at work. Individual firms can improve by changing their nature – unlike animals, a firm can change its own spots to better suit the environment. But how do firms change the way they do things? The answer is either by trading capabilities with other firms, or by gaining knowledge – either from their own experiences or from customers, governments or other firms.<sup>2</sup> Not all these transactions

<sup>2</sup> AMC and McKinsey (1994, p. 5) cites the diverse sources of new ideas for firms. Innovative firms cast their nets far more widely than other firms. They are particularly good free-riders, with 56 per cent of innovative

need be formal and at arm's length. Many are free; you learn simply by watching others. Moreover, some of the transactions are symbiotic in nature. For example, a customer might provide information about desirable changes in a product, which enables the producing firm to make higher quality products. The customer gets a better product, the firm obtains an increase in its competitiveness.



The critical point about this second mechanism is that every firm learns to improve through self analysis and hard-edged<sup>3</sup> trading in information. Of course, the world never ends up perfect – because new shocks always push firms away from perfection.

These two mechanisms, annihilation and learning, work side by side in improving the long run performance of firms. Economists have long understood the role of failure – but learning and cooperation have been less routinely acknowledged. By exchanging mutually beneficial information and capabilities, inter-firm cooperation can be a cheap and rapid way of discovering better ways of doing things (Figures 3.1 and 3.2). This still leaves unresolved the question of when, in particular, firms find it useful to cooperate rather than to use other strategies and where the boundary of a firm will fall when it is in close cooperative arrangements.

### 3.1.2 What determines a firm's boundaries?

Economists are still trying to understand what determines the boundaries of firms. Firms do some things, but not others. Where do they draw the line and why?

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firms borrowing ideas from other companies (typically through reverse engineering) compared to only 20 per cent of non-innovative companies. The innovators also rely far more heavily on cooperative modes for securing new ideas. Thus 44 per cent of innovative companies gain new ideas from leading-edge customers while 22 per cent of the innovators source new ideas from suppliers. In contrast, the figures for non-innovators are 30 and 20 per cent respectively.

<sup>3</sup> Hard-edged because there need be no altruism or good will in cooperation – but simply a recognition of the mutual value of cooperation between firms.

The major explanation<sup>4</sup> centres on the transactions costs of configuring resources (See Coase, 1937; Alchian and Demsetz, 1972; and Williamson and Winter, 1993). Surprisingly, buying something can be very complicated. There are many dimensions to a transaction. Buyers are interested in:

- pricing
- when they can get the product
- quantity
- quality
- after sales service
- flexibility
- how the problem will be fixed if for some reason one of these requirements is not met.

When buying products or services, firms face costs of (a) establishing contracts to specify all these aspects of the exchange of goods or services, (b) monitoring whether the contracts have been breached and (c) dealing with breaches if they occur. If these transactions costs are low compared to in-house production, then the firm will contract out to other firms through a market. For example, many firms will contract out cleaning because it is easy to monitor quality and to specify the full range of duties. On the other hand, when these transactions costs are high firms will internally organise production using non-market and hierarchical forms of organisation.

But how does cooperation enter this rather black and white characterisation of the firm? Cooperation allows a firm to conduct transactions and/or receive information outside the firm in a way which is less costly than either internal production or complete arm's length relationships. These costs may be lower relative to arm's length relationships because cheap and flexible implicit contracts, based on mutual advantage and feedback, can replace inflexible and expensive formal contracts. The principles of reciprocity, feedback and reputation discipline cooperative arrangements: both parties have incentives to adhere to the implicit contract because both parties have something to gain.

The costs are lower than internal production because firms either trade capabilities or information in which they have a comparative advantage, or spread fixed costs of some activity over a number of firms (such as a joint marketing program, acquisition of a particular technology or even specialised staff and equipment). For example, one engineering firm may have a particular advantage in the rapid design of unique engineering solutions, and another a unique ability to manufacture the specialised equipment. They may well cooperate because their competencies are complementary. It would be costly for any one firm to try to perform the other's function.

We emphasise that cooperative behaviour need not spring from an altruistic concern for others, but typically represents self interest.

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<sup>4</sup> Another important explanation is *technological*. If, for example, you want to make petroleum products and compete with other petroleum producers, you had better use up-to-date technology. Since this technology does not come in infinitely indivisible units you can only make large amounts of most petroleum products or none at all. There may also be economies in jointly undertaking petroleum refining and chemical manufacturing, but there are unlikely to be similar complementarities with, say, selling fish and chips. Accordingly petroleum firms will be large and may diversify into similar sorts of technological activities. They will not run fish and chip shops as well.

### **3.1.3 A world without business cooperation**

In trying to understand the ‘nitty gritty’ of why firms cooperate, it is revealing to ask what the world of business would look like if firms never cooperated.

#### ***Weaker information flows***

If firms never cooperated, information flows between firms would be far more sluggish. Firms would not voluntarily disclose information of use to other firms. This would slow diffusion of good management practices, technologies, and marketing intelligence. Product improvement and innovation would be riskier and more expensive – wheels would be re-invented and innovators would face only a market test for their completed new products, rather than receiving continuous feedback from customers about a proposed innovation.

Even if there were information flows, a lack of cooperation reduces the value of the flow. In many exchanges, one party knows more than another. The classic example is the market for used cars, colourfully depicted by Akerlof (1970) as ‘the market for lemons’. A buyer of a used car does not know whether the car is a good one or a bad one (a lemon). The seller, who has recently driven it, knows. Because of this ‘information asymmetry’ – sustained by the fact that buyers cannot trust the seller’s information – the price for used cars is depressed. If, however, you can trust the seller then both parties are better off. The buyer is better off because she avoids the risk of a lemon and the seller is better off because she gets a higher price.

As well, quality control and production and inventory planning would be more costly. Cooperative arrangements with customers and suppliers typically provide forecasting information on future requirements for stocks of inputs or outputs. Without that information, firms might have to maintain larger inventories of inputs and/or finished goods to cope with unforeseen demand changes. More of the economy would sit unproductively on the factory floor.

Firms informally provide information on the quality of employees who are leaving – the refereeing process is essentially a cooperative behaviour. Without this information, hiring firms would face greater uncertainty and higher search costs for good quality employees. This in turn would increase the level of unemployment.

#### ***More do-it-yourself***

Second, in a world without business cooperation firms would trade capabilities less and do more themselves, simply because the transactions costs of arm’s length relationships (which are not based on reciprocity and trust) would be too high. Firms would tend to be bigger and less specialised, and face higher costs.

This suggests that flows of information and capabilities between firms, underpinned by cooperative behaviour, increase economic efficiency and growth.

### **3.1.4 What sorts of firms will cooperate and when will they do it?**

Cooperation is *not* a strategy that suits all firms. The transaction between a tourist and a souvenir supplier is an extreme but suggestive example of an almost purely arm’s length arrangement. What makes this at arm’s length?:

- It is a one off purchase conducted in a relatively information-poor environment. Customers rarely return, and have little opportunity to collect informal information from other consumers about the quality of rival sellers.
- Customers are undemanding. A customer faces few adverse consequences from buying a poor quality good. This is because the purchase cost is low in relative terms (so that the cost of a poor investment is small) and the performance of the good does not matter much to the consumer (for example, consider a commemorative spoon which tarnishes compared with the unfortunate consequences of a faulty pacemaker). Reputation, guarantees and brand names – all devices to signal high quality – are usually absent.
- The goods are simple in nature. Rates of technological innovation are low. The information needed to understand and use the products is slight. Accordingly, it is easy to monitor their quality. There is no after sales service, customer training or product training for sellers.
- Any individual product matters little to the seller. They diversify selling risks with large ranges of goods. If the white elephant doesn't sell, the pink koala will.
- There are many, approximately equivalent customers – so that the value to the supplier of any one customer is small.
- There are many, approximately equivalent sellers, so that customers are indifferent between them – the market is highly competitive.
- Firms can realise few economies of scale. A bigger souvenir seller has few advantages in unit costs than a smaller one, unlike steel production for example. As well, the requirement of physical proximity to the consumers means that the typical seller must be small.
- The market is highly turbulent with rapid entry and easy departure of firms. Long term, non-contractual, relationships between firms are risky and uncertain because the cooperating parties may vanish. The value of market information quickly becomes redundant.

This is an example of an acutely distant relationship between customers and suppliers, who fleetingly, almost accidentally, engage and then part. While a caricature of most business transactions, it is useful for teasing out some of the important elements determining the degree of cooperation (Figure 3.3). Five major elements emerge. We need to look at both parties to any transaction. We must consider the nature of the transaction itself and the good or service being exchanged. Finally, we have to think about the social and institutional milieu in which the exchanges take place. We explore each of these elements in turn, and establish some conjectures which we investigate in later chapters.

### *Nature of customers*

Cooperation takes time. It follows that a firm cannot cooperate with everyone if it has a large number of suppliers and customers. The firm will cooperate with only the most important suppliers and most demanding and significant customers. If the customers and suppliers are all much the same, and there are many of them, the firm will tend to adopt arm's length transactions. This is why the relationships between ordinary consumers and retailers are typically at arm's length. Cooperative behaviour will usually be between firms only.

While money is the major lubricant of any transaction, there is usually another invisible transaction involving information flows. When customers use a product, they learn about how it works in the real world and how to improve it. The more information customers collect, the more valuable is their feedback – and

the more suppliers will elicit their cooperation. Demanding customers, by their nature, collect more information about how products work – which is why they can act as such valuable sources of product improvement (for example, AMC and McKinsey 1994).

### *Nature of sellers*

If an industry is composed of a large number of almost identical firms, each competing with the other, then there are:

- disincentives to share information with other firms in the industry (because the sharing firm forgoes a competitive advantage); and
- not many unique capabilities or much information to share among industry members.

**Figure 3.3 When will firms cooperate?**

Arm's length

Cooperative

**Nature of customers**

Undemanding	How demanding are customers?	Demanding
All much the same	Homogeneity of customers	Different customers
Many	Number of customers	Few
Small	Information needs	High

**Nature of sellers**

All much the same	Homogeneity of suppliers	Different sellers
Many	Number of sellers in industry	Few
Low	Dependence on any one product	High
Low	Need for feedback from customers	High

**Nature of products/services**

Simple	Degree of complexity	Complex
Unimportant	Importance of fixed cost or economies of scale	High
Low	Rate of technological innovation	High
Low	Cost of product failure	High
Low	Importance of reputation	High
Off the shelf	Extent to which tailored to particular customers	Tailor made

**Nature of transactions**

Infrequent	Frequency of transactions by individual customers	Frequent
Low	Cost of transaction failure	High
Small	Size of transactions	Big
Simple	Complexity of transaction	Complex

**Social norms**

Low trust	Attitude to trust	High trust
Guile is OK, its just business	Breaches of trust	Social sanctions

This does not preclude cooperative relationships with customers or suppliers in such an industry. However, such relationships may be relatively unstable, since any customer or supplier has many alternative choices among the firms. Each firm is somewhat dispensable.

In contrast, firms which have carved out product niches learn new and useful information which they can share with others without compromising market share. As well, the more the firm derives their competitive advantage from a particular product niche, the more important it is to gain feedback from customers and to

ensure high quality and timely inputs from suppliers. Such firms cannot diversify product risk through many unrelated lines – but they can reduce product risk through cooperation.

### *Nature of goods/services and processes*

There is often a deeper source of cooperation than the nature of suppliers and customers. In many cases, the nature of the product shapes the market structure and transactions. Product complexity and novelty are key factors – they create strong incentives for the information flows that dominate cooperation.

Complex products are goods or services which are difficult to make and may be difficult to use. Their quality is hard to monitor. Compare for example, a tomato with a machine tool. Tomatoes are simple products, whose texture or appearance betrays their quality. Machine tools are sophisticated products, whose quality will invariably only become apparent with use. Their manufacturer can find them hard to make well and the customer hard to master. Their production and their use generate valuable information.

Seemingly, customers and suppliers could buy and sell this information. However, the costs of organising such markets or of eliminating false and misleading information are often too high. In this case, information can only be exchanged cooperatively.<sup>5</sup> Customers tell suppliers about product faults, new possible designs and even better manufacturing techniques. Suppliers help train customers to use their products, fit production schedules in with customer needs, and tailor product design to new customer requirements.

How will firms signal the quality of complex, hard-to-monitor products? If the firm needs to signal their product quality to many customers at arm's length, they typically resort to formal guarantees and brands since they cannot build up a relationship based on trust with every customer. While guarantees are principally a form of insurance for the buyer of a good, they also signal that a seller has strong incentives to maintain high quality. In arm's length transactions, the guarantee is a formal contract, with clear terms and conditions governing its scope. This formality is possible because producers know the likelihood of product failure.

Where this likelihood is unknown (as in novel products or tailored solutions) suppliers will be reluctant to provide unlimited insurance to the customer. However, they may still want to signal an incentive to maintain quality. They can do this through a 'fuzzy' guarantee in a cooperative transaction. The supplier invokes an implicit guarantee with its customer which allows the cooperating partners to flexibly determine the contingencies under which the guarantee applies. In effect, the customer and the supplier recognise that they are 'trapped in a lift' together, and that they will have to equitably share the losses and gains of novel product development. This flexibility, based on trusting relationships with a few customers, can be critical where products are complex and novel.

The greater the pace of innovation, the greater is the required flow of information between customers and suppliers. If a product is complex but virtually unchanging, then the need for continued flows of information between customers and suppliers wanes, as does a major impetus for cooperation.

Faster, cheaper and more accurate information flows are a major rationale for cooperation. But there can also be a technological basis to cooperation. There can sometimes be either substantial economies of scale (or scope) and, or large fixed costs in production. For example, a global marketing push requires a substantial

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<sup>5</sup> As well, when cooperative exchange takes place, it eliminates much of the incentive to provide false or misleading information. Thus, in a market in which costly information is gathered, some players may cheat and contrive cheap false information which they sell as if it were the real article. If there is no price for the information, there is no incentive to provide such false information (other than in certain rivalrous strategic games).

fixed investment to have any impact – and investment often beyond the resources of a single firm. By cooperating with firms producing complementary products, these large fixed costs can be spread over many firms (see Box 3.1 for how such a cooperative venture was organised).

### **Box 3.1 Southern Gold: Spreading global marketing costs over many firms**

*Early in the 1990s, the Confectionary Manufacturers of Australasia (CMA), an association representing sweets producers in New Zealand and Australia, identified strong export opportunities for their members in the growing Asian market and poorer prospects in a stagnating domestic market. Australian producers were proficient at short production runs and Asian familiarity with Australian products gave Australia an edge over European and US producers. The CMA knew the cost of entry into this market for many individual companies was high. Small firms in the Australian confectionary manufacturing industry faced a range of impediments to export success. Individually, they lacked the resources necessary to gain the export knowledge, access export markets and maintain the production capacity to service export markets.*

*In mid-1993, the CMA developed a novel solution – a distinctive brand of confectionaries targeted at the Asian market and owned jointly by industry members. The CMA (with the National Industry Extension Service and a facilitator) established a network of eight small confectionery manufacturers in Victoria and New South Wales called Southern Gold. The manufacturers shared similar competencies and were fierce competitors in the domestic market. The group established a comprehensive code of ethics, developed a structural mechanism for operation of the organisation and built up trust between members. They could then clearly delineate the areas where they could cooperate, while still competing with each other vigorously in the domestic market.*

*Southern Gold launched their jointly owned brand, Kazz, at the Singapore Food Trade Fair in April 1994.*

Source: BIE interview

## **Nature of transactions**

Small, rarely repeated transactions are inevitably at arm's length. Cooperation is too costly for an ephemeral relationship with a customer or supplier. As well, non-cooperation cannot be punished where only one transaction takes place (Figure 3.4).

### **Figure 3.4 To cooperate or not? A revealing game**

The game is called the *prisoner's dilemma*. We only use it as an illustration of a principle. Two people, Thelma and Louise, are in separate cells in jail. The police know that the two jointly committed a crime, but don't have enough evidence to convict. The police offer each of them a separate deal. The police ask each prisoner to implicate their partner. If neither does, then both avoid custody altogether. If each implicates the other, then each goes to jail, but only for a short time. If one implicates the other but is not implicated then she gets off (and enjoys the hidden loot alone) while the other rots in jail for a prolonged period. Each prisoner ranks the four possible outcomes. The best would be to implicate the other party but not be implicated oneself (escape jail and get the loot to oneself!). The second best is to avoid implication of either party (thus avoiding jail and dividing the loot). The third

best is to both implicate each other (and endure a short spell in prison, before enjoying the loot together). Worst of all, is to be implicated, while not implicating your partner (long hellish life in jail and no loot).

We represent the game by a payoff matrix, showing how the players value the various outcomes of the game. If Thelma and Louise clear each other, we call this the *cooperative solution*. Other solutions are non-cooperative. What will be the predicted outcome of this game? Because they cannot communicate with each other, each player will implicate the other, and both players receive zero benefits. Why is this the dominant strategy? Put yourself in the shoes of any one player.

		<b>Thelma</b>	
		clear other	Implicate other
<b>Louise</b>	Implicate other	Louise: 10 Thelma: -5	Louise: 0 Thelma: 0
	clear other	Louise: 5 Thelma: 5	Louise: -5 Thelma: 10

Say I declare you are innocent. I know that if you implicate me, you will get the full loot and go free, while I remain incarcerated. It would be unwise to declare your innocence. This outcome is unfortunate because we could both be better off if we could somehow choose the cooperative solution. Now imagine a twist in the game that switches the results dramatically. Instead of playing it just once, say that we play it repeatedly (and the gains and losses are merely monetary rather than custodial).

This has been tested in experiments. Cooperation ensues so long as the players do not see the end of the game in sight. This occurs because I can feel safe about clearing you now, because if you cheat on me, I can punish you in future games by reversing my strategy<sup>6</sup>. What is the lesson of the game? *Repeated transactions often encourage cooperative behaviour.*

<sup>6</sup> The full story is in Kreps (1990, pp 503ff) where he also elaborates a number of ‘wrinkles’ to the story.

But if the value of the transaction rises, and, or the customer returns repeatedly, then there is a basis for trust, reputation and information exchange. If a transaction is complex, because it involves many carefully sequenced stages or because it must be flexible to meet changing circumstances, then the costs of formal contracts rise. In contrast, flexible arrangements based on cooperation and guidelines (such as memoranda of understanding) can economise on these costs.

The greater is the cost of transaction failure (for example, firms deciding not to sell or buy at a critical time) the more the transacting parties will need to coordinate and cooperate.

## **Social norms**

Trust underwrites many forms of cooperation. Trust has the advantage that it eliminates all sorts of costly monitoring and formal contracting that people would need if they weren't sure of the trustworthiness of their business partners. But how do you ensure that people behave in a trustworthy way in a cooperative business relationship? The view implicit in much of the modern theory of the firm is that people act in 'self interest with guile' (as coined by Williamson 1985). Korczynski (1994) gives a compelling example of how such guile afflicted the British engineering construction industry.

Guile leaves no room for trust. However, social norms and sanctions can encourage trust. People or organisations who need to be mutually trusting can penalise breaches of trust. For example, if two firms exchange vital strategic information, a discovered breach of trust by one can elicit a punishment from the other – effectively the two firms swap poison pills.

Different cultures tend to place different emphases on relationships based on trust and informality versus ones based on more formal rules (Trompenaars, 1993). Australian business people, like North Americans, tend to prefer rules to trust (Figure 3.5). Asian, Middle Eastern and Latin-American societies are the opposite. This may explain their greater reliance on business cooperation, as exemplified in the Italian machine tool industry.

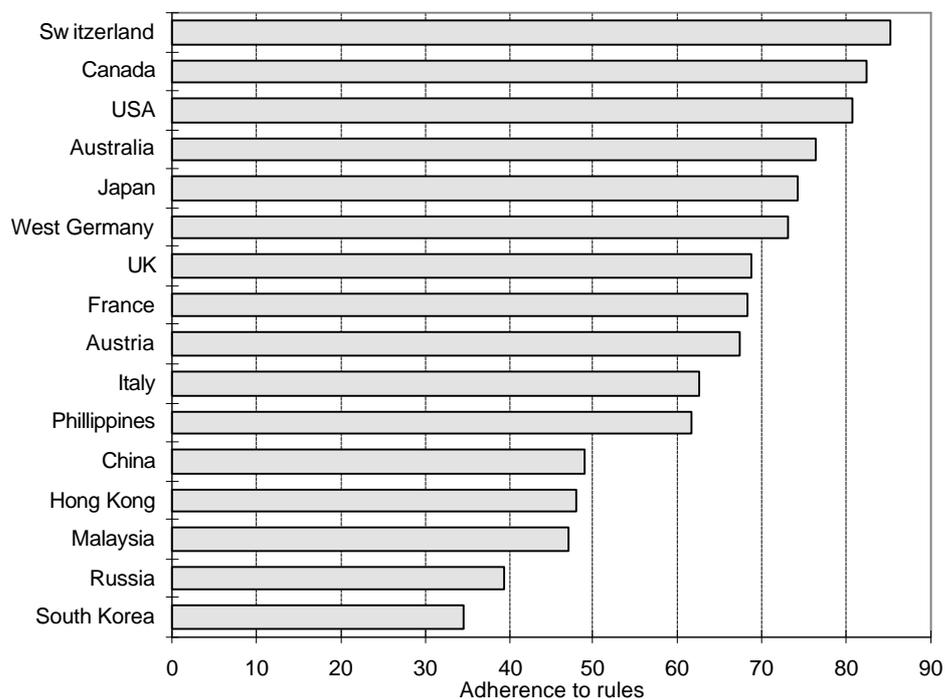
Trompenaars provides a vivid example of how social norms tilt business relationships:

In a ten year contract between a Canadian ball-bearing producer and an Arabic machine manufacturer, a minimum annual quantity of ball-bearings was agreed upon. After about six years the orders from the Middle East stopped coming in. The Canadians' first reaction was: 'This is illegal'. A visit to the customer only increased their confusion. The contract had apparently been cancelled unilaterally by the Arabs because the Canadian contract signer had left the company. The so-called universally applicable law was not considered relevant any more in the eyes of the Arabs. What could the Canadians say against this logic, especially when they discovered that the ball-bearings were never even used? It turned out that the product was purchased solely out of the particular loyalty to the Canadian contract signer, not because of a felt legal obligation. (p. 41)

Institutions can also sustain cooperation. For example, Lane and Bachmann (1995) suggest that there are systematic institutional differences (the law, financial systems, trade associations and training) between the UK and Germany which explain why UK is a low trust economy and Germany a high trust one<sup>7</sup>.

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<sup>7</sup> Germany scores higher than the UK in Trompenaars' measures of rules versus trust based relationships. This is hard to reconcile with Lane and Bachman's characterisation of the two countries. However, sometimes cooperation and rules are not opposing forces. In Germany, the existence of uniform institutional standards (especially those relating to industry norms – *Deutsche Industrie Norm*) helps to develop cooperation and trust.

**Figure 3.5 Rules versus trust-based relationships, by country**

Note: The data are the average of the scores in Figures 4.1 to 4.3 in Trompenaars. The higher the score, the more a culture tends to use arm's length relationships mediated by formal institutions. The scores are based on questions given to people in each of the countries. The scores provide an imperfect guide to the role of rules versus trust in different societies.

Source: Trompenaars (1993).

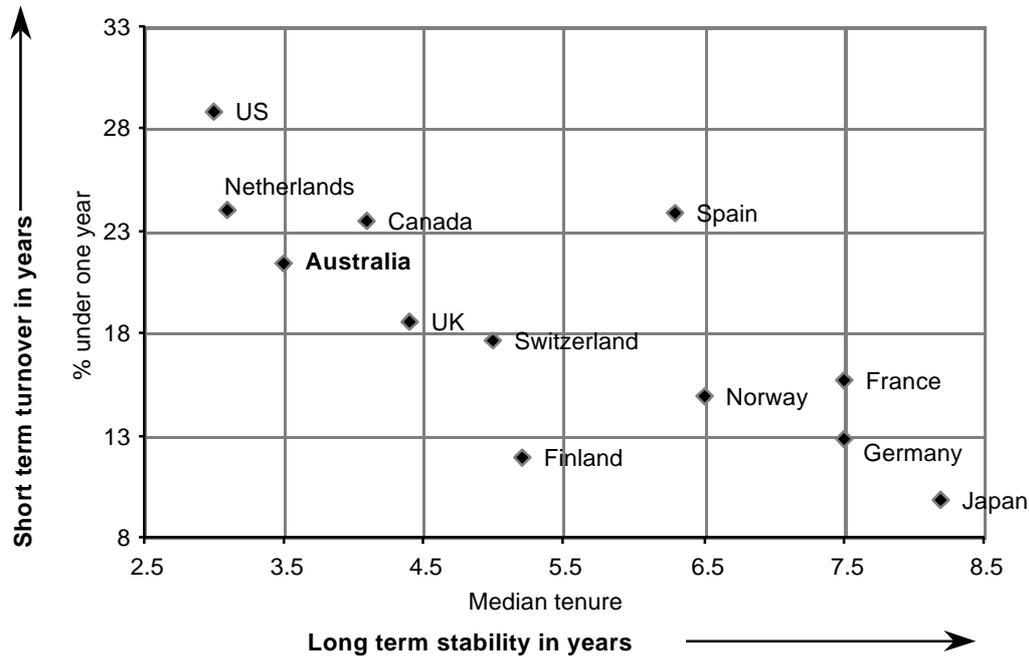
Since Australia has inherited many of these British institutions, Lane and Bachman's perceptions suggest that Australia too may face institutional and environmental impediments to cooperation. Certainly Australian industry associations and chambers of commerce lack the power of their German counterparts, while our legal system is inherited from the UK.

Some other indirect evidence supports the existence of impediments to cooperation. Short term job turnover is higher, and long run job stability is lower, in Australia relative to other OECD countries (Figure 3.6) – weakening the capacity for long-term personal-based trust.<sup>8</sup> As in the UK, but unlike Germany, wage differentials are quite pronounced between small and large firms in the same industry.<sup>9</sup> This may encourage more arm's length relationships between different-sized firms to reduce the risk of skill poaching.

<sup>8</sup> However, the figures for job stability among Australian managers and administrators is much higher than for the average Australian employee – so that there may still be ample room for long term personal-based trust in many Australian firms. In 1994, about 33 per cent of Australian employees had been in their jobs for only two years or less compared to 20 per cent of Australian managers and administrators (ABS, *Labour Mobility, Australia*, Cat. No. 6209.0, AGPS). In contrast 42 per cent of managers and administrators had been in their jobs for ten or more years compared to 24 per cent of all employees. In any case, higher job mobility in Australia may serve as a substitute way of diffusing knowledge around the economy

<sup>9</sup> For example, in manufacturing, average earnings of firms employing 20 or less persons were one-third less than firms employing 100 or more persons (1990-91 figures from ABS, *Small Business in Australia, 1993*, Cat.

**Figure 3.6 Short term job turnover and long term job stability**



Note: Median years spent in the one job is the measure of long term stability, while short term job turnover is measured as the percentage of employees who have been in their job for under one year.  
 Source: OECD (1993), Employment Outlook, Paris, July.

No. 1621.0, p.101). Loveman and Sengenberger (1990) provide comparative data for a number of other countries which implies that Australia's wage dispersion across different -sized firms is greater than most.

## Summary

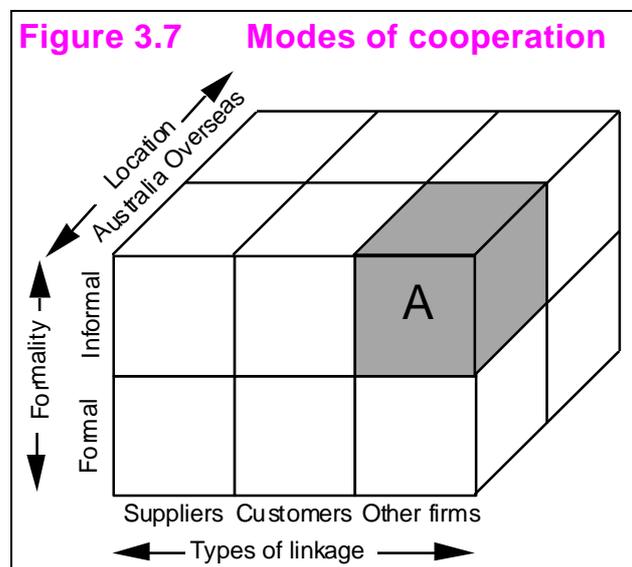
These five elements – suppliers, customers, the product, transactions and the social milieu – all affect the likelihood and the mode of cooperation. But they are not wholly independent. For example, a complex, novel and costly product, like ophthalmic lasers<sup>10</sup>, will typically be sold to only a few customers. These will have high information needs and face high costs of transaction failure – they therefore have strong incentives to provide feedback to the supplier. In this case, the product shapes the nature of customers, suppliers and transactions – which collectively determine the likelihood and type of cooperation.

## 3.2 Modes of cooperation

Cooperation is like a language – it has diverse forms and complex nuances of style. We have explored why firms cooperate but not why firms choose the particular forms and intensities of cooperation. In the remainder of the report (and especially in Chapter 5) we examine, *inter alia*, three dimensions of business links (Figure 3.7):

- the degree of formality of the linkage;
- who the linkage is with: suppliers, customers or other firms; and
- whether the linkage is with an Australian or overseas firm.

Any linkage can be located somewhere in an imaginary box describing these dimensions. For example, the pigeonhole labelled ‘A’ depicts an informal linkage between Australian firms from different industries.



### Formal versus informal

The choice of which form of cooperation to adopt is not arbitrary. First, consider the degree of formality. Small firms can cooperate through personal relations. This allows maximum flexibility and great subtleties in the degree and type of information exchanged. But such cooperation suffers from limitations. In large firms there are many key decision makers – not simply the CEO. If these firms based their cooperation on informal personal relations alone then movement of key people could destroy linkages (as in the previous ball bearing example).

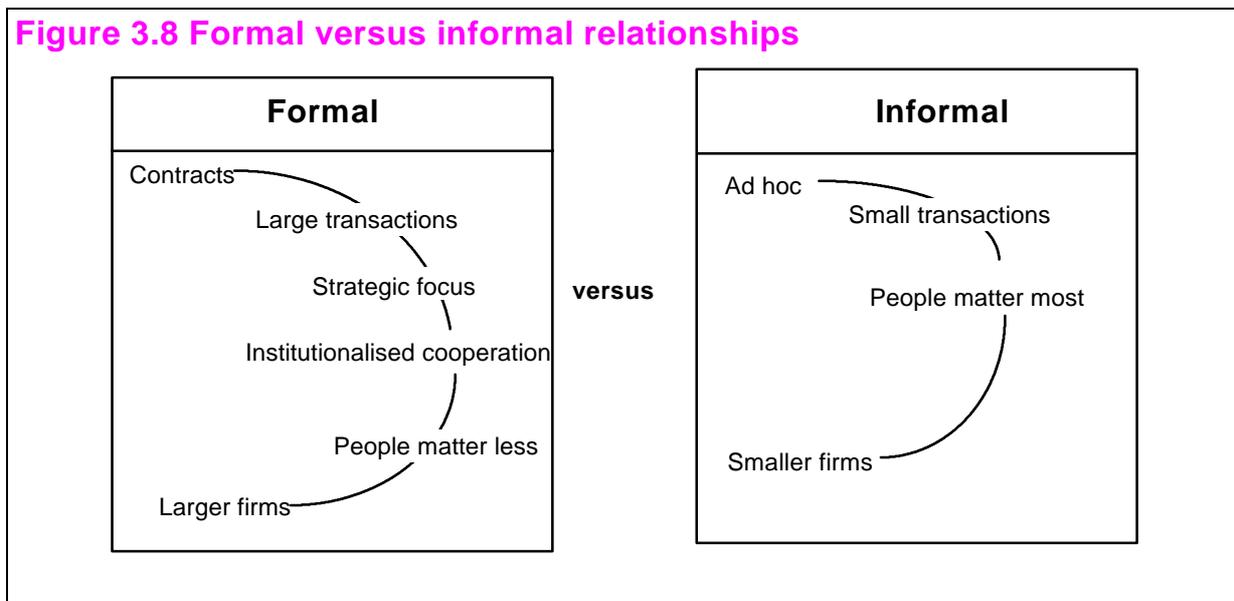
Larger firms cement their cooperation through codification (such as joint strategic objectives, MOUs and contracts) and structure. The memory of the linkage moves from a person to the institution (Figure 3.8). As well, in larger firms it becomes difficult to coordinate the various informal links of key people, unless there is some clear strategy and protocol for cooperation. Conversely, formal linkages often require a managerial infrastructure that small firms cannot or are reluctant to support. For example, an Olivetti-Toshiba joint venture in photocopy machines required one year of negotiation by a team of 10 part-time managers

<sup>10</sup> AMC and McKinsey (1994, p.11) gives a lively example of how Laserex Systems, an Australian company making just such devices, secured gains from their linkages with overseas leading-edge customers.

(Camagni, 1993). This suggests that larger firms use more structured and formal cooperation, a hypothesis we examine in a later chapter.

As well, formality need not only be a function of a firm's size – but reflect the need to clarify expectations about a partner's role when large collaborative resources are at stake. Hence large collaborative R&D projects or joint production agreements between firms will usually involve formal contracts as well as informal cooperation.

**Figure 3.8 Formal versus informal relationships**



### *Domestic versus overseas*

The role of international linkages in promoting business efficiency and growth is controversial. Michael Porter in his *Competitive Advantage of Nations* (1990), emphasises the role of domestic versus overseas linkages and provides a privileged position to demanding and sophisticated local customers. For example, Norway has a good winter sport manufacturing industry because its consumers of winter sport equipment are the most discerning in the world (they have to be!). Similarly, the advantage of Australia's marine industry might stem from sophisticated local customers.

AMC and McKinsey (1994) have questioned whether the Porter model is really applicable to a small open economy like Australia – and suggest instead the primacy of leading-edge customers abroad. AMC and McKinsey found some strong evidence in favour of this with their survey data, but their sample frame included only high value-added, high export companies – which might bias the results.<sup>11</sup> The BIE dataset

<sup>11</sup> If an exporter has its major customer abroad, then it would not be surprising that it believes that information from that customer is more important than minor customers at home. A better test would be to look at firms who had equally-sized contracts with individual customers at home and abroad. If they still rated overseas customers as more important, then that would be strong evidence in favour of the AMC/McKinsey hypothesis.

should enable a better, if still incomplete<sup>12</sup>, resolution of the relative importance of domestic versus overseas links.

Clearly at a more facile level, one would expect that exporters will have much stronger links with overseas customers than non-exporters (which we test formally later in this report). On the other hand, unless the supplier produces a strategic input for an Australian customer, and/or the Australian customer is a key one for the foreign supplier, it is less likely that strong overseas links will be established with suppliers.

The international dimension of cooperation is interesting in another way too. Australia is a small economy: in 1991-92 there were around 340,000 private businesses in the non-agricultural sector and about 40,000 manufacturing businesses.<sup>13</sup> Contrast this with the giant US economy. In the US, there were around 5.7 million non-agricultural businesses in 1990 and around 370,000 manufacturing enterprises in 1988.<sup>14</sup> As indicated in Figure 3.1, each firm is an experimental configuration of resources, from which other firms can learn. In a small economy there are fewer examples of best practice to mimic – in the global economy the number of firms to learn from is extraordinarily magnified. Just as people are increasingly seeing bio diversity as an asset, so too can global firm diversity provide useful information. With decreasing costs of transferring information (faxes, modems, the infobahn), there also seems to be increasing scope for firms, including *non-exporters*, from different countries to exchange information. Surprisingly, non-exporters in particular can be natural partners because they do not compete with each other.

But while there may be good reasons for international flows of information through cooperation, is the necessary infrastructure in place to support those flows? The evidence, while indirect, supports the notion that Australia is one of the lead countries in the adoption of technologies which aid diffusion of knowledge and that the global accumulation of such technology is proceeding apace (Figure 3.9).

### *Linking with whom?*

We have already established hypotheses about the major factors which determine whether a firm is likely to cooperate. Who they cooperate with is merely a variation on these themes. In particular, product and transaction complexity emerged as one of our key explanations for cooperation. Thus if a supplier provides complex, hard-to-monitor inputs to a firm, it is more likely that they will cooperate than if they supplied simple homogeneous inputs.

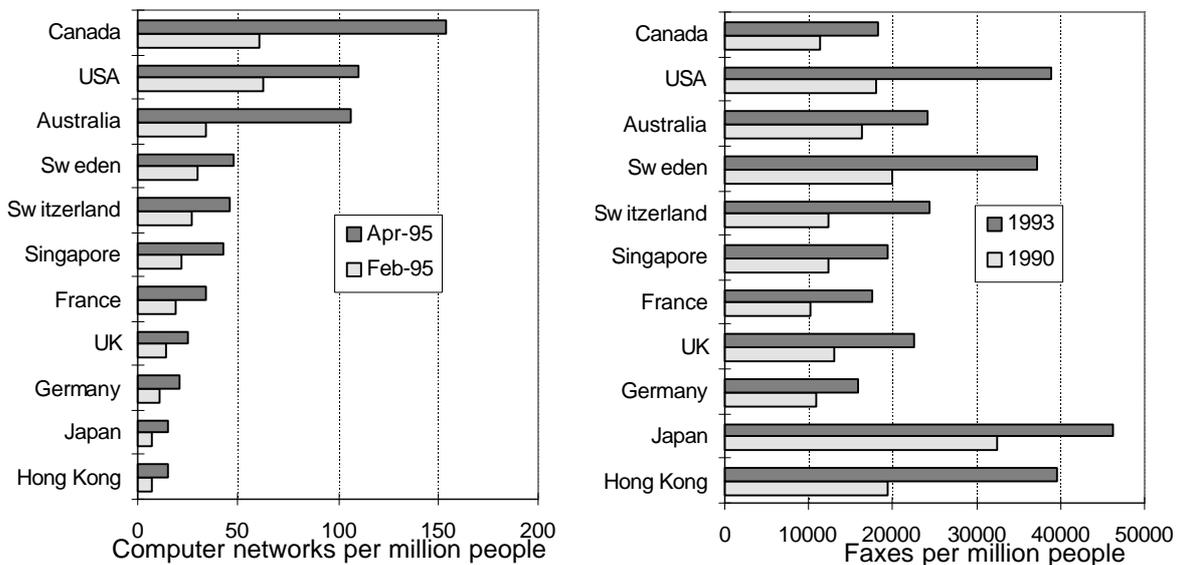
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<sup>12</sup> Incomplete because we cannot undertake the best test, as described in the previous footnote. What we can do, is compare the incidence and benefits of prime linkages with overseas firms relative to prime linkages with domestic firms.

<sup>13</sup> We restrict the number of firms to those employing one or more persons. The data is from ABS (1993), *Small Business in Australia, 1993* Cat. No. 1321.0.

<sup>14</sup> These data also exclude non-employing businesses and are drawn from *The State of Small Business, A Report of the President*, 1991, US Government Printing Office, Washington. In the European economy it is estimated that there were about 14.6 million firms in the non-primary private sector (European Network for SME Research, 1993, *The European Observatory for SMEs* Netherlands).

**Figure 3.9 Technological infrastructure for knowledge diffusion**



Note: 1993 populations are used to estimate the nets per million persons for February and April 1995. Other data from the Internet Domain Survey run by the Internet Society also suggest Australia is a lead user. July 1994 data for example suggested that Australia had the second highest levels of hosts per GNP in the world.

Source: [ftp://nic.merit.edu/nsfnet/statistics/1995/nsf-9502.country](http://nic.merit.edu/nsfnet/statistics/1995/nsf-9502.country).

There are, however, a few accretions to this story which explain how firms choose the pigeonholes in Figure 3.7:

- Sequencing of relationships. Many firms learn how to produce before they learn how to sell. If you are setting up a business, you will probably not have orders from customers until you can demonstrate that you can produce the good. In order to produce the good, you must have forged some relationship with a supplier (whether it be at arm's length or not). In this context, it would not be surprising to find that smaller, younger firms tend to have proportionately more supplier arrangements than customer ones.
- Avoiding Goliaths. Small firms may well benefit from strategic relationships with large firms in the same industry – especially when they lack the resources to develop innovative products. However, many small firms are, with some reason, worried by the prospect that their ideas or their skilled personnel may be poached – they lack the deep pocket or managerial sophistication to defend their intellectual property. The BIE (1994a) found that 13 per cent of small innovative companies engaged in collaborative research compared to 23 per cent of larger innovative firms.
- Anti-competitive behaviour by firms within an industry. Sometimes firms cooperate to fix higher prices or to discourage new entry.

### 3.3 Summary

This chapter has outlined how cooperation works *in theory*. The rest of the report aims to describe how cooperation works *in practice* and what can be done to improve the effectiveness of cooperation – both by the firms themselves and also by outside bodies, including industry associations and government.

Cooperation has become an integral part of business. Indeed, a world without business cooperation would be one with weaker information flows and greater reliance on firms doing things for themselves. However, cooperation is not a strategy that suits all firms.

Additionally we point out that cooperation itself is not homogeneous. It can take many different forms. Firms have good reasons for favouring particular forms – the degree of formality of arrangements, with whom the linkage is formed (customers, suppliers and other firms), and whether the arrangement involves Australian or overseas-based firms.

The characteristics of individual firms and their products influence both the level and type of business cooperation they will undertake. In the following chapters, we test some of the hypotheses about these determinants of cooperation by looking at a range of variables (noted in Figure 3.3). However, not all of these variables are easy to measure. In our empirical work we use variables that are as (i) objective as possible and (ii) easy to measure. Accordingly, we examine how cooperation varies by transparent firm characteristics such as: location; size; age; growth rate; export orientation; product type; nature of technology; ownership and degree of competition. Some of these will be adequate proxies for some of the more subtle, less observable firm characteristics defined in Figure 3.3. Others are of interest for their own sake.



## 4 Which firms cooperate?

In this chapter we ask which sort of firms are most likely to form cooperative arrangements and which are not (Sections 4.2 and 4.3). For example, are large firms more likely to cooperate than small firms, or do high performing firms dominate the group of cooperating firms? These questions can also be posed for firms in different industries and states.

The inter-relationship between firm characteristics and the existence of cooperative arrangements can provide an indirect link between cooperation and firm performance. In Chapter 3 we suggested that the nature of a firm's products may affect whether it cooperates. For example, we expect that firms with highly complex products will forge more cooperative relationships. Other important factors were predicted to be the rate of technological innovation, cost of product failure, importance of reputation and level of tailoring of product to individual customer needs. This chapter tests these hypotheses.

It must be emphasised that businesses are complex, multifaceted entities. Trying to distinguish the set of characteristics explaining why firms establish, or fail to establish linkages is difficult. For example, older firms tend to be larger. Larger firms tend to have more complex forms of ownership. But which of these factors drives their cooperative urge? To overcome these difficulties, results from modelling are used in Section 4.3 to confirm the partial analyses of the survey data and also to provide comparisons with information in other studies. More information on the use of these models is contained in Appendix A.

### 4.1 Overview

We summarise the incidence of cooperation for different types of firms in Table 4.1. We present the detail later in the chapter.

Apart from specific firm characteristics (examined in Section 4.2) there are some more general factors which may influence whether a firm is in a cooperative arrangement. These are the industry in which the firm operates, the state in which it is located and whether it is located in a metropolitan or regional area.

**Table 4.1 Which firms cooperate, by various characteristics (a)**

<i>Characteristic</i>	<i>Number of respondent firms</i>	<i>Per cent of firms cooperating</i>	<i>Difference from average (b)</i>
All firms	1286	41 <sup>(c)</sup>	–
<b>Industry</b>			
Clothing and footwear	291	32	A
Engineering	578	41	D
IT&T	131	54	A
Sci/med	122	48	B
Food	156	39	D
<b>Exporters</b>			
Exporter	358	54	A
Non-exporter	768	35	A
<b>Size (employees)</b>			
Micro	459	36	A
Small	230	44	A
Medium	254	43	C
Large	76	63	A
<b>Technology</b>			
Low	287	32	A
Medium	552	40	D
High	386	50	A
<b>Performance</b>			
High	85	50	A
Low	91	35	D
<b>State</b>			
NSW	448	40	D
VIC	408	42	D
QLD	153	37	D
SA	118	38	D
WA	93	48	B
<b>Product</b>			
Further processing	255	37	C
Capital equipment	222	57	A
Consumer goods	761	38	D
<b>Age</b>			
Young	202	47	A
Established	611	40	D
Mature	371	42	D
<b>Ownership</b>			
Unincorporated	75	31	A
Australian private	1032	41	D
Australian public	30	60	A
Australian subsidiary	14	50	D
Foreign subsidiary	35	60	A
Foreign owned	24	58	A

Notes:(a) These are listed in a rough order of importance of each characteristic's influence on a firm's propensity to cooperate. The definitions of each group are included in the glossary.

(b) A = significantly different from the average at the 95% level of significance; B = 90-94%; C = 80-89%; D = below the 80% level of significance.

(c) We report the survey response of 41 per cent – rather than the bias adjusted figure of one-third. We do this because we did not have reliable information to adjust for bias for sub-groups of firms.

Source: BIE survey

### 4.1.1 Industries

Table 4.2 provides information on the number of responses to the survey received from firms in the five industries sampled by the BIE.

**Table 4.2 Survey responses by industry**

	<i>Clothing and footwear</i>	<i>Engineering</i>	<i>IT&amp;T</i>	<i>Scientific and medical</i>	<i>Food</i>	<i>Total<sup>(a)</sup></i>
Cooperating firms	94	237	68	58	65	525
Non-cooperating firms	197	341	63	64	91	761
Total	291	578	131	122	156	1286

Notes: (a) Not all firms could be placed in one of the five industries.

Source: BIE survey

Industries can shape firms. A central question is: do different industries have different degrees of cooperation among member firms? Blackburn (1993) for example, in his analysis of two surveys of small businesses in the services sector in the United Kingdom, found that the industry effects were important in understanding a firm's links to the wider environment. However, the AMC (1994) found:

“...there is no significant relationship between industry sector and the implementation of best manufacturing practices [one of which is inter-firm cooperation] and the achievement of their related outcomes. In fact the variation in practices and outcomes within each industry sector is greater than the variation across sectors.”

Given this uncertainty we sought to discover why some industries tend to have more cooperating firms. We found that the IT&T industry has significantly higher, and the Clothing and footwear industry significantly lower, proportions of cooperating firms than that observed in the total survey population (Table 4.1). The Scientific and medical industry also has a higher level of cooperation than can be expected on average.

The high level of business cooperation in the IT&T industry may reflect the emerging demand for IT solutions (Standard and Poor 1993). Each IT firm provides only part of a complex whole. The products themselves are often tailored to customers' specific needs and have a high after sales component, thus requiring close contact with customers and providing greater opportunities for cooperation. This is a rapidly developing industry and so there may also be a greater need to keep abreast of new technology and developments both in Australia and overseas. Business cooperation can provide the vehicle for these requirements. The Scientific and medical industry shares many of these features.

Conversely in the Clothing and footwear industry, the low level of business cooperation can perhaps be partially explained by an historical tendency towards secrecy in order to protect design advantages. Clothing and footwear manufacturers do, however, have some level of dealings with suppliers and customers to ensure smooth production.

To allow for this variation in the cooperative stance of industries we compare the firm characteristics examined in Section 4.2 on an industry-by-industry basis, as well as overall.

### **4.1.2 States**

When firms were broken down by state there is a significant difference in the proportion of firms cooperating in Western Australia (48 per cent of firms involved in linkages), from that in the overall population (41 per cent). However no highly significant difference is found in any other state (Table 4.1).

Western Australian firms rely strongly on each other as they are isolated from the bulk of the firms which are on the eastern seaboard. This is demonstrated by the fact that 71 per cent of Western Australian firms have their most important cooperative arrangements with a local company (same town or same state), whereas only 52 per cent of firms in other Australian states have their key linkage with local companies. These differences may also be partially due to variations in the industry focus of various states.

We found a greater concentration of:

- Clothing and footwear firms in Victoria;
- Food industry firms in SA and WA; and
- IT&T firms in Queensland and WA.

Since cooperation varies by industry, some of the differences in the level of cooperation at the state level may really reflect underlying industrial structure more than a real locational difference. This makes it necessary to consider the interaction between state and industry in the following analyses.

### **4.1.3 Metropolitan and regional firms**

It could be conjectured that metropolitan firms have greater opportunities to cooperate with other firms than do regional firms due to the large number of businesses nearby. On the other hand, it can also be argued that regional firms may make a greater effort to link with other firms to overcome any disadvantages they suffer due to their location.

In fact there is no significant difference between the proportion of firms cooperating in these two groups. For this reason the metropolitan/regional split will be ignored in the remainder of this chapter.

## **4.2 Characteristics of cooperating and non-cooperating firms**

We now test whether the incidence of cooperation varies in firms with different characteristics (see Chapter 3 for the rationale). These characteristics are the size and age of the firm, its level of exports, performance (measured by turnover growth rate), type of product, the product's technology content (low, medium or high), level of competition in the market (low, medium or high), ownership, competitive advantages and constraints.

### 4.2.1 Firm size

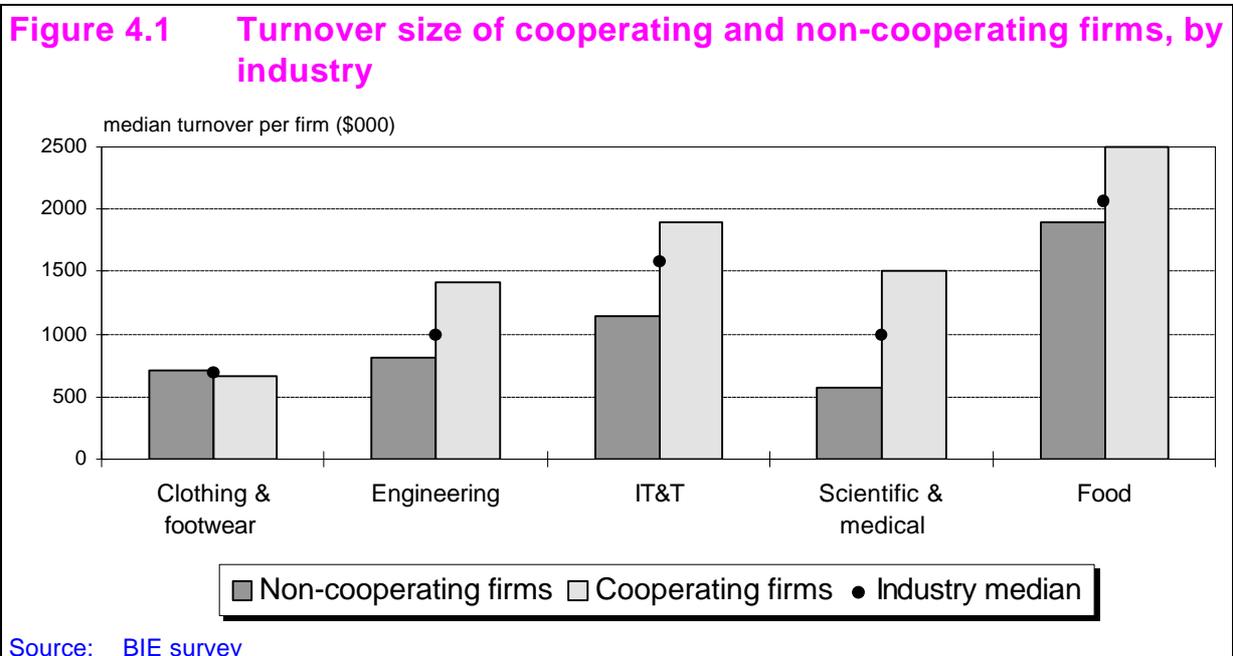
Interviews with firms suggested that larger firms<sup>1</sup> more easily attract partners because they offer greater technological and managerial capabilities. Larger firms can also spread the fixed costs of cooperation over greater resources and have more time available for networking.

Chapter 3 put forward the hypothesis that firms with big transactions (and therefore often larger firms) could be expected to make more use of cooperative arrangements. Additionally large firms are probably more likely than small firms to employ people trained in management and so more knowledgeable of management techniques, such as business cooperation.

Previous research backs up the opinion that large firms have a greater propensity to cooperate. BIE (1994b) found that very large firms commonly use outsourcing (changing the supply of goods and services from internal production to purchasing from external sources) to lower costs. From this position it is a small step to develop cooperative arrangements. AMC (1994) found that the larger employers in their surveyed group of firms were marginally more likely to implement best practice programs, part of which involves cooperating with others.

What about the flip side? Are there reasons why small firms are *less* likely to form business arrangements? MacMillan et al (1990) found small business owners reluctant to seek outside advice and assistance. Blackburn (1993) also found small firms kept business contacts, owners of other businesses, and customers and suppliers at a distance when resolving critical problems so as not to damage their reputation or lose face. However, linkages still provide advantages to small firms by allowing them to be more focussed on a core group of activities.

The data from this study shows a significantly lower level of cooperation in micro (very small) firms (Table 4.1). As expected, large firms have a much higher propensity to cooperate.



<sup>1</sup> Firm size can be measured in a variety of ways and in this study both employment level and average annual turnover are used. These two tend to move together.

This higher tendency for cooperation among larger firms is preserved at the industry level – and is especially marked in the Food industry (Figure 4.1). The mixture of very large, vertically integrated companies (including some multinationals) and micro firms, may account for this diversity in the level of cooperation between large and small firms in that particular industry.

We find large gaps between the median turnover of cooperating and non-cooperating firms in the IT&T and the Scientific and medical industries. This points to difficulties that small firms in these industries may encounter in trying to enter cooperative business arrangements. These are very much research and design based industries. Small firms can find it hard to be noticed by other companies.

The size effect is particularly conspicuous for Victoria. This reflects the high proportion of Clothing and footwear firms in Victoria - these have a lower level of cooperation and are also generally smaller in size.

### 4.2.2 Age of firm

There is a debate as to whether cooperative business arrangements are more common, or more important, in younger or older firms. Birley, Cromie and Myers (1991) found that older firms relied no more heavily on business contacts than did younger firms. Smallbone et al (1992) found only about half of mature businesses had sought outside assistance over a ten year period.

The average age of firms in the BIE study does not vary greatly between the cooperating and non-cooperating firms. The average year of commencement of operations was 1972 in both cases.

When we divided firms into three age categories – 5 years or younger, 6-24 years, and older than 25 years – we discovered that a slightly higher proportion of younger firms have cooperative business arrangements<sup>2</sup>(Table 4.1). This may be because younger firms are less self-sufficient, or have formed at a time when increasing emphasis is being put on business cooperation by other firms.

It is hard to tell whether age really has much impact on the likelihood of cooperation because it is confounded by:

- **size effects.** Young firms are mainly small, while mature firms are larger; and
- **industry effects.** The average age of firms varies greatly by industry. Those in the IT&T industry are the youngest (16 years on average), while the Food industry contains the oldest firms (31 years on average). We found that when the age of cooperating and non-cooperating firms is compared *within* an industry, there are no significant differences.

There is a lesson in all this. Associations that appear valid on the surface can vanish when deeper analysis is undertaken. So it is with age. What we originally took to be a reliable age effect disappears when we account for industry effects.

### 4.2.3 High and low performance firms

The top 20 per cent of firms in terms of turnover growth rate in the BIE study have been categorised as high performance firms. Of these, 50 per cent are cooperating firms (Table 4.1). This is significantly higher than

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<sup>2</sup> The relevant survey question asked firms what cooperative business arrangements they currently have. This causes a bias against cooperation by very young firms, say less than one year old, as there is a certain lead time needed to develop a cooperative arrangement which these firms have not had. For this reason the level of cooperation by young firms is most likely underestimated.

the 41 per cent level of cooperating firms in the whole firm population. Of the low performance firms only 35 per cent are cooperating firms<sup>3</sup>.

Large firms are less likely to have rapid growth than micro firms. Recording a growth rate of 100 per cent is easier with a turnover of \$10 000 than \$1 million. However, surprisingly, the only difference in the size structure of firms classed as having high and low growth rates is that low performers are more heavily slanted towards micro firms (see Section 4.2.1). This reinforces the lower level of cooperation expected for low growth firms.

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<sup>3</sup> There could be a problem with this analysis due to the movement of firms between the two snapshot groups - cooperating and non-cooperating firms - during the period for which growth is calculated. However, the large differences in the average growth rate of these two groups suggest that movement would need to be extensive to influence the findings adversely.

Of course, this correlation does not imply that cooperation necessarily *causes* the high growth. After all:

- low growth firms may cooperate less because prospective partners want to form relationships with more dynamic firms; and
- high growth firms have the managerial competence and resources to form cooperative arrangements<sup>4</sup>.

#### 4.2.4 Exporters and non-exporters

Recently there has been much emphasis by the Government to increase and diversify Australian exports. Two AMC and McKinsey reports, *Emerging Exporters* (1993) and *Wealth of Ideas* (1994), have concentrated on small and medium manufacturers and their rapidly increasing involvement in export markets. Central to these reports is the idea that linkages with other firms provide a spur to improved export performance, as well as access to diverse information and ideas.

Our data confirm a relationship between export propensity and cooperation:

- non-cooperating firms have an export propensity of 4.3 per cent compared to 14.3 per cent for cooperating firms;
- in interviews with the BIE, firms saw cooperation as a vital strategy for accessing export markets (Box 4.1);
- the relationship still holds *within* industries. For all five industries, exporters are more likely to cooperate than non-exporters; and
- the relationship largely holds *within* states – with exporters likely to cooperate more than non-exporters in all states except WA.

#### 4.2.5 Product type

In Chapter 3 the hypothesis was proposed that firms which tailor their goods for particular customers are more likely to have cooperative arrangements. The BIE survey asked firms to classify their predominant output as either being sold on to other firms for further processing, sold as capital equipment, or sold to distributors or final consumers.

##### Box 4.1 Cooperation – providing a foundation for growth

*Diemould Tooling Pty Ltd is a South Australian engineering firm employing 35 people. Much of Diemould's work comes from the South Australian car industry, an industry that regularly has its ups and downs. This causes major problems for Diemould in terms of staffing, capital investment and so on. To diversify its activities and provide a more stable flow of work, Diemould is looking for work in other states and overseas.*

<sup>4</sup> Two other studies have examined the relationship between firm growth/performance and the presence of cooperative arrangements. AMC and McKinsey (1994) found high growth emerging exporters are more likely than other firms to pursue joint initiatives, especially those formed for innovation. In their study high growth firms are those with total revenues over \$10 million and export growth more than twice their industry average.

Additionally, the AMC's *Leading the Way* (1994) scored firms on their approach to best practice, of which the formation of cooperative business arrangements are one form. It is through working with, and learning from, other firms that best practice is achieved. It was found that in Australia the top scoring 20 per cent of firms, had higher sales growth (4 per cent) than the lowest scoring 20 per cent (a decline of 0.5 per cent).

*The company tried exporting a few years ago, but the cost and difficulties it faced in doing so proved too much for a single firm to face. Now Diemould is in a network with four other engineering firms to crack the export market.*

*The five firms share the costs of developing export markets and most importantly, can offer a complete package of services, with the customer only needing to deal with a single company. The companies jointly undertake production, share capital equipment and work together to improve quality and both production and management skills. They even jointly fund a program to keep employees up to speed with technological developments in their industry (which they could not afford on an individual basis).*

*Through working with others, Diemould plans to raise its exporting activity from currently negligible levels to around 50 per cent of earnings in the coming years; and at the same time provide a more stable foundation on which to grow.*

Source: BIE interview

Those firms which produced capital goods are significantly more likely to be involved in a cooperative arrangement (57 per cent in a cooperative arrangement) than expected from the all firms average level of cooperation<sup>5</sup> (Table 4.1). The close relationship between production of capital goods and higher levels of cooperative arrangements may be due to the fact that these are complex goods which often incorporate modifications to suit the client. This is fertile ground for inter-firm cooperation.

#### **4.2.6 Technology content**

In Chapter 3 we suggested that factors such as complexity, high monitoring costs, large single transactions and the need for feedback would propel high technology firms towards cooperation.

The study found that nearly 50 per cent of firms with a high technology product are in cooperative business arrangements, compared with only 32 per cent with low technology products<sup>6</sup> (Table 4.1). Anecdotal evidence also suggested a link between technology and business cooperation (Box 4.2).

The technology content of industries varies enormously. But in each industry we still find that cooperating firms tend to be more high tech than non-cooperating ones (Figure 4.2).

<sup>5</sup> These results still hold when we take account of possible industry or state effects.

<sup>6</sup> Definitions of high, medium and low technology firms are contained in the glossary.

**Box 4.2 High technology – high cooperation**

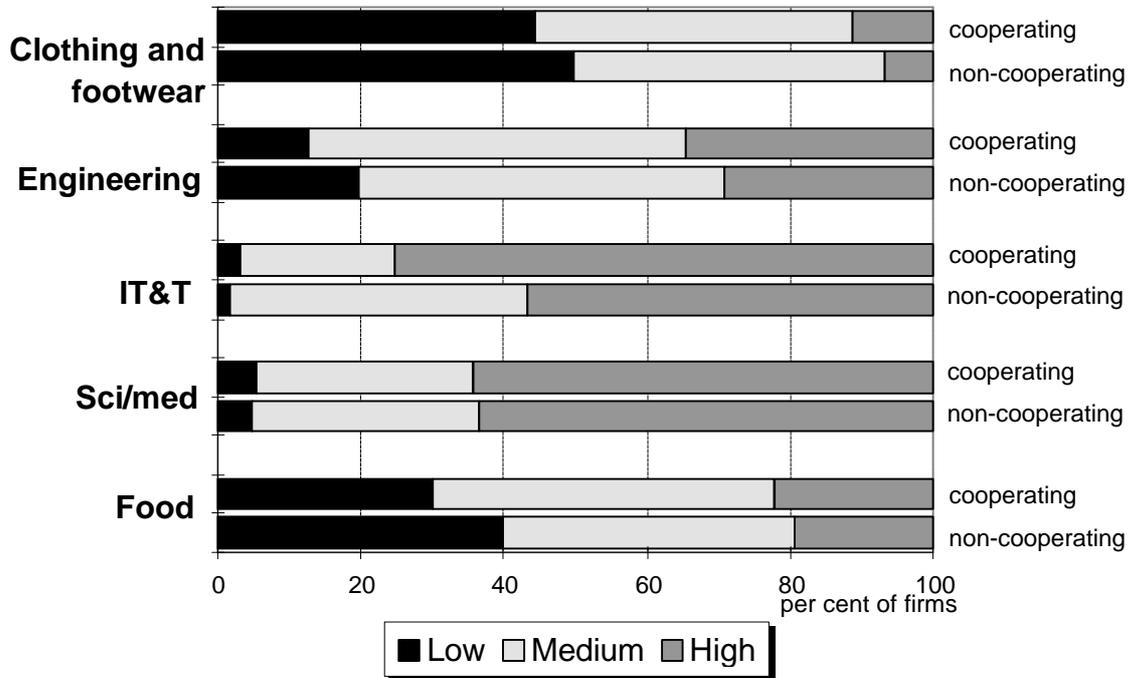
*Pan Bio was formed in 1988 and its products include high technology test kits for serological diagnosis. Technologies include ELISA and rapid single test devices. Agricultural biotechnology diagnostics are a new area for the company. Around 15 per cent of revenue is from exports, and this is the most rapidly growing segment of business.*

*Pan Bio has strong R&D links with overseas companies and local research institutions. The typical international network is with European and US biotechnology manufacturers. In the Asian region Pan Bio provides marketing and distribution for not only its own products but also services other international manufacturers.*

*Most networking is done through travel initially as it is important to build up personal relationships. Follow up is by fax and phone and periodic visits.*

Source: BIE interview

**Figure 4.2 Technology content of product by industry and cooperation status**



Source: BIE survey

**4.2.7 Ownership**

The form of ownership may influence whether or not a firm becomes involved in cooperative business arrangements. More complex forms of ownership may provide a firm with increased opportunities to work with other firms – the management team is larger and has more time to devote to building up relationships with other firms. A large management team provides more personal contacts in other firms. Our face-to-face interviews revealed this to be a common factor in initiating cooperative business arrangements. More complex ownership forms often involve other firms in the actual ownership of the firm (for example parent

companies). This indirectly allows more cooperative arrangements to be developed by providing a good reputation, the use of pre-existing contacts, and indeed, increased use of best practices (AMC 1994). Finally, these companies are more likely to have a strategic plan aimed at long term growth, of which the formation of beneficial linkages is frequently a part.

Do firms with more complex forms of ownership cooperate more with other firms? It appears so.

Unincorporated firms (6 per cent of respondents) have a strong trend towards independent operation with nearly 70 per cent claiming no involvement in cooperative business arrangements. There is some correlation here with the size of firms, as unincorporated firms tend to be small, both in terms of employees (a mean of 7 employees) and turnover (\$1.5 million mean). As discussed above, smaller firms are less likely to be involved in inter-firm cooperation.

The opposite is true for those with more complex forms of ownership (public companies, subsidiary companies, and foreign-owned companies). They have a tendency towards forming cooperative arrangements (on average 56 per cent) and also tend to be larger in terms of both turnover (a mean of \$8.5 million) and number of employees (a mean of 33).

Inter-industry and state comparisons are not possible as the sample sizes are too small for some ownership categories to allow any meaningful conclusions to be drawn. Unless all the interacting influences are modelled (Section 4.3) we find it hard to decipher whether it is the influence of firm size or the form of ownership which affects involvement in inter-firm arrangements.

### **4.2.8 Competition**

Over 65 per cent of respondents regarded the level of competition in the market place as high. There is no significant difference between the responses of those involved in inter-firm cooperation and those not; even on an industry or state basis. Only 5.4 per cent of firms believe there is little competition in their market. Using this information we find no connection between the level of competition and the incidence of business cooperation<sup>7</sup>.

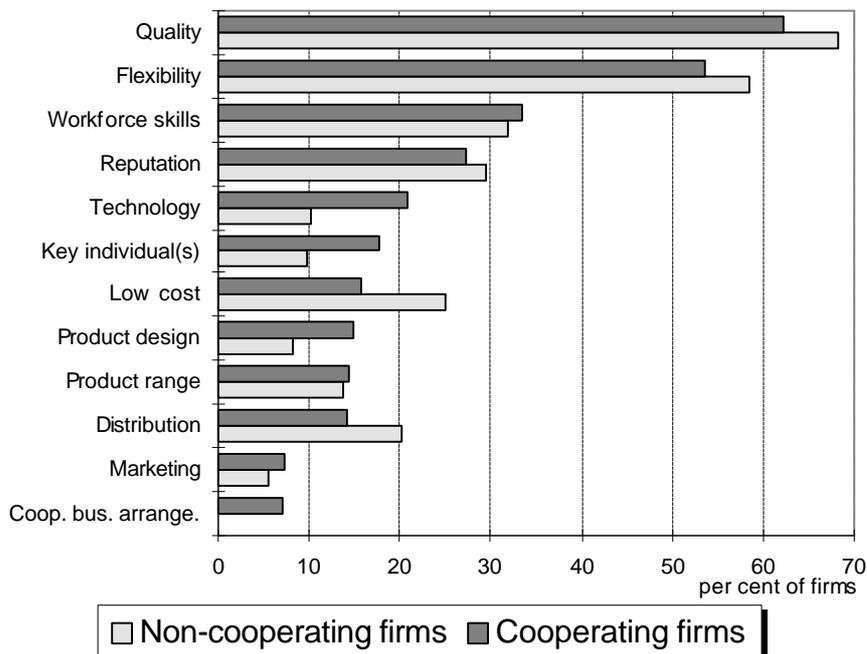
### **4.2.9 Competitive advantages**

A firm's competitive advantages drive its market position. Respondents to the BIE survey were asked to rank the top three competitive advantages of their firm (Figure 4.3). For all firms, across all industries and states, the most common four competitive advantages are quality of products/services, flexibility in meeting customer needs, skills of workforce/expertise, and prestigious brand/good reputation. The ordering is fairly similar whether firms are involved in cooperative relationships or not, differing only in the mid rankings. Results are also in accordance with Buttery (1993) and AMC (1994). Firms already involved in cooperative business arrangements are more likely to see technology/good ideas, product design, and key individuals, and, of course, their cooperative business arrangements as sources of competitive advantage.

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<sup>7</sup> However, it may be that our question on the extent of competition failed to adequately discriminate between different degrees of competition.

**Figure 4.3 Firms' competitive advantages, ranked as top three**



Source: BIE survey

The similarity of competitive advantages raises doubts, for not all firms can be competing on the basis of an advantage in the same area. Firms may perceive themselves as having an advantage in an area where they do not. This would possibly hamper firms in forming successful cooperative relationships as they do not recognise their true strengths and possibly weaknesses.

Firms rank cooperative arrangements last – in fact only 7 per cent of firms listed ‘cooperative arrangements in which your firm is involved’ as one of their top three competitive advantages. Even in the relatively cooperative industries, such as IT&T and Scientific and medical, cooperative business arrangements are no more highly ranked. But this is not surprising as cooperative arrangements are primarily tools which allow firms to better exploit other competitive advantages.<sup>8</sup>

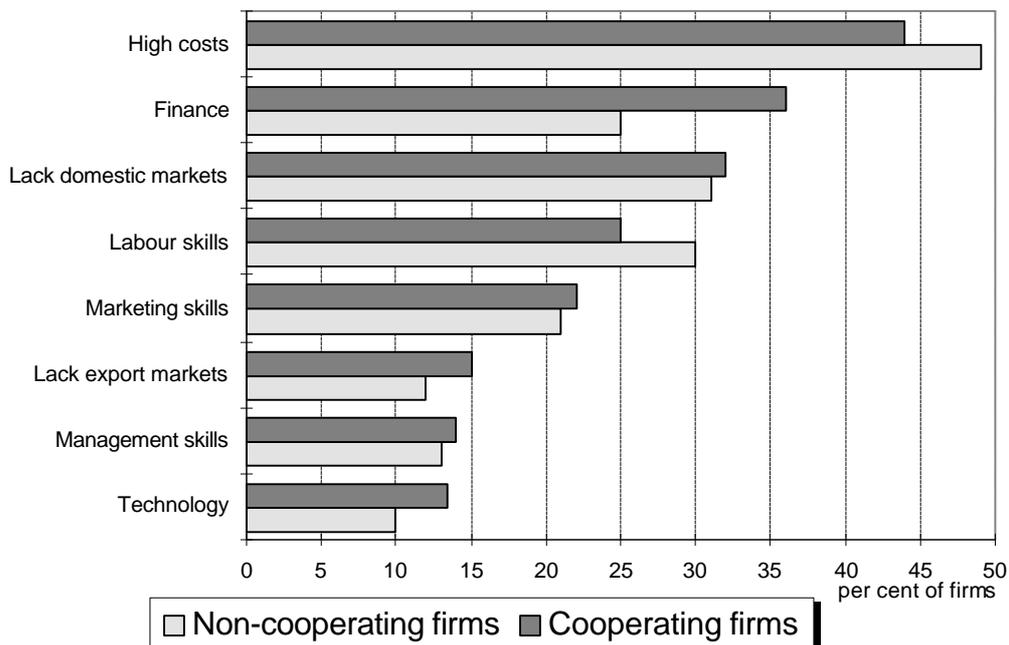
#### 4.2.10 Constraints

There is a large body of work which argues that cooperative business arrangements are formed to overcome limits to, and constraints on, firm growth or performance (Bosworth 1990; Barber, Metcalf and Porteus 1990; Ashton Business School 1991).

If this argument holds we would expect a significant relationship between constraints and a firm's involvement in linkages. In fact this does not occur.

Cooperating and non-cooperating firms both nominate the same areas – high costs, access to finance, lack of domestic markets, and labour skills – as the greatest constraints on their performance (Figure 4.4).

<sup>8</sup> The issue of how firms use business cooperation to exploit their competitive advantages is addressed in Chapter 7.

**Figure 4.4 Constraints on firm performance, ranked top three**

Source: BIE survey

However, a higher proportion of cooperating firms note access to finance as a constraint on their performance. This is perhaps not surprising given that financial constraints most adversely affect fast growing or high technology firms where cooperation is more likely. In total, 37 per cent of cooperating firms see access to finance as a critical constraint on their firm's performance.

BIE (1994a) notes that small innovative firms suffered from both supply and demand side constraints in the operation of financial markets. Our study also found some smaller firms, particularly those with new products or services, have had difficulty accessing finance. For example one firm commented:

*“Although our company has the technical know-how and has developed a product we can not obtain any finance to go into production. Lending institutions want security not a product and as a result we have been forced to look at manufacturing the product overseas, or even selling the technology.” (BIE survey)*

To overcome these problems, some firms have approached financing through cooperative arrangements.

### 4.3 Modelling analysis

The information presented in this chapter begs one further question. Firms are identified by a bundle of characteristics. For example, a large firm may be older, have a complex form of ownership, but not be involved in the export market. Its size suggests that it would cooperate, but its lack of exports make this less likely – which factor exerts the strongest influence? The inter-relationships of firm characteristics can be examined by using a model relating cooperation to a range of firm characteristics.

The model results are more robust than the partial analysis as they take into account the interaction between different variables (firm characteristics), whereas a partial analysis looks at only two variables in isolation from all others. Thus a partial analysis of individual survey findings may sometimes give misleading results.

This is what we found, for example, when we looked at whether age and cooperation were correlated. Partial results provide a useful basic test for hypotheses but, where possible, they should be compared with the results from a more sophisticated model.

The model results (presented in Appendix A) suggest:

- firms in the Clothing and footwear industry are less likely to cooperate (no other industry effects were found);
- firms in WA are significantly more likely to cooperate;
- the bigger the firm (either turnover or employees) the more likely they are to cooperate;
- turnover growth is *not* a significant factor determining cooperation;
- firms producing capital goods are more likely to cooperate;
- firms which derive a competitive advantage from key individuals, or form technology/good ideas, are more likely to cooperate; and
- firms facing finance constraints have a higher probability of being cooperative.

## 4.4 Summary

Firms without cooperative arrangements form a substantial proportion of Australian industry. Government policies and programs aimed at increasing inter-firm cooperation are not reaching or affecting these firms. Using particular characteristic signs to identify these in a population of firms can allow better targeting of both policies and programs and may even provide information on factors inhibiting firms from entering cooperative business arrangements.

There are five firm characteristics that appear to be strongly associated with cooperating firms. Cooperating firms tend to be larger in size, have a high level of performance, be exporters, produce a high technology output and also produce capital goods. The survey data appears to uphold the predictions of Chapter 3 that cooperating firms would tend to be larger and produce a complex output.

This is not to suggest that firms without one or more of these characteristics will either not cooperate or be unsuccessful in any cooperation they do undertake. Rather, it shows that although all firms can use cooperative arrangements as part of their business strategy, certain firms will tend to do this more often. It is important to recognise too that it is not necessarily a failing of a firm if it is not in a cooperative business relationship with other firms. However, as later chapters highlight, it could well be a lost opportunity for the firm.

The following chapter extends this examination of firms with particular characteristics by determining if there is any pattern to a firm's choice of certain forms of cooperative arrangements.



## 5 How do firms cooperate?

So far Part A has explained what cooperation is, why it can occur and the firms most likely to be involved. We now turn to examine cooperation in detail. We turn the spotlight on the way firms engage in business cooperation. This gives us a profile of the arrangements themselves and the firms most commonly using each type. We ask questions like: what proportion of firms have cooperative arrangements with customers? Is most cooperation undertaken on a formal or informal basis? How common are arrangements with firms overseas?

There are two sections in this chapter. In the first we measure the *intensity* of business cooperation occurring between firms in Australian manufacturing industries. We look at the number of arrangements firms have, how many other firms are involved in each arrangement and whether the arrangements are formalised or remain informal.

In the second section, we examine the *nature of the partner firms* in the arrangements. These firms can be classified as either customers, suppliers, or other firms or they can be divided into domestic or overseas-based firms. We also ask whether firms with certain characteristics (young firms, big ones) choose different sorts of arrangements than most firms. Our aim is to give a picture of how much cooperation is going on and what sort of cooperation is occurring.

For all the possible forms of arrangements there are two ways of grouping firms for comparison:

- We could look at the proportion of firms with each type of arrangement on a non-exclusive basis (for example formal and informal arrangements), which allows for the fact that some firms have both. Added together these will generally make more than 100 per cent. For example, 76 per cent of cooperating firms have formal arrangements and 69 per cent have informal arrangements. This grouping is used to provide an accurate indication of the relative frequency of each type of arrangement.
- We could see how many firms have *exclusive* types of arrangements. Thus, what proportion of firms have *only* formal, or *only* informal arrangements and what proportion have a combination of both (these figures will add up to 100 per cent). We do not focus much on exclusive arrangements in this chapter because the firms which have exclusive arrangements tend also to have only one arrangement. There is no point in effectively repeating the analysis of the number of arrangements. The use of exclusive arrangements becomes more important in the following chapters as it allows the benefits and costs to be allocated to particular forms of arrangements.

We summarise the main users of each form of arrangement in Table 5.1. Those firm characteristics with a rating of three (•••) have a major influence on the type of arrangement, while those with a one (•) rating have no influence. For example, the age of a firm has a major influence on the likelihood of cooperation with overseas firms, but a low influence on the number of partners in an arrangement.

**Table 5.1 Firm characteristics and type of arrangements – summary**

	<i>Size</i>	<i>Age</i>	<i>Growth performance</i>	<i>Exporters</i>	<i>Product type</i>	<i>Technology</i>	<i>Competition</i>	<i>Ownership</i>
Number of arrangements	•••	••	••	••	•	•••	•	•
Number of partners within arrangements	•••	•	•••	••	•••	•••	•	•
Formal or informal	•••	••	•••	•••	•••	•••	•	•
Customer/supplier/other	•••	•••	•	••	•••	•••	•	•
Arrangements with overseas firms	•••	•••	••	•••	••	••	•	•

Notes: • = no influence; •• = minor (indirect) influence; and ••• = major (direct) influence.

Source: BIE survey

## 5.1 Intensity of arrangements

### 5.1.1 Number of arrangements

Information on the number of arrangement per firm is a key indicator of the intensity of firms' cooperation. Do larger firms tend to have several, or just one important arrangement? Do exporters tend to have more than five arrangements? Box 5.1 demonstrates how one firm regularly uses a number of cooperative arrangements.

As discussed in Chapter 2, firms have been split into three groups according to the number of cooperative arrangements they have – those with only one arrangement, those with two to four, and finally those with between five and ten arrangements. Those with more than ten arrangements have been excluded from analysis as it is unlikely that all these would be cooperative business arrangements (that is some are probably arm's length relationships). It was found that around 30 per cent of cooperating firms have only one cooperative arrangement, 46 per cent have between two and four, while 24 per cent have between five and ten cooperative arrangements.

**Box 5.1 Achieving big things through cooperation**

*Davison Engineering provides repairs, servicing, problem solving and manufacture in fields as diverse as airport laundries, pumps, carpet tufting machines, vacuum presses, and parts for waste authorities.*

*It has a full time staff of only twelve yet through cooperation with other engineering companies the firm has been able to tackle very large jobs. The cooperative system is one of loose contacts of almost a family-like nature between firms in the engineering industry. In contrast to many other companies, cooperative arrangements tend to start formally with arm's length contracts specifying partner obligations and end up being informal once trust develops between companies.*

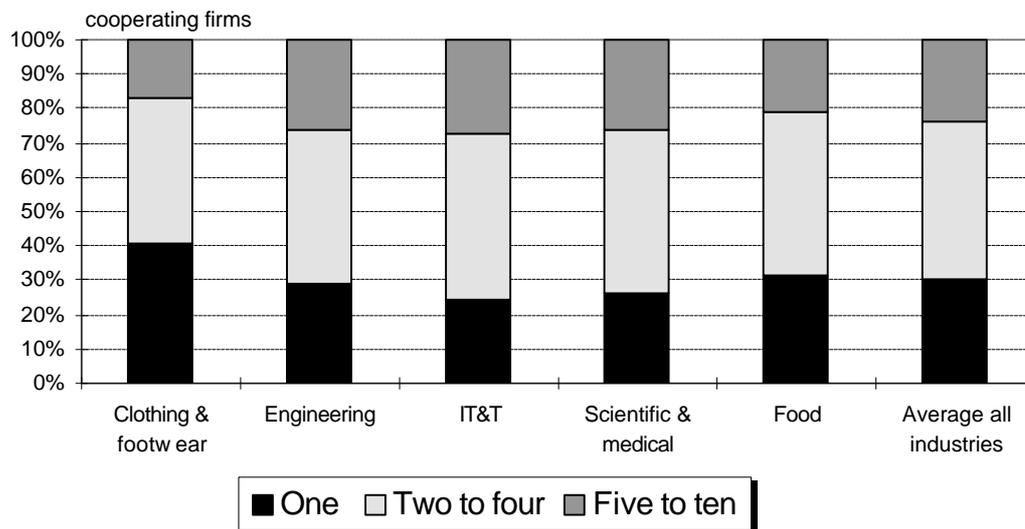
*Cooperation typically occurs in three areas. Davison Engineering may work with one or more companies with complementary skills where a half completed task for a customer is passed onto another firm for completion. Work is also passed on to other companies if they do not currently have the capacity to carry it out. The third area where cooperation occurs is through the sharing of information on customers, suppliers, running of the business and on acquiring investment goods.*

Source: BIE interview

**Industries**

Firms in the Clothing and footwear industry have a significant tendency towards having only one cooperative arrangement and away from having larger numbers of arrangements (Figure 5.1). This accords well with our finding in Chapter 3 that Clothing and footwear firms have the lowest overall participation in cooperative business arrangements. This is further supported by the fact that the industry with the highest level of overall cooperation, IT&T, also has the lowest proportion of cooperating firms with only one arrangement and nearly 30 per cent with between five and ten arrangements.

**Figure 5.1 Number of arrangements, by industry**



Source: BIE survey

New industries, such as IT&T and Scientific and medical, appear to use cooperative arrangements as an integral part of business strategy and are therefore likely to have a greater number. Firms in the more mature

industries, such as Food and Clothing and footwear, are not ‘born cooperators’ and have less of a tendency to be involved in several arrangements.

## States

Firms in Queensland are more likely than firms in other states to have only one cooperative arrangement, while very few have five to ten arrangements. Again, this is in keeping with the finding that the overall level of cooperation by Queensland firms is relatively low. This also coincides with Buttery’s (1993) finding. He posed a similar question of Queensland firms and found that only 20 per cent of cooperating firms had more than five individual arrangements.

Western Australian firms, which have a high participation rate in cooperation (48 per cent of firms), have a significantly large number of firms with five to ten arrangements and a small proportion with only one arrangement.

## Major influences on number of arrangements

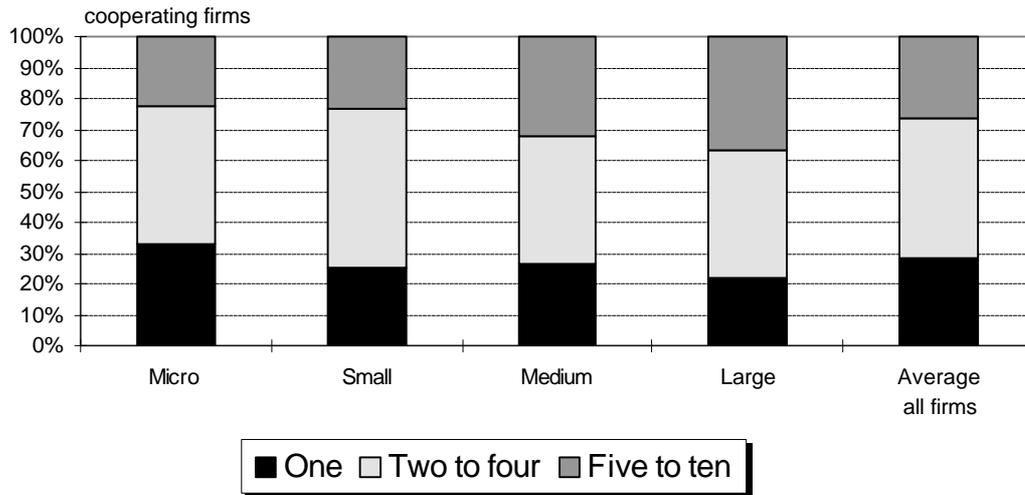
Not surprisingly, most of the factors that influence participation in cooperation also affect the *number* of arrangements adopted by firms. We found:

- As firm size increases there is a tendency for the number of arrangements to also increase. Small firms are more likely to have only one cooperative arrangement and significantly less likely to have between five and ten arrangements (Figure 5.2).
- Low and medium technology firms are more commonly only involved in one cooperative arrangement (Figure 5.3). High technology firms, on the other hand, are less likely to have only one arrangement and more likely to have between two and four.
- Although the age of a firm is not a significant factor in determining whether a firm cooperates or not (Chapter 4), it does appear to be related to the number of arrangements. Young firms are significantly less likely to have five to ten cooperative business arrangements and more frequently have only one.
- Exporting firms are significantly more likely to have five to ten arrangements and significantly less likely to have only one arrangement. To export, firms often rely on a large number of other firms, such as distributors, which are often vital to a successful export strategy. Firms which do not export may have less need for these extra linkages in carrying out their operations. Additionally, as noted in Chapter 4, exporters are predominantly in the new industries which have a naturally higher level of cooperation. Moreover, exporters also tend to be larger firms, with 77 per cent of large firms exporting compared to around 35 per cent of small firms.
- High growth firms are significantly more commonly involved in five to ten linkages and less frequently in only one.
- There is *no* significant difference between the proportions of producers of capital goods, final goods and intermediate goods with differing numbers of arrangements<sup>1</sup>.

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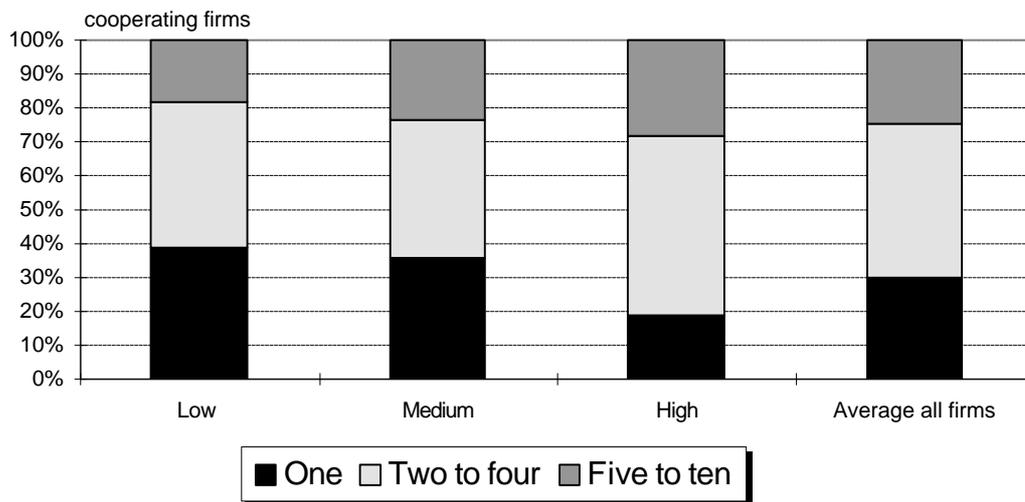
<sup>1</sup> The two other firm characteristics considered in Chapter 4, form of ownership and level of competition, are not examined in depth here or in the following sections. In the case of ownership this is because of the very small sample numbers for each of the various forms which makes statistical comparisons difficult. In the case of competition, as well as sample size problems (very few firms in the low competition group), no significant

**Figure 5.2 Number of arrangements by firm size (employees)**



Source: BIE survey

**Figure 5.3 Number of arrangements, by technology content**



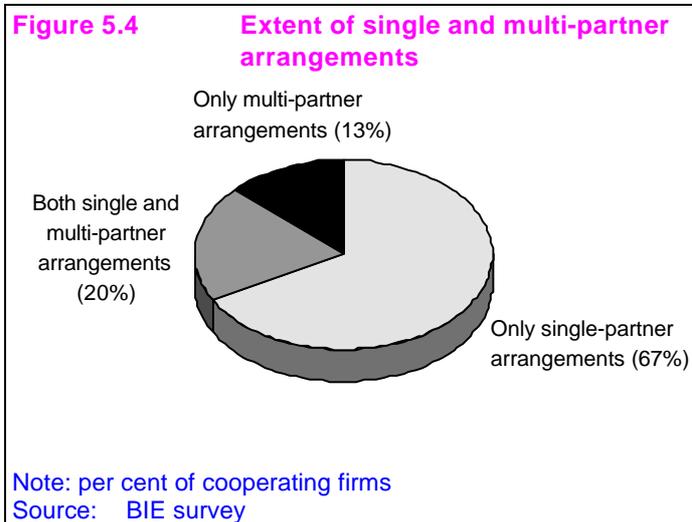
Source: BIE survey

differences were found in the use of different types of arrangements between firms experiencing either medium or high levels of competition and the average firm.

### 5.1.2 Number of partners within arrangements

Just as the number of arrangements firms have is of great interest, so is the issue of the number of partners within arrangements. Do firms mainly cooperate on a one-to-one basis? How common are networking type arrangements where three or more firms cooperate? This information is particularly interesting to policy

makers and administrators involved in assisting the development of networking.



In the BIE survey, 87 per cent of cooperating firms have arrangements which involve only one other firm, while only one third of cooperating firms have business arrangements which involve two or more other firms (Figure 5.4). Around one-fifth of firms have both types of cooperative arrangements. Only 13 per cent of cooperating respondents were exclusively in networking type arrangements, while two-thirds of firms cooperate only on the basis of one-to-one arrangements.

So single-partner arrangements dominate business cooperation. These involve a link with a single partner (a supplier for example) rather than many partners. To most Australian firms a cooperative arrangement means dealing directly with one other firm. Networks are used much more rarely although there are now government programs which promote these (see Appendix D). Networks can produce large benefits for member firms, as illustrated in the case of PTE Hydraulics (Box 5.2).

#### Box 5.2 Multiple firm network – PTE Hydraulics

*PTE Hydraulics is a small engineering company involved in a training development network. The group has been operating about 15 months and is an initiative of the Queensland Department of Employment, Education and Training and two consultants who act as facilitators. It comprises seven small manufacturing companies within a five kilometre radius of each other in Brisbane. The principals of these companies meet bi-monthly to discuss problems and solutions.*

*Some companies have advantages in certain areas, such as full use of shopfloor groups or computer-aided machinery, and the meetings allow a faster transfer of knowledge of these methods and their benefits and associated problems.*

*This network has resulted in some very good training to date, especially at the supervisor level. However, the firms are still on a learning curve and PTE expects future benefits to be even greater.*

Source: BIE interview

**Table 5.2 Single-partner and multi-partner arrangements, per cent of cooperating firms**

	<i>Single-partner only</i>	<i>Multi-partner only</i>	<i>Both</i>
<b>All firms</b>	<b>67</b>	<b>13</b>	<b>20</b>
<b>States</b>			
NSW	70	14	16
VIC	69	11	20
QLD	54	21	25
SA	51	13	36
WA	67	7	27
<b>Industries</b>			
Clothing and footwear	72	13	15
Engineering	64	13	23
IT&T	63	13	24
Sci/med	72	10	17
Food	58	18	23
<b>Firm size</b>			
Micro	69	9	22
Small	65	15	21
Medium	58	19	23
Large	65	15	21
<b>Age of firm</b>			
Young	69	13	18
Established	66	13	21
Mature	63	14	23
<b>Turnover performance</b>			
Low performers	74	10	16
High performers	60	14	26
<b>Exporting status</b>			
Non-exporters	69	13	18
Exporters	60	16	24
<b>Type of product</b>			
Intermediate	63	15	22
Capital	66	10	24
Final	66	14	20
<b>Technology</b>			
Low-tech	72	14	14
Medium-tech	66	15	18
High-tech	61	12	27

Source: BIE survey

We used our survey data to map the frequency of such network arrangements compared to single partner arrangements for different regions, industries and firm characteristics (Table 5.2):

- While there are only very slight differences in the level of single partner arrangements between industries, there are some notable differences in the frequency of networks. The Food industry has much more multi-firm links than average, while the Sci/med industry has significantly less. The higher level of networks in the Food industry can be at least partially explained by the relatively homogenous product of firms in specific sectors of this industry. Fairly uniform items such as wine or confectionary are eminently suitable for sharing production facilities and common international

marketing initiatives.<sup>2</sup> The Scientific and medical industry, on the other hand, produces highly differentiated products. This may result in reduced areas for cooperation between any more than two firms. Moreover, face-to-face interviews with these firms suggested that multi-firm links often have a role similar to an industry association rather than a cooperative business arrangement (that is, sharing information and providing common support for industry objectives).

- There are relatively high levels of multi-partner linkages in both South Australia and Queensland. The South Australian situation can be directly related to the high level of Food industry responses. Queensland has a significantly higher proportion of firms which are exporting (see Chapter 4) which have a greater tendency to enter multi-firm arrangements.
- Smaller firms are less involved in arrangements with more than one partner than other sized firms. This suggests that smaller firms face some barrier to entering business networks. When they do cooperate they tend to form arrangements with only one other firm.
- High growth firms make significantly more use of networks.
- The greater the technology content of a firm's product the more likely they will participate in networks. About 40 per cent of high tech firms had network arrangements compared to about 30 per cent of low tech firms.
- Exporters have a significantly higher level of network arrangements. However, as exporters tend to be large firms, and non-exporters small firms, this relationship between exports and network arrangements may be due in part to size variations.

### 5.1.3 Formal and informal arrangements

Cooperative arrangements can be classified as formal or informal. In the survey we asked firms to classify their arrangements without being given a strict definition of either formal or informal arrangements.

This self-classification therefore reflects the real world understanding of the terms. In interviews with firms it was apparent that formal arrangements are commonly accepted as those which are legally binding and involve a contract outlining what is expected of all parties to the agreement.

On the other hand, an informal arrangement is a trust-based tacit agreement. All parties generally know what is required of them. But they cannot be forced to keep their word, apart from the fear of losing the benefits of cooperation. Informal arrangements are often based on a history of previous dealings, trust, reputation and mutual dependence. The arrangement tends to stay together as long as all involved are happy and trust is maintained. Informal arrangements are classified as cooperative business arrangements provided they have some continuity and are not one-off relationships put together for a specific task.

But why do we care?:

- formal arrangements provide a measure of *committed* cooperation, while informal linkages often represent marginal forms of cooperation; and
- policy makers and program designers are interested to see which types of firms adopt the more formal arrangements.

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<sup>2</sup> In fact there are government-supported Food industry networks which operate in this manner (see Appendix D).

The stories of the two companies in Box 5.3 show that often a definite choice is made by firms as to whether a formal or an informal form of arrangement would best suit the situation. As we pointed out in Chapter 3, the choice is not arbitrary. We hypothesised that larger firms may cement their arrangements by formalising them, thus minimising problems due to the movement of key personnel.

**Box 5.3 To formalise or not to formalise**

*NetComm Ltd is a designer, manufacturer and marketer of high performance PC communications products and telecommunications access services for the Internet information super highway. It has over fifty per cent share of the Australian modems market. Exports account for a relatively small share of total sales.*

*NetComm has a mixture of formal and informal arrangements. Its smaller, short term relationships tend to be operated on an informal basis. Some of its long-term cooperative arrangements have also started life as informal relationships. NetComms' principal guideline is that the minute long-term security or profitability comes under threat it seeks to formalise arrangements.*

*Breseight Australia is a small engineering company based in Sydney. It currently has major contracts to supply components for two large communications companies and has cooperative arrangements with several of its own suppliers.*

*Breseight management believes that formality is often a matter of evolution and arrangements being allowed to take their own course. However, wherever possible the company prefers the flexibility of informal arrangements with suppliers and the comfort of formal agreements with customers.*

Source: BIE interviews

A large number of firms have both formal and informal arrangements. The majority of firms with cooperative arrangements (76 per cent) have formal arrangements and 69 per cent have informal arrangements, while 45 per cent of firms have both. Despite the apparent interest in these two forms of cooperative arrangements previous studies have tended to concentrate on only one type of arrangement, or have not made a clear formal/informal split.

While we found some variation in the frequency of formal versus informal arrangements by industry, region or firm characteristics, this variation was less stark than for other features of cooperation (Table 5.3).

**Table 5.3 Formal and informal arrangements, per cent of cooperating firms**

	<i>Formal only</i>	<i>Informal only</i>	<i>Both</i>
<b>All firms</b>	<b>31</b>	<b>24</b>	<b>45</b>
<b>States</b>			
NSW	28	27	45
VIC	31	22	47
QLD	47	19	33
SA	38	20	42
WA	20	33	47
<b>Industries</b>			
Clothing and footwear	30	30	40
Engineering	31	28	41
IT&T	24	19	57
Sci/med	41	12	47
Food	37	12	51
<b>Firm size</b>			
Micro	29	26	45
Small	27	23	50
Medium	35	21	44
Large	40	15	46
<b>Age of firm</b>			
Young	36	19	45
Established	29	27	44
Mature	32	22	45
<b>Turnover performance</b>			
Low performers	34	21	45
High performers	26	20	54
<b>Exporting status</b>			
Non-exporters	31	27	41
Exporters	32	19	49
<b>Type of product</b>			
Intermediate	27	30	43
Capital	28	20	52
Final	34	23	43
<b>Technology</b>			
Low-tech	37	35	28
Medium-tech	33	23	44
High-tech	27	18	55

Source: BIE survey

At the industry level, no industry has a particularly strong tendency towards either formal or informal arrangements. The Food and Scientific and medical industries are the only two with any noticeable difference between the level of formal and informal arrangements – both favouring formal arrangements. These are two very different industries in many respects. The Food industry has more multi-partner arrangements, which are also more likely to be formal. In the Scientific and medical industry, strict regulation of product quality often necessitates the formalisation of the arrangements.

Firms located in Queensland use informal arrangements less than the average. Buttery (1993) has made a study of cooperation by Queensland firms which confirms these figures and shows an even lower

acceptance of informal arrangements. Buttery found that 20 per cent of surveyed firms (both cooperating and non-cooperating) would enter a network or alliance on the basis of trust alone while 50 per cent would require a contract. Additionally 20 per cent of firms required both. We do not know why Queensland firms are so keen to formalise their arrangements. Formal arrangements are associated more strongly with particular industries but there is not a large proportion of either Food or Scientific and medical firms amongst the Queensland respondents. There is a relatively high proportion of IT&T firms in Queensland, but these lean only marginally towards formalised arrangements.

As a firm becomes larger it tends to become more involved in formal arrangements and relatively less involved in informal arrangements. There are a number of possible explanations. It may be that formal arrangements are more costly to form, maintain and monitor so that large firms are the ones which can afford them, particularly in large numbers. Larger firms with their generally higher level of complexity and resources can also devote more time per employee towards the formation and maintenance of business arrangements. It may also indicate that this is the way large firms do business, generally preferring to tie things down because of the numbers in the organisation and the strategic importance of arrangements. Box 5.4 gives one example of a medium to large firm which has formalised its cooperative arrangements with even larger companies.

#### **Box 5.4 Formalisation of arrangements**

*Agen Biomedical produces medical and veterinary diagnostic test kits, with a very high R&D component. In 1993/94 the sales were valued at \$9.5 million, of which \$8.5 million was due to exports. The company has always exported, as the Australian market is not big enough to support the required research. Exports go to Japan, the United States and Europe.*

*Agen has a series of relationships with distributors in different markets. These all started out as pure distributor relationships. But as the companies involved are large multinationals the majority of relationships have become formalised, and now involve joint R&D. Another one of these relationships is with Johnson&Johnson and involves informal joint research.*

Source: BIE interview

High growth firms are slightly more likely to have formal arrangements than the average firm. Such firms tend to have both formal and informal arrangements. Surprisingly there is a greater polarisation of choice by poor growth firms: they tend to opt for exclusively formal or exclusively informal arrangements.

Exporters are slightly more likely to use formal arrangements. This can be expected on the grounds that many of these arrangements are with overseas firms (Chapter 4) and, as such, it is wise to have some form of contract to avoid misunderstandings when dealing with firms operating under different regulations and systems.

Capital producers also tend to use formal arrangements slightly more than the average. On the other hand, producers of intermediate goods have significantly more reliance on exclusive informal arrangements.

Firms producing a high technology output are much more likely to use formal arrangements than low tech producers.

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## 5.2 Nature of the arrangement partners

### 5.2.1 Arrangements with customers, suppliers and ‘other’ firms

The AMC and McKinsey (1994, 1993) emphasise the importance to firm performance of having cooperative business arrangements with customers and suppliers. Of course links also may be formed with other firms either in the same or different industries – competitors, distributors and transport operators amongst others.

*Leading the Way* (AMC 1994) found that information was the key to a customer relationship. Knowing about a customer’s needs allows a firm to anticipate changing preferences and use this as a source of competitive advantage. In the *Wealth of Ideas* the AMC noted that most successful and innovative firms use a range of linkages – with customers, suppliers, R&D providers and other firms in their industry – to enhance their performance and gain access to ideas. Box 5.5 gives an example of a Brisbane-based company which is working with both its customers and suppliers.

Around half the cooperating firms in the BIE survey have linkages with more than one of these three groups (Figure 5.5). There is typically an even spread of arrangements, but it is slightly more common to work closely with customers (60 per cent of cooperating firms have customer arrangements).

It is not possible to determine the proportion of arrangements with ‘other’ firms that are with direct competitors, although anecdotal evidence gathered in interviews, indicates firms are often not comfortable working closely with competitors.

*“I know who my competitors are, and would greet them at a conference, but I would never talk business with them.”*

There are relatively equal numbers of firms with non-exclusive formal and informal arrangements with customers (41 per cent of cooperating firms have formal arrangements and 38 per cent informal) and suppliers (37 per cent formal and 35 per cent informal), while there is a tendency for arrangements with other firms to be formalised (39 per cent formal and 32 per cent informal). The greater formalisation of arrangements with other firms may be because they are generally outside day to day transactions and may also be with competitors, requiring more care in specifying obligations.

**Box 5.5 Customer and supplier arrangements**

*Franna Cranes commenced operations in 1986 and is a fully Australian-owned private company. Exports account for about ten per cent of sales. About 55 staff are currently employed and annual revenue is approximately \$28m.*

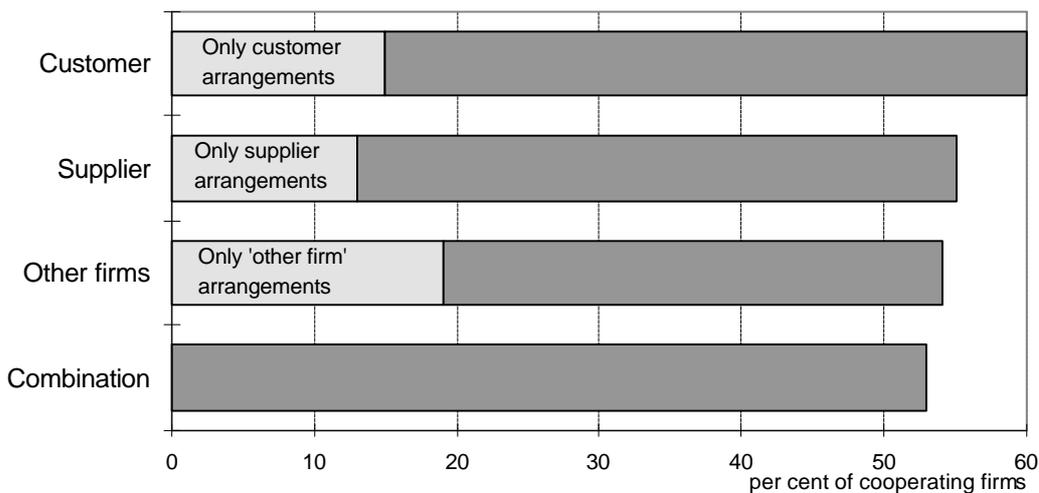
*The company specialises in the design and manufacture of mobile cranes, as well as distributing European and Japanese cranes. At the moment the domestic market is protected by tariffs and also by the fact that it is too small for any of the big overseas companies to set up operations.*

*Franna Cranes aims to work closely with all its suppliers as well as maintaining contact with their customers. There is more widespread cooperation with suppliers now than in previous years. When the company started they relied on a few strong links, now there are many more but relationships are still on a one-to-one basis.*

*Cooperation has definitely proved beneficial for the company. The company actively seeks feedback on the performance of its cranes from users and talks to clients everyday. Most clients are self-employed operators.*

Source: BIE interview

**Figure 5.5 Extent of cooperation with customers, suppliers and ‘other’ firms**



Source: BIE survey

We sought to discover systematic patterns in a firm’s choice of partner<sup>3</sup>(Table 5.4):

- Firms in the Food industry have less supplier links than average. This can be explained by the nature of the Food industry, where suppliers are generally individual farmers providing a homogenous product which can also be bought from intermediaries such as wholesalers and markets. It is only the very

<sup>3</sup> More prominent patterns appear when we look at exclusive arrangements: cases when a firm only works with one type of partner. But this is not worth examining closely. Why? Simply because we would really be running a reprise of section 5.1.1 where we looked at the *number* of arrangements. The sorts of firms which tend to form only one arrangement are clearly going to have a higher likelihood of forming an exclusive arrangement.

largest processors which actually work closely with these primary producers to ensure both the quality and quantity of supply.

- The IT&T industry had a higher incidence of customer relationships than other industries. Overall, 55 per cent of firms in our survey regard their flexibility in meeting customer needs as a component of their competitive advantage. This suggests that firms know the importance of working with their customers whatever their industry. This is supported by the finding of AMC and McKinsey (1994), that around 70 per cent of firms across all industries rate customer demands as very important or critical in driving performance.
- Links with other firms are significantly less frequent in the Clothing and footwear industry. This reflects their difficulty in cooperating with firms that are neither customers or suppliers. Firms in this industry often need preferred suppliers and tend to also work with retail stores. There is less cooperation with other firms.
- There was some regional variation in the types of partners in cooperative arrangements, but we do not think this is due to any inherent feature of regions, but instead reflects differences in states' industry structures. For example, the lower level of arrangements with suppliers in South Australia is probably caused by the high level of respondents in the Food industry. Here, supplier links are fairly uncommon<sup>4</sup>.
- There were no big differences in the type of partners chosen by firms of varying size.
- Young firms have more supplier arrangements and less customer links than the average firm. This suggests that supplier arrangements may often be the earliest form of business arrangement and actually supports the 'sequencing' hypothesis we outlined in Chapter 3. To a new firm, continuity of output is vitally important in establishing reputation. Hence, such firms often place greater emphasis on supplier arrangements than do older firms. Additionally, younger firms are less likely to have arrangements with other firms (45 per cent compared to an average of 54 per cent).
- Capital producers more commonly have cooperative arrangements with 'other' firms. Intermediate good producers have many more links with customers than to their suppliers. Firms producing final goods have a higher proportion of supplier links. The reliance on working closely with suppliers may enable strict quality control over inputs, in addition to the development of new products.
- 60 per cent of exporters have supplier arrangements as opposed to 50 per cent of non-exporters, and there is almost as large a difference in the level of arrangements with other firms (58 and 51 per cent respectively). However, exporters tend to be predominantly larger firms while non-exporters are generally small firms. These size variations may be the cause of differences.
- High growth firms have a significantly greater propensity to form arrangements with suppliers and other firms, but are only equally likely to have customer arrangements.
- Low-tech firms have fewer links with 'other' firms than the average.

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<sup>4</sup> There were other *apparent* differences in the type of partners by state. But we discount these because of low samples in the relevant categories.

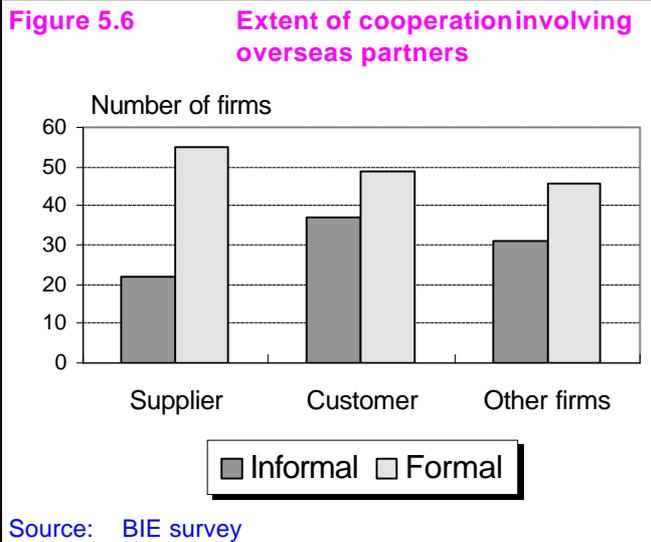
**Table 5.4 Supplier, customer and other links, per cent of cooperating firms**

	<i>Supplier</i>	<i>Customer</i>	<i>Other</i>
<b>All firms</b>	<b>55</b>	<b>60</b>	<b>54</b>
<b>States</b>			
NSW	57	62	51
VIC	58	60	54
QLD	54	47	63
SA	44	62	62
WA	60	69	51
<b>Industries</b>			
Clothing and footwear	65	62	41
Engineering	53	59	56
IT&T	59	71	56
Sci/med	67	55	53
Food	37	58	65
<b>Firm size</b>			
Micro	51	60	51
Small	61	67	54
Medium	53	62	60
Large	56	71	54
<b>Age of firm</b>			
Young	59	54	45
Established	52	61	56
Mature	56	64	57
<b>Turnover performance</b>			
Low performers	54	60	48
High performers	61	59	66
<b>Exporting status</b>			
Non-exporters	50	60	51
Exporters	60	62	58
<b>Type of product</b>			
Intermediate	44	68	57
Capital	52	56	62
Final	60	61	50
<b>Technology</b>			
Low-tech	60	63	45
Medium-tech	52	61	51
High-tech	57	59	63

Source: BIE survey

### 5.2.2 Overseas and domestic arrangements

The importance of working with companies overseas has been noted by several studies and was discussed in Chapter 3. AMC and McKinsey (1994) found 80 per cent of emerging exporters rated offshore customers as very important, or critical, sources of information. Buttery (1993) found that nearly 57 per cent of all surveyed firms which were networking had experience in alliances with overseas firms in the previous three years.



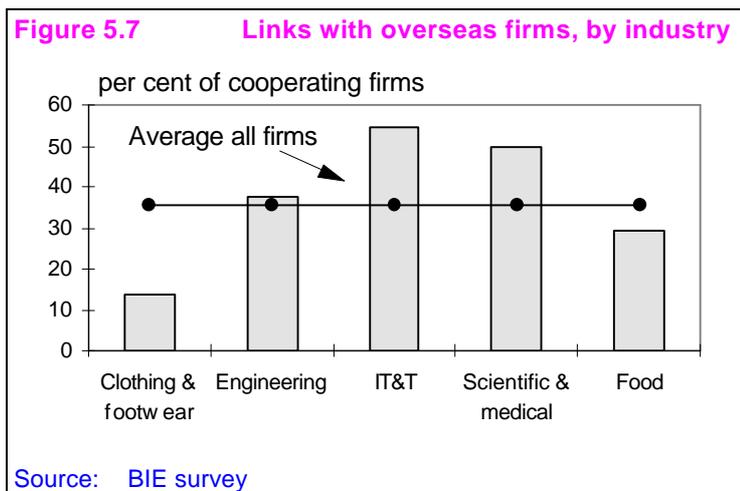
We found around 36 per cent of cooperating firms had arrangements with overseas firms, while the other two-thirds of firms only deal with domestic partners. The method of data collection did not enable the separation of firms with arrangements which *solely* involved overseas companies from those which involved *both* overseas and domestic companies. Hence, no information can be presented on firms with exclusive overseas arrangements.

As expected (see Section 5.1.3) most overseas arrangements are formalised. However, the level of informal arrangements involving overseas partners varies with the type of partner (Figure 5.6). Customer arrangements

are much more likely to be informal than are supplier arrangements.

When we looked deeper into the data we found that (Table 5.5):

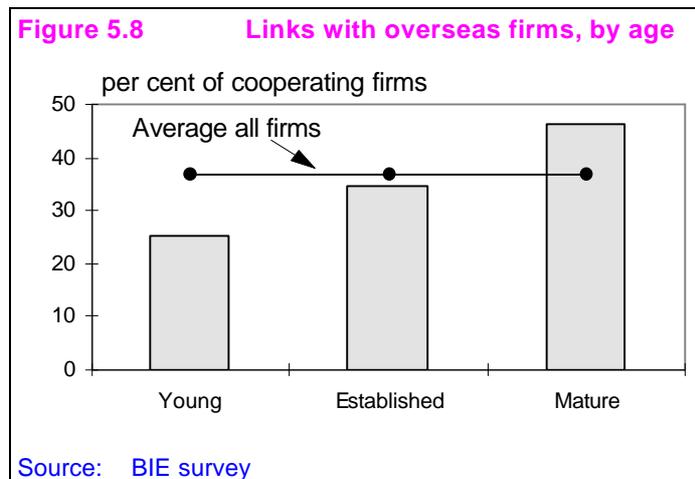
- Firms in the IT&T industry are much more likely than the average firm to have overseas links (Figure 5.7). On the other hand, only a small share of firms in the Clothing and footwear industry have overseas links. This reflects, in part, the outward orientation of the IT&T industry and the focus on the domestic market by the Clothing and footwear industry.



- Western Australia has the lowest level of overseas links (and exports), despite its proximity to the growing markets of Asia. This reiterates the domestic focus of Western Australian firms profiled in Chapter 4. Queensland companies have the strongest links to overseas-based companies despite their relatively low overall level of cooperation. This is not unexpected, however, due to the slightly higher proportion of Queensland firms which are exporting (35 per cent) compared to the average (32 per cent). The relationship between overseas links and exports is investigated further below.
- Not surprisingly, the level of overseas arrangements appears to be closely related to the level of export activity. This relationship is examined in BIE (1994a) which found that over 30 per cent of small firms in emerging industries used joint ventures to assist with marketing their export product and nearly 60 per cent used distributors or agents for this task. Both the joint venture partner and distributors were mainly overseas companies. Box 5.6 gives an example of an exporter with a variety of cooperative business arrangements involving overseas-based companies. What is

surprising, is the number of non-exporters which did have links. We found that 22 per cent of non-exporters had such links (compared to around 56 per cent of exporting firms). Despite the benefits of cooperative business arrangements with overseas companies we found from face-to-face interviews that it was not always easy to develop these relationships. Work by Michael Porter (1990) in *The Competitive Advantage of Nations*, suggests a network of relationships is important for stimulating and sustaining a vibrant export sector. This theme is also expounded in AMC and McKinsey (1994) and the LEK report (1994).

- The majority of firms, whatever their size, tend to focus primarily on arrangements with domestic firms. Even so, the larger the firm, the higher the likelihood of an overseas linkage. This is not surprising since exporters tend to be larger firms.
- Young firms are less likely to have overseas arrangements. This is because of their generally smaller size and their lower export propensities (Figure 5.8).
- Producers of intermediate goods and capital equipment have significantly less overseas arrangements than average. Final good producers are the opposite, relying relatively heavily on overseas arrangements.
- Low technology firms use below average levels of overseas arrangements, while the opposite is true for high technology firms. High technology firms are predominantly in the IT&T and Scientific and medical industries which use relatively high levels of linkages with overseas firms and have a correspondingly high level of exporters. Accordingly, these findings are consistent with both export and industry findings.



**Table 5.5 Overseas linkages, per cent of cooperating firms**

	<i>Proportion with overseas linkages</i>
<b>All firms</b>	<b>36</b>
<b>States</b>	
NSW	33
VIC	39
QLD	47
SA	46
WA	22
<b>Industries</b>	
Clothing and footwear	14
Engineering	38
IT&T	54
Sci/med	50
Food	29
<b>Firm size</b>	
Micro	27
Small	40
Medium	45
Large	50
<b>Age of firm</b>	
Young	25
Established	35
Mature	45
<b>Turnover performance</b>	
Low performers	30
High performers	41
<b>Exporting status</b>	
Non-exporters	22
Exporters	56
<b>Type of product</b>	
Intermediate	14
Capital	50
Final	38
<b>Technology</b>	
Low-tech	16
Medium-tech	32
High-tech	52

Source: BIE survey

### 5.3 Modelling analysis

‘There are lies, damned lies and statistics’. Whenever you try to distil patterns from data, it is very hard to really find out what determines what. You might, for example, find an apparent relationship between two variables, A and B. But on closer analysis you find that there is another variable, C, which causes B and A. The relationship between B and A is actually spurious. For example in this report, we have found age effects often reflect some other factor. Partial analysis – looking for relationships between two variables – is always subject to this risk. It may be helpful for rooting out really obvious relationships, but it can also spuriously pick up the influence of other omitted variables.

**Box 5.6 Arrangements with overseas companies – Agen Biomedical**

*In 1993/94, Agen Biomedical's sales were valued at \$9.5 million, of which 90 per cent were exports. Most of Agen Biomedical's cooperative business arrangements are with international companies, as these are the only ones large enough and with the necessary market contacts to be of assistance to Agen. The joint projects (both formal and informal) with these companies result in the development of reagents to test for particular diseases using the instruments produced by the larger companies.*

*Agen Biomedical tends to formalise a long run relationship, especially if large sums of money are involved. There are always problems of distance working with international companies, but the benefits make the extra effort worthwhile. These cooperative arrangements have given Agen a global view of its industry and the firm's role.*

*Agen's one-to-one relationships with international companies tend to have a clear commercial or project focus while multi-firm relationships generally only provide support and information. However, Agen is willing to cooperate with any firm (including competitors) as long as they can maintain the necessary level of control.*

Source: BIE interview

In this section, we overcome the deficiencies of partial analysis by using regression methods – these control for all the myriad of influences, and give more reliable results. We are able to use the models to better understand what factors influences a firm's choice of cooperative arrangement. We use data for only those firms already in a cooperative business arrangement. The techniques used to construct and test the models are outlined in Appendix A<sup>5</sup>.

### 5.3.1 Number of partners

The likelihood of multi-partner arrangements increase with:

- firm size;
- firms which see their cooperative arrangements as a competitive advantage;
- firms which have links with 'other' firms (ie. neither customers nor suppliers); and
- firms located in Queensland and South Australia.

On the other hand, the likelihood of single partner arrangements increases with supplier relations and decreases with increasing size.

<sup>5</sup> It is important to note one feature of the models. In most probit models, the researcher looks at the probability of mutually exclusive events. Gender, for example, is for most people a mutually exclusive category: you are either male or female. But in much of our analysis the categories are not mutually exclusive. For example, a firm may be in both a network and a single partner arrangement. Accordingly, when we model the likelihood of being in a network, we define a dependent variable which is unity when a firm is in a network and zero if it is not. This means that the usual symmetry that occurs in probit models employing mutually exclusive categories vanishes. For example, imagine a model of voting preferences where there are two parties, A and B. You can only vote for one party. Say that if income rises, a person is more likely to vote for the A party. Because A and B are mutually exclusive, you can also calculate the effect that income has on the probability of a person choosing B. When A and B are no longer mutually exclusive, this symmetry disappears. For this reason we model network choice and single partner choice separately.

### **5.3.2 Formal/informal**

The firm characteristics which influence the formation of a formal or informal link are somewhat different to those which determine whether a firm forms a cooperative arrangement or not:

- modelling confirmed that firms in Engineering industries are less likely to have a formal arrangement;
- bigger firms are more likely to enter a formal cooperative arrangement; and
- firms linking overseas are more likely to choose formal arrangements.

We found that smaller firms or those firms with supplier arrangements more commonly use informal arrangements.

### **5.3.3 Customers/suppliers/others**

We found that the choice of cooperative arrangement partner(s) is not dependent on the size of a firm. As the total number of arrangements firms have is generally low, once firms have an arrangement with one of the three types of partners it is less likely that they will have an arrangement with the other two types. Additionally, it was found no particular industry or state has firms more likely to work specifically with one of these types of firms.

So which variables are important?:

- a firm's tendency to work with customers is positively influenced by the presence of formal arrangements or arrangements involving overseas firms;
- firms facing constraints due to high costs, a proxy for high competition, are also increasingly likely to work with their customers;
- firms which use informal arrangements, produce intermediate goods or low technology products are more likely to have supplier linkages; and
- firms with overseas connections are more likely to forge multi-partner arrangements.

### **5.3.4 Overseas firms**

The likelihood of links overseas:

- decreases for firms in the Clothing and footwear industry. This is most likely related to the strong domestic market focus of this industry;
- not surprisingly, is strongly related to export orientation;
- increases for firms which have competitive advantages in the areas of product design, quality of products, product range and technology or good ideas;
- decreases markedly for firms which produce intermediate goods; and
- increases for firms with formal arrangements.

## **5.4 Summary**

There are many ways firms can cooperate with each other. Like people, firms choose the intensity of their relationships and the nature of their partners. Firms need to consider the whole spectrum of possible partners

– competitors, customers, suppliers, other firms in their industry and even firms outside their industry – and the full spectrum of arrangement modes.

So what types of arrangements do firms have? Over 80 per cent of *arrangements* involve just two firms (for example, a firm working closely with one of its customers). Around 90 per cent of *cooperating firms* have at least one of these single-partner arrangements. Two thirds of cooperating firms rely only on single-partner arrangements (though they may have more than one of these arrangements). Around one-third of firms have some multi-partner arrangements.

Firms do not favour either formal or informal arrangements. Many have both. Around 75 per cent of cooperating firms have formal arrangements, while 70 per cent have informal ones. Similarly, there is no clear favouring of either customers, suppliers or other firms (such as competitors, and distributors and) as arrangement partners. Indeed around 45 per cent of firms have arrangements with more than one of these partners. Australian firms appear to have relatively strong links with overseas companies. Around one-third of cooperating firms have these.

Firms with certain characteristics are both more likely to cooperate overall (Chapter 4) and more likely to favour certain forms of cooperative arrangements. There are four factors which appear central to a firm's choice of both arrangement intensity and partners:

- size;
- the technology level of the product;
- the type of product; and
- whether or not the firm exports.

For example, firms with low technology products favour arrangements where they work with suppliers.

So what does this mean for currently non-cooperating firms? Firstly, it demonstrates that firms of all types can, and are, cooperating and doing so in a variety of different ways. Secondly, it indicates that 'promiscuity' – having a wide range of cooperative partners – is beneficial to firms in engendering new ideas and processes. This is suggested by the relationship between positive characteristics of firms – high growth, high exports, large size – and their involvement in a relatively high number of cooperative arrangements with a range of partner firms. Of course causality may not run just one way. For example, large firms may find it easier to enter arrangements, while involvement in linkages may also stimulate sales.

Finally, this chapter does not suggest that any form of arrangement is 'better' than any other. Rather, firms need to seek out the form of cooperative arrangement and the partner(s) that best suit their needs.

## Part B Benefits and performance

The report turns now to examine what all the various forms of business cooperation occurring in Australian industry means in terms of benefits and firm performance. The fundamental issues are the nature of the benefits firms are seeking and acquiring and the measurable impact of cooperation on various firm performance and competitiveness indicators.

What firms get out of their cooperative arrangements has implications across a wide spectrum. Does cooperation, for example, generally assist SME growth or assist SMEs to specifically overcome growth constraints such as access to finance and technology? To what extent are firms forming linkages to drive innovation, access new markets or to improve the quality of their products? Do firms get different forms of benefits from different types of arrangement and do they appear to benefit more overall from certain arrangements?

The benefits which firms acquire through business cooperation, and their impact on the ‘bottom line’, also helps our understanding of modern Australian industry and the way cooperative arrangements are being used as a valuable business strategy. Such matters are of considerable interest to policy makers, amongst other groups in society.

Information on the nature and extent of cooperation benefits, the type of firms which benefit the most and least and the types of arrangements which work the best and worst can be of real assistance to governments supporting business cooperation strategies. Moreover, policy makers have an interest in the direct relationships between business cooperation and key industry policy aims such as encouraging innovation, increasing technology uptake and boosting exports. A full awareness of the benefits of cooperation can help governments to evaluate specific policy options, to promote the merits of particular forms of cooperation and to design and deliver appropriate business cooperation assistance programs.

The structure of Part B is as follows. The first part, Chapter 6, presents an aggregate view of cooperation benefits, as well as looking at differences between the states and metropolitan/regional locations. In Chapter 7 the report considers how benefits vary by type of firm and includes an examination of how firms with different competitive advantages and growth constraints acquire different benefits. Chapter 8 examines the benefits flowing from different types of arrangements, such as customers or suppliers, formal or informal and overseas and domestic. Finally, Chapter 9 discusses the impact of firms’ ‘key’ cooperative arrangement on a range of performance indicators and on various competitiveness measures.



## 6 Overview of business cooperation benefits

The evidence from Chapter 2 is that most cooperative arrangements in Australian manufacturing are formed for strategic reasons. While some arrangements undoubtedly just come about as ‘a good idea at the time’, the majority are planned with the aim of bringing specific benefits to the firms involved.

Most firms involved with business cooperation manage to obtain *some* benefits across a wide range of areas. In order to try and discover the areas where cooperation is having its greatest impacts on firm performance, the focus of this and the following two chapters will be on the *major* and *critical* benefits which firms have indicated they are acquiring from their various arrangements. These major/critical benefits are the ones making the big differences and the ones which can really make it worthwhile for firms to form linkages.

The answers provided in the survey, and through face-to-face interviews, open up a vast array of possibilities for analysing the positive outcomes of inter-firm cooperation. The purpose of this chapter is to provide an overview of the different benefits available to cooperating firms and an indication of the ones which tend to be most important. To do this, we describe business cooperation benefits at very aggregated levels. Subsequent chapters delve more deeply into the question of how benefits vary for different firms and different arrangements.

In the following sections, the benefits are first compared at the all industries level (Section 6.1). This section also describes the ‘Benefit Index’ which is used to measure and compare cooperation benefits in this and subsequent chapters. Section 6.2 compares benefits across the different states while Section 6.3 looks at differences between metropolitan and regional locations. Section 6.4 summaries the chapter.

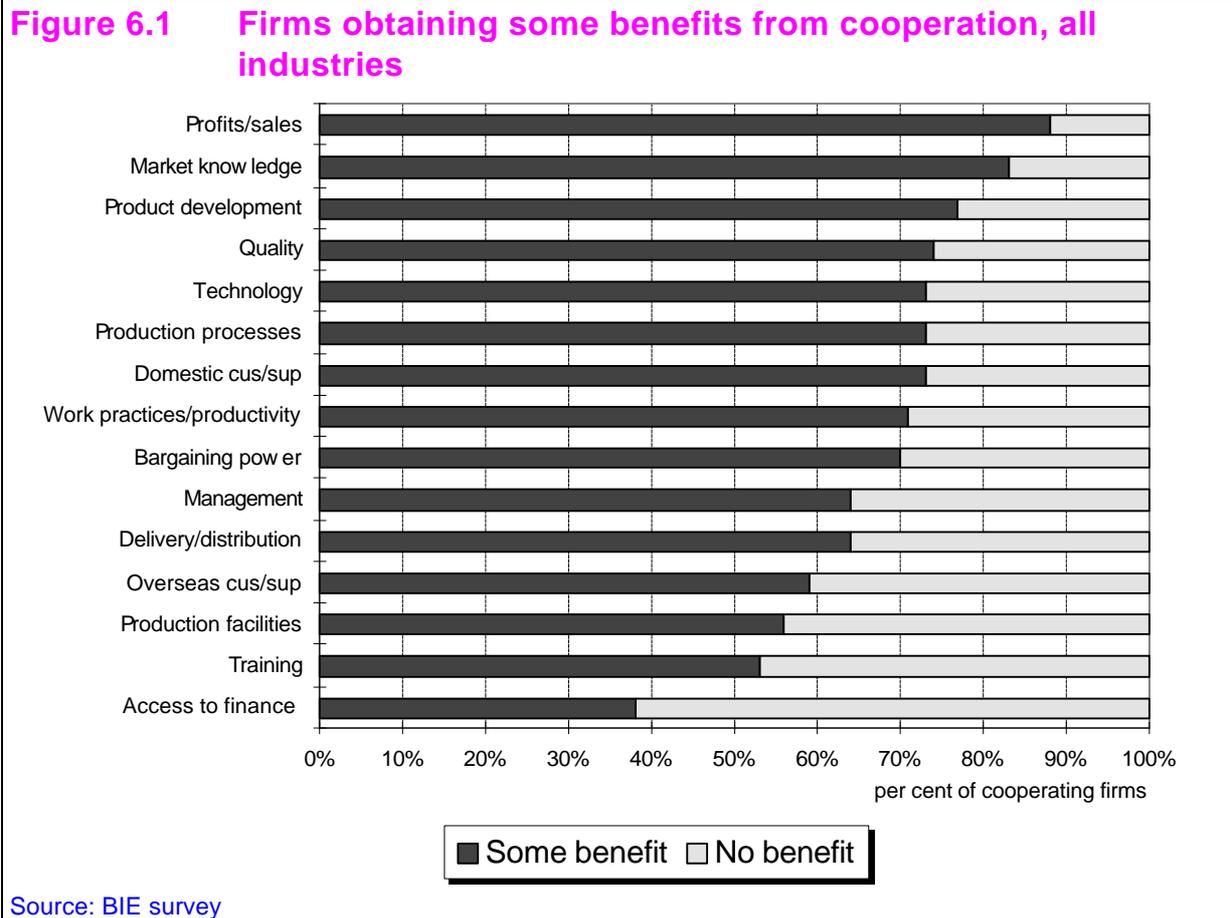
### 6.1 All industries

#### 6.1.1 Degree of benefits

In the survey, firms were given a list of fifteen possible benefits of cooperative business arrangements. The list was designed to try and capture benefits in a number of broad areas – increases in demand, production and distribution efficiencies, improved knowledge, product improvement and other strategic benefits. Those firms which stated that they were currently involved in linkages with other firms were asked to record whether they had obtained any of these benefits from their own cooperative arrangements and, if so, the degree of importance of the benefit (minor, moderate, major and critical).

As noted above, the focus of the results in this report is on the major and critical benefits of business cooperation. To place this in context however, it is useful to first examine the proportion of firms obtaining *some* benefits from cooperation as opposed to just major/critical ones. Thus, providing a respondent firm indicated it was receiving any form of benefit – whether minor, moderate, major or critical – it is assessed as receiving ‘some’ benefits from its cooperative arrangements. Secondly, it is then useful to observe the relationships between ‘some’ benefits and the ‘major/critical’ benefits.

In Figure 6.1 the proportion of cooperating firms obtaining some benefits and no benefits is shown for all fifteen benefit categories. The percentages indicate the proportion of linked firms obtaining benefits from their cooperative arrangements.



At least 50 per cent of cooperating firms are obtaining some benefits from their cooperative arrangements in each of the benefit categories (apart from access to finance). Virtually all firms (88 per cent) say they have increased their profits/sales and the vast majority (83 per cent) also say cooperation has increased their knowledge of their market(s). Around three-quarters of cooperating firms have obtained some benefits from product development, improved quality, new domestic customers/suppliers, access to technology and improved production processes.

Clearly, very high proportions of firms involved in business cooperation are finding it worth their while. The next question though is how many are obtaining really major benefits from cooperation, sufficient perhaps to have a large impact on their business as a whole?

Table 6.1 shows the rankings for the fifteen major/critical benefits alongside the rankings for some benefits as rated by the 525 firms with some form of cooperative arrangement. The rankings are broadly comparable between the two groups. Importantly those benefits near the top and bottom tend to be the same.

**Table 6.1 Comparative rankings of some and major benefits of cooperation**

	<i>Major/critical benefit</i>	<i>Some benefit</i>
Profits/sales	1	1
Market knowledge	2	2
New domestic customer/suppliers	3	7
Product development	4	3
New overseas customers/suppliers	5	12
Improved production processes	6	6
Improved quality	7	4
Access to technology	8	5
Increased bargaining power	9	9
Improved delivery/distribution	10	11
Improved work practices/productivity	11	8
Access to production facilities	12	13
Improved management	13	10
Improved training	14	14
Access to financial resources	15	15

Source: BIE survey

The outstanding difference is the benefits firms are receiving from new overseas customers/suppliers. This is the equal fourth most important major/critical benefit to cooperating firms but a lowly twelfth ranking benefit when the minor and moderate benefits are included.

The marked variation is explained by the fact that a large number of Australian firms have little or no involvement with export markets or overseas firms and therefore are obliged to indicate ‘no benefit’ in the question on cooperation benefits. However, those firms which *are* involved with overseas markets are apparently obtaining disproportionate major/critical benefits from finding new overseas customers/suppliers as a consequence of business cooperation.

Four of the leading five benefits are the same for both groups. This underlines their critical importance as reasons for business cooperation. Profits/sales, market knowledge, new domestic customers/suppliers and product development will come up time and time again (along with new overseas customers/suppliers) as the most important benefits for cooperating firms.

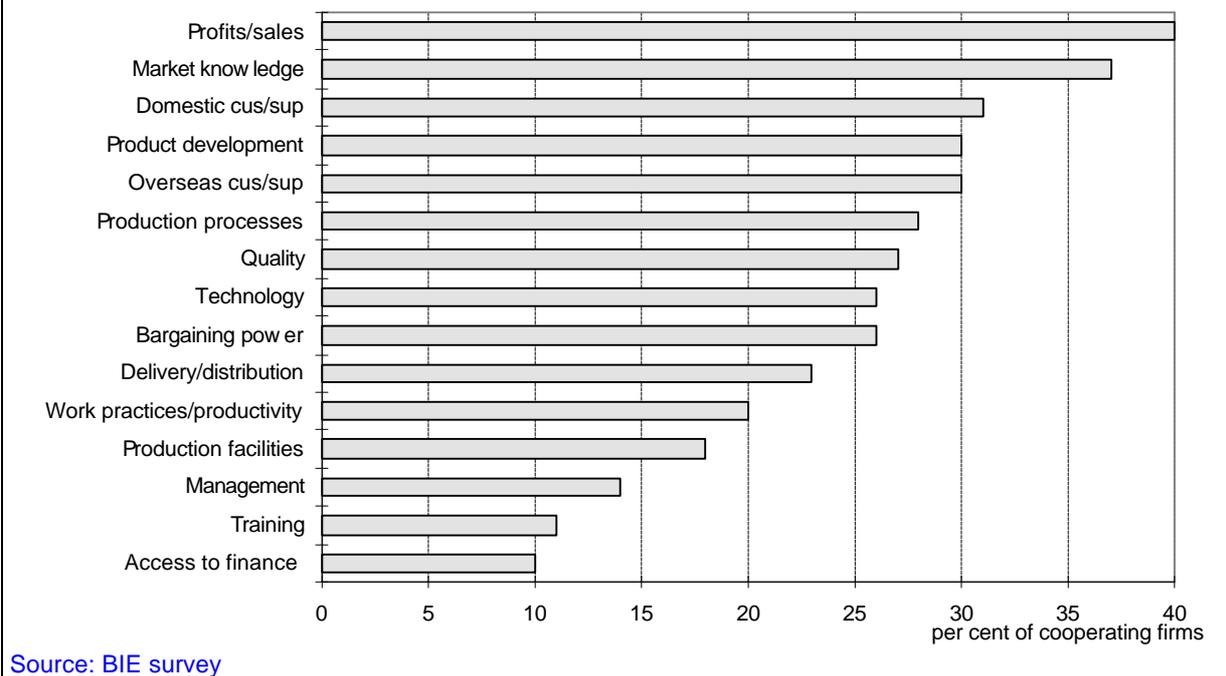
Throughout Part B of this report the discussion of benefits will focus only on the major and critical benefits of business cooperation. This allows us to unearth the key reasons why firms are entering cooperative arrangements and to ascertain the relative importance of particular linkages.

### **6.1.2 Major benefits of cooperation**

Around 75 per cent of cooperating firms obtain major or critical benefits from their business cooperation activities. Moreover, 65 per cent obtain at least two types of major/critical benefits, 56 per cent obtain at least three and 35 per cent obtain five or more. These are impressive figures and provide a very solid base in support of the concept of business cooperation.

The major and critical business cooperation benefits are discussed below. For convenience, the use of the word ‘major’ in describing benefits will henceforth include both the major and critical benefits.

**Figure 6.2 Major benefits of cooperation, all industries**



The measurement of major benefits across all industries, as shown in Figure 6.2 will serve as a ‘benchmark’ against which benefits in different arrangements and firm types can be compared. In such instances the concept of the ‘average’ firm will often be employed to describe the proportion of firms receiving a particular benefit at the all industries level. For example, we might say that 34 per cent of Clothing and footwear firms obtain a major benefit through cooperation in the form of increased profits/sales, compared to a figure of 40 per cent for the average cooperating firm.

As profit-seekers, a major reason why firms are becoming involved in linkages is to try and achieve outcomes which will improve their profitability. Looking at the leading benefits in Figure 6.2, the fact that increases in profits/sales heads the benefit list (40 per cent of firms) shows that many firms are able to see very clearly the impact of cooperation on their order books and profits.

Increases in profits/sales will feature as the most important cooperation benefit more often than not for different arrangements and types of firm. The important relationships between inter-firm cooperation and profits/sales are explored more comprehensively in Chapter 9.

Sometimes business cooperation can have quick and significant impacts on a firm’s profitability, but in other cases firms may be developing linkages with longer-term profitability in mind. In these situations, cooperation can help a firm move through the processes towards the ultimate rewards. The other leading benefits of cooperation show how firms utilise close relationships in other vital areas to help contribute to improving the ‘bottom line’.

Market knowledge is a close second as a major benefit of business cooperation (37 per cent of firms). Firms use their relationships with customers, suppliers and other firms to learn about the market in which they operate – how they can do things better or how they can exploit market opportunities. Working closely with customers and suppliers and understanding their needs is a good grounding for the future success of a firm.

The fact that market knowledge ranks so highly is interesting and should be regarded as a very positive side-effect, or ‘spin-off’, of business cooperation. Whereas most firms go into cooperative arrangements with a definite financial outcome in mind (as in profits/sales), relatively few would see learning about the market as a major reason for cooperating<sup>1</sup>. It is a benefit which is part and parcel of working closely with other firms and which will usually arise incidentally in accompaniment with other benefits. The importance of spin-off benefits arising through business cooperation will be taken up in the discussion of firm types and different arrangements in Chapters 7 and 8 respectively.

Improved profits/sales and market knowledge stand out as the two leading benefits of business cooperation. There is a noticeable gap between market knowledge and the third and fourth ranked major benefits, new customers and suppliers at home and overseas (31 per cent and 30 per cent respectively). These two benefits represent the exploitation of the kind of market opportunities which may be at the ‘development’ or ‘planning’ stage in the market knowledge category. The level of the benefits indicate that the ability to find *new* customers and/or suppliers is a very strong reason for undertaking cooperative arrangements.

Product development (30 per cent of firms) rates about the same as new customers/suppliers on the benefits scale and says something about the enterprising nature of firms involved in business cooperation. The objective of improving products or developing new ones is at the heart of a firm’s innovative activities and product development will be often used as a proxy for innovation benefits throughout this chapter – along with improved production processes and access to technology. Other benefits such as improved work practices/productivity, delivery/distribution and even market knowledge may well also have significant innovation elements.

One of the innovation indicators, improved production processes, is the sixth ranked major benefit for all industries, followed by improved quality. It will be recalled from Chapter 4 that quality of their products was rated by around 60 per cent of cooperating firms as their most important competitive advantage. It seems that a relatively high proportion of firms are using business cooperation to further enhance this selling point for their products.

Both improved production processes and improved quality can be seen more as operational or production efficiency benefits, as opposed to the higher ranked market-related benefits of new domestic and overseas customers/suppliers.

### **6.1.3 The Benefit Index**

In order to keep the analysis of benefits well focused and to aid comparisons, the discussion of major benefits in the remaining sections of this chapter will concentrate on *only the seven most important benefits* for each type of arrangement or firm characteristic.

The ‘Benefit Index’ (BI) for the top seven major benefits will be commonly employed as a basis for comparison. This is simply the total number of firms which have indicated they have received major/critical benefits for the leading seven benefit categories (in a particular arrangement or type of firm), divided by seven to give an average benefit ‘score’.

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<sup>1</sup> The mail survey did not ask firms what motivated their cooperation. However, in our face-to-face interviews we explored firms’ major aims in cooperating. Whereas profits/sales emerged as an influential motivator, market information did not.

Thus we can use the Benefit Index as a shorthand measure for summarising the extent to which particular firms (or firms in particular arrangements) are benefiting as a result of cooperation<sup>2</sup>. It is a simple, yet accurate, means of making comparisons. For example a group of firms with a BI of 35 can be said to be benefiting more from their cooperative arrangements than another group with a BI of 28.

The Benefit Index across all industries is 32. This will be commonly used as a basis for comparison to measure the extent to which the benefits for a firm type or a specific cooperative arrangement differ from the average.

As will be observed, the focus on the top seven benefits associated with a particular arrangement or firm type will mean that the three lowest ranking major benefits in Figure 6.2 will generally not feature in the analysis. This is not to say of course that business cooperation benefits relating to finance access, improved training and improved management skills are in some way trivial; after all, significant numbers of firms are saying they do receive *some* benefits in these areas (Figure 6.1).

In a relative sense, however, firms are indicating that these factors are very seldom the *main* outcomes from being involved in business cooperation (although of course they will be for some firms). It is likely, in fact, that finance access, improved training and management skills are often unanticipated spin-offs from involvement in cooperative arrangements, rather than key aims at the outset.

## 6.2 Benefits by state

To a large extent, state characteristics simply reflect the relative importance of the industries and different firm types within their borders. Thus, while it is interesting to inspect the benefits of cooperation at the state level, caution should be exercised in attributing state differences to intrinsic or inherent state characteristics (and particularly so with the small number of firms involved in some cases<sup>3</sup>).

The major benefits of cooperation for firms in each mainland state are shown in Figure 6.3. There are, of course, substantial differences in the number of cooperating firms in the states and this needs to be borne in mind when making comparisons.

The two largest states, with their extensive and relatively diffuse industrial bases, have similar benefit patterns in terms of both benefit types and their degree of importance. As would be expected, these patterns also closely shadow the national patterns.

Interestingly, both states have lower than national average figures for the two leading benefits, increased profits/sales and market knowledge. Victorian firms in fact, fall below the national benefit averages for all but improved production processes and improved quality. Both of these factors are associated more with the efficiency side of cooperation rather than market access. Firms in NSW fare only slightly better, having three benefit levels on line with national data (new overseas customers/suppliers, product development and improved quality).

The three smaller states provide considerable variety in benefit types and especially in their degree of importance. Increased profits/sales and market knowledge are still entrenched in the top two positions. For

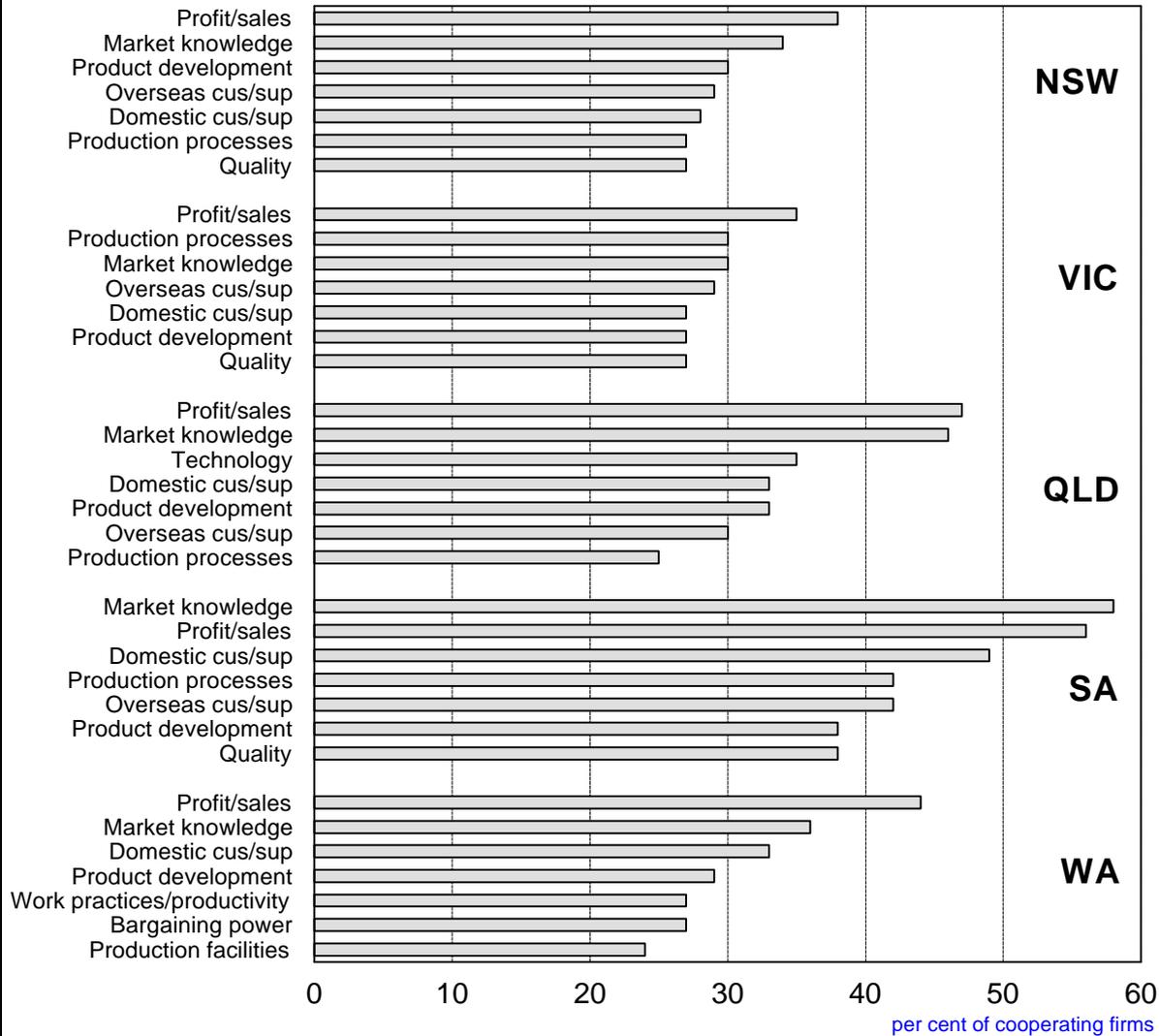
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<sup>2</sup> In around 95 per cent of cases, the relative importance of a particular BI against other BIs accurately reflects the relative differential using all 15 major benefits. That is, the comparison of benefits across different arrangements and firm types has not been distorted by using only the seven most important benefits.

<sup>3</sup> This comment is of course equally valid to the 'state sections' in subsequent chapters.

both South Australian and Queensland firms there is virtually an equal level of benefit in these two areas as a result of forming linkages.

**Figure 6.3 Major benefits of cooperation, by state**



BI NSW 30  
 BI VIC 29  
 BI QLD 36  
 BI SA 46  
 BI WA 31  
 Source: BIE survey

Close to 60 per cent of cooperating firms in South Australia obtain major benefits from increased profit/sales and market knowledge as a result of inter-firm cooperation. These exceptionally high degrees of benefits are continued in all other major benefit areas for South Australian firms, with an equal tendency towards market and efficiency benefits. The proportions of linked firms benefiting are well above national figures. The BI for South Australian firms is 46, compared to the average BI of 32.

Outside the impressive figures for increased profits/sales and market knowledge, the major cooperation benefits for Queensland firms drop down to close to national levels – with the exception of access to

technology. Queensland is the only state to have this benefit listed in the top seven, and to have it ranked third at nine percentage points above the national average is very striking. The reasons for this may be revealed in the following two chapters.

Business cooperation benefits in Western Australia provide a similarly interesting story as the other smaller state, South Australia, but for different reasons. In WA, the interest is not the high proportion of firms obtaining major business cooperation benefits – the BI is only 31 – but rather the benefit types.

Outside the leading benefits is the 20 per cent of cooperating firms in WA benefiting from new overseas customers/suppliers as a result of cooperation. This is nine percentage points less than any other State and ten points below the national average. This largely reflects WA's relatively low export levels and low levels of cooperative arrangements with overseas firms (see Part A).

The other interesting point about inter-firm cooperation WA style, is the appearance in the leading benefits of work practices/productivity and access to production facilities. This may indicate more of a cooperation focus by WA firms on the production efficiency side of the equation, rather than seeing business cooperation as an opportunity for market expansion. This would help explain the relative lack of interest in overseas partners, although the proportion of WA firms benefiting from new *domestic* customers/suppliers is in line with the national average.

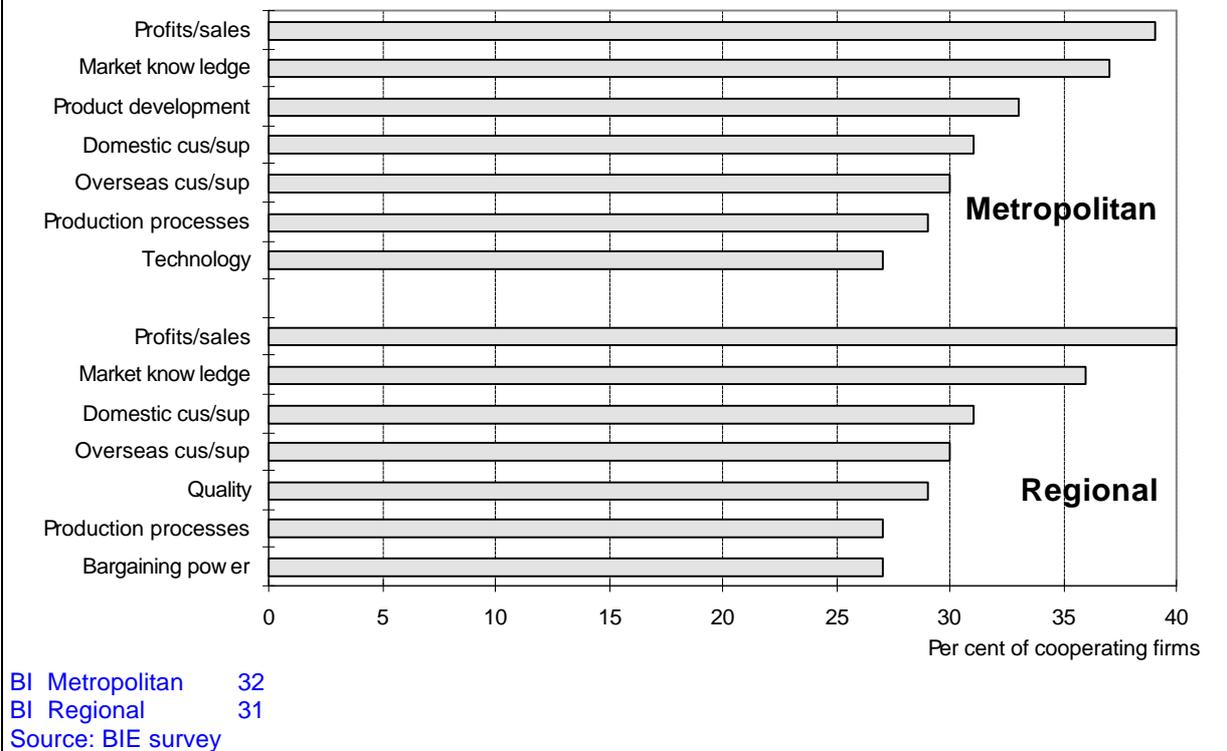
### **6.3 Benefits by metropolitan/regional location**

The benefits accruing to firms in metropolitan and regional areas do not appear to vary much at all (Figure 6.4). The overall benefits as measured by the BI are very similar and both groups benefit most in the same sort of areas.

Perhaps the key difference between the two groups is the absence of product development from the leading benefits of regional firms. The inclusion of improved quality and increased bargaining power in the leading benefits of regional firms, and their absence for metropolitan firms, is also interesting.

The regional firms in the survey are dominated by two industries – Engineering and Food – and explanations for the different benefits of metropolitan and regional firms may reflect this to a significant extent. However, other differences in regional and metropolitan firms may also play a role. The relation of benefits to firm characteristics, including industry location, is discussed in detail in the next chapter.

**Figure 6.4 Major benefits of cooperation for metropolitan and regional firms**



## 6.4 Summary

Virtually all cooperating firms benefit in some way from business cooperation. This is hardly surprising as there would be limited reasons to continue in a cooperative arrangement if there were no positive outcomes.

In order to discover the areas where cooperation is having its greatest impacts on firms, we focused only on the major and critical benefits. Around 75 per cent obtain at least one major or critical benefit from their cooperative arrangements, two-thirds get three or more and around 55 per cent get five or more.

Two benefits stand out for firms undertaking cooperative activities – increased profits/sales and increased market knowledge. Almost 90 per cent of the surveyed firms indicated that cooperation had a favourable impact on their profits and/or their sales - and 40 per cent said it impacted in a major or critical way. The data for market knowledge are very similar.

These two benefits will appear time and time again in subsequent chapters as leading outcomes. Interestingly they probably represent two different sides of cooperation benefits. Increasing sales and profits are very much intended benefits of business cooperation – firms enter into cooperative arrangements to improve the look of their balance sheets. Market knowledge, on the other hand, is for the most part an unanticipated positive side-effect, or ‘spin-off’ of cooperative activities. Firms do not take the trouble to strike up cooperative arrangements just to learn about their markets, they have other more concrete things in mind. But by linking with other firms they gain invaluable knowledge on their travels.

While market knowledge is the most obvious candidate for a spin-off benefit, others will often fall into this category. The phenomenon of anticipated and spin-off benefits in cooperative arrangements is taken up in the discussion of firm types and arrangements in the following two chapters.

For the other leading benefits of business cooperation, there are two prominent groups – market-related and production efficiency, or operational, benefits. The former consists of new customers and suppliers in Australia and overseas, while the latter includes such benefits as improved production processes and technology access. Other benefits with efficiency connotations are improved quality and better distribution.

Overall, firms are more likely to gain from the market-related benefits of business cooperation, with both new domestic customers/suppliers and new overseas customers/suppliers in the top five benefits. Improved production processes and improved quality are the leading efficiency benefits, ranking sixth and seventh in overall benefits.

The other leading benefit of business cooperation is product development (equal fourth overall). Improving products or developing new ones is at the heart of a firm's innovation activities and the importance attached to this benefit by cooperating firms is an important finding for those interested in the relationships between business cooperation and innovation. Other leading cooperation benefits which might have innovation elements are technology access, improved production processes, improved delivery/distribution and even market knowledge.

The purpose of this chapter was to provide an overview of the major benefits of cooperation – which benefits tend to be the most important and how many firms obtain these benefits. In view of the aggregated nature of the data presented, we did not seek to provide explanations for all the results. For the states, for example, different benefits are more likely to reflect different industries and different firm types rather than any inherent state differences.

The following two chapters dig deeper into these aggregate findings to explore what is occurring for different firm types and different forms of cooperative arrangements.



## 7 How do different firms benefit?

We know that some firm types are more likely to cooperate in the first place and then more likely to cooperate in certain ways. What we wish to find out now is the specific benefits flowing to cooperating firms and how these vary between firms. This has implications for government program managers either wishing to target particular firms or to promote more widely the range and degree of benefits available to cooperating firms.

In the first part of the chapter (Section 7.1) we look at the firm characteristics which are clearly significant in explaining a greater likelihood of benefits from business cooperation. These are industry, size, technology content and exporters. We then consider the relationship between other firm characteristics and benefits. The benefits associated with specific competitive advantages and performance constraints of firms are discussed in Sections 7.2 and 7.3 respectively. The chapter is summarised in Section 7.4.

### 7.1 Benefits and firm characteristics

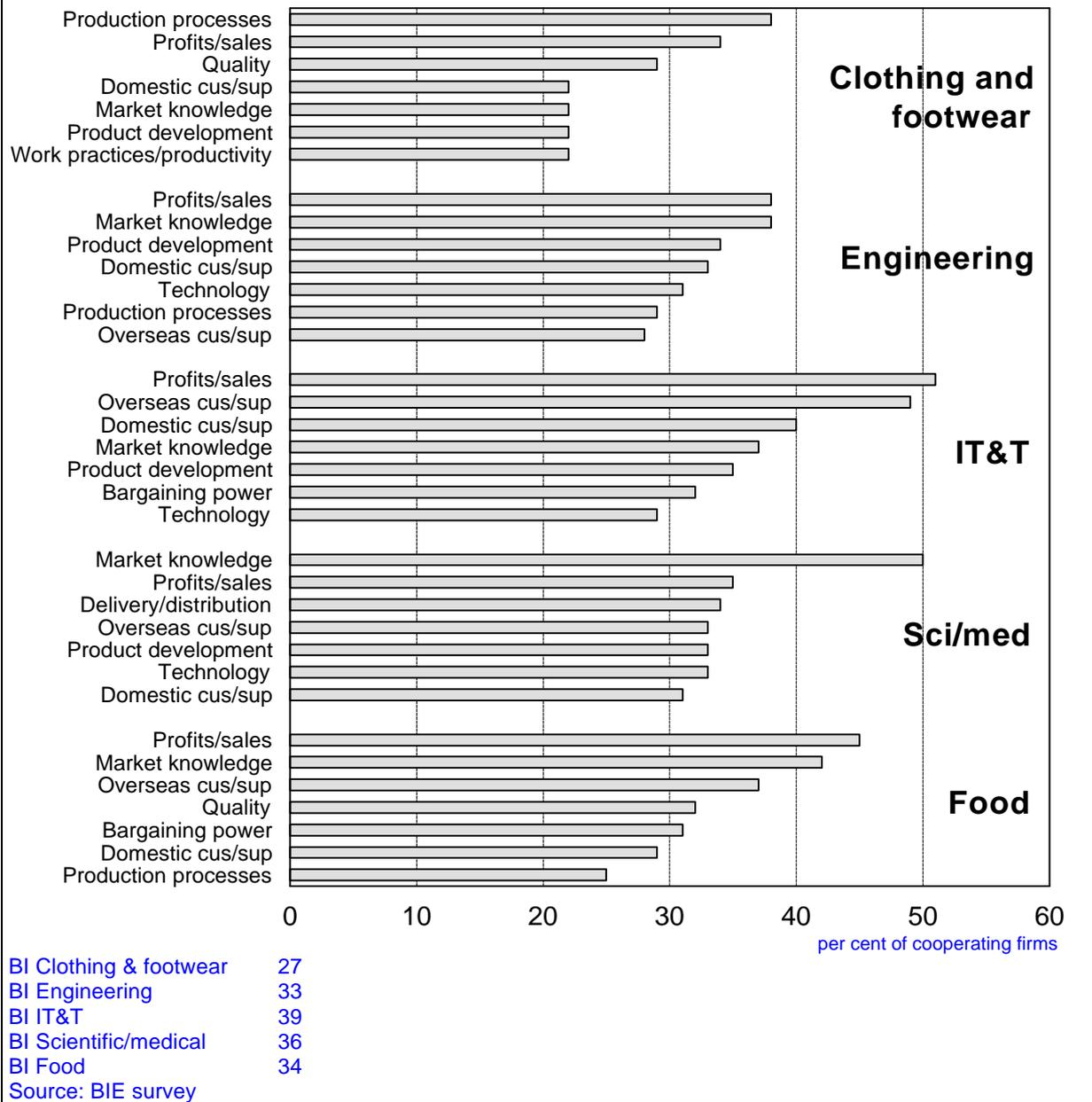
#### 7.1.1 Industries

A comparison of the major cooperation benefits by industry reveals some interesting facts (Figure 7.1). In terms of rankings, increased profits/sales leads the way in three of the five industries. However, it is a very distant second for cooperating firms in the Scientific/medical industries, where one-half of the firms obtain major benefits in the form of market knowledge. Market knowledge is also a major benefit in the other industries, with the exception of Clothing and footwear where only 22 per cent of cooperating firms obtain market knowledge benefits from their links.

New overseas customers and suppliers and product development also emerge as major benefits (Figure 7.2). The importance of new overseas customers/suppliers is particularly relevant to cooperating IT&T firms, with half of them benefiting in this way. These overseas benefits are also important to firms in the Food and Scientific/medical industries, but less so in Engineering and of no real value at all to Clothing and footwear firms.

A smaller proportion of firms in the Clothing and footwear and Food industries see product development (a key proxy for innovation benefits) as a major benefit. Firms in the other three industries are all just as likely to obtain above average product development benefits from their cooperative arrangements.

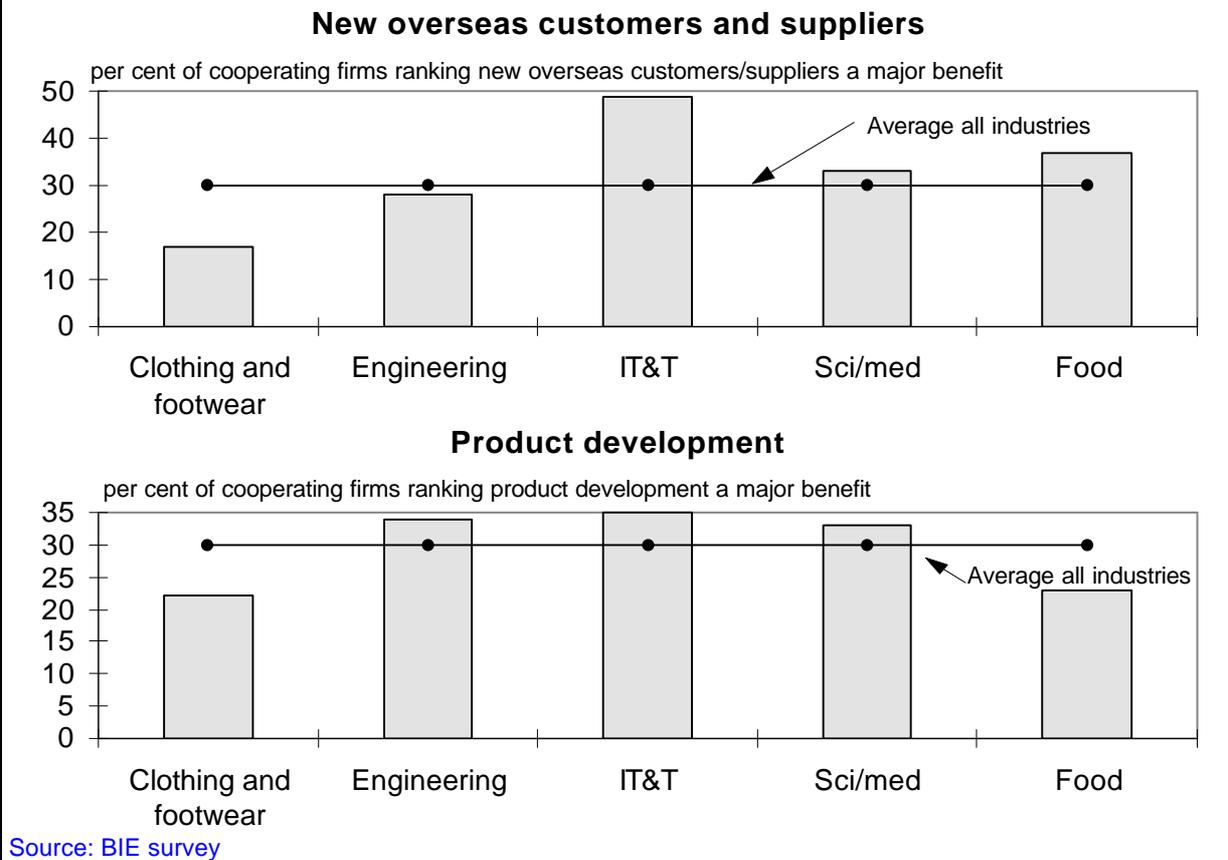
**Figure 7.1 Major benefits of cooperation, by industry**



Overall, IT&T firms appear to be benefiting the most from cooperative arrangements. The three major benefits rate very highly and the Benefit Index (BI) for IT&T firms is, at 39, very high<sup>1</sup>. This is higher than any other industry and compares with a Benefit Index of 32 for all industries. The other interesting result for IT&T firms is the significance of increased bargaining power. Links give firms more leverage in negotiations and discussions which is not available (to the same extent) in normal arm's length transactions.

<sup>1</sup> See Section 6.1.3 for an explanation of the 'Benefit Index'.

**Figure 7.2 Major cooperation benefits – new overseas customers/suppliers and product development**



Firms in the other relatively “high-tech” industry, Scientific and medical equipment, also appear to be significant beneficiaries of inter-firm linkages. The importance of market knowledge to Sci/med firms has already been noted. The great store placed on improved delivery/distribution by Sci/med firms vis-a-vis increased bargaining power by IT&T firms is the only difference in major benefit types between the two industries.

This would seem to reflect basic differences in their structure and nature. Some Australian firms in the IT&T industry may be looking to strategic linkages to help them gain access to the MNE controlled global distribution networks, while the importance of exports to Sci/med firms implies a critical reliance on efficient delivery and distribution mechanisms (see Box 7.1).

Cooperating firms in the Food industry benefit well from increased profits/sales, market knowledge and new overseas customers/suppliers. Around one-third of cooperating Food firms also obtain major benefits in the form of improved quality for their products. Food processing firms are subject to considerable regulation in the interests of public health and the Food industry generally is facing growing competition. A combination of these factors may in part explain this emphasis on quality.

**Box 7.1 Dealing with distributors**

*KDB Engineering is a medium-sized Western Australian company making hospital and rehabilitation equipment. It is the largest manufacturer of rehabilitation equipment in Australia.*

*Most of KDB's production is for the Australian market but it has recently commenced exporting to New Zealand, Singapore, Indonesia and Japan.*

*With the majority of its markets thousands of kilometres from Perth, KDB requires an excellent distribution network. Its eastern seaboard distributors started off as arms length relationships but gradually built up in importance. KDB talks to its distributors all the time and meets them as regularly as possible.*

*The feedback received from its distributors is very important to the company and not only in relation to delivery and distribution operations. Different states (and overseas markets) react differently to KDB's products and this information is passed on to KDB management. The company learns a lot about its markets in this way. The close working relationships with its distributors also assists KDB in improving the quality of its products and developing new ones.*

Source: BIE interview

Clothing and footwear firms have the lowest participation in inter-firm cooperation (see Chapter 4) and are demonstrably benefiting the least from their cooperative arrangements. In only two areas do more than 30 per cent of cooperating firms receive major benefits from inter-firm cooperation, and the fourth ranked benefit, at 22 per cent, is over 10 percentage points less than all the fourth-ranked benefits in the other industries.

The high score for improved production processes in the Clothing and footwear industry would seem to be a reflection of the competitive nature of the industry and the constant pressure to keep the lid on cost increases. Similarly, the relative importance of quality to cooperating Clothing and footwear firms probably reflects these competitive pressures as well as the significance of quality in product choice by the industry's consumers. Customers and suppliers are working together to get things right in terms of both quality and production runs (see Box 7.2).

### **Box 7.2 Smoother production through cooperation**

*Candy Footwear prides itself on being the biggest ladies footwear manufacturer under one roof in Australia. A subsidiary of Dunlop, it had a turnover of \$28.4 million in 1993/94 and experienced growth of around 16 per cent.*

*To sustain this growth rate Candy Footwear must cooperate closely with its domestic suppliers, especially the suppliers of footwear soles. The company orders daily requirements from its suppliers who coordinate their production to fit with Candy's production schedules. A two week turnaround time is the norm.*

*This procedure provides benefits for both sides. Advance purchasing of suppliers' raw materials helps the cash flow of the supplier, and in turn ensures a guaranteed supply for Candy. In fact on one occasion Candy split orders to sustain a reliable supplier.*

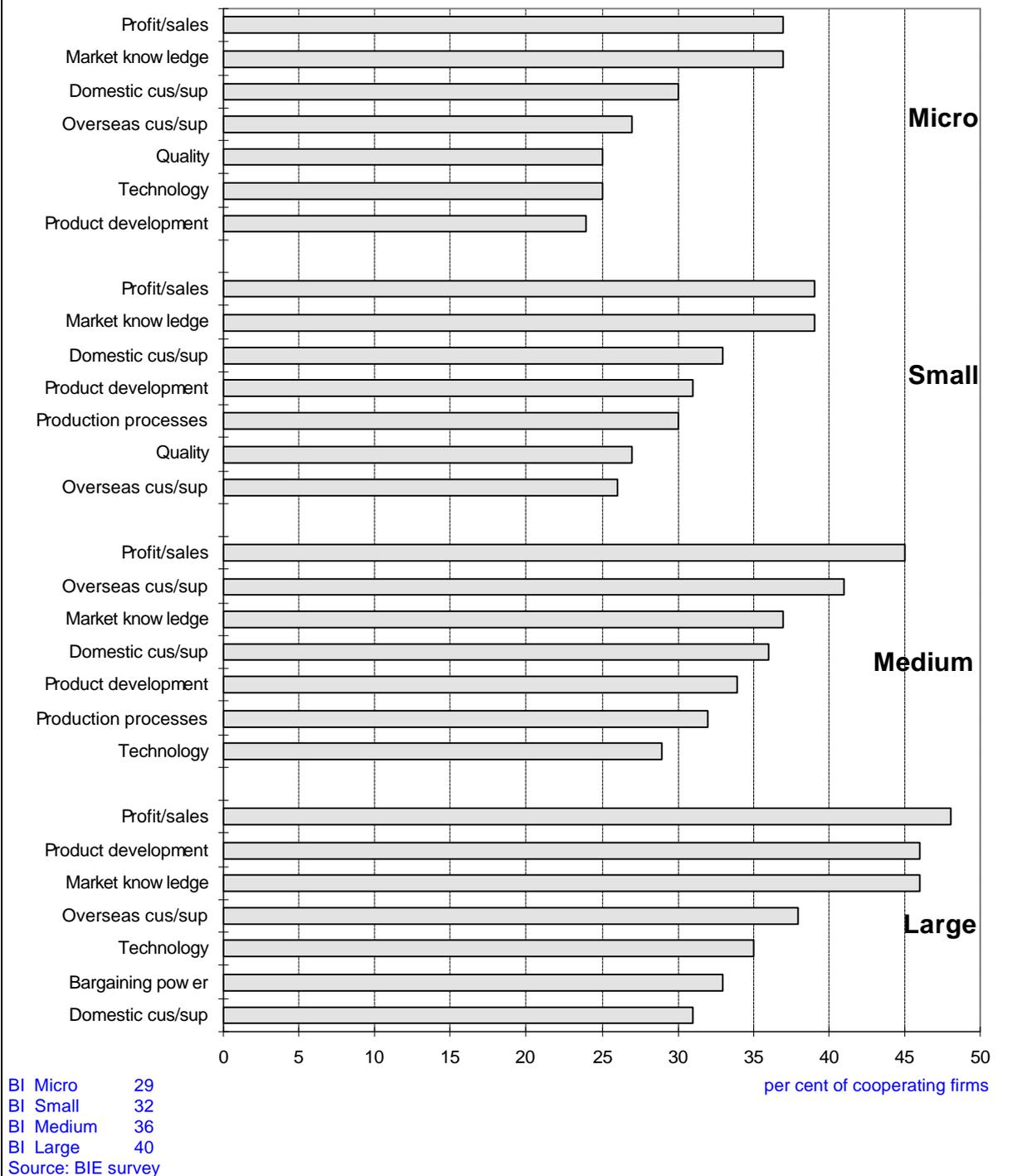
*This cooperative system is absolutely critical when demand is growing rapidly as it avoids bottlenecks in production.*

Source: BIE interview

## **7.1.2 Size of firm**

One of the cornerstones of government policy relating to business cooperation is that SMEs have much to gain from forming linkages with other firms. A major objective of AusIndustry's Business Networks Program, for example, is for SMEs to obtain the economies of scale and scope which are available to larger enterprises.

**Figure 7.3 Major benefits of cooperation, by firm size**



Large firms benefit too of course from business cooperation. The results of the BIE survey provide answers as to just how both large and small firms benefit from cooperation and the relative importance of different benefits to the different-sized firms.

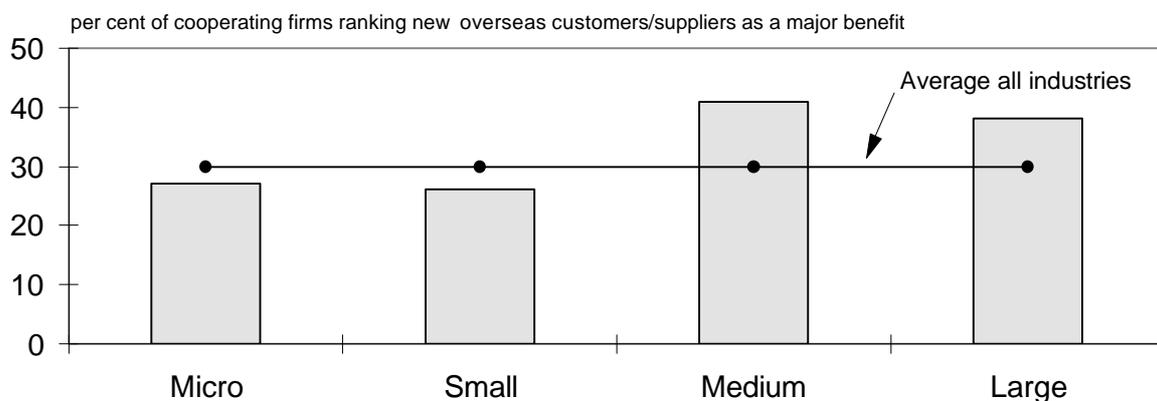
The major benefits of cooperation for micro, small, medium and large<sup>2</sup> firms are shown in Figure 7.3. The first point to make is that firms of all sizes are benefiting substantially from business cooperation; that is, no matter how big or small a firm is, it has the potential to obtain significant benefits by forming linkages with other firms.

It is also evident that the likelihood of benefiting from business cooperation increases with firm size. Thus the BI of 40 for large firms compares with a BI of 29 for micro firms. These disproportionate results are probably mainly explained by the fact that larger firms are generally more likely to have a greater number of arrangements.

Large firms have three very prominent types of benefit; increased profits/sales, market knowledge and product development. Close to 50 per cent of large firms obtain major benefits in each of these areas from their cooperative arrangements, a result well above the average. Large firms also derive above average benefits from new overseas customers/suppliers, access to technology and increased bargaining power. The combination of technology and product development benefits suggests an underlying innovation rationale behind many large-firm linkages.

New overseas customers/suppliers (Figure 7.4) are a major cooperation benefit for medium-sized firms, in fact slightly more so than for large firms. It stands out as a major reason why medium firms are forming cooperative arrangements, other than for increasing sales and making profits (which is also above average). The innovation factor also seems to be present for medium firms with the inclusion of product development, improved production processes and technology access in the major benefits.

**Figure 7.4 New overseas customers/suppliers benefits, by firm size**



Source: BIE survey

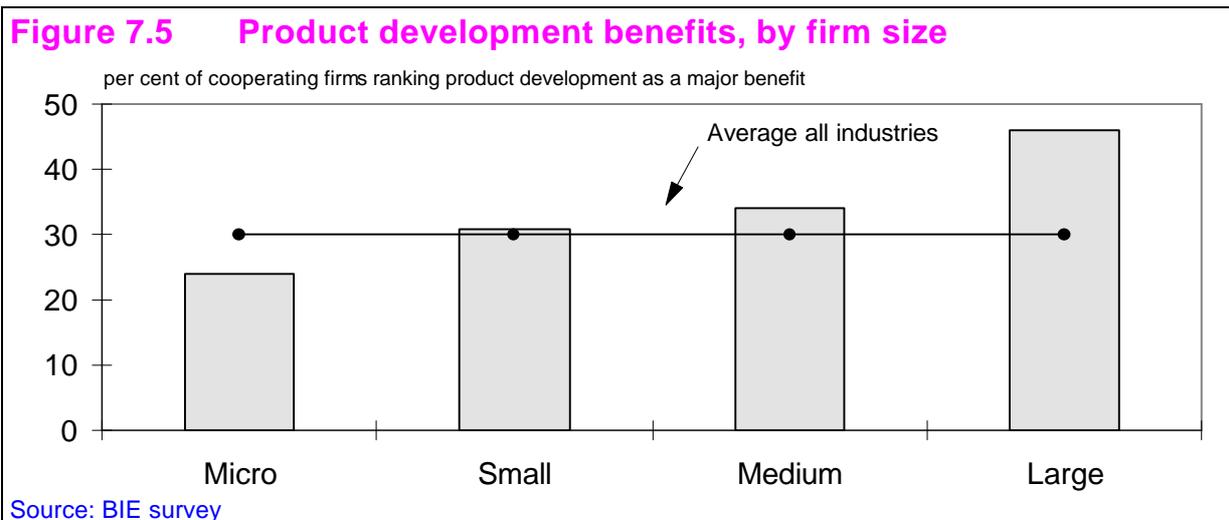
The emphasis placed by both large and medium sized firms on new overseas customers or suppliers is not shared by smaller firms, although around one quarter of the two small firm groups are still benefiting in this way.

This is an encouraging finding for those who emphasise the importance of overseas customers/suppliers (AMC and McKinsey 1993, 1994). The fact that even the smallest of firms are using cooperation to access overseas markets or to find new overseas suppliers is a very positive aspect to business cooperation in Australia.

<sup>2</sup> Definitions like 'large' or 'small' are always somewhat arbitrary. We are not out to provide sterile defences of what we term 'large', 'medium' or 'small' firms, but rather to show what happens to benefits when you look at different-sized firms.

Small and micro firms are very similar in nature regarding the importance they attach to the three leading reasons for forming linkages. The inclusion of new domestic customers/suppliers and the absence of both new overseas ones and product development are the notable differences between small firms and medium to large firms. Product development does however come in fourth for small firms and new overseas customers/suppliers fourth for micro firms.

Product development is interesting to observe over the different firm sizes (Figure 7.5). Along with increased profits/sales, it is the only benefit to clearly increase with each step up from a micro to a larger firm. Thus, 24 per cent of micro firms benefit from product development through business cooperation, 31 per cent of small firms, 34 per cent of medium firms and 46 per cent of large firms.



Market knowledge is also worth highlighting. A minimum of 37 per cent of firms (micro, small and medium) improve their knowledge and understanding of their markets through business cooperation. The proportion rises to 46 per cent for large firms. This underlines the importance of market knowledge as a very positive spin-off from cooperation – it is something all firms can benefit from, regardless of size.

Overall, the leading three or four major benefits do not vary a great deal with firm size. Profits/sales, market knowledge, new overseas firms, new domestic firms and product development tend to be there in most cases. The degree of benefit does however vary, with a stronger probability of major benefits from cooperation flowing to the medium and large firms.

### 7.1.3 Technology content

If you had to use a primitive yardstick you would probably rate IT&T and Sci/med as high-tech industries, Clothing and footwear as low-tech and Engineering and Food as mainly medium-technology industries<sup>3</sup>.

However, these coarse descriptions will not tell the whole story regarding the technology content of a firm's product, given that there may be considerable variations within industries. For example, not all Sci/med firms produce high-tech products while some Engineering firms clearly do.

<sup>3</sup> Definitions of high, medium and low technology firms are contained in the glossary.

High-tech products present a picture of being all about linkages, essentially because of the difficulty of a single firm being able to do everything in rapidly changing and sophisticated market sectors. Low-tech firms, on the other hand, do not rely on cooperative arrangements to the same extent in their normal day-to-day operations (Chapter 4).

The benefits flowing from cooperation from firms with varying degrees of technology content in their products accordingly provides an interesting comparison. Are firms which tend to rely more on linkages in the normal course of business more likely to benefit the most from cooperative arrangements? Alternatively, are benefits likely to be higher for firms not so used to cooperation and which make special efforts to form productive linkages?

Figure 7.6 depicts the major benefits for firms according to the level of technology of their output. The answer to the above questions are immediately apparent. There seems to be no doubt that the greater the technology content of a product the greater will be the likelihood of firms receiving major benefits from their cooperative arrangements.

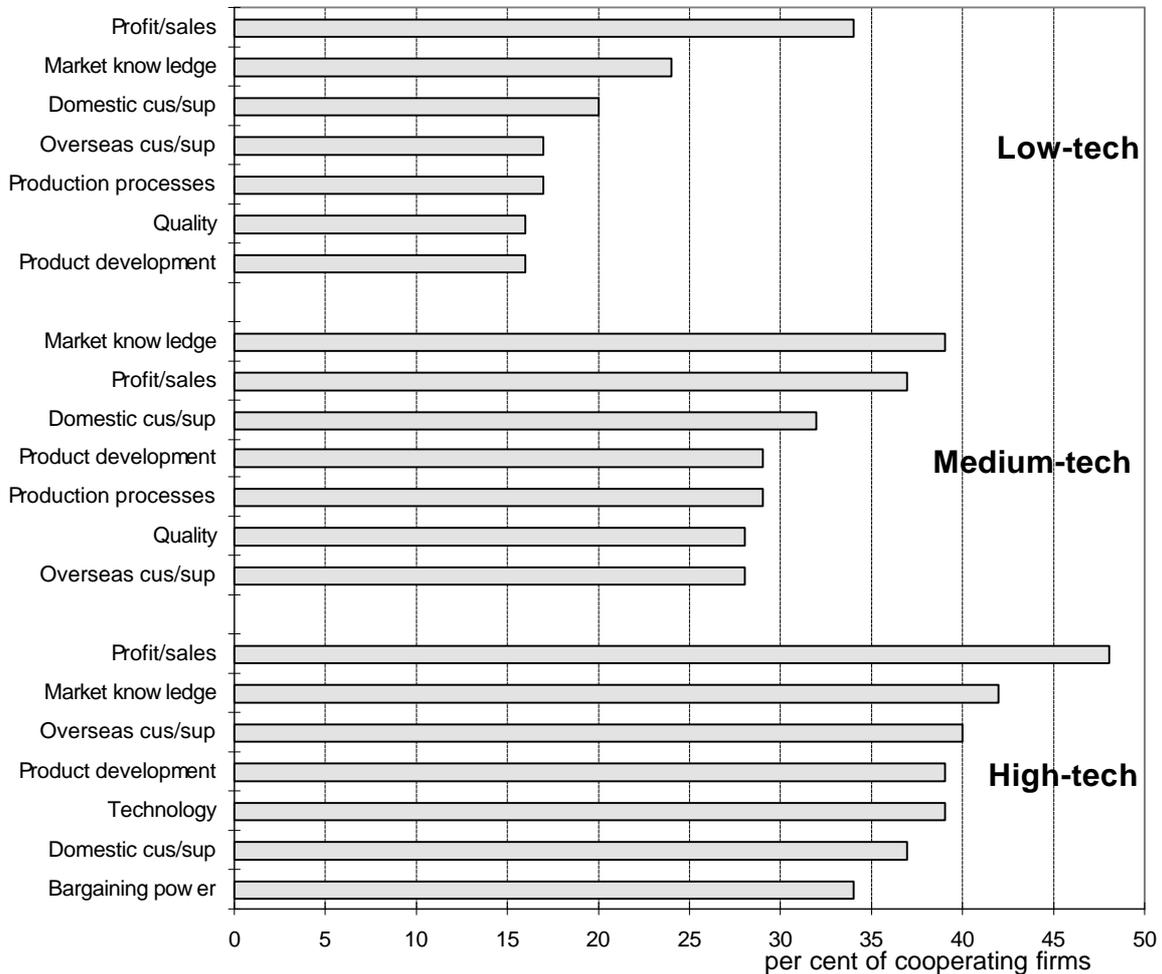
Overall, high-tech firms are benefiting much more from cooperation than medium and low-tech firms (BIs of 39, 28 and 21 respectively). These results are significantly different from the benefits by industry in Section 7.1. This demonstrates the dangers of attributing certain technology levels to particular industries.

High-tech firms are clearly outstanding beneficiaries of inter-firm cooperation. The fact that even their *fifth* most important benefit, product development, is experienced by 39 per cent of firms is a good indicator of the importance of business cooperation to this group of firms.

Virtually half the high-tech firms receive major improvements in profits/sales from their cooperative business arrangements. Market knowledge benefits are also a little above average. The proportion of firms benefiting via new overseas customers or suppliers, access to technology and product development are substantially above average. This indicates that a desire to innovate and keep one step ahead may be one of the major factors underpinning high-tech firms' business cooperation. An example of a firm working closely with its customers to develop its products is shown in Box 7.3.

Low-tech firms do quite well out of cooperation. Just on a third benefit through increased profits/sales. This result in itself is a good one and should not be overlooked. However, there is no disguising the fact that the proportions of firms benefiting for other reasons are below par. The tendency for low-tech firms to deal at arm's length seemingly makes it difficult for business cooperation strategies to gain a foothold.

**Figure 7.6 Major benefits of cooperation, by technology content of firm's product**



BI Low-tech 21  
 BI Med tech 28  
 BI High-tech 39  
 Source: BIE survey

Medium-tech firms, not surprisingly, fall somewhere in the middle. They start off quite well with a good proportion of firms acquiring benefits from market knowledge and increased profits/sales. The other leading benefits are for the most part around the average expected for any firm.

Overall, firms producing high-technology content products are doing very well out of business cooperation. The differences in benefit levels with the other two groups are high and widespread. The extent to which low-tech firms could actually do much better out of cooperation – for example with external assistance – is debatable given such a low Benefit Index (21). The role of external assistance is discussed in Chapter 13.

**Box 7.3 Designing the product for the customer**

*Sastek was established in 1980 with a staff of two and began with a turnover of approximately \$400,000. From its original base in Brisbane, Sastek has grown to a company trading \$9 million in 1994 with a staff in excess of 70 people.*

*Today Sastek is internationally recognised as a leader in the field of data acquisition and information management systems for food processing industries such as abattoirs, fish and poultry processors and smallgoods manufacturers. Its systems are in daily use at over 150 locations in Australia and in such countries as New Zealand, UK and China.*

*The company's strong growth and product development since its inception has been achieved through the cooperation and involvement of Sastek customers in the development of its product range.*

*The company's role has changed in response to customer needs for off-floor software specially designed for the industry. While it continued to develop robust and functional hardware, Sastek, in consultation with its customers, developed a complete suite of software from livestock acquisition and costing through to sales processing, inventory and dispatch which provides the industry with a completely integrated IT system allowing users worldwide to cope with the complexities of today's information requirements.*

*Sastek has always recognised that a 'total customer focus' philosophy is essential to its continued success, and places a high value on customer feedback to its operations.*

Source: BIE interview

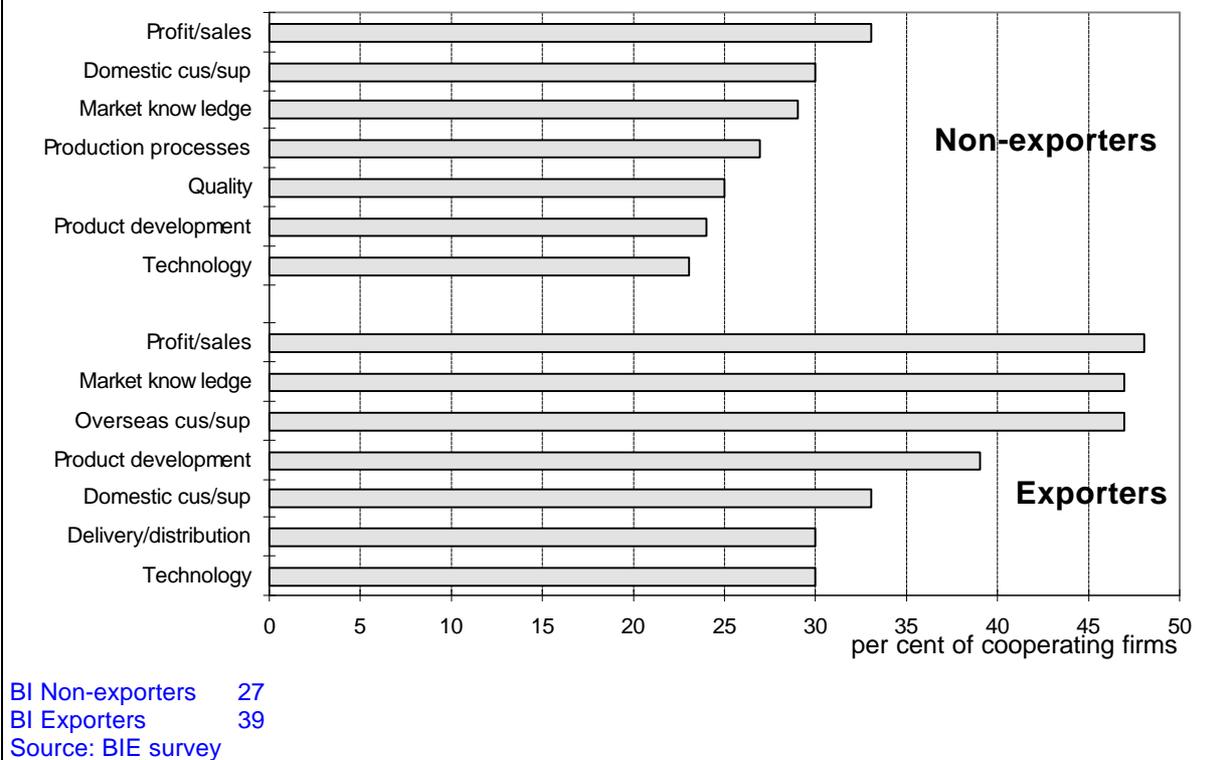
#### **7.1.4 Exporters and non-exporters**

Exporters are generally amongst the most efficient firms in their industries – they must be to stay competitive. They need more than lower costs (and prices) than market rivals. Exporters have to adapt with information and ideas. They have to know their markets and package their products according to customer demands. Tastes, technology and the nature of competing products are fickle. To survive exporters have to access knowledge as much as markets.

The benefits of business cooperation to firms focussed solely on domestic markets provide an interesting comparison both in terms of the things that matter and the extent of these benefits.

Figure 7.7 details the leading benefits of cooperation for exporters and non-exporters. The relatively greater importance of cooperation to exporters is immediately apparent. In fact, exporting firms obtained a higher “score” than domestic focused firms in all but one of the categories.

**Figure 7.7 Major benefits of cooperation for exporters and non-exporters**



Exporters appear to be using business cooperation very effectively to assist their performance. This is achieved more through market-related benefits – new customers/suppliers – than efficiency ones, although the latter still rate as important. The extent to which exporters benefit is very high (BI of 39) and owes much to the proportion of firms benefiting from increased profits/sales, new overseas customers/suppliers and improved market knowledge. Close to 50 per cent of cooperating exporters are achieving major benefits in each of these three areas.

An above average proportion of exporters (39 per cent) are also using business cooperation as an aid to product development. In crude terms this means that approximately 40-50 per cent of exporters are utilising their linkages to become smarter (market knowledge) or better (product development). Both of these are likely to represent spin-offs to a significant degree. For example, an exporter might use a cooperative arrangement to help break into new markets. This in turn leads to acquiring new market intelligence and assists in developing new or better products. Product development, of course, will also sometimes be a major aim of business cooperation.

The appearance of improved delivery/distribution as a leading major benefit for exporters highlights the special ways that business cooperation can help particular firm types<sup>4</sup>. Distribution networks are often vital to the success of products, particularly when trying to gain a foothold in new markets. Linking up with a

<sup>4</sup> It will be recalled that distribution also figured in the leading benefits of firms with overseas cooperative arrangements.

firm 'on the ground' and working together to get the best results can make an enormous difference to export sales. A close relationship with a distributor can also bring benefits in other areas (see Box 7.4).

#### **Box 7.4 Cooperating for an export drive**

*Delta West is a large pharmaceutical company producing human injectibles. Its three major markets are cancer products, general products and respiratory medicine. Delta West exports around 50 per cent of its production.*

*Access to markets is critical to Delta West's export success and is provided through its parent Upjohn and strategic alliances.*

*Its most significant cooperative arrangement is with US firm, Gensia Inc. This arose when Delta West decided to undertake a major export drive and sought a US partner to distribute its products in North America. Delta West looks after the development and manufacture of the product, while Gensia is responsible for product registration, marketing and selling.*

*The arrangement with Gensia involves communication and feedback on how well Delta West's products are received and how distribution and production processes might be improved. It also enables Delta West to keep in touch with new opportunities arising in North America, both in terms of new markets and new alliance partners.*

Source: BIE interview

For non-exporting firms the benefits of business cooperation are different and are certainly lower. Domestic-focused firms have more of a tendency for seeing cooperation as a means for improving production efficiencies, although many still benefit from new domestic customers/suppliers. There is no place for new overseas customers/suppliers or distribution in their leading benefits and these are replaced by improved production processes and improved quality (although it should be pointed out that exporting firms achieve similar levels of benefit for production processes and quality).

The impression left by this data is that domestic-focussed firms are not sufficiently grasping the opportunities created by business cooperation. The comparisons between exporters and non-exporters in the areas of profits, market knowledge and product development are especially revealing. These have been shown to be key benefits of business cooperation in general, but these data reveal the skewing of the general results which is caused by exporters. Take the exporters out of the picture and the probability of firms benefiting in these areas suddenly looks much less rosy.

If non-exporters were to use business cooperation more productively it would not only enhance their individual prospects vis-a-vis other domestic producers, but might ultimately make the firms more competitive against imported products and/or lead to development of their own export potential.

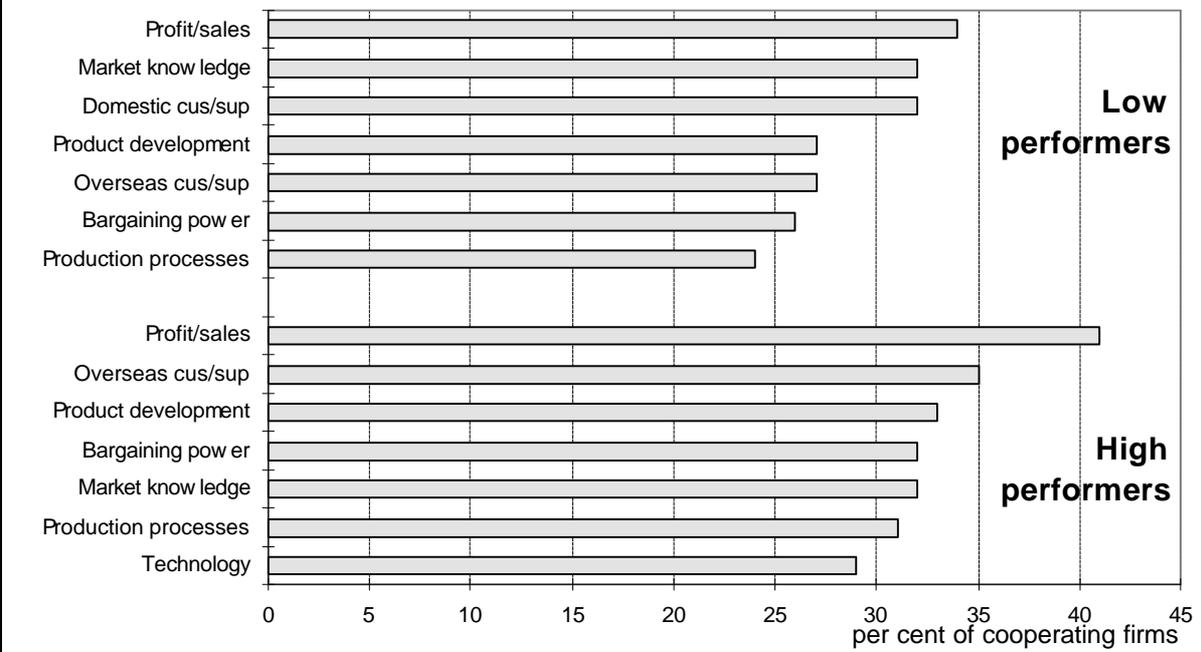
### **7.1.5 High and low performing firms**

Comparing the business cooperation benefits of firms which have experienced vastly differing turnover growth rates over recent years, can potentially provide some clues about the true extent of cooperation's benefits. For example, if firms experiencing negative growth overall can still point to improved sales/profits resulting from their cooperative arrangements this would say a lot about the effectiveness of cooperation as a business strategy.

One thing which cannot be determined with complete accuracy is the causal relationship between business cooperation and high or low turnover growth. Thus a high growth firm obtaining high cooperation benefits cannot be interpreted to mean that business cooperation is the main reason for the firm's strong increase in

sales. In the following analysis, however, there are sufficient clues to explain the nature of the relationship between high/low performers and business cooperation benefits.

**Figure 7.8 Major benefits of cooperation for high and low performing firms**



BI Low performers 29  
 BI High performers 33  
 Source: BIE survey

The leading benefits of the high and low growth firms are shown in Figure 7.8. The high performing firms are benefiting more overall out of business cooperation than the low performers, but only by a relatively small margin. Interestingly, there are no especially large differences in the relative importance of particular benefits, but the high performers tend to do a little better in each case. The biggest difference in fact is only eight percentage points which occurs for new overseas customers/suppliers.

The extent of the benefits obtained by high performing firms is not very impressive in the wider context. The BI of 33 is about average and is well below the levels achieved by exporting firms (BI of 39) and large firms (BI of 40).

One obvious implication of this is that the high sales growth achieved by high performing firms cannot be directly attributed to their cooperative business arrangements. If cooperation was the major cause of high growth, then we would expect to see much higher benefits from links from high growth compared to low growth firms.

So what are the high performers looking for from business cooperation? They apparently do not need it to achieve their impressive short-term growth, but what do they need it for?

The benefits shown in Figure 7.8 suggest a possible link between new overseas customers/suppliers and increased bargaining power, both of which are assisting above average numbers of firms. Maybe there is a plausible innovation story to tell. Product development, improved production processes and access to

technology all feature as leading benefits<sup>5</sup>. Moreover, the above average proportion of firms benefiting from new overseas customers/suppliers also raises the possibility of innovation linked to overseas connections.

A possible hypothesis then is that the high-performing firms view cooperative linkages as mechanisms to assist their medium to long term goals of staying ahead by innovating and being smarter than other firms. In addition, they are seeking to use business cooperation to strategically enhance their market position through greater bargaining power.

The low performing firms contain fairly traditional major benefits in their leading seven. The real story here is the fact that they benefit significantly from business cooperation at a time when overall firm performance is declining. Thus, over 40 per cent of firms experiencing negative growth increased their profits/sales through their cooperative arrangements. This would seem to be a very strong selling point for the merits of cooperation as a business strategy<sup>6</sup>.

### **7.1.6 Product type**

Almost 60 per cent of cooperating firms are final goods producers, 25 per cent are capital goods producers and 15 per cent make intermediate products. Is business cooperation relatively more important for any of these firm types? Do the benefits obtained by capital goods producers have much in common with those obtained by makers of final goods?

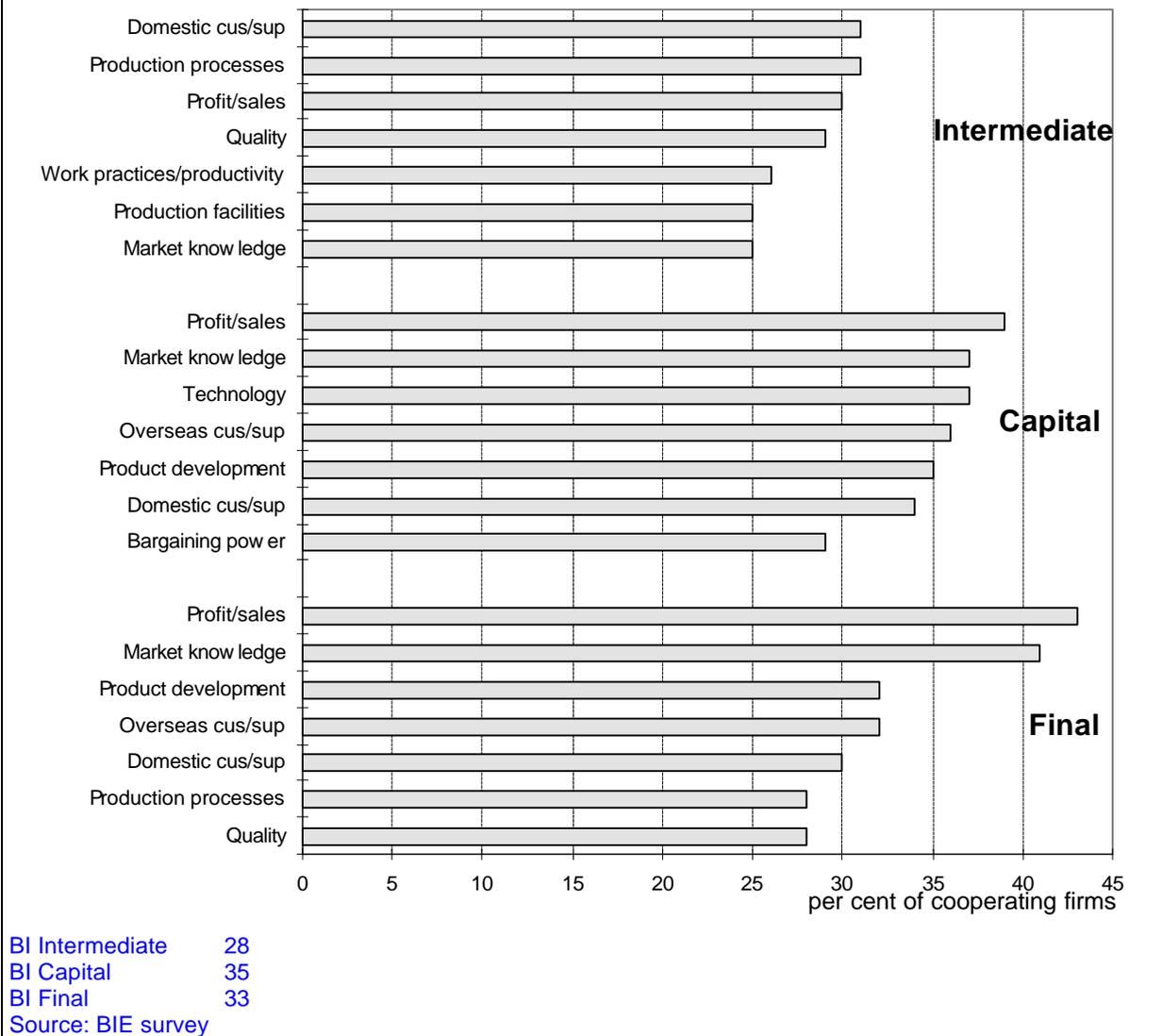
The major benefits obtained by firms in the three product groups are shown in Figure 7.9. In terms of overall benefits, firms producing intermediate goods are a little adrift of the other two groups – BI of 28 compared with 33 for final goods firms and 35 for capital goods producers.

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<sup>5</sup> Although the actual proportion of firms obtaining these benefits are not significantly different from other firm types.

<sup>6</sup> The impact of cooperation on low performers' profits, sales and other performance measures is discussed further in Chapter 9.

**Figure 7.9 Major benefits of cooperation, by firm's product type**



It is unusual to see improved production processes as the most important benefit, but this occurs for firms producing intermediate products (along with new domestic customers/suppliers). These firms are able to increase the efficiency of their production runs by working closely with their linkage partners. By planning ahead with a major preferred customer, for example, a firm is able to accurately predict its target output and its required inputs. The certainty of demand allows for reduced inefficiencies in the production process.

The inclusion of improved works practices/productivity and access to production facilities in the top seven major benefits of intermediate goods producers is also unusual when compared to most other linkage types.

The clear conclusion is that these firms are using business cooperation to assist with the operational side of their business activities. Containing costs and improving operational efficiency seems much more important to them overall than market opportunities and demand.

There has to be a question mark on why more intermediate goods producers cannot obtain major benefits from cooperation. However, this might be difficult in view of the benefits of most interest to them.

Compared to the ‘average’ cooperating firm, intermediate goods producers are in fact more likely to benefit from improved work practices/productivity and access to production facilities.

The major benefits for final goods producers (which account for almost 60 per cent of all cooperating firms) are the same as for the ‘average’ firm, although there are some variations in rankings and scores. Both profits/sales and market knowledge are a little above average, leaving a large gap to the third most important benefit, new overseas customers/suppliers. The differences in the profits/sales and market knowledge benefits between final product and intermediate product firms is quite substantial, but again reflects differences in their fundamental reasons for forming linkages.

The third group, capital goods producers, are the most likely, on average, to benefit from business cooperation. A very consistent 34 per cent to 39 per cent of firms obtain the six leading benefits. Significantly, technology access is the second most important benefit and is 11 percentage points higher than the average for all firm types. The above average benefits which also occur for new overseas customers/suppliers suggests there may well be an overseas supplier-technology connection.

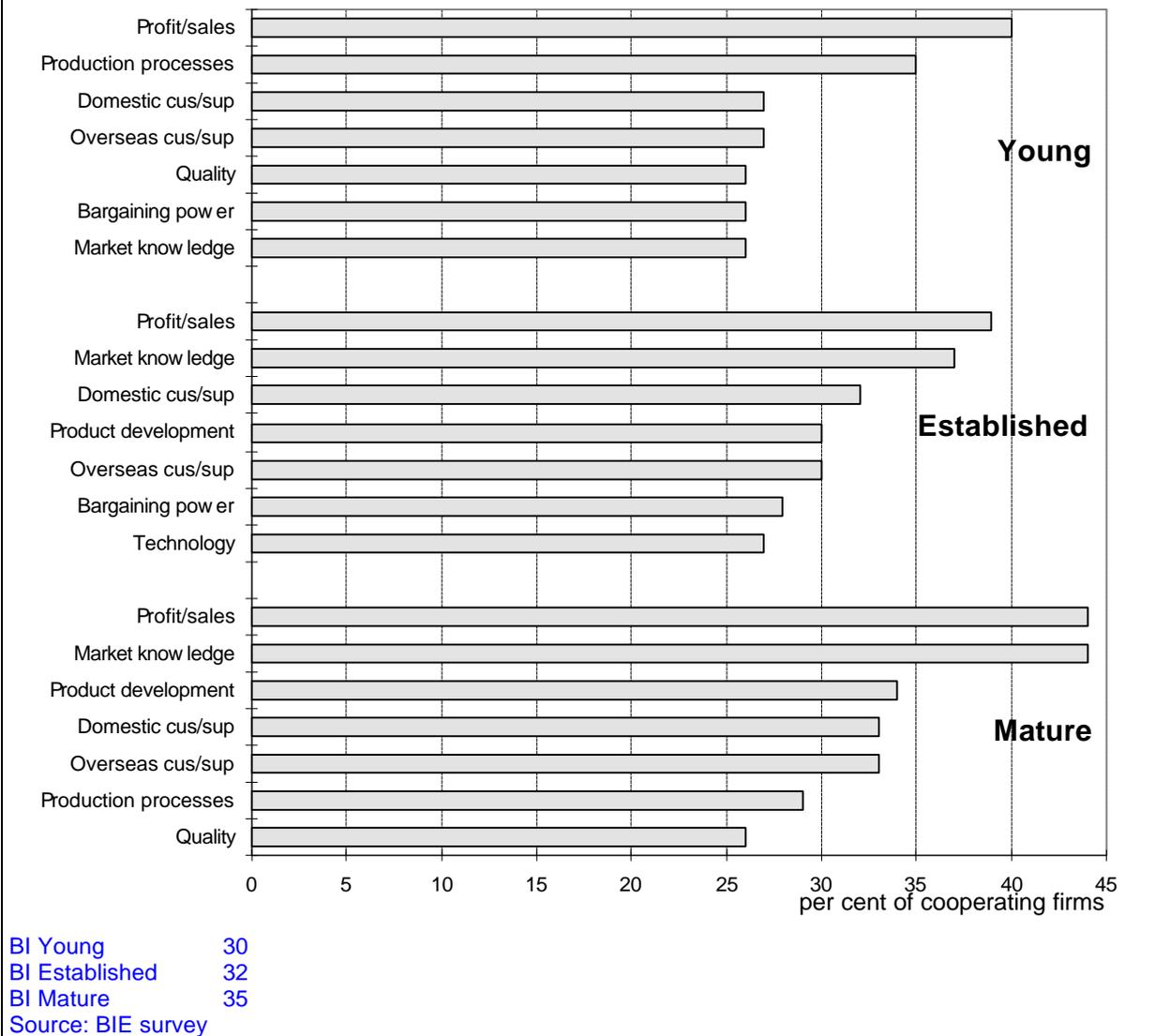
Cooperating capital goods producers are the most likely to benefit from product development. This appeals to common sense, given the critical importance and generally high value of these items. Capital goods, by definition, are usually elaborate and require careful design and production. Firms in the industry can benefit by working closely in developing new products with both their customers and suppliers.

### **7.1.7 Age of firm**

Do the benefits of business cooperation differ according to the age of the firms involved?

Figure 7.10 reveals that mature firms are likely to benefit the most from cooperation and young firms the least. Established firms in the 6-24 age group, which account for the largest proportion of surveyed firms, sit close to the middle of the two extremes.

**Figure 7.10 Major benefits of cooperation, by age of firm**



The oldest firms have the standard types in their leading benefits, with the top five ‘scores’ being slightly above average. However, only market knowledge is significantly different from the average. The benefits for the established firms contain nothing remarkable vis-a-vis other cooperating firms.

It would seem that young firms are less likely to regard their linkages as a means of accessing new customers and suppliers, or indeed as a means of improving the nature of their products. Market knowledge benefits are also unremarkable. However new firms are apparently using business cooperation to gather knowledge in other ways, as is shown by the 35 per cent which obtain major benefits from improved production processes.

This suggests that in their early years firms are more focussed on developing linkages to produce as efficiently as possible. Once they have established themselves and have entrenched their basic cost and price competitiveness, they then go on to use linkages to try and lift performance by learning more about their markets and by competing more on the basis of product characteristics.

None of the age groups have a particular bent towards using business cooperation to find new overseas customers and/or suppliers. Again, the older firms are the more likely to benefit in this way, but the differences with other aged firms are not particularly significant.

Does technology access vary with firms at different stages of their development? We found virtually no variation in benefit at all between firms in the three age groups.

### **7.1.8 Other firm characteristics**

Two other firm characteristics were available for testing the significance of benefits. The first, *ownership*, could not be used because 80 per cent of respondent cooperating firms are Australian private companies, and the rest a combination of Australian public companies, unincorporated firms and foreign-owned companies and their subsidiaries. With such a large proportion of firms in one group and the remainder scattered around various groups, we had insufficient data to make valid comparisons.

We also looked at how benefits varied with the *level of competition*. Only small variations showed up. There was a slight tendency for firms in highly competitive markets to obtain bigger benefits than those in less competitive markets. But most firms said they worked in highly competitive environments – so the results are a bit rubbery. A better proxy for competition might be firms with a high costs constraint – this is considered in Section 7.4.

## **7.2 Competitive advantages**

In Chapter 4, we compared competitive advantages for cooperating and non-cooperating firms to test whether any particular advantage increased the likelihood of business cooperation.

This section develops further the notion that competitive advantages help to explain why firms become involved in cooperative business arrangements and obtain differing benefits.

The relationship between a firm's competitive advantages and its benefits from cooperation could potentially work in either direction. On the one hand, a firm's competitive advantages may be considered as fairly stable and remain unaffected as a result of business cooperation. In this case, the cooperation benefits are in a sense driven by existing competitive advantages. Alternatively, situations could arise where specific cooperative arrangements *create* a firm's competitive advantages.

In the former case, it could be argued that firms are entering cooperative arrangements primarily to enhance or strengthen *existing* competitive advantages. For example, a high-tech firm with a competitive advantage in technology and ideas might form an arrangement to help increase its competitive edge in the area it does best and accordingly obtains significant technology benefits.

In the latter case firms identify gaps or weaknesses in their competitive advantages. They then engage in business cooperation to obtain benefits to help plug those gaps. For example, a highly innovative firm might cooperate to help overcome a weakness in marketing its products. In time, this may give the firm a competitive advantage in marketing.

Face-to-face interviews with firms suggested that firms mainly have stable competitive advantages and that competitive advantages are generally not created as a result of business cooperation. In none of the 40 firms interviewed has a cooperative business arrangement actually created a new enduring competitive advantage

for the firm. On the contrary, the clear message from firms is that they know where their strengths are. They use cooperative arrangements to help them get better or stay ahead in those areas.

### **7.2.1 *Leading competitive advantages***

The two most common competitive advantages of cooperating firms are product quality and flexibility in meeting customer needs, with 61 per cent and 52 per cent of cooperating firms respectively including these two in their top three competitive advantages. The next two most important competitive advantages for cooperating firms are workforce skills (32 per cent) and prestigious brand/good reputation (30 per cent). The remainder range from marketing (8 per cent of cooperating firms) to technology (20 per cent).

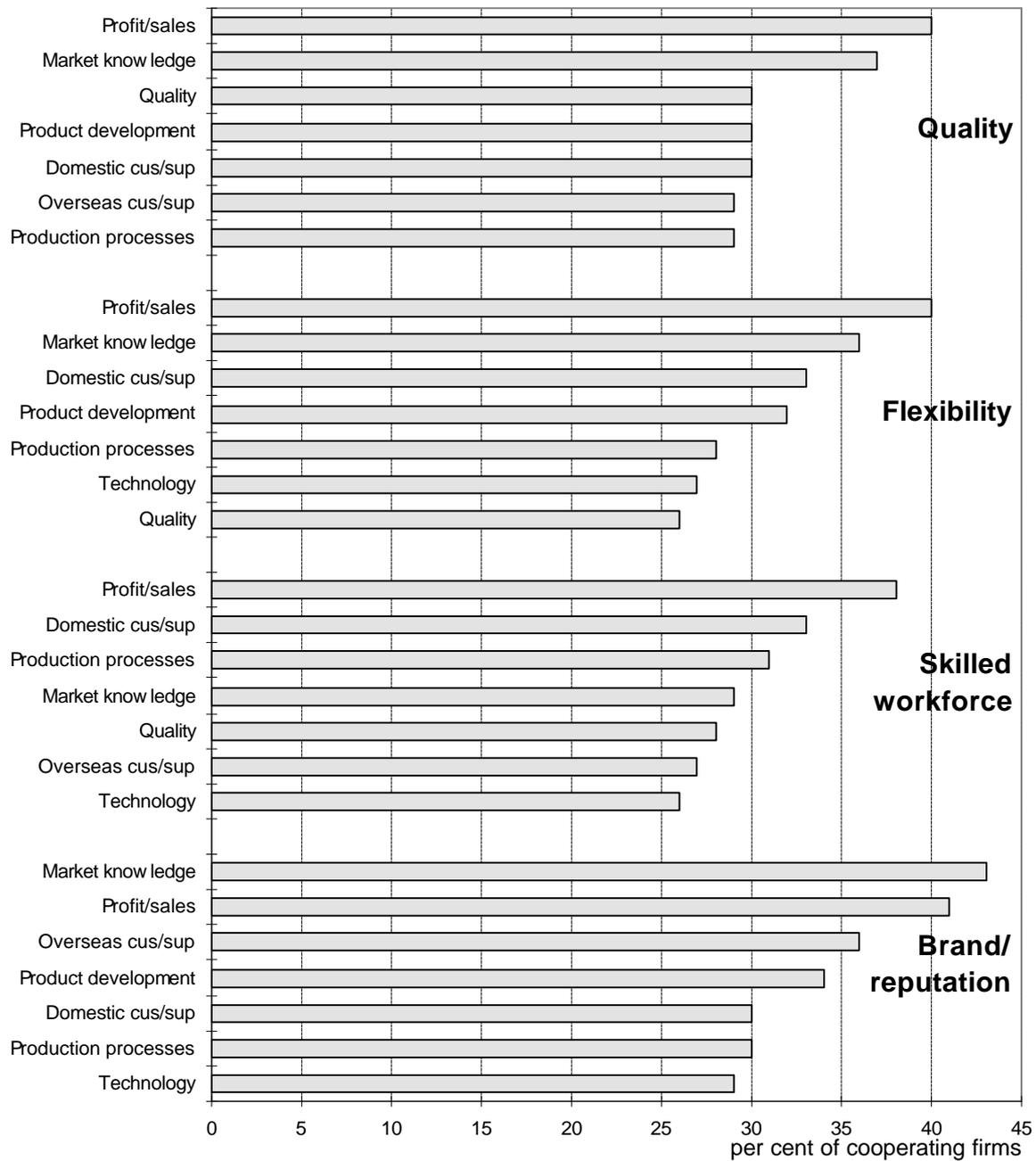
The major benefits associated with the four most common competitive advantages tend to reflect the benefit types associated with the average firm, which is to be expected in view of the relatively large number of firms which possess one or more of these advantages (Figure 7.11).

Both product quality and meeting customer needs are fairly standard in terms of leading benefits and their BIs (32 per cent being the same as the average firm). However, both firm types are noteworthy in some respects.

For the product quality firms, improved quality ranks a little higher than usual, suggesting that firms with a perceived product quality advantage can still obtain important quality benefits from their participation in business cooperation.

More significant perhaps is the absence of new overseas customer/suppliers as a leading cooperation benefit for the latter group of firms. These firms, which apparently place a great emphasis on meeting the demands of their customers, are no more likely than the average firm to use their cooperative arrangements to gain new customers (or suppliers) overseas.

**Figure 7.11 Major benefits of cooperation for firms with the leading four competitive advantages**



BI Quality 32  
 BI Flexibility 32  
 BI Skilled workforce 30  
 BI Brand/reputation 35  
 Source: BIE survey

Developing new overseas customers or suppliers is important to firms claiming to have a competitive advantage due to a prestigious brand name or good reputation; over one-third of these firms benefit in this

way from business cooperation. A possible common scenario in this case might be one of firms which have built up a good name in the domestic market turning to overseas distributors to help them forge new export markets.

Firms relying significantly on their reputation for their competitive edge are also noticeable for obtaining above average benefits in product development. This is not by as much as might have been expected given the importance these firms attach to the characteristics of their products. On the other hand, this group of cooperating firms tended to obtain large benefits from increased market knowledge – the intelligence on rival brands and feedback on their own products might be alternative ways of improving their products. Box 7.5 provides an example of a firm obtaining an opportunity for cooperation through its good reputation.

#### **Box 7.5 Good reputation attracts cooperation**

*Machine Technology produces a range of low-technology goods including metal components and tooling and has a turnover of around \$1 million solely from domestic operations.*

*In an intensely competitive market Machine Technology's good reputation resulted in their being contracted as a preferred supplier of a major telecommunications company. This position allows them to provide inputs of high and improving quality, as well as fast delivery, at a highly competitive price.*

*This formal arrangement has given Machine Technology many advantages. As the number of preferred suppliers is restricted they are provided with a feeling of security. This has driven a willingness to try new things and prepare for orders that are expected to be placed.*

Source: BIE interview

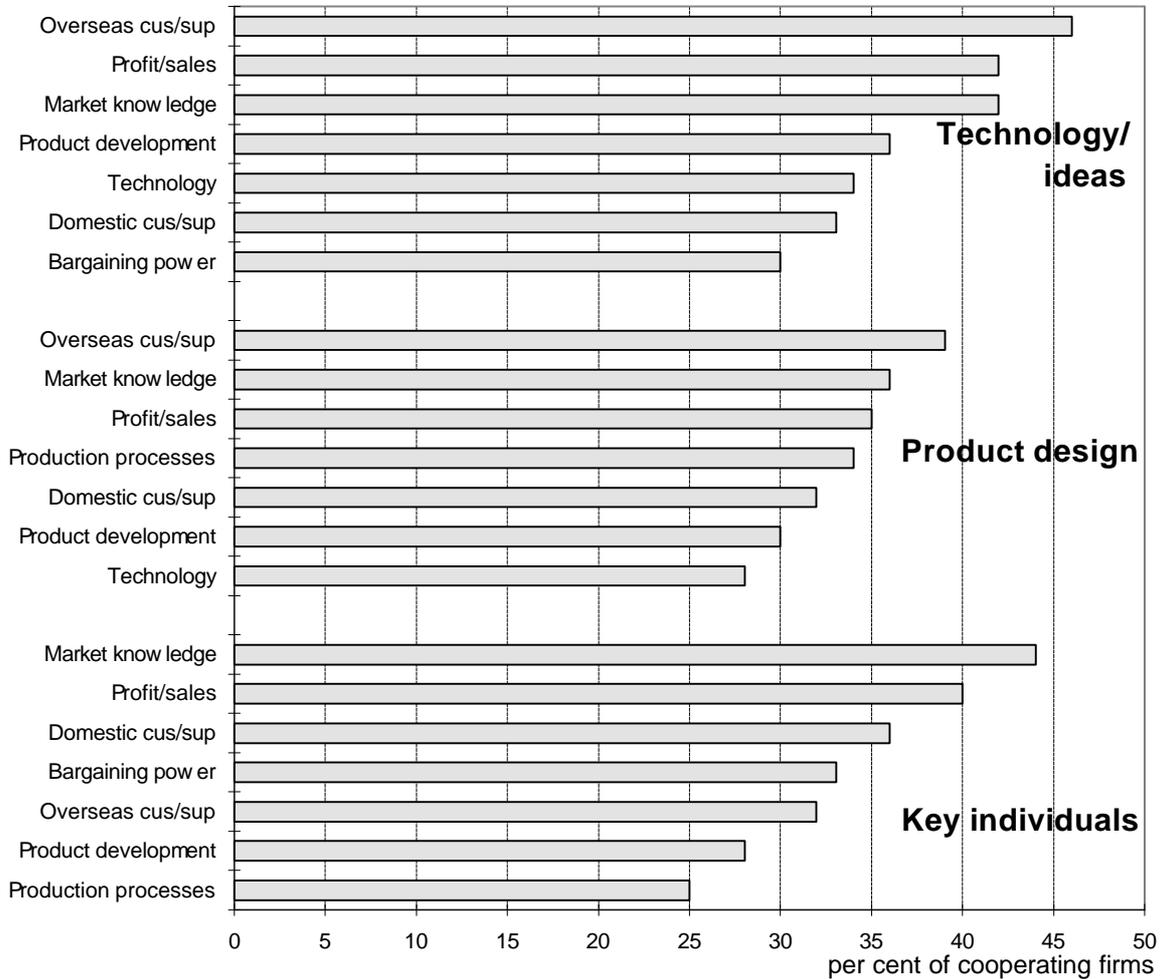
### **7.2.2 Tendency to cooperate and competitive advantages**

In Chapter 4 we found that firms involved in cooperative business arrangements are more likely to have competitive advantages in three major areas; namely, technology/good ideas, product design and key individuals<sup>7</sup>. The benefits from cooperation for firms listing these factors as major competitive advantages are shown in Figure 7.12.

Both technology/ideas and product design imply a strong reliance on innovation as a means of keeping firms ahead in the competitiveness stakes. Firms listing these factors as their competitive advantages are basically saying that they are looking to new technology, new ideas and new or improved products to give them an edge over their competitors.

<sup>7</sup> “Cooperative arrangements in which your firm is involved” was also found to be significant, but as only 20 cooperating firms listed this as a major competitive advantage it was not possible to examine the associated benefits.

**Figure 7.12 Major benefits of cooperation associated with the competitive advantages of firms with the greatest tendency to cooperate**



BI Technology/ideas 38  
 BI Product design 33  
 BI Key individuals 34  
 Source: BIE survey

In this regard it is notable that firms with technology/ideas and product design as their major competitive advantages are placing a strong reliance on business cooperation to find new overseas markets or new overseas suppliers. New overseas customers/suppliers is the most important cooperation benefit for both these firm types. Benefits from technology access and product development are also relatively high in firms with technology as a competitive advantage.

One implication would seem to be that these firms are entering cooperative business arrangements to fortify and further enhance their positions as innovators and are looking to business cooperation to develop their overseas markets and/or form strategic alliances with suppliers. In a few cases it is possible that the direction of causation may flow the other way. For example, firms which are licensing technology from an overseas firm as part of a cooperative arrangement may have created their technological advantage. Overall, the 20

per cent of cooperating firms competing on the basis of technology/ideas are apparently significant beneficiaries of business cooperation (BI of 38).

The 'product design' firms are fairly average cooperation beneficiaries overall (BI of 33) and present mixed signals on whether cooperation is being used to strengthen their competitive advantage. The relatively high proportion of firms benefiting from improved production processes suggests that working more closely with customers on design aspects may be paying dividends in the overall scheme of production planning and operations. At the same time, the score for benefits from product development is only average. This may indicate that these firms are not especially interested in forming cooperative arrangements to find *ideas* to assist in maintaining or improving their key competitive advantage.

Firms which derive a major competitive advantage by having important, or key, individuals are likely to benefit most from cooperation by acquiring market knowledge<sup>8</sup>.

## 7.3 Performance constraints

In looking at the effects of business cooperation it is interesting to see if there are any apparent relationships between benefits and specific performance constraints of different firms. Are firms able to directly address through cooperation the factors inhibiting their prospects, or do they use cooperative arrangements more generally to try and lift overall performance?

All but one (inadequate marketing skills) of the eight performance constraints listed on the survey form have equivalent categories under the cooperation benefits section of the survey. Accordingly, it is possible to observe how the results of cooperation match up against the perceived inhibiting factors<sup>9</sup>.

### 7.3.1 The key performance constraints

The four most important performance constraints for cooperating firms, as identified in Chapter 4, are high costs, access to finance, a lack of domestic markets and labour skills. The major benefits associated with the firms nominating these constraints are shown in Figure 7.13.

Firms with high costs as a performance constraint can be reasonably expected to be operating in highly competitive markets. So how does business cooperation assist these firms? The benefits for firms with high costs are in fact fairly unremarkable, save for a slightly higher than average rating for improved production processes. If these firms were becoming involved in cooperative arrangements to gain a competitive edge by *specifically* addressing operational efficiency issues, they might be expected to have above average proportions benefiting from both improved production processes and improved productivity/work practices. However, this is not the case and it seems that firms with cost constraints benefit from cooperation in much the same way as the average firm.

Access to finance is interesting because it is the only constraint that is significantly more likely in cooperating firms vis-a-vis non-cooperating firms. The lack of funds to expand, to tap into new markets and

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<sup>8</sup> This person (or persons) might be the owner/manager, a manager of a key division of the firm or even a chief researcher or scientist.

<sup>9</sup> There might be a difficulty in this approach in cases where cooperative arrangements have been formed to overcome problems which, as a result, are no longer constraints on firm performance. This, however, is unlikely to be common.

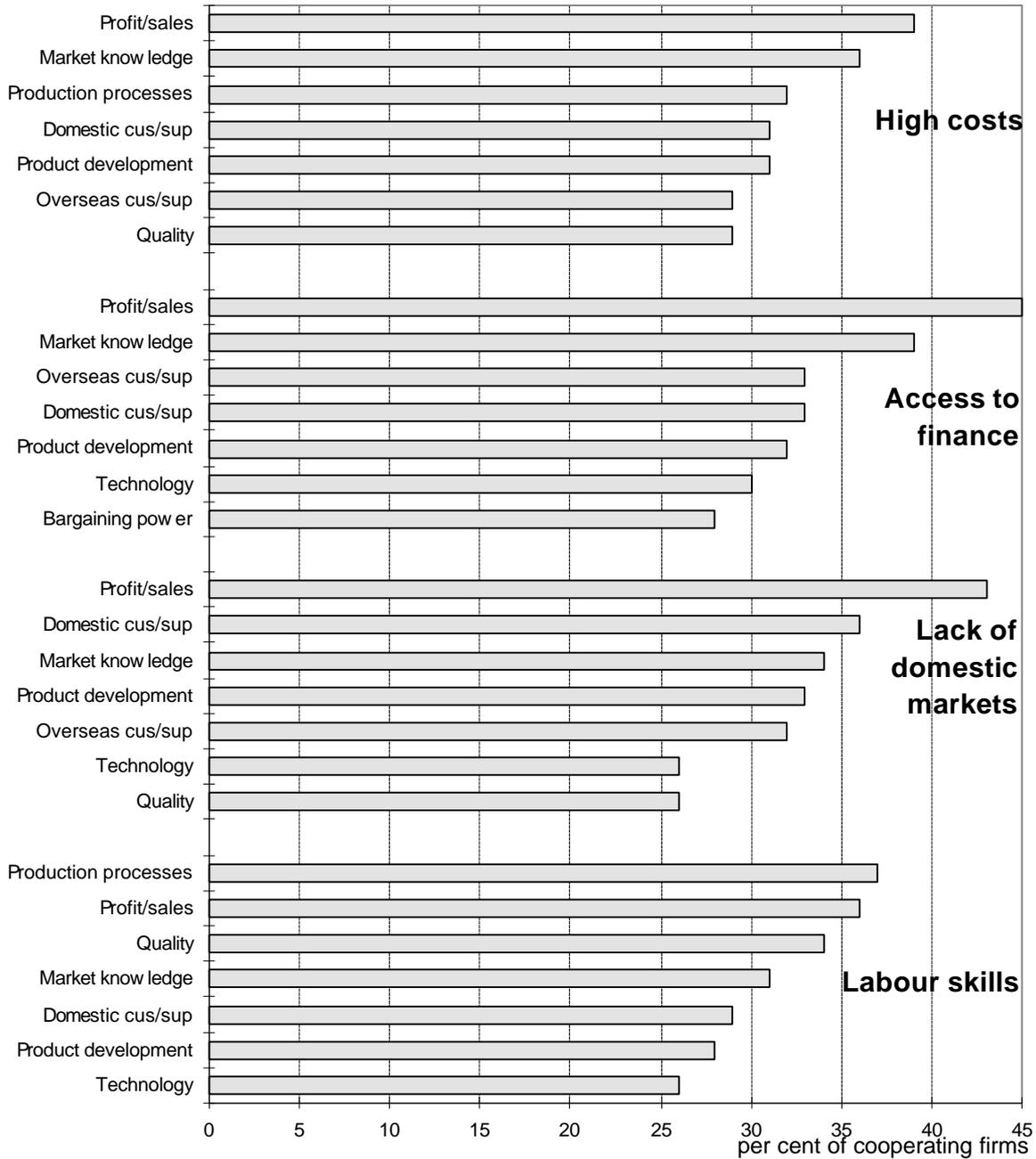
even to innovate are apparently being overcome somewhat through entering cooperative arrangements with other firms. At least one-third of these firms are benefiting from new customers/suppliers at home and abroad and approaching one-half are increasing their turnover/profits. Product development also benefits around one-third of the firms.

Interestingly, money-strapped firms are clearly *not* benefiting directly by accessing finance through their cooperative arrangements. Only 14 per cent of firms received major benefits from access to financial resources as a result of cooperation, which is only slightly above what might be expected from the average firm.

Firms constrained by lack of domestic markets are to some extent addressing this problem through their business cooperation activities. Around 36 per cent of these firms are finding new customers (and/or suppliers) in local markets as a consequence of cooperation. This benefit is second only to increased profits/sales (43 per cent). The proportion of firms receiving other benefits are around average firm levels.

The group of firms facing a shortage of labour skills are also apparently confronting aspects of this problem by cooperating with other firms. It seems that an above average proportion of these firms are trying to mitigate skilled labour problems by working closely with other firms to improve their production processes. This could involve a number of activities such as shared production activities.

**Figure 7.13 Major benefits of cooperation for firms with the four most important performance constraints**



BI High costs 32  
 BI Access to finance 34  
 BI Lack of domestic markets 33  
 BI Labour skills 32  
 Source: BIE survey

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## 7.4 Summary

All firm types, whether large or small, high or low-tech, young or old, can benefit from business cooperation. There is nothing in the data to suggest that firms with certain characteristics are unsuitable for cooperation. The interesting questions relate to the type of firms *most* likely to benefit overall and the degree to which specific kinds of benefit vary between firms.

A key finding is the strong relationship between firms with the greatest tendency to form cooperative arrangements (see Chapter 4) and the firms most likely to benefit from their cooperative activities. Thus, large firms, high-tech firms and exporting firms benefit the most, and IT&T and Scientific and medical firms do the best on an industry basis. The results of modelling confirm that firms with a high reliance on exports have a relatively higher likelihood of benefiting from their cooperative linkages.

What might explain this relationship between the tendency to cooperate and benefits? It seems likely to be due to a combination of intensity and commitment. Firms which tend to cooperate the most are likely to have a greater number of cooperative arrangements in operation, and therefore a greater chance of obtaining benefits (and a wider spread of benefits). These firms are also more likely to see forming linkages as a strategic management tool and an important part of conducting business. They will devote considerable time and resources to cooperative activities. Accordingly they have a greater commitment and desire to achieve the best outcomes.

All this is not to say, of course, that other firm types do poorly out of business cooperation – they are just *less* likely to succeed. Thus the differences between the two groups of firms, while significant, should not be exaggerated.

The results presented in this chapter indicate that the firms most likely to benefit from cooperation, tend to do so more through market-related activities than operational procedures. For these firms, in fact, the leading four benefits are the same – increased profits/sales, market knowledge, new overseas customers and suppliers and product development. This can be encapsulated by saying that the type of firms most likely to benefit from cooperation do so through an overseas focus and through better and improved products.

For the other firms, a majority still rate increased profits/sales, market knowledge and new domestic or overseas customers/suppliers in the top three benefits. But some apparently place a greater emphasis on the efficiency-improving aspects of business cooperation. Improved production processes, for example, are leading benefits for Clothing and footwear firms, young firms and for firms producing intermediate products.

Clothing and footwear firms rate improved production processes as their most important cooperation benefit and also have other operational benefits – improved quality and improved work practices/productivity – as leading benefits. Young firms are apparently more focused on forming linkages to assist with operational procedures – to be competitive by producing as efficiently as possible. Once they are established and have entrenched cost and price competitiveness they are then more likely to use linkages to learn more about their markets and to assist with innovation.

Firms are apparently forming cooperative arrangements to build on their competitive advantages. The clear message is that they know where their strengths lie and are using cooperative arrangements to help them get better or stay ahead in these areas. There is also some evidence that firms are using business cooperation to address specific constraints on their overall performance, such as lack of markets and technology requirements.

In the previous chapter we raised the issue of some benefits of cooperation being anticipated and others being unexpected spin-offs. The extent to which the benefits accruing to different firm types are anticipated is difficult to measure. However, the face-to-face interviews indicate that just about all firms receive spin-off benefits from their cooperative arrangements. Improved production processes, market knowledge, product development and improved quality are the most significant of these.



## 8 Benefits and different forms of cooperation

This chapter considers the benefits obtained by firms involved in different forms of cooperative arrangement (following the format of Chapter 5). The forms of arrangement are classified by intensity (amount, number of partners in arrangements, the formality of arrangements) and by the nature of the partner firms – whether these are customers, suppliers or other firms, or whether they are overseas or domestic partners.

In estimating the benefits flowing from particular arrangements, it is sometimes difficult to be sure about true causes and effects. For example, it is impossible to isolate the benefits obtained by firms from their customer arrangements if they also have supplier arrangements. But if we are to correctly ascribe certain benefits to a particular form of linkage we need to be sure the effects of other forms are excluded.

This problem has been approached by focusing the analysis on firms with exclusive arrangements<sup>1</sup>. For example, to find out about the benefits of cooperating with customers, we examine those firms which *only* have customer arrangements (there is no cooperation with suppliers or other firms to confuse the issue). The same approach is then adopted for a second group of firms with exclusive supplier arrangements and a third group which only have arrangements with ‘other’ firms. Finally, a fourth group exists which is made up of firms which have some form of combination of arrangements; for example, an arrangement with both a supplier and a customer.

The assessment of the benefits associated with different types of business cooperation is structured as follows. Section 8.1 reports and analyses how benefits vary with the intensity of cooperative arrangements. Section 8.2 discusses the effect of different linkage ‘partners’ on cooperation benefits. In Section 8.3, the relevance of different linkage partners to cooperation benefits is extended to certain characteristics of partner firms in the ‘key’ cooperative arrangement (which is discussed more fully in Chapter 9). Section 8.4 briefly looks at the results of modelling the benefits data for both types of cooperative arrangement and firm characteristics. Section 8.5 presents a summary of the chapter.

### 8.1 Benefits and the intensity of the arrangements

In Chapter 5, we assessed the ‘intensity’ of a firm’s business cooperation activities according to three criteria – the number of cooperative arrangements the firm has, its tendency to cooperate on the basis of one-to-one or multi-firm arrangements and its preference for formal or informal arrangements. The benefits associated with these different degrees of cooperation intensity are considered in turn below.

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<sup>1</sup> The exception to this approach in this chapter is for firms with overseas and domestic arrangements. Due to the format of the survey form it was not possible to ascertain which firms had arrangements solely with overseas partners.

### **8.1.1 Number of arrangements**

If inter-firm cooperation is generally beneficial, a reasonable hypothesis would be that firms involved in at least two arrangements (for example, one with a customer and one with a supplier) might benefit more than firms with only one arrangement. On the other hand, a firm with only one arrangement, but one of great strategic importance, could be expected to bring in larger returns than a firm with two or three minor linkages. Clearly, quality as well as quantity is a factor in determining the overall benefits of inter-firm cooperation.

According to the survey results, those cooperating firms with five to ten<sup>2</sup> arrangements are benefiting the most from their inter-firm linkages (Figure 8.1). These firms score 37 on the Benefit Index<sup>3</sup> (or BI), compared to a BI of 33 for firms with two to four arrangements and a BI of only 26 for firms with single arrangements.

Firms with large numbers of arrangements obtain higher levels of benefits in all categories except for quality and improved production processes. In particular these firms realise many more benefits from new domestic customers or suppliers than firms with fewer arrangements. The rungs on this ladder of benefits are set wide. Thus, 41 per cent of firms with five to ten arrangements access new markets or suppliers. This falls to 30 per cent for firms with two to four arrangements and 22 per cent for firms with only one arrangement. Firms with many arrangements are also much more likely to benefit from product development and market knowledge.

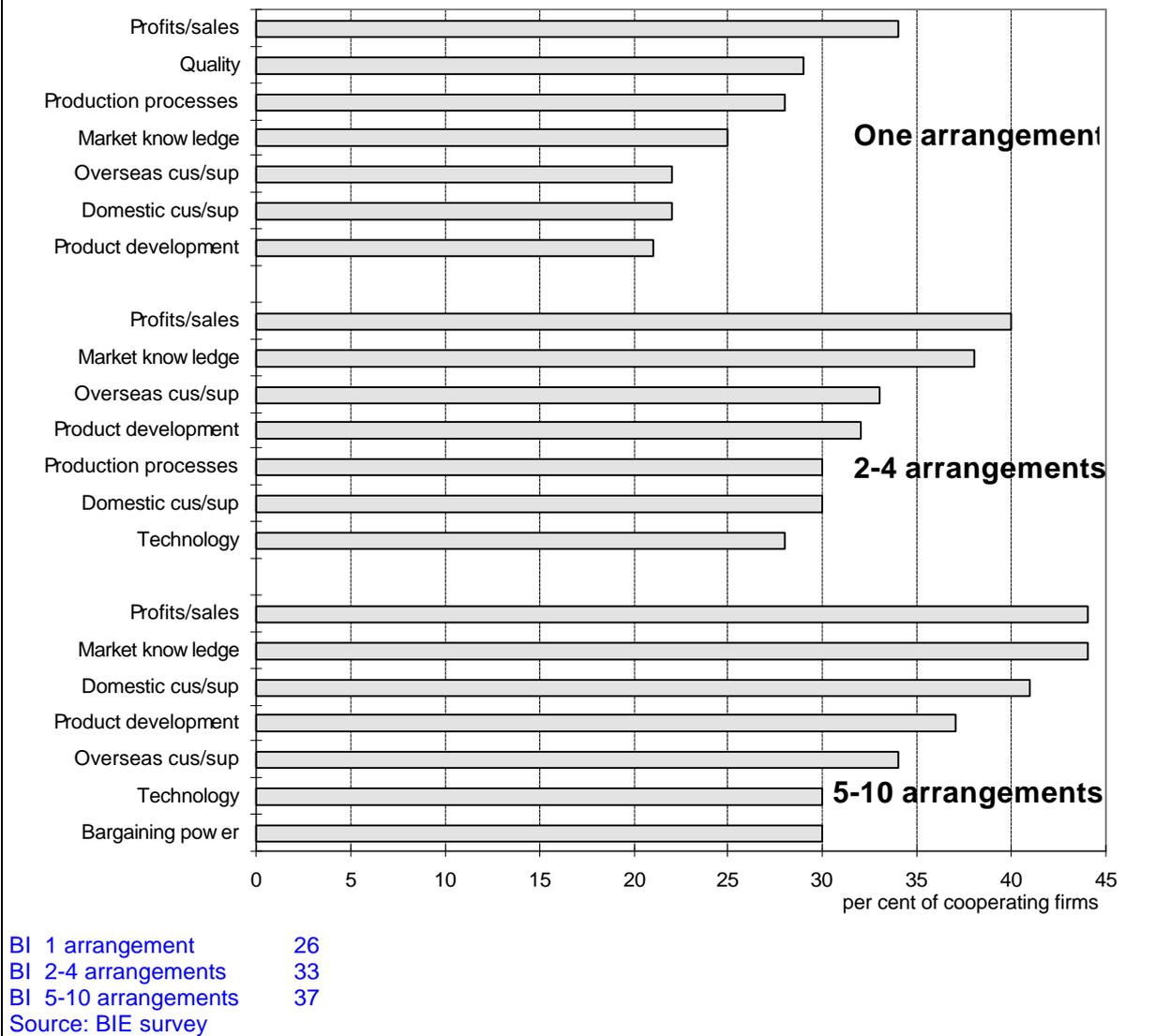
Overall it is hard to avoid the conclusion that firms with just one linkage may be disadvantaging themselves by not forming further arrangements. The high level of importance these firms place on improved quality and improved production processes suggests a somewhat 'limited vision' of what they wish to achieve out of inter-firm cooperation. This would be consistent with firms fairly new to special relationships finding their way cautiously and looking for limited benefits in key areas.

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<sup>2</sup> As discussed in Chapter 5, those firms with more than ten arrangements have been excluded from this analysis as there is some doubt as to the accuracy of these numbers.

<sup>3</sup> See Section 6.1.3 for an explanation of the 'Benefit Index'.

**Figure 8.1 Major benefits of cooperation, by number of arrangements**



That the level of benefits increases with the number of arrangements could be explained by the point that the more arrangements a firm has, the more opportunity it has to obtain benefits across a diverse range. In one arrangement it might achieve major market knowledge benefits, for example, and in another it might obtain significant new overseas markets. When its linkages are aggregated, the firm is seen to do well over a number of areas. Box 8.1 highlights the advantages of having many cooperative arrangements, including the likelihood of receiving spin-off benefits.

A more intriguing explanation for some firms might be that they gain the same types of major benefits from each of their linkages, but get a higher degree of benefit due to economies of scale and scope. The more they cooperate, the more they learn and the more they benefit.

**Box 8.1 More arrangements, more benefits**

*Linkages are often vital to firms in the IT&T industry. Security Domain, a small Sydney company, has forged a number of cooperative arrangements since it was formed in 1989.*

*Security Domain undertakes R&D in smart card technology as applied in information security, EDI and telecommunications. It also offers consultancy, training and application development services. From its earliest days the company has had a strategy to form numerous alliances, recognising that the industry is too complex and dynamic for one small firm to try and succeed single-handed.*

*Two of Security Domain's key linkages are with local telecommunications company, Telstra, and the French smart card manufacturer, Gemplus. It also has cooperative arrangements with P&O Holidays, Intellect Australia and Zergo Limited.*

*Security Domain benefits widely from its multiple arrangements. Critical benefits have been product development (Telstra) and overseas distribution (Gemplus). It has also gained vital knowledge of the industry and of domestic and overseas markets. Other major benefits have been obtaining new customers, technology transfer and access to financial resources.*

Source: BIE interview

### **8.1.2 Number of partners in the arrangement**

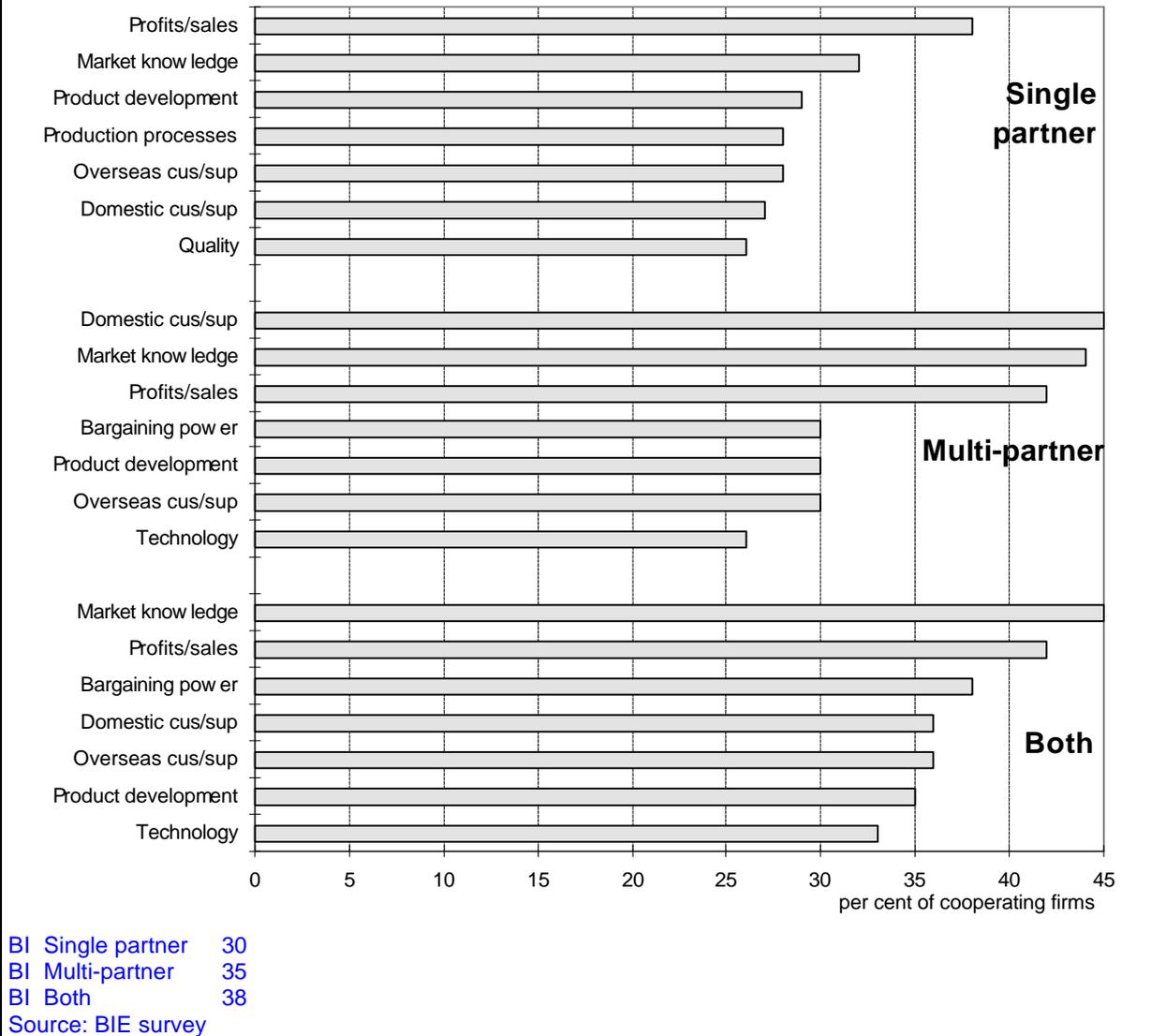
A firm in a network-type relationship with at least two other firms may be more focussed on the prospective benefits as it has almost certainly gone to more trouble to form and maintain such an arrangement. In addition, arrangements involving at least three firms have generally been put together with a very specific objective and corresponding benefits in mind. On the other hand, there may be special benefits from single partner arrangements because of the closeness of the relationship.

Two-thirds of cooperating firms in the survey have single partner arrangements (and no multi-partner arrangements), 13 per cent have multi-partner arrangements (and no single partner arrangements), and the remaining 20 per cent have a combination of single and multi-partner arrangements.

The benefits resulting from the two types of arrangement are shown in Figure 8.2. One-to-one linkages appear to provide lower benefits overall than multi-firm linkages. Firms are better off cooperating exclusively by means of networks, but even better off with a combination of networks and one-to-one linkages. In the latter case, it seems they get the best of both worlds; the close working relationships and the focus on results. Another explanation could be that benefits are higher for firms with combined arrangements simply because they may have more arrangements (they must have at least two).

The leading benefits for firms in multi-partner arrangements are new domestic customers/suppliers and market knowledge. The proportion of firms benefiting is much higher than for one-to-one arrangements. For example, whereas almost half of the firms in networks access new domestic markets or suppliers, only around one quarter of the firms in single-partner linkages obtain this benefit. However, benefits relating to profits, new overseas customers/suppliers and product development are similar.

**Figure 8.2 Major benefits of cooperation, by number of partners in arrangement**



There are two differences in the leading benefits of the two groups. Single-partner arrangements are more likely to result in improved production processes and have a slight edge with regards to quality. On the other side, firms in multi-partner arrangements benefit greatly from strengthening their bargaining power (30 per cent compared with 21 per cent in single-partner relationships) and are more able to access technology as a result of their linkages.

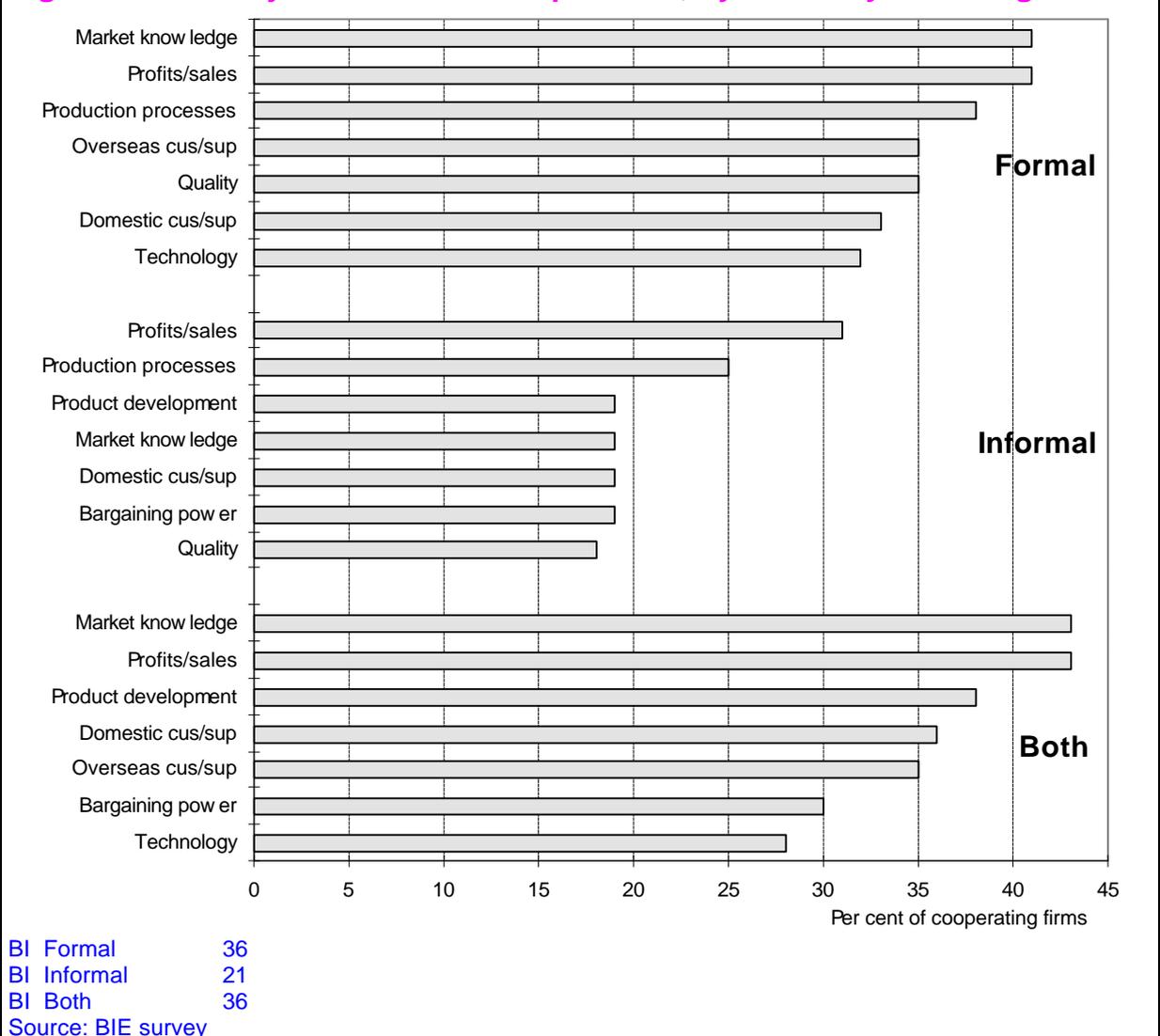
But how do the benefits vary for firms which exclusively use multi-partner arrangements and those with a mix of arrangements? We find the same seven benefits matter, but with different rankings and scores. Bargaining power, technology access, product development and overseas customers/suppliers are all substantially stronger for firms with combined arrangements (although new domestic customers/suppliers are substantially weaker).

The results for firms with multi-partner arrangements provide an indication of the benefits provided by AusIndustry’s Business Networks Program. This major initiative encourages firms to create cooperative arrangements with at least two other firms to increase their competitiveness and capabilities. Government-funded network programs are discussed in Chapter 13 and Appendices D, E and F.

### 8.1.3 Formality of the arrangements

Firms participate in formal and informal cooperative arrangements in fairly even numbers (see Chapter 5). The major benefits associated with the formality of arrangements have been classified into three groups: firms with only formal arrangements, firms with only informal arrangements and firms with a both.

**Figure 8.3 Major benefits of cooperation, by formality of arrangements**



The very clear underlying message from a comparison of formal and informal linkages is that those firms focussed only on formal arrangements receive benefits way in excess of firms in looser alliances (Figure 8.3).

The only benefit where ‘informally cooperating firms’ get anywhere near ‘formally cooperating firms’ is increased profits/sales. However, there is still a gap of 10 percentage points in the degree of benefits. Otherwise, close to twice as many firms with formal links than informal-linked firms are benefiting from cooperation.

We found a high proportion (38 per cent compared to an average 28 per cent) of firms in formal arrangements benefit from better production processes. Improved product quality is the other ‘surprise’ benefit for firms in formal arrangements, with about one third of firms listing it as a major outcome of cooperation. Significantly, this is well above the ‘normal’ proportion of firms which receives quality improvement from their cooperative arrangements.

A substantial proportion of the firms with improved production processes and improved quality are likely to be achieving these benefits as positive side-effects of their arrangements. Box 8.2 shows how one firm has acquired a variety of benefits from its formal arrangements.

### **Box 8.2 Firms are more likely to benefit through formal arrangements**

*ERG Ltd is a public company with an annual turnover of around \$100m and export sales worth around \$25m. The company manufactures, markets and installs electronic ticketing and communications equipment.*

*The majority of ERG’s cooperative arrangements are governed by contracts. Being a large company means there is a tendency to formalise matters, but there are a number of other reasons why the formal approach is preferred:*

- . there are significant amounts of money involved*
- . the large companies ERG deals with tend to require formal arrangements*
- . the agreements sometimes involve third parties.*

*ERG believes that legal contracts ensure a greater commitment by the participating firms to make things work. A formal arrangement with its emphasis on precision and details, can also lead to firms helping each other in ways not necessarily envisaged. ERG has received an ‘all round package’ of benefits from working closely with its partners in most facets of the firm’s operations. Enduring benefits (and ones with clear spin-offs into other areas of ERG’s business) have been a greater emphasis on quality and raising the standard of production.*

Source: BIE interview

Other factors deserve special comment. The first is the absence of product development from the top seven formal arrangement benefits. This is a little surprising in view of the usual prominence of product development as a major benefit of cooperation. However, at 28 per cent, the benefit level of product development in formal arrangements is in fact only slightly below average. Another notable absentee, this time in the top informal benefits, is new overseas customers/suppliers, which is a major benefit for only 17 per cent of firms linked informally.

In some respects it is logical that firms who only have informal arrangements may not put in as much effort as the formally-linked firms. Maybe the greater benefits in formal arrangements are commensurate with the greater degree of preparation time and importance that is attached to these relationships.

Another explanation for the relatively better performance of formal arrangements is that they tend to be associated more with larger firms and with the complex forms of cooperation at the right hand side of the cooperation continuum<sup>4</sup> :

<sup>4</sup> The cooperation continuum is described in Chapter 2.

- large firms have a greater tendency to formalise as a matter of course and large firms are the most likely to benefit from business cooperation; and
- joint ventures, strategic alliances and formal networks are usually much more complex than ‘softer’ forms of cooperation and involve bigger stakes, and accordingly firms would have a greater expectation of benefit and over a wider range.

The greater likelihood of benefits in formal arrangements does not of course mean that informal arrangements do not work. A substantial number of firms still obtain benefits from loose arrangements with other firms. The results can be just as spectacular as formal business cooperation in some cases (see Box 8.3).

### **Box 8.3 Informal benchmarking and improved production processes**

*Florsheim Australia is one of Australia’s leading producers of quality men’s shoes and competes in a market where the quality and style of the product is fundamental for success. In the top end of the market they compete with the world’s finest shoe manufacturers. With the lowering of tariff protection competition has intensified.*

*An integral aspect of Florsheim’s strategy to stay ahead is working informally with other shoe manufacturers to improve their production processes and quality. While Florsheim does not work with direct competitors, it finds it very useful to link with other companies such as Diana Ferrari (which produces women’s shoes) to benchmark common processes, talk about the quality and supply of materials and so on.*

*One example of how cooperation has benefited Florsheim is that it has cut its work in progress in half, enabling it to respond more quickly in a market where changes in demand for particular styles and designs are the rule rather than the exception.*

Source: BIE interview

The 45 per cent of firms which have a combination of formal and informal arrangements get about the same benefits as firms with exclusive formal arrangements – which further underlines the value of formal relationships. Firms with informal arrangements can still achieve high benefits overall providing they have at least one formal arrangement.

Comparing the major benefits for firms with formal only links and firms with combined links, the key differences are the inclusion of product development and increased bargaining power for firms using mixed arrangements at the expense of improved production processes and improved quality. The demise of improved production processes is a little mysterious in view of its high ranking for both exclusive formal and informal arrangements. The 38 per cent of firms benefiting from product development from combined formal and informal linkages is quite striking. It compares with 28 per cent in exclusive formal linkages and 19 per cent in exclusive informal links.

## **8.2 Benefits and the nature of the arrangement partners**

We turn now to the benefits of cooperation with different sorts of partners:

- are the firms customers, suppliers or ‘other’ firms?
- are they located in Australia or overseas?

### **8.2.1 Customers, suppliers and other firms**

The value of linkages with customers and suppliers is of topical interest. Two recent studies by the AMC, *Leading the Way* (1994) and *The Wealth of Ideas* (AMC and McKinsey 1994) have both highlighted the importance of customer and supplier relationships in improving the performance of Australian manufacturing firms, specifically with regard to international best practice and innovation.

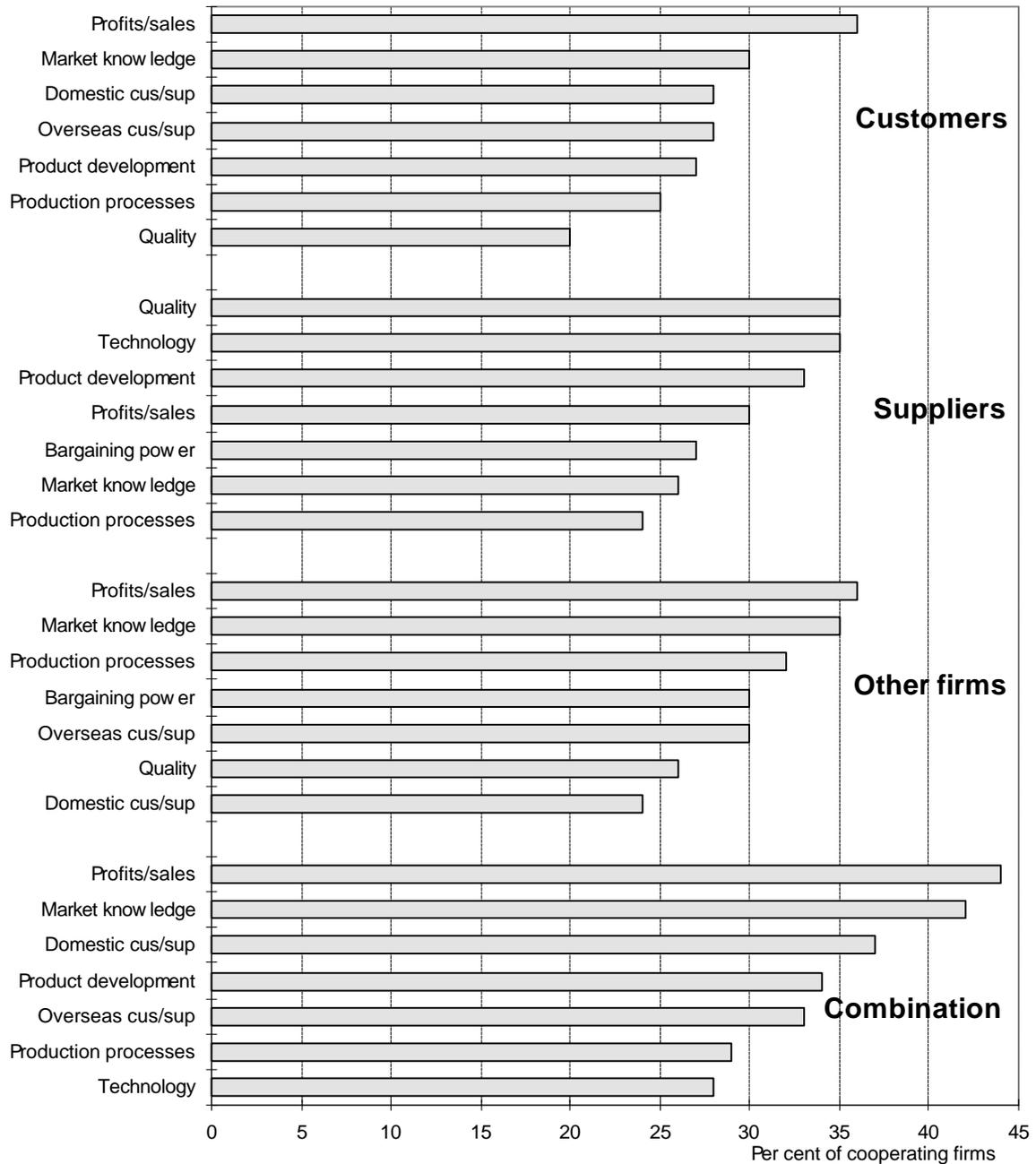
Over half of the cooperating firms identified in the BIE Survey have a combination of linkages with customers, suppliers or other firms. Relatively small proportions have customer only and supplier only linkages (15 per cent and 13 per cent respectively). Linkages with other (non-customer or supplier) firms make up the remaining 20 per cent of cooperative arrangements.

We found little difference in the overall magnitude of benefits obtained through exclusive relationships with customers, suppliers or other firms. (Figure 8.4). The slightly lower Benefit Index for customer relationships is not significant, although the level of benefits obtained through customer linkages drop away fairly steeply near the bottom of the major benefits list.

Looking at the composition and rankings of the groups, firms with customer arrangements closely track the leading benefits for the average firm, but with slightly lower proportions of firms obtaining the benefits. Box 8.4 gives an example of a firm benefiting from working with its customers.

Some substantial differences occur for the types of benefits obtained in the different arrangements. Most notable is the 35 per cent of firms with supplier linkages that gain benefits through access to technology, compared with the 15 per cent of firms in customer relationships. There is nothing particularly unexpected of course about this result. However, the same cannot be said about the contrasting importance of improved quality.

**Figure 8.4 Major benefits of arrangements with customers, suppliers and other firms**



BI Customers 28  
 BI Suppliers 30  
 BI Other firms 30  
 BI Combination 35  
 Source: BIE survey

**Box 8.4 Working with a key customer**

*Seekers Australia has been around for 25 years and currently employs 100 staff. It manufactures swimwear and associated casual wear. Most of its sales effort is focused on the Australian market it is a market leader for fashion swimwear but it also exports considerable volumes to New Zealand and small quantities to Singapore and Japan.*

*Seekers has a licensing agreement with Jantzen (USA) to manufacture and sell its products in Australia. It also has a very important cooperative arrangement with a leading Australian retail chain. This latter arrangement is a prime example of how customers and suppliers can work together for mutual interest and benefit.*

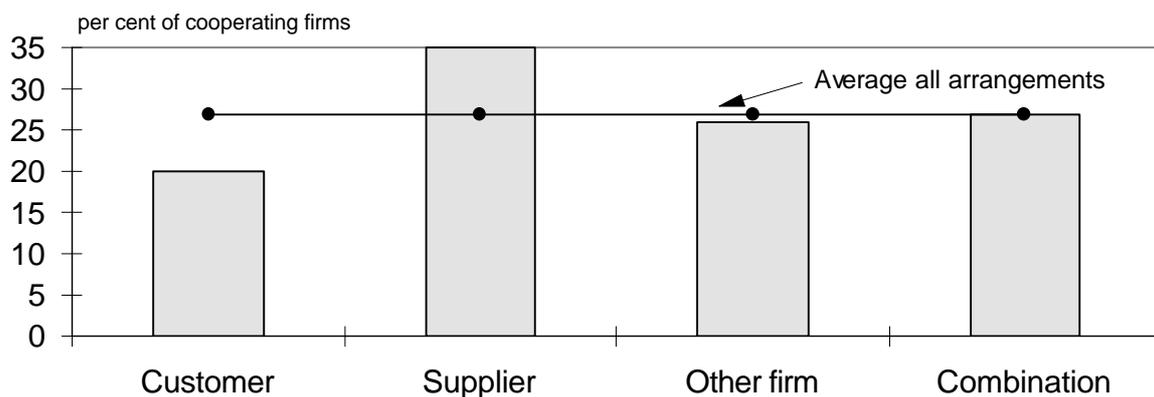
*Seekers is a preferred supplier to the retailer. It develops a swimwear business plan in conjunction with the retailer and the companies hold numerous follow up discussions to get the designs right and the production schedules finalised.*

*The benefits to Seekers are several. There is an obvious financial benefit in having a supplier arrangement with a major retail company. But the other benefits of working together help contribute to improving Seekers' overall performance. The company learns vital information about its markets by talking with the major retailer at the sharp end of the production/retail chain. It gets ideas for refining its products and developing new ones. It has also become more aware of the significance of changing technology requirements, especially the use of Electronic Data Interchange.*

Source: BIE interview

Quality enhancement emerges as the most important benefit to firms in supplier relationships and yet only 20 per cent of firms with customer linkages regard it as a significant benefit of cooperation (Figure 8.5). The formalisation of arrangements is the only other linkage characteristic which appears to be particularly related to quality enhancement. However, supplier arrangements are not formalised any more frequently than are customer arrangements.

**Figure 8.5 Quality enhancement in arrangements with customers, suppliers and other firms**



Source: BIE survey

A firm dealing with one of its suppliers will often have the advantage over the supplier in being able to insist on certain standards and specifications. This in turn may be reflected in the quality of its own outputs. The quality enhancing aspects of customer relationships in some respects should mirror those of supplier

arrangements. This time the firm's customer should be placing pressure on the firm in question to get things consistently right and to deliver high quality input.

One implication of the survey results might be therefore that customers are tough in securing gains *for themselves*, but:

- Do not share with the supplier the gains from quality improvements made by the supplier; and
- Do so without actually increasing the efficiency of the supplier. For example, a customer might insist on rapid supply or no fuss replacement of lower quality inputs, but leave the basic production processes of the supplier untouched.

Either way such one-sided arrangements are not fundamentally cooperative, nor do they really yield the full gamut of efficiency gains that can flow from good feedback from customers to suppliers. AMC and McKinsey (1994) notes the relationship between customer demands and performance improvement in a variety of areas, including quality:

Leading-edge customers raise expectations of suppliers on all dimensions – cost, quality, time and customer responsiveness. Meeting these expectations helps firms stay ahead of the game, and pulls them up the performance curve. In all industries we studied, most of our emerging exporters believe customers have been very important or critical in raising their performance over the past five years. (P.10)

As already noted, we found that it is firms with supplier arrangements who are obtaining the greatest benefits out of improved quality. This, along with technology access, are the two leading benefits of working cooperatively with suppliers. Box 8.5 provides an example of the advantages of close links with suppliers.

#### **Box 8.5 Working closely with suppliers**

*Vax Appliances (Australia) is a subsidiary of Vax Appliances (UK). It has annual sales of between \$20-\$25 million and employs around 100 people. The company faces vigorous competition in the local market for vacuum cleaners.*

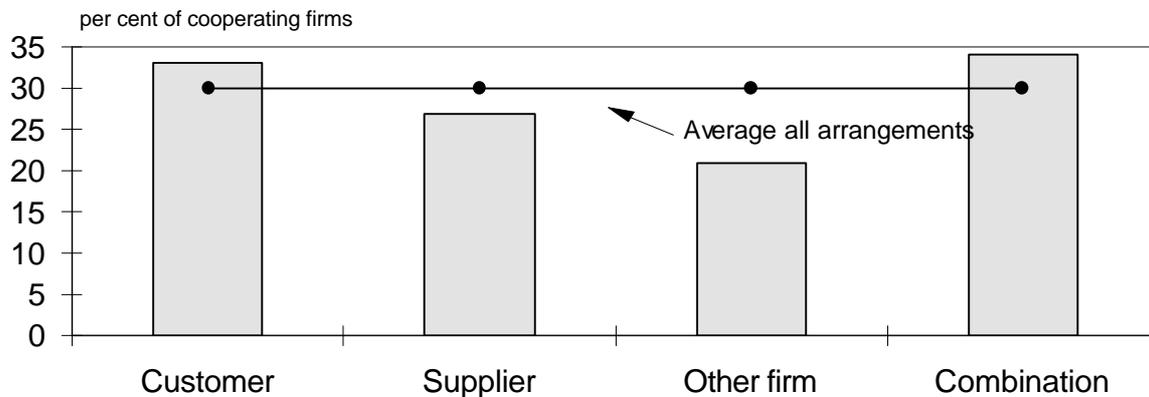
*Vax has numerous preferred supplier arrangements operating on a short term basis. It also has three major component suppliers – motors, hoses and casings – with whom it works very closely. These three key arrangements, which have been in place since 1988, are all informal and based on trust and honour.*

*The key benefits of Vax's principal supplier arrangements are technology access, market knowledge and product development. On the latter point, Vax is continuously looking for improvements and provides a lot of input into how its suppliers produce their products. The degree of cooperation extends to Vax approving components before they are manufactured by the suppliers.*

Source: BIE interview

Product development, with its innovation connotations again features (like quality improvement) much more on the supplier side of relationships. That is, customer firms are apparently working in partnerships with key suppliers to develop and improve their products. However, somewhat paradoxically supplier firms in the survey do not seem to be working to the same degree with their customers to improve their own products (Figure 8.6).

**Figure 8.6 Product development benefits in arrangements with customers, suppliers and other firms**



Source: BIE survey

Firms with relationships outside customers and suppliers lack the closeness and proximity of these linkages and not surprisingly do not get so involved in product development. However, we found that firms who forge links outside customer/suppliers get larger benefits from improved production processes. In the previous section we noted that these benefits are a major feature of formal arrangements and there clearly may be some correlation between these two results.

**Box 8.6 Controlling the value chain**

*Women's fashion footwear is a highly competitive industry, with competition from both local firms and imports. J. Robins and Sons, the manufacturer of the Sandlers label, is one of the big players with around 900 workers employed in its factories.*

*The company's business strategy is strongly focused on a key arrangement with its major supplier, and a customer arrangement involving a national retail department store.*

*J. Robins gets 85 per cent of its leather purchases from one local supplier. The relationship has evolved over 7 years and is absolutely critical to the firms operations. The benefits of the arrangements are security of supply, highly efficient JIT delivery, improved quality and product development. Despite the strategic importance of the linkage it has remained informal, relying on trust and the fact that high mutual benefits are involved.*

*On the other side of the value chain, J. Robins' preferred arrangement with the retail chain has also many major benefits. It has enabled J. Robins to take a bigger share of business from the department store, thus increasing its sales and profits. Market knowledge gained from a close working relationships has been vital. It has also made the company look more closely at its 'production retail chain' and improve the efficiency of operations. In this respect, having the arrangement with its key supplier has given the company a greater ability to get the best possible outcomes.*

Source: BIE interview

Firms with a combination of arrangements have a significant edge on firms focused solely on one linkage type. This may simply reflect the fact that they could have multiple arrangements and therefore obtain more benefits overall. Alternatively, it could imply that arrangements with key players on at least two sides of the value chain can earn above average rewards. For example, a firm working closely with both a major

customer and a vital supplier has greater control over its value chain and may be able to use this control to its advantage. The firm may also acquire several spin-offs along the way (see Box 8.6).

## 8.2.2 Overseas and domestic partners

Recent studies by the Australian Manufacturing Council have highlighted the importance of overseas linkages to Australian firms. In *Emerging Exporters* (AMC and McKinsey 1993) evidence was found of the increasing importance of foreign investment in the integration of emerging exporters both regionally and internationally. Links with overseas companies can also take the form of joint ventures and strategic alliances amongst others.

More recently the *Wealth of Ideas* (AMC and McKinsey 1994) provided substantial data on the benefits of overseas linkages, particularly in relation to innovation and growth.

“having access to a diverse range of market-oriented information and ideas about new products and processes and ways of doing business is critical to successful innovation... firms cannot acquire these ideas on their own. Strong linkages to the best in the business are a source of these ideas as well as a constant spur to performance improvement.”

Unlike the other forms of arrangement discussed in previous sections, the BIE study was unable to consider the benefits of exclusive overseas linkages compared with exclusive domestic arrangements and arrangements with some overseas/domestic combination<sup>5</sup>.

What we *are* able to compare is the benefits accruing to those cooperating firms with *some* overseas linkages (that is, at least one) and those cooperating firms with *only* domestic linkages (that is, no overseas linkages at all).

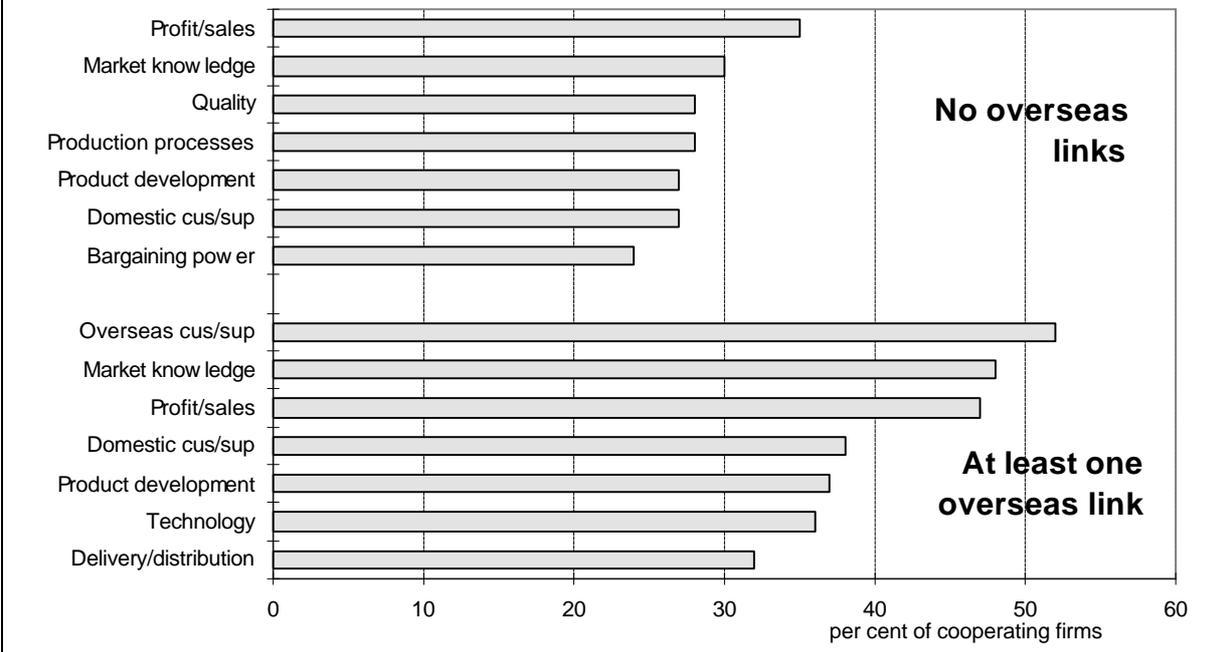
The likelihood of obtaining major benefits from cooperation is much higher for firms with overseas links (Figure 8.7). Overseas-linked firms have a very high Benefit Index of 41 compared with a Benefit Index of only 28 for domestic-oriented firms.

Not unexpectedly, the most important benefit for firms with overseas arrangements is the opportunity provided by cooperation to find new customers and/or suppliers overseas. Over half of the firms benefit in this way. The proportions of overseas-linked firms benefiting from market knowledge and increased profits/sales are also well above average and way ahead of firms with only domestic arrangements.

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<sup>5</sup> The format of the mail survey form precluded this compartmentalisation.

**Figure 8.7 Major benefits of arrangements with overseas and domestic firms**



BI No overseas links 28  
 BI At least one overseas link 41

Source: BIE survey

Access to technology also appears to be a significant reason for firms to enter into overseas partnerships. It ranks as the sixth most important benefit (36 per cent of firms), compared with a lowly ninth rank (21 per cent) for firms with only domestic links (see Box 8.7).

**Box 8.7 Accessing technology through overseas partners**

*Security Domain is an IT&T company employing approximately 30 people. It is a young company and one of Australia’s “emerging exporters”. It currently exports over half of its annual sales.*

*Security Domain’s expertise lies in designing systems and developing software. It is a world leader in the application of smart card technology. The nature of its business has led to Security Domain forming strategic relationships with several large overseas companies. The most important of these is with French smart card manufacturer, Gemplus.*

*The cooperative arrangement with Gemplus provides a number of benefits to Security Domain, but one of the most important is the access it provides to Gemplus’s technology. Gemplus is a leading-edge IT manufacturer, developing and adopting state-of-the-art technology. Having access to a multinational manufacturer’s latest technological developments greatly assists Security Domain in developing its own products.*

Source: BIE interview

Firms focused solely on the domestic market are likely to receive below average ‘returns’ from cooperation (the BI of 28 compares with the average BI of 32).

The high rankings for improved quality and improved production processes highlights the relatively strong emphasis placed by domestic-oriented firms on using cooperation for production efficiency and ‘getting the product right’. This contrasts with the market opportunities being sought by overseas-linked firms. Interestingly, more firms with overseas partners see their linkages as useful for finding new *domestic* customers or suppliers than the domestic-focused firms.

The key innovation indicator, product development, does not fare well with the domestic-oriented firms. However for firms with at least one overseas link, the probability of obtaining product development benefits is much improved and well above average. This could reflect the benefits of firms working closely with both their customers and suppliers (with one based overseas). In some cases, however, it will simply be the result of a greater number of linkages.

The appearance of ‘distribution’ in the overseas-linked firms’ list of benefits is notable. The 32 per cent of firms with overseas linkages benefiting from improved distribution is close to twice the amount of firms which benefit in domestic-only arrangements (18 per cent). This implies that a major function of overseas linkages is access to foreign markets.

Our findings support those of the AMC. Australian firms which form cooperative arrangements with firms overseas are much more likely to obtain major benefits from inter-firm cooperation than Australian firms which rely solely on linkages with local firms. Box 8.8 provides a further example of the wide-ranging benefits for firms with overseas linkages.

#### **Box 8.8 The importance of overseas partners**

*ERG Ltd is a public company with an annual turnover of around \$100m and export sales worth around \$25m. The company manufactures high tech electronics components which are used in areas such as telecommunications, transport ticketing equipment and stored-value cards.*

*ERG was formed in 1984 and has been involved in cooperative arrangements since its earliest days (“cooperation is the nature of the IT game”). It has several key linkages with leading overseas companies including:*

- . Nokia ERG manufactures Nokia’s GSM base station products under licence*
- . Fujitsu involved in the Onelink consortium with ERG in supplying the Melbourne Fare Collection Contract covering bus, rail and tram*
- . Goldstar ERG paging products are assembled by Goldstar in South Korea and then distributed into the Asian market.*

*ERG’s overseas links have been critical to its success. The company has obtained a good mixture of benefits from working closely with its overseas partners. One of the most important benefits has been the new markets it has been able to penetrate both at home and overseas. For example, ERG sought the arrangement with Nokia to give the company a strong presence in the growing local telecommunications market, while its link with Goldstar is providing a good base for expansion in Asia.*

*ERG has also gained improved production processes, improved distribution of its products and access to leading edge technology from its cooperative arrangements.*

Source: BIE interview

## 8.3 The key arrangement and partner firm characteristics

In addition to providing information on benefits for all their cooperative arrangements, we asked firms to provide a range of data about their most important or ‘key’ arrangement. We discuss the key arrangements in depth in Chapter 9. However, we look here at some of the benefits of these key arrangements. In particular we want to see how the benefits of cooperation vary with different aspects of the partners in the key arrangement – their size, location and ownership. To place the results in context, however, we first briefly examine the overall benefits associated with the key arrangement and how benefits vary with the age of the arrangement.

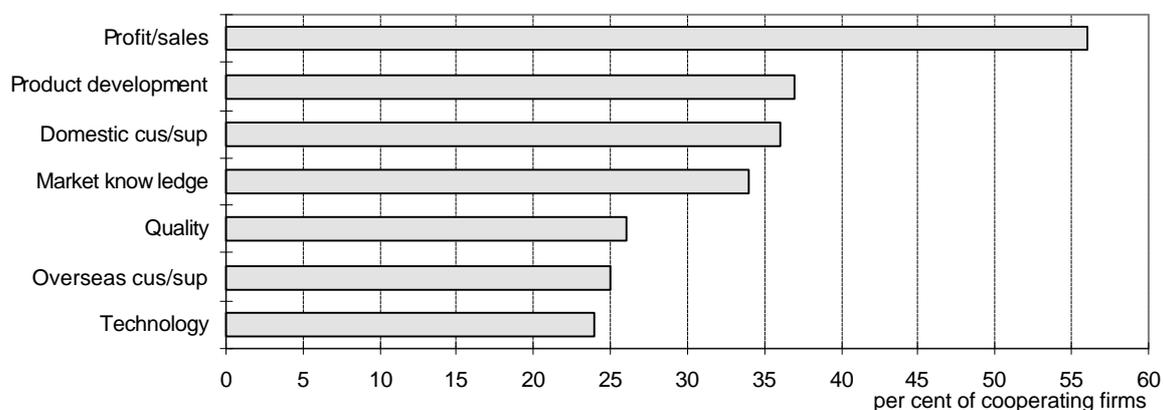
For the key arrangement, respondent firms were asked to rank the most important benefits from one to three. We rated all of these as major benefits. This differs from the method for assessing major benefits for general cooperative arrangements. In that case, we asked firms to assess the importance of all fifteen listed benefits.

Accordingly, we have to be cautious when comparing benefits from *key* arrangements with those from *all* arrangements.

### 8.3.1 Key arrangement overall benefits

The proportion of firms obtaining major benefits from their key arrangements are shown in Figure 8.8. The composition of the top seven major benefits differs in only one respect from the top seven major benefits of general arrangements – access to technology replaces improved production processes.

**Figure 8.8 Benefits of the key arrangement**



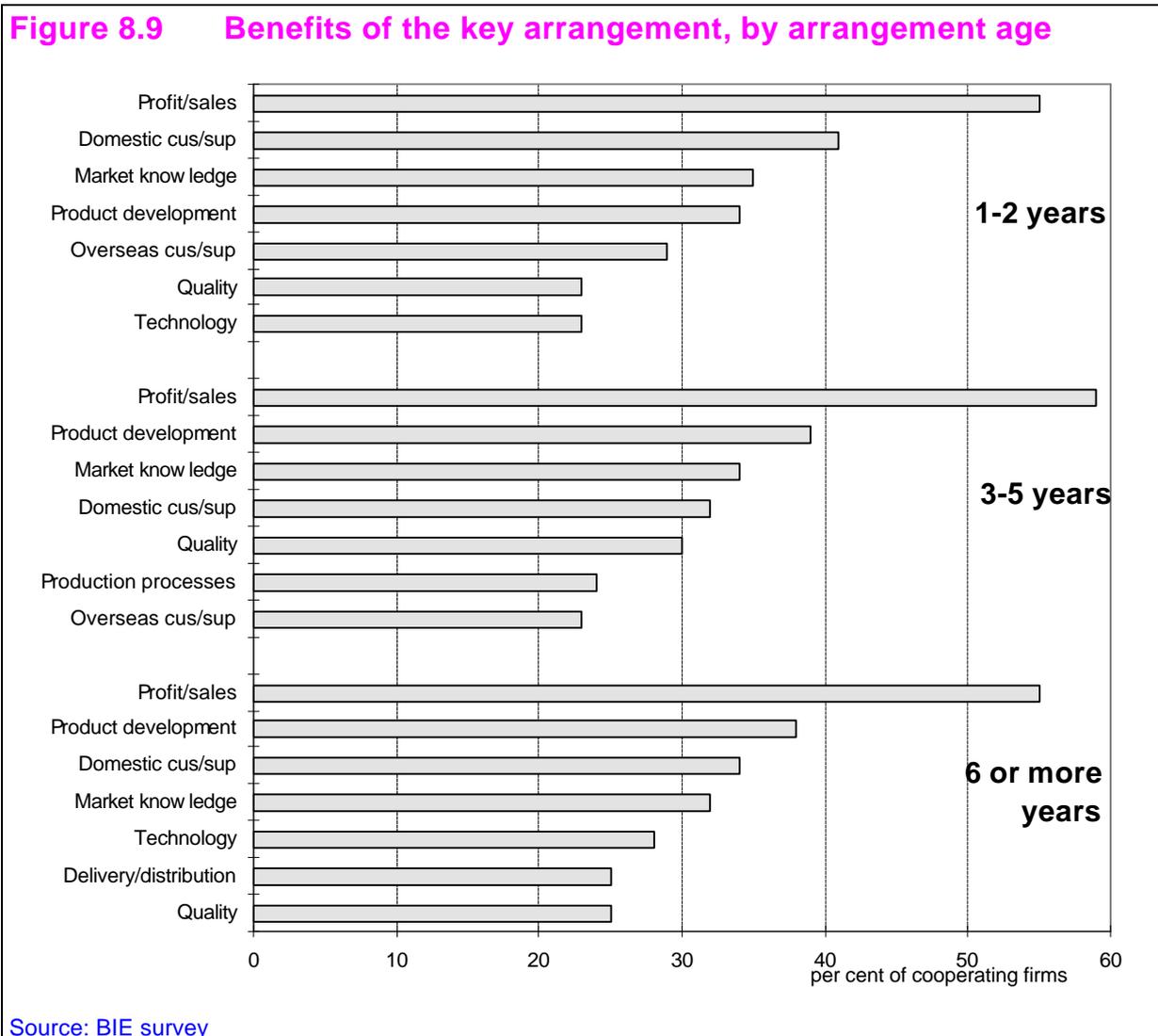
Source: BIE survey

The relative importance of the top benefits are not consistent with those from linkages in general. Increased profits/sales heads the list in both cases. But then product development comes in as the second most important benefit in the key arrangement compared to its fifth ranking for general arrangements. Market knowledge and new domestic customers/suppliers are both in the top four in both cases, albeit in different places. Finally, the benefits from new overseas customers/suppliers are relatively less important for the key arrangement, while the reverse applies to improved quality.

The overall picture for the key arrangement is, then, one of similar benefits to general cooperative arrangements. There is a slightly higher emphasis on product development, quality and technology access, and a lower level of importance attached to market knowledge and new overseas partners. Improved production processes falls out of the leading benefits altogether.

### 8.3.2 Age of the key arrangement

Does the age of the key arrangement affect its benefits? Do benefits differ in type or degree depending on whether the firm is involved in a relatively young or old arrangement?



The average age of key cooperative business arrangements in Australia is close to six years. In Figure 8.9, the most important benefits are shown for arrangements existing two years or less, three to five years old and six years old and over.

Increased profits/sales is the most important benefit for all three categories and with approximately the same degree of importance in each case. The other top four benefits are the same in all cases, albeit in different orders, and reflect the top four overall benefits of key arrangements.

One notable difference is the higher degree of importance attached to product development and technology access in older arrangements, and to new customers or suppliers (both domestic and overseas) in the youngest arrangements.

Firms with young linkages are apparently keen to attract and secure partners with whom they can develop their supply lines or product markets. Firms in more mature relationships, having got over the initial rush for market opportunities, are seemingly more intent on using their most important relationship for innovative purposes and to access the latest technological developments. Their emphasis is on new products and new processes rather than accessing new markets.

### ***8.3.3 Key arrangement and partner firm characteristics***

The underlying question examined in this section is whether variations in the size, age, location or ownership of partners in a firm's most important cooperative business arrangement affect the benefits it receives from the arrangement.

#### ***Size of partner firms***

The majority of Australian firms involved in business cooperation are firms with less than 20 employees (see Chapter 4). This reflects the general population of Australian firms.

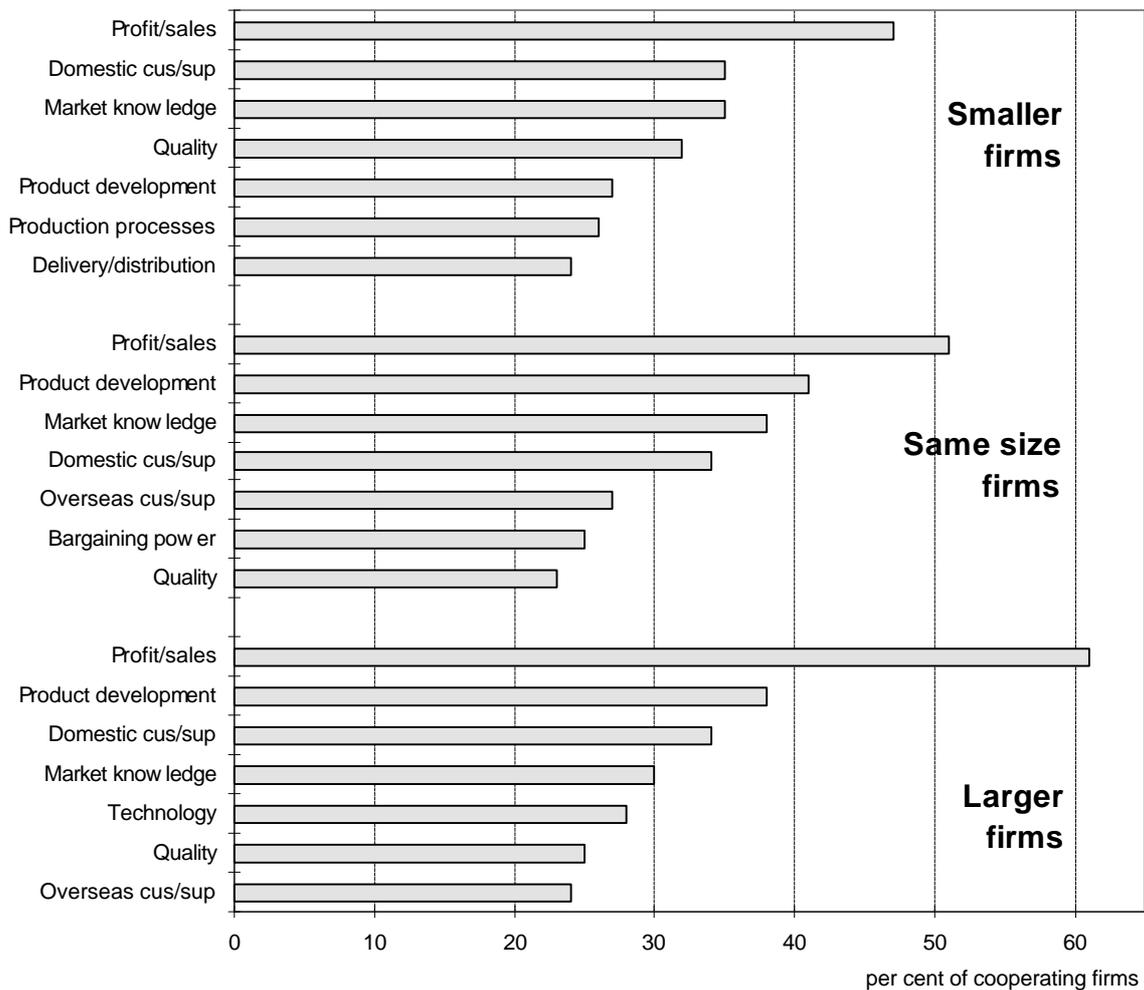
How do the benefits of cooperation vary as the size of your partner changes?

The majority of arrangements involving larger partner firms are notable for their significantly higher profitability/sales growth and the greater benefits they bring through access to technology (Figure 8.10). There is nothing else which stands out as being particularly notable although product development is more likely to be a major outcome of relationships with both larger and similar – sized firms viz-a-viz smaller firms.

Interestingly, relationships with smaller firms appear to have a very clear advantage in improving the quality of a product or service. This may be because large firms work closely on quality control with smaller suppliers.

The usual 'high profile' benefits such as new domestic partners and new overseas partners show similar results for each firm size category. However market knowledge, somewhat paradoxically, is less likely to be a major benefit for firms linked with larger firms, than firms involved with similar-sized or smaller firms.

**Figure 8.10 Benefits of key arrangements, by partner's size**



Source: BIE survey

Overall, the size of partner firms does not seem to make a great deal of difference to the benefits of cooperation. Dealing with larger firms may have some slight advantage for firms looking for innovation benefits.

### *Location of partner firms*

Approximately 50 per cent of cooperating firms have partners only in the same city or town, 22 per cent have partner firms overseas, 16 per cent have them interstate and 13 per cent in the same state (but not in the same city)<sup>6</sup>.

The relative merits of near or far proximity attracts considerable debate. At one end of the spectrum there are the voices emphasising the critical importance of working closely with overseas customers or suppliers,

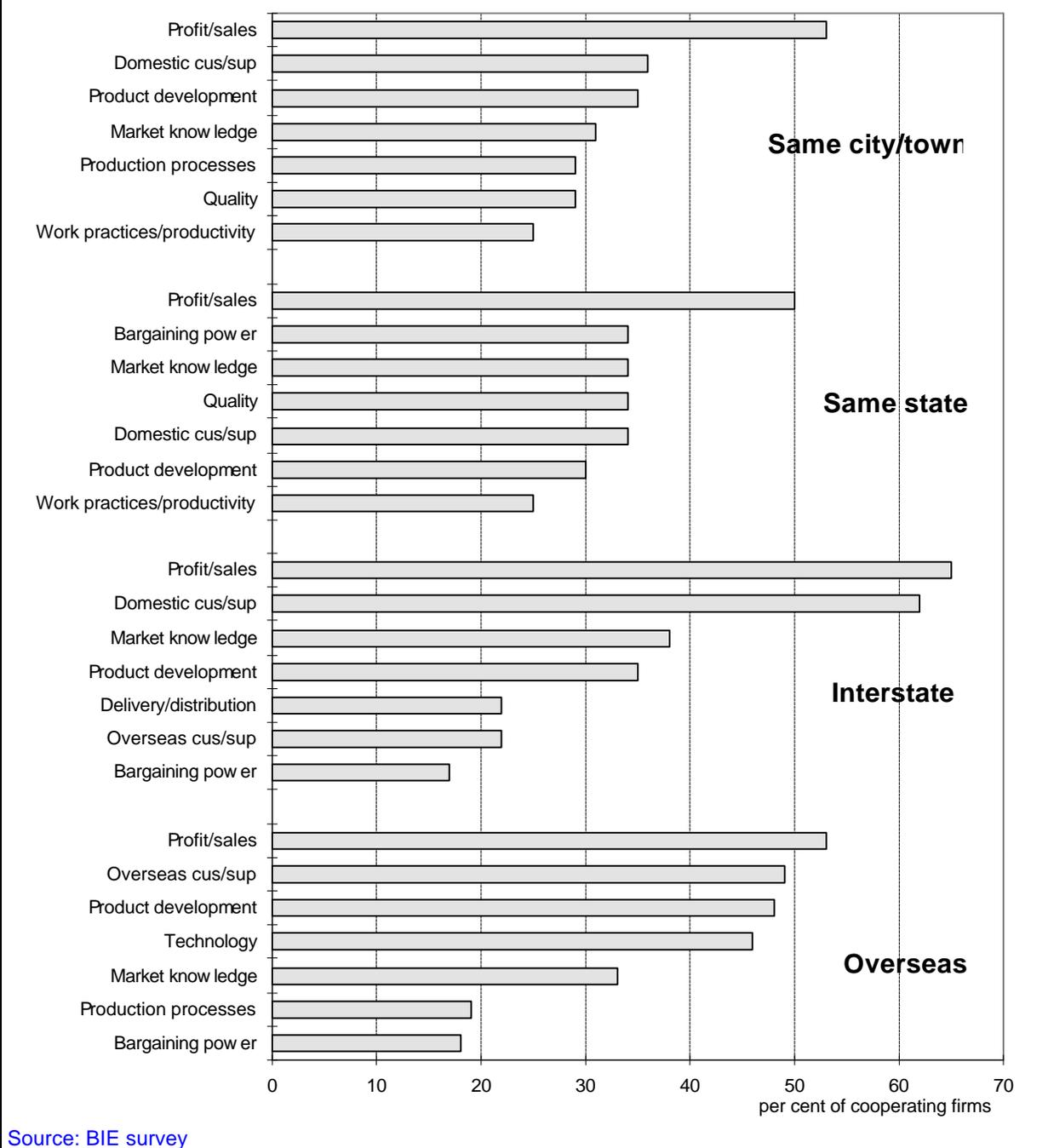
<sup>6</sup> Clearly we had to look at those arrangements where firms were able to assign their partners to just one location.

while others think it vital for success that firms ‘eye ball’ each other on a regular basis, therefore entailing a close geographic location.

*“Most arrangements we have are with international companies ... there are always problems of distance, but the benefits make any extra effort worthwhile.”*

Figure 8.11 demonstrates that the location of partner firms does make a considerable difference to the type of benefits likely to be obtained through cooperation. Partners either overseas or interstate are the most preferable overall.

**Figure 8.11 Benefits of key arrangements, by location of partner firms**



Firms with interstate partners have a heavy concentration of benefits in increased profits/sales and new domestic customers or suppliers. These are the key reasons why firms have linkages with firms interstate. Market knowledge and product development benefits are also major benefits of interstate links.

It is interesting to contrast the benefits for exclusive overseas key linkages with those of arrangements involving an overseas firm shown earlier in Figure 8.7. They show some significant differences in the ranking of benefits.

Once again, access to technology stands out as a major difference for overseas linkages. 46 per cent of firms rate this in their top three benefits. On the other hand, one clear contrast with the overseas linkage benefits shown earlier is product development. This is the third most important benefit (48 per cent) and is clearly more significant for overseas relationships than for local ones – whether interstate, same state or same city.

Firms with their key arrangement partner in the same city or state seem to have a fairly similar benefit pattern, with increased profits/sales being markedly the most important benefit. Product development does reasonably well in these arrangements. Not surprisingly, there are few firms benefiting from new overseas customers or suppliers.

### *Ownership of partner firms*

Another test of the impact of overseas relationships is comparison of the benefits of firms linked with foreign-owned and Australian-owned companies. Foreign-owned firms account for approximately 30 per cent of the partner firms in the key cooperative arrangements. They tend to be the same as the overseas-based firms discussed in the previous section, and the results below reflect this. However, ‘foreign-owned’ and ‘overseas-based’ need not always mean one and the same<sup>7</sup>.

If the arrangement is with a foreign-owned firm, the probability of receiving benefits from cooperative arrangements is higher in almost all the major categories. For the seven major key arrangement benefits, only new domestic customers/suppliers and improved quality are more likely to flourish with Australian-owned firms. Product development and access to technology – two of the leading innovation benefits – are very prominent in linkages with foreign companies and are significantly stronger than in domestic-only arrangements.

The utilisation of links with foreign-owned companies to find new customers or suppliers overseas only manages to rate fifth in the list of benefits. However, the 36 per cent of cooperating firms linked with foreign firms which benefited from finding new overseas customers/suppliers, contrasts sharply with the 16 per cent of domestic-linked firms who received the same benefit. If a key objective of a firm entering into cooperative business arrangements is to expand its overseas customer or supplier base, there are clear advantages in seeking out a foreign-owned company as one of its initial partners.

The situation is reversed for firms wishing to use cooperation to find more local customers or suppliers – they are better off forming alliances with other Australian firms. Firms with Australian-owned partners are also more likely to obtain stronger benefits from cooperation in the area of quality, improved production processes and improved work practices/ productivity.

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<sup>7</sup> For example, an overseas-based partner may be the wholly-owned subsidiary of an Australian firm – and would not therefore be classified as a foreign-owned partner.

## 8.4 Modelling analysis

This chapter, and the two previous ones, have highlighted the variety of benefits firms get from different forms of cooperative business arrangements. This naturally leads to the question as to whether there are any particular firm types or forms of arrangement that are more likely to provide high levels of benefits.

We employed modelling techniques to look at this question. We modelled those firms which received five or more major/critical benefits and their arrangements. The model showed that an overseas focus is a major determinant of whether or not a firm will receive a high level of benefits from its cooperative arrangements. This was expressed in two ways. Firms with a strong reliance on exports in their turnover have a greater likelihood of *general* benefits and those firms cooperating with overseas-based partners are the most likely to gain *high* benefits.

The other key factor influencing the level of benefits received from cooperation was found to be the formalisation of arrangements. Those companies which have formal arrangements gain the highest benefits.

However, not all types of benefits are relevant or desired by all firms. For example, some firms have a very strong focus on working with their suppliers. It is interesting to look at the factors which have a role in maximising the benefits from these arrangements. By looking at firms which noted they had received major/critical suppliers benefits<sup>8</sup> in three or more areas and comparing them to the other cooperating firms, it can be determined if these firms (or the arrangements they have formed) have any identifying characteristics.

The firms which gain high levels of supplier benefits differ from the other cooperating firms in that they are predominantly high technology firms. For these firms, cooperative suppliers can ensure quality products that are delivered on time and which can be altered to specification. Firms with formal arrangements are more likely to gain supplier-related benefits from their cooperative business arrangements. Through the formalisation of arrangements, suppliers are tied to the firm and all parties involved have specific and known roles to play in the relationship.

Surprisingly, firms which cited their low costs as a competitive advantage do not gain high levels of supplier benefits. One possible reason for this is that such firms tend to produce less elaborately transformed manufactures where markets are more fiercely competitive and costs are critical. Such firms are less likely to have complex inputs, which is where suppliers can make a big difference.

## 8.5 Summary

We have looked at the benefits associated with different forms of cooperative arrangements from two angles – the intensity of the arrangement and the nature of the cooperation partners.

There is undoubtedly a strong relationship between a high level of cooperation intensity – or the degree of involvement – and a high level of benefits. This comes across in all three measures of the intensity of cooperative arrangements. First, firms with large numbers of arrangements are likely to benefit the most. Those with five to ten arrangements, for example, benefit much more than those with only one arrangement.

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<sup>8</sup> Supplier benefits were determined to be comprised of improved production processes, improved management skills, improved work practices/productivity, improved training, access to technology, and access to production facilities.

Firms with only one arrangement apparently tend to favour efficiency reasons for forming linkages – improved quality and production processes are their leading benefits after increased profits/sales.

Second, firms cooperating in multi-partner, or network-type, arrangements benefit more than firms in one-to-one linkages. The former get their greatest benefit on the market-related side of the benefits coin – from new domestic customers/suppliers. Firms in networks are probably more focused on prospective benefits and have generally formed their arrangements with specific objectives in mind.

Third, the clear conclusion from a comparison of formal and informal cooperative arrangements is that firms operating on a formal basis obtain benefits far in excess of firms involved in looser arrangements. This probably reflects a variety of reasons, including greater commitment and a tendency for larger firms to formalise arrangements as a matter of course.

Intensity aside, the benefits of cooperation also vary according to who firms are cooperating with. Recent studies by the Australian Manufacturing Council (AMC) and McKinsey have emphasised the importance of customer and supplier linkages. From an overall perspective there appears to be little difference in the magnitude of benefits obtained through relationships with customers or suppliers or other firms. Some substantial differences do however occur in the nature of the benefits.

The results not unexpectedly show more of a tendency towards efficiency benefits in supplier links and market-related benefits in customer links. The two leading benefits of firms with supplier arrangements are improved quality and technology access, followed by product development. Firms with customer linkages benefit most from increased profits/sales and market knowledge, followed by new customers/suppliers (domestic and overseas). Firms in cooperative arrangements with ‘other’ firms seem to get a healthy mixture of efficiency and market benefits. Firms with a combination of arrangements (for example, a customer *and* a supplier arrangement) take the prize for benefiting the most from business cooperation. They are considerably more successful than other firms. Interestingly, they benefit more through market-related than efficiency benefits.

We also looked at the overseas or domestic focus of firms’ cooperative arrangements. A key finding is that Australian firms which form cooperative arrangements with firms overseas are much more likely to obtain major benefits from cooperation than those which rely solely on linkages with local firms.

The most important benefit for firms with overseas arrangements is the opportunity provided by cooperation to find new customers and/or suppliers overseas. The proportions of overseas-linked firms benefiting from increased profits/sales and market knowledge are also well above average and way ahead of firms with domestic linkages only. Access to technology also appears to be an important reason for firms to enter into overseas linkages.

We also examined the characteristics of partner firms in the ‘key’ arrangements. The most significant finding from this analysis, and one which lends support to the above, is that firms are much more likely to benefit from their key, or most important, cooperative arrangement when the other firm (or firms) is based overseas<sup>9</sup>.

Firms involved in different forms of arrangements once again noted that many of the benefits of cooperation arose unexpectedly as spin-offs. Most commonly these involved market knowledge, improved production processes, product development and improved quality.

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<sup>9</sup> As noted in Section 8.3.3, an overseas-based partner is usually (but not always) foreign-owned.



## 9 The key arrangement, competitiveness and firm performance

This chapter analyses the impact of business cooperation on a range of performance indicators. The most common benefits of cooperation include increased profits/sales, market knowledge and new suppliers/customers (see Chapter 6). Benefits are not, however, limited to the ‘market’ interests of the firm. Large numbers of firms record benefits in the areas of improved production processes, access to technology and improvements in quality.

All of these benefits affect a firm’s ‘bottom line’. This chapter explores how the benefits of cooperation translate into ‘real’ measurable impacts – the ultimate test of how cooperation benefits a firm.

But, why is this important?

Clearly, firms as profit seekers are interested in what difference cooperative arrangements can make to their profit and loss sheets. But business today is concerned with a wider range of issues. Increasing competitive pressures are ensuring firms seek out competitive advantages wherever they can. For example, quality standards and accreditation are becoming the norm rather than the exception<sup>1</sup> and the drive towards innovation is widespread.

Those firms seeking to improve their competitive edge may well find cooperative arrangements are an important tool that can be used to achieve both competitiveness and performance.

Moreover, industry policy is focussed on improving the competitiveness of Australian firms (see Chapter 13). There are many government policies and programs relating to exporting, innovation, and quality. As will be seen, inter-firm cooperation can play an important role in these and other areas. Although policy makers have identified networking and similar activities as potentially useful, their impacts on performance and competitiveness are largely undocumented.

Recent studies of inter-firm linkages and cooperation have only assessed the impact of these business strategies in broad, general terms. This report is the first to undertake a detailed and rigorous examination of how inter-firm arrangements impact on performance and competitiveness.

In the BIE survey, respondents were asked to provide a range of information about their ‘key’ arrangement<sup>2</sup> and this forms the basis for the analysis in this chapter. The key arrangement is the one they considered to be their most important. It need not be the one that provides the biggest impact on profits, although in many cases this certainly may be the case.

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<sup>1</sup> This is reflected in survey responses on competitive advantages. Two-thirds of respondents to the survey believe that quality is one of their central competitive advantages.

<sup>2</sup> See BIE survey questions 13 to 24 (Appendix A).

Firms were asked to indicate how this single arrangement had directly affected<sup>3</sup> a range of performance and competitive measures over the past three years. The performance measures included:

- employment levels
- turnover
- profits
- productivity and
- exports.

and the competitive measures were:

- technology
- quality
- price competitiveness and
- customer service.

Firms were asked if their key cooperative arrangement had increased, decreased or not changed each measure. In addition, they were asked to estimate the magnitude of the impact of the key arrangement for each performance measure (but not for competitiveness measures).

The pursuit of profit or turnover increases is apparently one of the major reasons firms enter cooperative arrangements (see Chapter 6). It would therefore not be surprising to find that most ‘key’ arrangements provide increases in profits or turnover, regardless of their nature (for example formal or informal), although the size of the changes may vary well differ.

On the other hand, particular arrangements may provide important improvements in areas such as technology or quality that are not common to other types of arrangements. Where this is true, impacts on competitiveness or performance would be expected to vary between types of arrangements.

Moreover, firms with different characteristics may enter cooperative arrangements for varying reasons. For example, the focus for young firms tends to be on the cost or efficiency side more so than older firms. The differences in focus may lead to different effects of cooperation on performance and competitiveness.

It is important to remember that the impact measures do not relate to cooperation as a whole. The key arrangement is a specific case, the most strategically important cooperative relationship a firm has established, and is only one of a range of arrangements for the bulk of firms<sup>4</sup>. The results in this chapter may therefore not match those found in Chapters 6, 7 and 8 which examine benefits across all arrangements held by firms. Nevertheless, given the wide variety of arrangements that have been identified by respondents as ‘key’, the analysis in this chapter does provide an indication of the impacts of cooperation more broadly<sup>5</sup>.

The first section of the chapter presents an overview of the impacts of key arrangements and examines industry and state outcomes. Section 9.2 explores how impacts vary with the nature and characteristics of arrangements while Section 9.3 analyses impacts by characteristics of the firm. The results of modelling analysis are discussed in Section 9.4 and the chapter is summarised in Section 9.5.

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<sup>3</sup> Firms were asked if their key arrangement had increased, decreased or not changed each measure (see Question 24 of survey).

<sup>4</sup> Almost three-quarters of cooperating firms have more than one arrangement (Chapter 4).

<sup>5</sup> In piloting the survey, the Bureau found that respondents were more easily and accurately able to assess the impact of a single arrangement rather than cooperation as a whole.

# 9.1 A snap shot of the impacts of cooperation

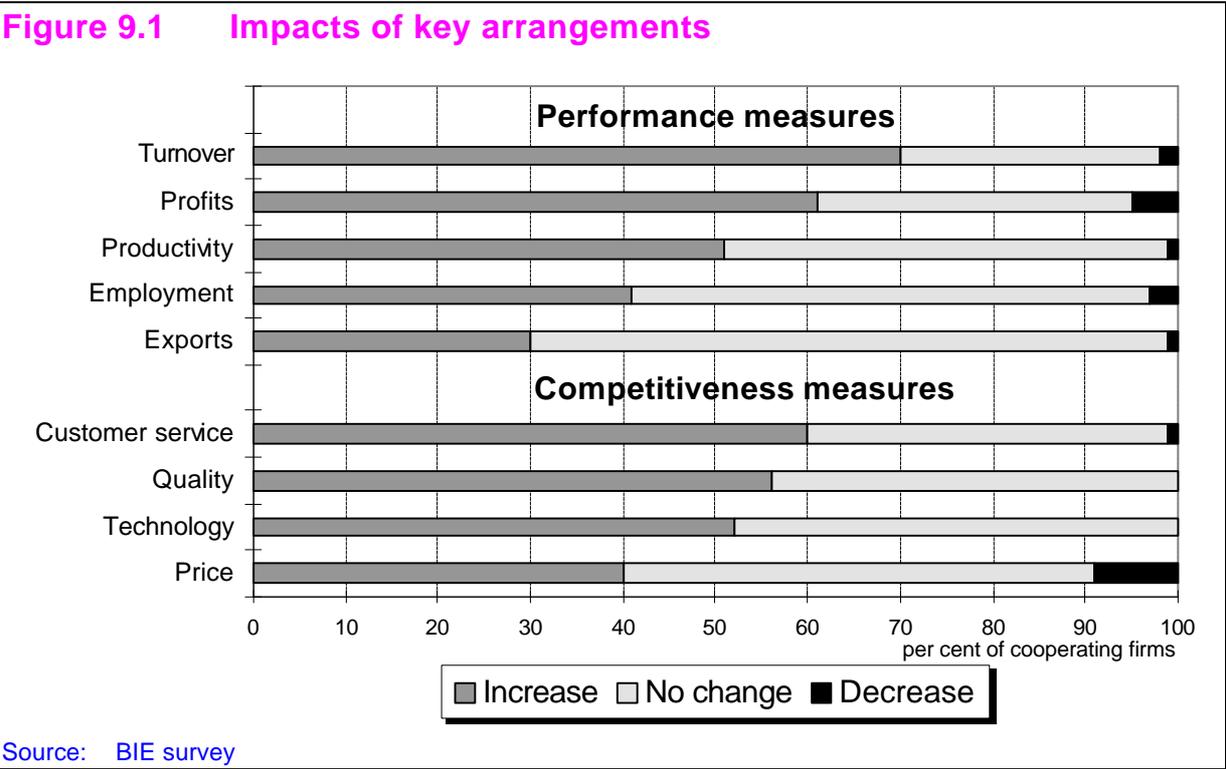
## 9.1.1 Overview

Figure 9.1 summarises the performance and competitiveness impacts of key cooperative arrangements. It shows that almost three-quarters of cooperating firms experience increases in turnover as a direct result of their key arrangement and well over half post higher profits.

Cooperation also improves a firm’s competitive position. The majority of firms experience improving customer service and quality through their key arrangement.

Only 30 per cent of firms indicated that their key arrangement has a positive impact on exports. This reflects the fact that only 38 per cent of cooperating firms were known exporters<sup>6</sup>. When exporters are considered in isolation, 54 per cent indicated that their key arrangement increased exports.

Interestingly, five per cent of respondents indicated that their key arrangement has resulted in lower profits for the businesses over the past three years. Only 40 per cent of these arrangements were formal, and so it is unlikely that the majority of these firms are contractually ‘locked-in’ to poor performing arrangements. Perhaps this small number of firms fulfilled their commitment (albeit informal) for the sake of the relationship or reputation. More positively, it may also reflect those firms who have suffered some short term ‘pain’ (such as a large investment) in the pursuit of longer term gains from cooperation.



<sup>6</sup> 52 per cent of linked firms did not export, and 10 per cent did not provide data on exports.

The relatively high proportion of firms noting a decrease in price competitiveness is likely to reflect some confusion in answering the question, misinterpreting price competitiveness for price levels. Accordingly, we ignore these data.

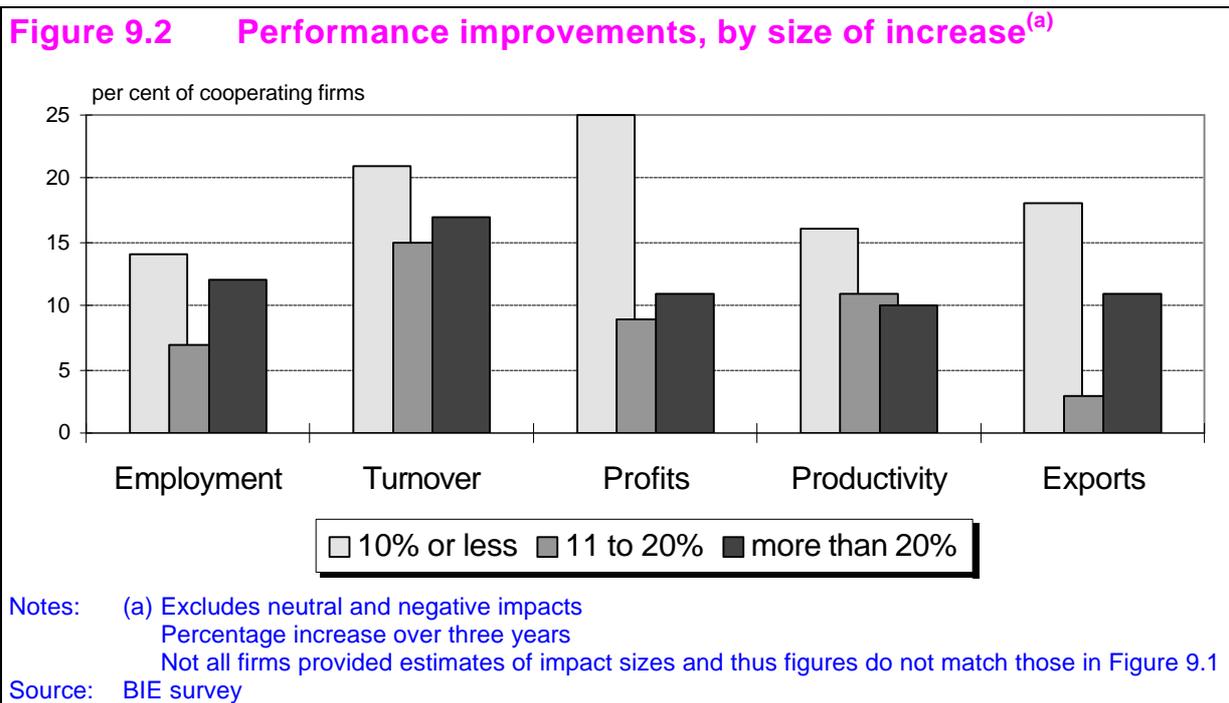
While the data in Figure 9.1 do not show which impacts are valued more highly by firms, some insights are available by examining how the results compare with the ‘benefits’ of the key arrangement<sup>7</sup>.

The most frequently cited benefit from the key arrangement is increased profit/sales (56 per cent of firms). Improved quality is ranked fifth (26 per cent) and access to technology seventh (24 per cent).

Around 60 per cent of those firms reporting a positive *impact* on turnover or profits ranked an increase in profit/sales in the top three *benefits* of their key arrangement. In contrast, 40 per cent of those recording positive impacts on quality ranked quality improvements in the top three benefits. These results suggest that firms generally consider increases in profits and turnover to be amongst the most important impacts of cooperation.

In the technology area, over a third of those firms recording positive impacts on technology ranked access to technology in the top three benefits. Taking a broader definition of technology benefits<sup>8</sup>, the figure rises to almost two-thirds. Improvements in technology would therefore seem quite important for the approximately 50 per cent of cooperating firms which reported positive impacts in this area.

Figure 9.2 examines the positive impacts of the key arrangements in more detail. It shows the share of cooperating firms that recorded positive performance impacts by the size of the impact<sup>9</sup>.



<sup>7</sup> Firms were asked to indicate the top three benefits flowing from their key arrangement.

<sup>8</sup> Including access to technology, improved production processes, improved work practices/productivity, and access to production facilities.

<sup>9</sup> Not all firms provided estimates of the magnitude of changes. Therefore, figures shown in Figure 9.2 will not necessarily match those in Table 9.1.

Improvements in turnover are fairly evenly spread across the size groups. One in six firms experience an increase in turnover of more than 20 per cent as a direct result of their key arrangement. Across all cooperating firms the median impact in turnover from the key arrangement is a growth of 5 per cent. If only those who experience positive impacts are considered (that is 70 per cent of linked firms) the figure rises to 16 per cent.

A lot of firms got profit increases – but most of these were small. Just under 40 per cent of those firms that took on additional staff as a result of their key arrangement expanded their workforce by 20 per cent or more.

Improvements in export performance were noticeably either small (10 per cent or less) or large (more than 20 per cent). Almost 40 per cent of exporters that experienced export increases reported export growths of more than 20 per cent over three years.

Around one in six firms recorded improvements in productivity of 10 per cent or less over three years. For 10 per cent of firms, the key arrangement provided opportunities to make substantial progress on the productivity front (increases of more than 20 per cent), while a similar number achieved moderate improvements (11 to 20 per cent).

### 9.1.2 Impacts by Industry

The performance and competitiveness impacts by industry mirror the results for benefits by industry discussed in Chapter 7. Firms in the IT&T and the Scientific and medical equipment industries tend to get more from cooperation than those in the Clothing and footwear and Food industries.

Table 9.1 shows the distribution of positive impacts by industry. Firms in IT&T record the highest proportions of positive impacts in five of the nine measures (including the three most variable measures), while those in the Clothing and footwear industry recorded the lowest in five.

**Table 9.1 Positive impacts of key arrangements, by industry (per cent)**

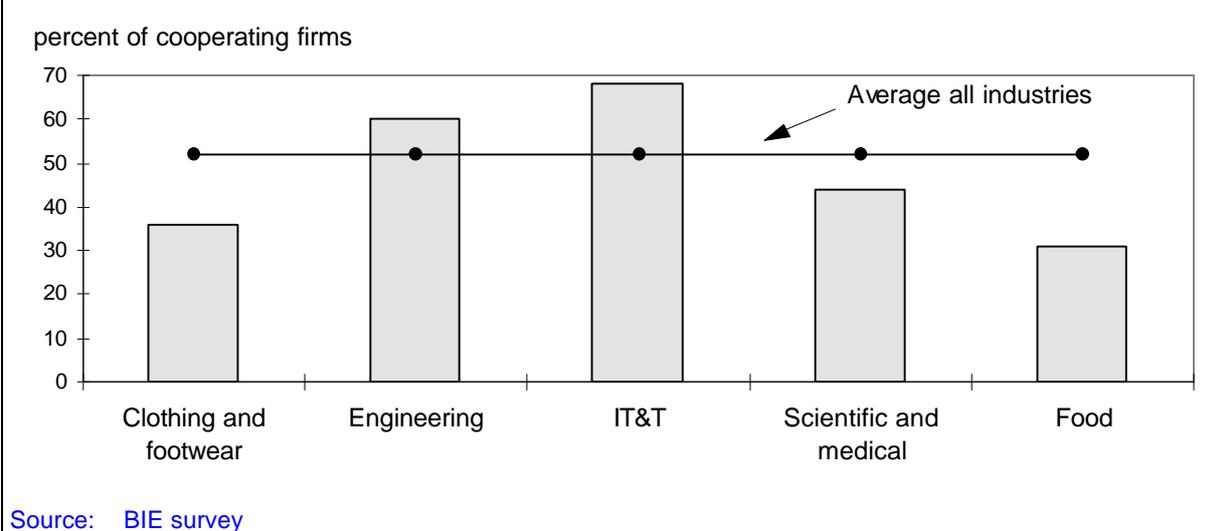
	<i>Clothing and footwear</i>	<i>Engineering</i>	<i>IT&amp;T</i>	<i>Scientific and medical</i>	<i>Food</i>	<i>All industries</i>
<i>Performance indicators</i>						
Turnover	61	71	69	79	71	70
Profits	53	61	63	67	67	61
Productivity	58	50	43	55	48	51
Employment	29	41	53	48	36	41
Exports	17	25	44	42	41	30
<i>Competitiveness measures</i>						
Customer service	61	62	62	65	47	60
Quality	57	55	58	47	57	56
Technology	36	60	68	44	31	52
Price	36	40	43	40	37	40

Source: BIE survey

In some measures there is relatively little difference in impacts across industries (for example productivity and quality). However, there are significant differences in the areas of technology, exports and employment.

Compared to the average of 52 per cent, the IT&T and Engineering industries recorded above average impacts (68 per cent and 61 per cent of firms respectively), while the Food and Clothing and footwear industries reported well below average impacts (31 per cent and 36 per cent respectively) (Figure 9.3). These results can largely be explained by the relatively high proportion of low-tech firms in the latter two industries (around 40 and 30 per cent respectively). Low-tech firms least commonly experience improvements in technology from their key arrangement (see Section 9.3.6).

**Figure 9.3 Positive impacts on technology, by industry**



Interestingly, access to technology ranks in the top seven major/critical benefits of cooperation<sup>10</sup> for the Engineering, IT&T and Sci/med industries (see Chapter 7). This suggests that technology improvement is an important aspect of cooperation and is not only limited to the key arrangement.

Impacts on exports also vary widely between industries. The proportion of firms in the Clothing and footwear industry recording positive impacts on exports is only half that of the average across all industries. The IT&T and Food industries reported positive impacts nearly 50 per cent higher than the average. However, exporting activity also varies across industries and this distorts these results. When only known exporters are considered, inter-industry differences largely disappear. However, two-thirds of exporters in the IT&T industry reported increases in exports (compared to an average of 54 per cent for all industries). It was shown in Chapter 7 that just under a half of IT&T firms consider access to new customer or suppliers overseas as a major/critical benefit of cooperation (a result not matched in any other industry).

These findings suggest that one of the principal reasons firms in the IT&T industry enter cooperative arrangements is for access to overseas markets, in what is a global industry. The Federal Government's Partnerships for Development and Fixed Term Arrangement programs are based on this principle. The programs are discussed in Appendix D and their impacts on participating firms are summarised in Box 9.1.

Overall, the above examination of impacts by industry suggests that business cooperation is a valuable tool for improving a firm's competitiveness and performance, regardless of the industry.

<sup>10</sup> All arrangements, not just the key arrangement.

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### **Box 9.1 Impacts of the PfD and FTA programs**

*The Commonwealth Government's Partnerships for Development and Fixed Term Arrangement programs are aimed at developing Australia's IT&T industries. The strategy for achieving this is to forge linkages between Australian IT&T firms and large, multinational IT&T companies (the partner firms).*

*The BIE recently undertook an evaluation of the programs and as part of the study examined the impacts of the program on partner firms. It credited the program with the following impacts across all partner firms:*

- *increased annual sales by 5.8 per cent*
- *increased employment by 4.2 per cent*
- *increased R&D expenditure by 32.1 per cent*
- *increased annual exports by 26.8 per cent*
- *decreased annual imports by 0.4 per cent.*

*The BIE also investigated the impacts of the program on local IT&T firms and found that the program had the following impacts:*

- *increased sales by 2.8 per cent*
- *increased exports by 12.9 per cent*
- *increased R&D by 9 per cent.*

Source: BIE (1995)

### **9.1.3 Impacts by state**

Table 9.2 shows the distribution of impacts by state. Differences need to be interpreted with care due to the relatively small sample sizes in Queensland, South Australia and Western Australia. Generally, firms in all states recorded similar improvements in their performance and competitiveness from cooperation.

Firms located in South Australia tend to improve their competitiveness through their key arrangement more commonly than firms in other states. Some 70 per cent of South Australian firms experience improvements in quality from their key arrangement (compared to an average of 56 per cent). In contrast, only 44 per cent of Queensland firms reported a similar outcome. Proportionately more South Australian firms are able to improve their customer service and technology via their key arrangement. These findings are in line with those of Chapter 6, which found that South Australian firms are more likely to achieve major/critical benefits from cooperation than those in other states.

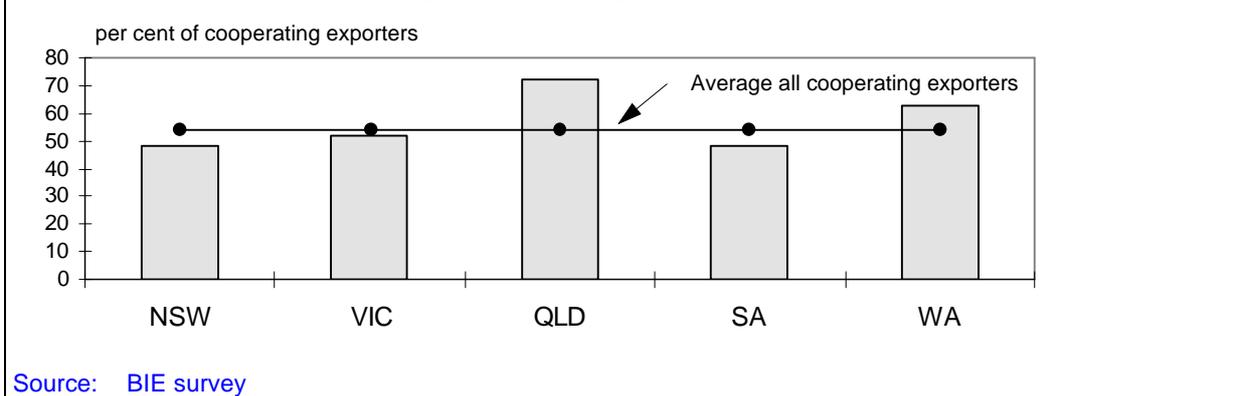
The data in Table 9.2 suggests a large variation in impacts on exports. However, when only exporters are considered, the results change somewhat (see Figure 9.4). Over 70 per cent of Queensland's cooperating firms which export reported increased exports as a direct result of their key arrangement (compared to an average of 54 per cent). The above average result for Western Australia is not statistically significant due to the small number of firms in the sample.

**Table 9.2 Positive impacts of key arrangements, by state (per cent)**

	NSW	VIC	QLD	SA	WA	All states
<i>Performance indicators</i>						
Turnover	69	67	75	71	77	70
Profits	60	56	69	63	68	61
Productivity	50	49	57	55	45	51
Employment	40	37	36	52	46	41
Exports	25	31	45	34	19	30
<i>Broader competitiveness measures</i>						
Customer service	59	61	49	72	63	60
Quality	54	57	44	70	46	56
Technology	55	50	48	58	44	52
Price	41	35	36	42	54	40

Source: BIE survey

**Figure 9.4 Positive impacts on exporters, by State**



Source: BIE survey

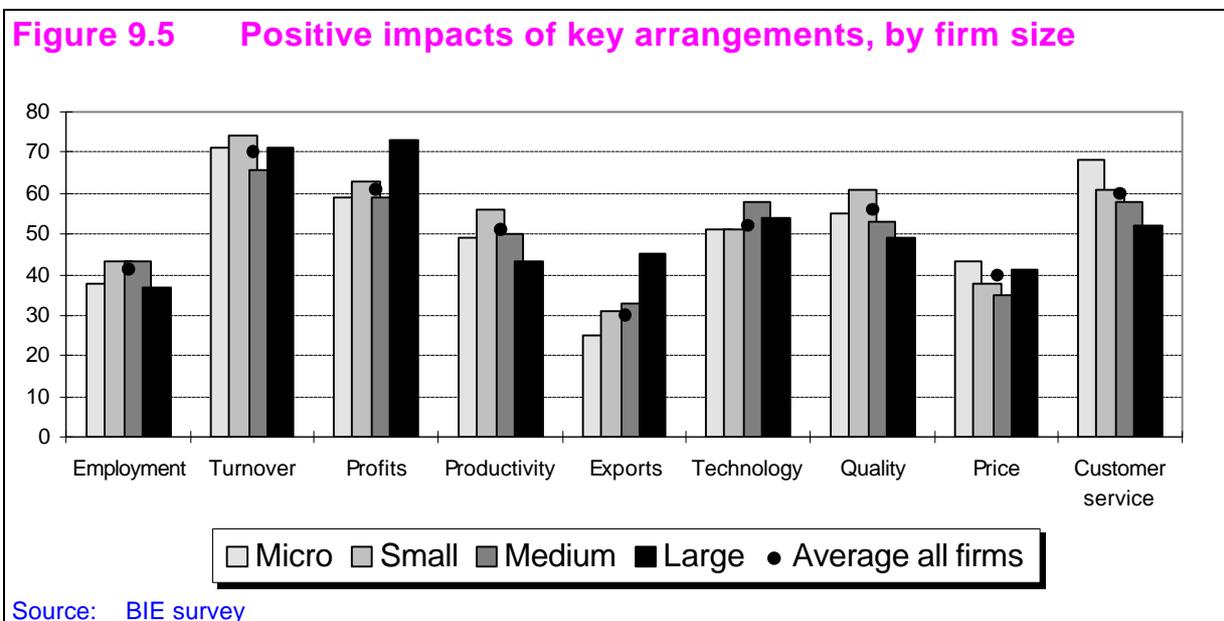
## 9.2 Impacts and the characteristics of the firm

Chapter 7 showed that the benefits of cooperation vary with the characteristics of the firm. For example large firms are far more likely to derive major benefits in terms of product development and technology than small firms, while access to new overseas customers/suppliers is very important for exporters.

This section develops this theme by examining how the performance and competitiveness of different firms are affected by their key arrangements. The structure follows that of Chapter 7, examining impacts by size, age, exporting activity, growth performance, product and technology types and a range of other characteristics.

## 9.2.1 Impacts and the size of firms

As shown in Chapter 7, firms of different sizes report different benefits flowing from cooperation. One might also expect that the impact of cooperation on firm performance and competitiveness varies with firm size. Figure 9.5 shows the proportion of firms recording positive impacts from cooperation by firm size.



The chart shows a relatively large variation in impacts on exports, with larger firms recording well above average impacts, and micro firms (10 or less employees) recording below average impacts. These results are somewhat distorted in that the proportion of firms which export varies with firm size. When only exporting firms are considered, there is essentially no variation in impacts on exports by employment size.

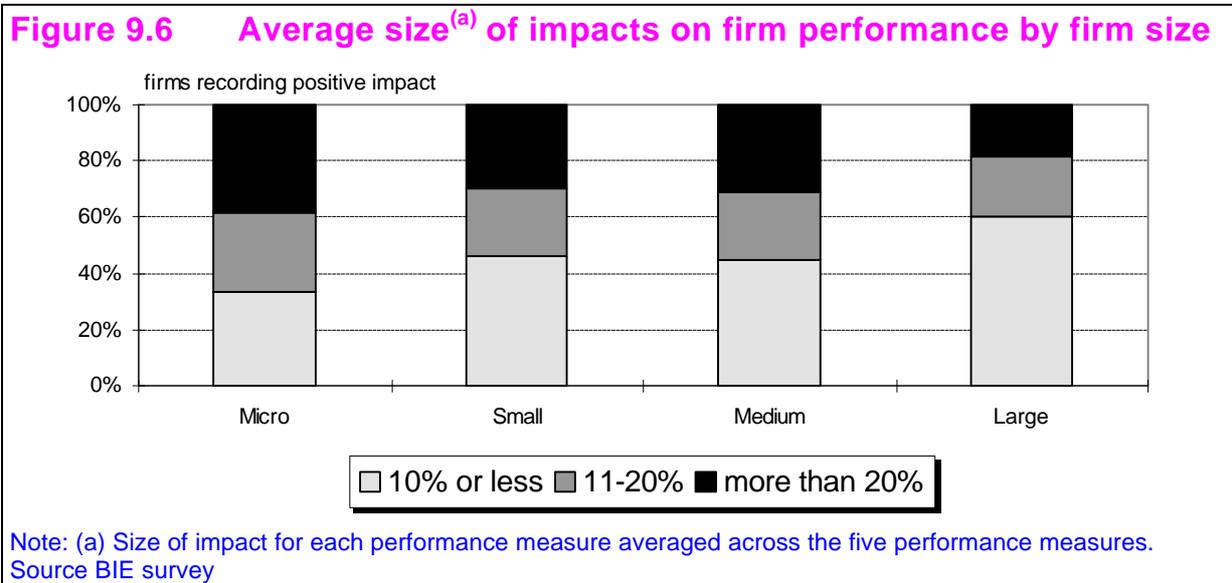
One of the two areas where there is a significant divergence from average results is in profits, where large firms are more likely to experience increases from their key arrangement than other firms. The other is in customer service, where more micro firms than average experience improved customer service via their key arrangement.

These results contrast sharply to those of Section 7.1.2 which found that the probability of receiving major/critical benefits from cooperation in general rises substantially with firm size. Figure 9.5 indicates that firms of all sizes have generally the same chance of recording improvements in competitiveness and performance. Once again, this is likely to be a reflection of the fact that the data relates to only the key arrangement – that key arrangements are similar between sizes of firms. This suggests that for any given arrangement, firm size, *per se*, does not provide any inherent advantage (or disadvantage) in reaping the benefits of that arrangement. The results in Section 7.1.2 are likely to reflect other factors, such as the number of strategically important arrangements held by large firms relative to that of smaller firms.

While the data in Figure 9.5 show that similar numbers of firms in each size categories experience improvements in performance and competitiveness, it does not provide any information on the relative sizes of the impacts. Does the magnitude of impacts vary with firm size?

An examination of the size of performance changes reveals that smaller firms typically experience greater improvements than larger firms. In each of the performance measures, apart from exports, smaller firms

record higher impacts than larger firms. Figure 9.6 shows the average size of impacts (across the five performance measures) by firm size. On average, around 20 per cent of large firms recorded impacts of greater than 20 per cent, compared to a figure of almost 40 per cent for micro firms. Of course, it is easier to grow from a relatively small base. However, these results are particularly important to those small firms who are seeking to improve their performance.

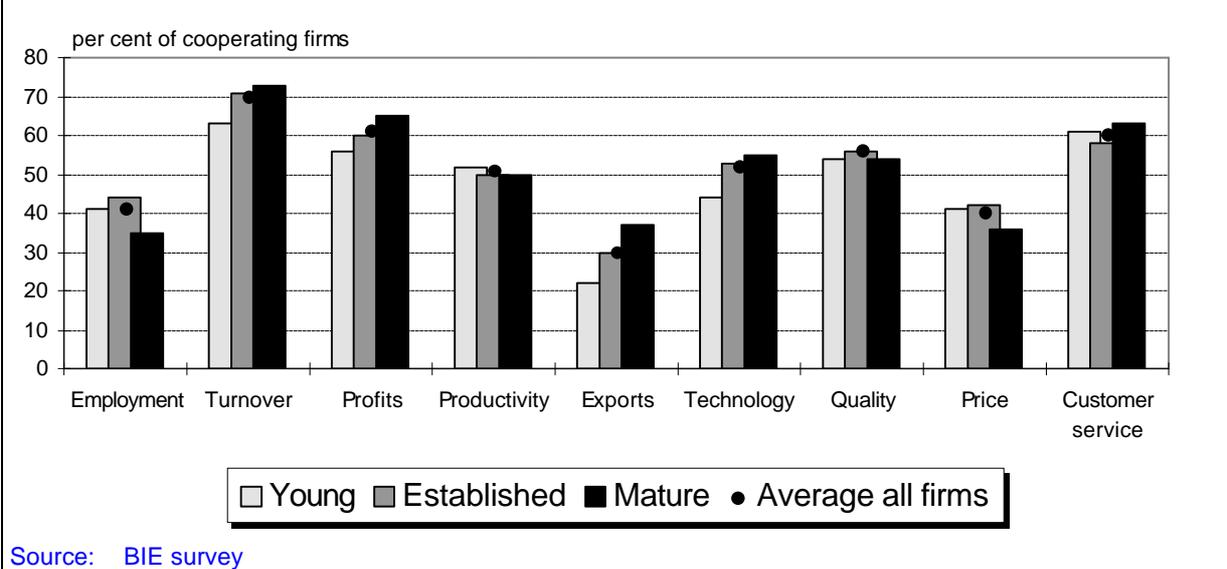


In sum, these results suggest that cooperation can provide substantial benefits to all firms regardless of size. The fact that a firm is large or small generally has little impact on the likelihood that its performance and competitiveness will be improved by any particular arrangement. However, where improvements in performance do arise, they tend to be proportionately bigger for smaller firms.

## 9.2.2 Age of firms

As shown in Chapter 4, the extent of cooperation does not vary greatly between firms of different ages. Figure 9.7 shows that impacts also exhibit little variation with the age of firms.

**Figure 9.7 Positive impacts of key arrangements, by age of firm**



The relatively small proportion of young firms experiencing increases in exports as a result of their key arrangement mainly reflects a difference in export activity. The proportion of young exporters which recorded increasing exports was 45 per cent (compared to an average of 54 for all exporters).

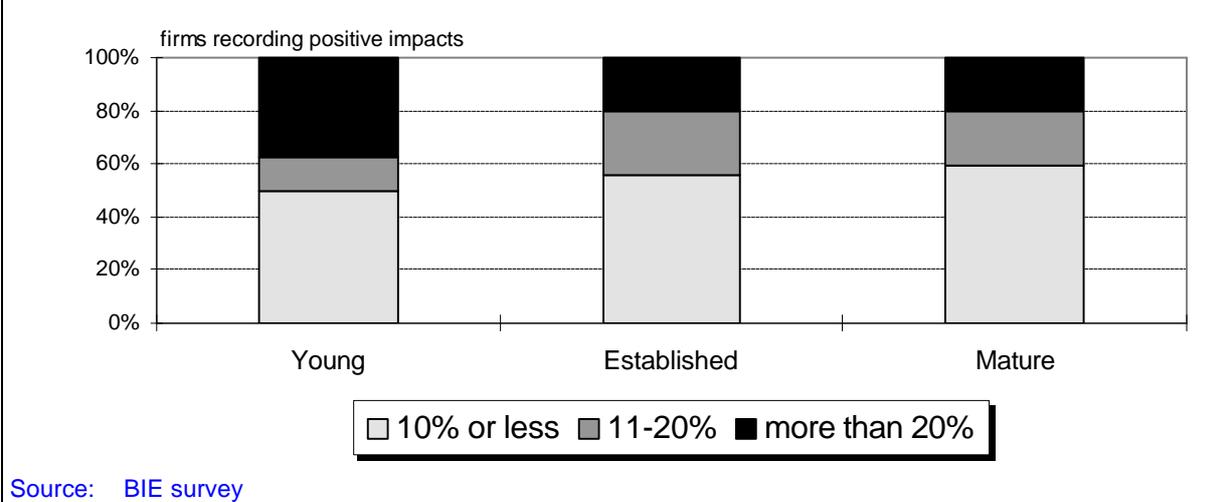
Young firms are also less likely than more mature firms to receive improvements in technology as a direct result of their key arrangement. The proportion of younger firms which classified themselves as “low-tech” is significantly higher than in other age groups. Low-tech firms also experience well below average levels of technology improvement (see Section 9.3.6).

Figure 9.7 suggests that there might be a positive relationship between age and improving turnover and profit levels. This is in line with the findings in Section 7.1.7 which showed that proportionately more mature firms reported increased profit/sales as a major/critical benefit of cooperation than did young firms. Moreover, it found that mature firms were more likely to receive major/critical benefits generally than younger firms. The same could not be said of impacts and the key arrangement. The data in Figure 9.7 indicate that firms of all ages are equally likely to improve their performance and competitiveness via their key arrangement.

Younger firms typically experience greater impacts than more mature firms. This is illustrated by Figure 9.8 which shows the magnitude of positive impacts on turnover by the age of firms.

While more mature firms experience increasing turnover from their key arrangement than young firms, younger firms, on average, experience a greater impact than do mature firms. Such a conclusion is not overly surprising given that young firms are typically smaller than mature firms, and therefore any given increase is likely to be proportionately larger for younger firms.

**Figure 9.8 Turnover increases, by age of firm**



In sum, the impact of the key arrangement does not vary greatly with the age of firms, although younger firms generally experience larger impacts than mature firms.

### 9.2.3 Exporters and non-exporters

Section 7.1.4 examined the benefits of cooperation accruing to exporters and non-exporters and found that benefits tend to favour exporters, most notably increased profits/sales, market knowledge and new overseas customers/suppliers. Are these differences reflected in the impact of the key arrangement?

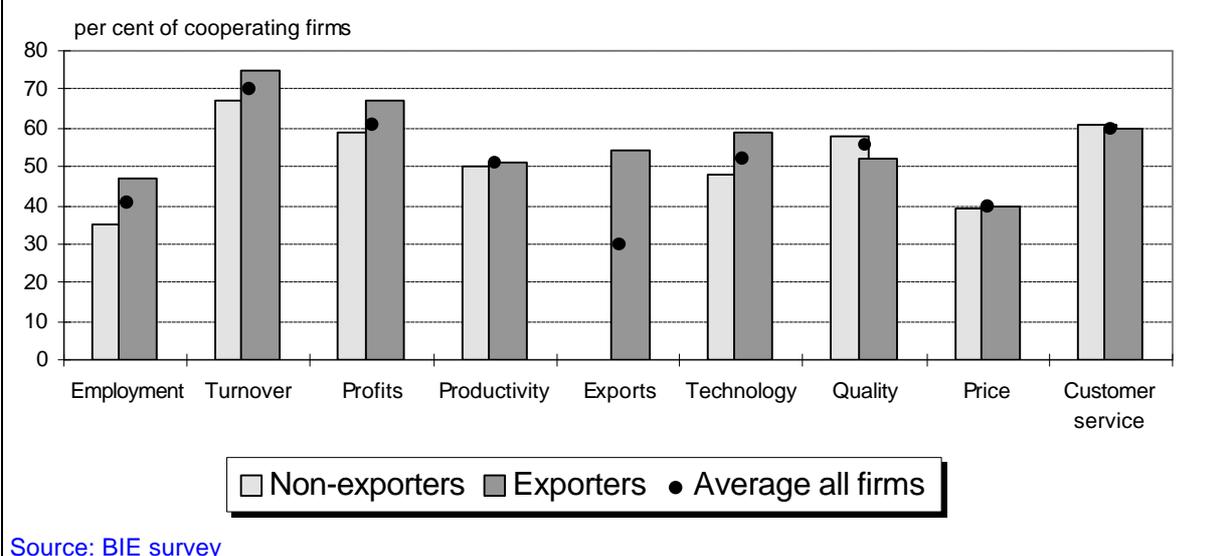
Figure 9.9 shows the changes in performance and competitiveness for exporters and non-exporters. Once again, proportionately more exporters experience increases in turnover and profits directly from their key arrangement than do non-exporters.

Just under half of exporters took on more employees to exploit the enhanced business opportunities resulting from the key arrangement. The comparable figure for non-exporters was 35 per cent.

These results suggest that, on average, key arrangements for exporting firms improve performance more so than those of non-exporting firms.

The picture for competitiveness is not quite as clear. Improvements in technology are more common for exporting firms and this is likely to reflect the importance of overseas links to exporting firms. One-third of exporters' key arrangements are exclusively with firms located offshore – the very arrangements that are most likely to lead to technology improvements (see Section 9.3.4). Nevertheless, non-exporters still record close to average impacts, with almost half experiencing technology improvements.

**Figure 9.9 Positive impacts of key arrangements, exporters and non-exporters**



Proportionately more non-exporters have improved their quality performance via their key arrangement than exporters. An examination of the top three benefits of the key arrangement also reveals that quality improvements are considered somewhat more important to non-exporters than exporters. In the case of the former, 43 per cent of those which have experienced quality improvements ranked it in the top three benefits of the key arrangement. For exporters, the result was 38 per cent.

To an extent this reflects a difference in focus in the key arrangement for the two groups of firms. The most important arrangement for exporters tended to focus on demand side issues, particularly in overseas markets. Non-exporters tend to place a priority on productive efficiency.

### 9.2.4 Impacts and firm performance

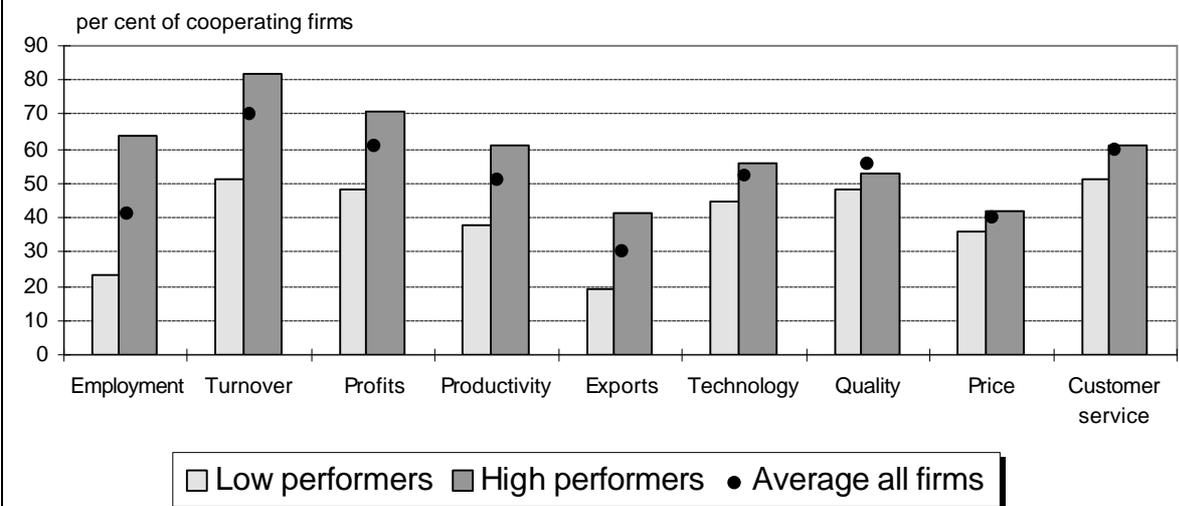
Just under 20 per cent of firms which are involved in cooperation experienced declining turnover in the preceding three years. Figure 9.10 shows the impacts of cooperation on these ‘low performers’ and that for ‘high performers’ – those in the top 20 per cent of growth<sup>11</sup>.

High growth firms are far more likely to receive positive impacts than those with falling turnover – there was an average 20 percentage point difference across the nine measures.

High performing firms recorded above average impacts in all the performance indicators – the area where poor performers recorded well below average impacts. There was an average 28 percentage point difference between the two groups for these five impact measures.

<sup>11</sup> High performers had an average annual growth rate of greater than 25 per cent in turnover over the last three years.

**Figure 9.10 Positive impacts of key arrangement, by turnover performance**



Source: BIE survey

The results for poor performers are particularly important. They demonstrate that business cooperation is still very effective, even for firms experiencing declining sales. Half the cooperating firms with falling turnover experience increased turnover as a direct result of their key arrangements, and almost as many achieve higher profits. While the impacts of the key arrangements for these firms is not great enough to overcome the other influences leading to falling turnover, they nevertheless result in smaller falls than otherwise would be the case.

Moreover, firms in decline are still achieving average positive impacts in the broader competitiveness measures. Improvements in technology, quality, price and customer service can be expected to improve firm performance over time with the consequence perhaps that cooperation might assist in reversing declining turnover.

For the bulk of high growth firms, the key arrangement assisted in achieving high levels of turnover growth<sup>12</sup>.

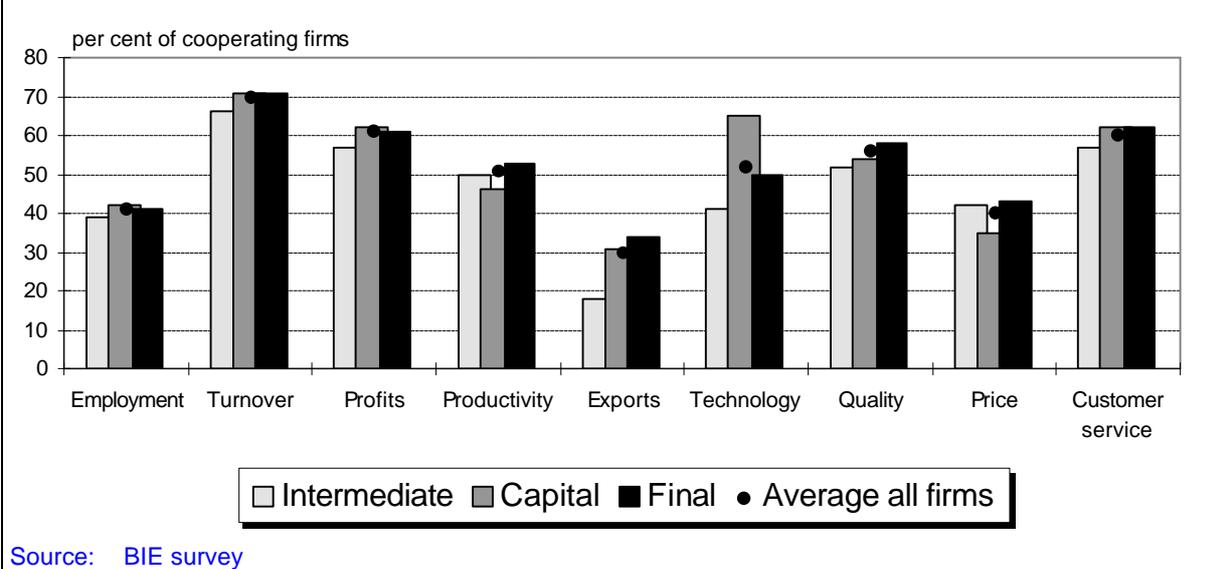
### 9.2.5 Product types

Section 7.1.6 found that intermediate goods producers, like young firms, tend to focus on efficiency or cost issues in their cooperative arrangements. This was more pronounced than capital and final goods producers. Is this difference in focus reflected in the impact of the key arrangement?

Figure 9.11 shows that there is little variation in impacts across firms producing different types of goods. The major areas where differences arise are exports and technology.

<sup>12</sup> Less than 20 per cent of high growth firms report that their key arrangement played no role in increasing turnover.

**Figure 9.11 Positive impacts of key arrangements, by product type**



Some 65 per cent of capital good producers reported that their key arrangement has led to improvements in technology competitiveness (compared to an average of 52 per cent). In contrast, only 41 per cent of intermediate product firms recorded likewise. This largely reflects that capital goods tend to be more technology intensive than either intermediate goods or final goods. Over half of the firms which produce capital goods recorded their level of technology as high. The comparative figure for intermediate good and final good producers is only 25 per cent. This finding is consistent with that in Section 7.1.6 which showed that access to technology was the equal second ranked major/critical benefit of cooperation (access to technology was not included in the top seven major critical benefits for either of the other two groups).

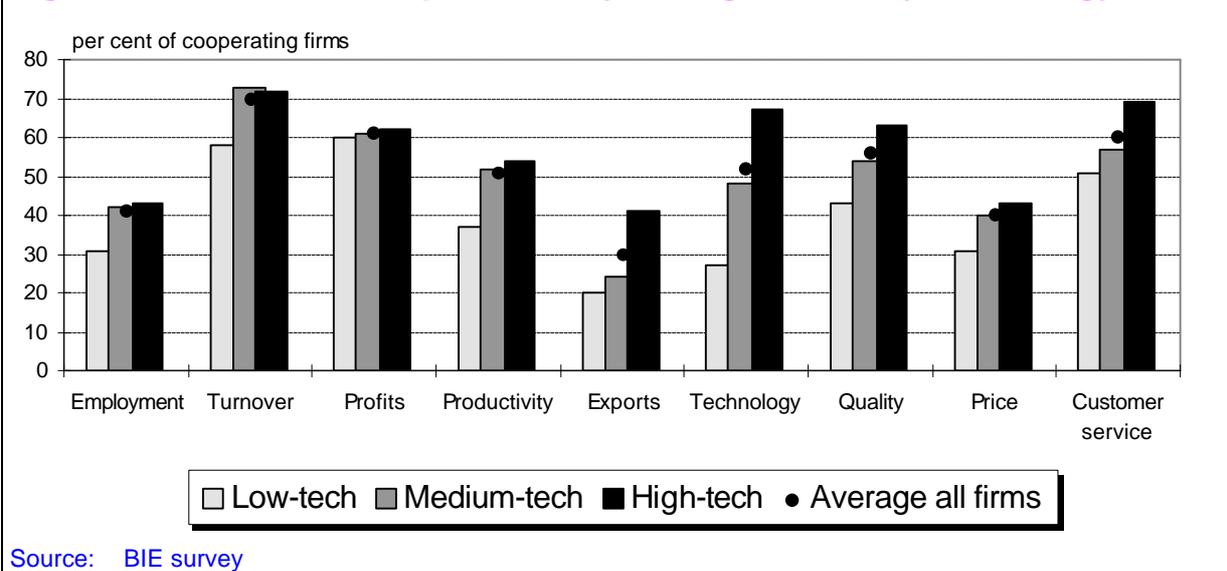
Figure 9.11 shows an apparently small impact on exports for intermediate good producers and an average result for the other two groups. This result is merely due to the very small number of intermediate good producers who are actually involved in exporting.

Overall, the impact of the key arrangement on performance and competitiveness does not vary to any great extent with the type of product a firm produces. Even the magnitudes of the changes in performance are quite similar. These findings suggest that wherever a firm is in the value chain, cooperative arrangements can be a valuable tool in the pursuit of enhanced competitiveness and performance.

### 9.2.6 Low, medium and high-tech firms

Low-tech firms are likely to get less from their key arrangement than other firms (see Figure 9.12). Across the nine measures, there was a 17 percentage point difference in positive impacts between high and low-tech firms.

**Figure 9.12 Positive impacts of key arrangements, by technology level**



Low-tech firms recorded below average impacts in employment, turnover, productivity, technology, quality and customer service. High-tech firms were particularly able to improve their competitive position on a number of fronts, recording above average impacts in technology, customer service and quality.

Not surprisingly, the proportion of high-tech firms experiencing improvements in technology is well above average (67 per cent compared to 52 per cent). In contrast, low-tech firms are only half as likely to record positive technology impacts than average.

These results support findings on the benefits of the key linkage. One third of high-tech firms ranked access to technology in the top three benefits of their key arrangement (it was ranked 6th out of 15 benefits). Nearly half of the high-tech firms which reported positive impacts on technology ranked access to technology in the top three benefits. In comparison, only 8 per cent of low-tech firms ranked access to technology in the top three (it was ranked 14th out of 15). It was revealed in Section 7.1.3 that access to technology is the equal fourth ranked major/critical benefit of cooperation for high-tech firms (it was not ranked in the top seven by either low or medium-tech firms). All in all, cooperative arrangements appear to be important conduits in the flow of technology between high-tech firms, but far less so for other firms.

The apparent differences in impacts on exporters merely reflect differences in exporting activity between the technology groups. When only exporters are considered, impacts are close to the average of 54 per cent for each group.

An interesting aspect of Figure 9.12 is that low-tech firms are as likely as any other to experience increases in profits as a result of their key arrangement, a result not matched in any of the other nine measures. As noted earlier, one of the central reasons firms enter cooperative arrangements is to pursue profit increases. Viewed in this light, the lack of variation in impacts on profits is perhaps not surprising.

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### 9.2.7 Other firm characteristics

Analysis of impacts by competition levels found that a change in competition from medium to high had little impact on the effectiveness of the key arrangement. However, in areas other than productivity, exports and technology, firms facing little competition tended to record far fewer improvements<sup>13</sup>.

Sections 7.2 and 7.3 examined the benefits of cooperation by firms' competitive advantages and growth constraints. Broadly speaking, it found that firms tend to enter arrangements to consolidate and enhance existing competitive advantages and to help overcome specific constraints.

Generally, there is little variation in key arrangement impacts by competitive advantages. Most firms, regardless of their individual strengths, recorded average or close to average impacts.

One interesting exception are those firms with a competitive advantage in technology. Proportionately more of these firms reported growing employment (51 per cent compared to the average of 41 per cent), higher exports (45 per cent compared to the average of 30 per cent) and, not surprisingly, improvements in technology (71 per cent compared to an average of 52 per cent). The latter result suggests that the most important relationship for firms with advantages in technology tend to have technology as a major focus.

The other notable case are firms which considered that the low cost of the products gives them a competitive edge. Such firms recorded average impacts in all areas except technology, where only 40 per cent recorded a positive impact compared to the average result of 52 per cent. This is likely to reflect that for these firms, new and advanced technology is less likely to be seen as an issue of central importance than for other firms.

Finally, there are some significant differences in impacts of the key arrangement for firms which considered access to technology as a major *constraint* on their performance. The proportion of these firms recording improvements in competitiveness tended to be lower than average. For example, only 45 per cent indicated that their key arrangement had enabled them to improve the quality of their products compared to an average of 56 per cent. A similar proportion were able to deliver improved customer service, compared to an average result of 60 per cent. Interestingly, the proportion of firms reporting improved technology was on par with all other firms, indicating that perhaps such firms are pursuing cooperative agreements in part to overcome their technology constraint.

## 9.3 Impacts and the characteristics of arrangements

This section examines how the impact of cooperation varies with the characteristics of arrangements and partner firms. In Chapter 8 we examined how the benefits of cooperation varied with the type of arrangement. For example, it was found that the chance of obtaining major/critical benefits from informal arrangements was significantly smaller than for formal arrangements.

Information on the differing impacts of arrangement types is important to both firms and policy makers. For the former, an indication of how different arrangements affect their 'bottom line' may prove useful in examining cooperative strategies. It also allows firms to target their cooperative activities more closely. For example, if a firm is looking to improve its exporting position, it is very useful to know which arrangements are most likely to achieve such a result. Managers of government programs would also find it useful to know how impacts vary with different types of arrangements. Many government policies are aimed at

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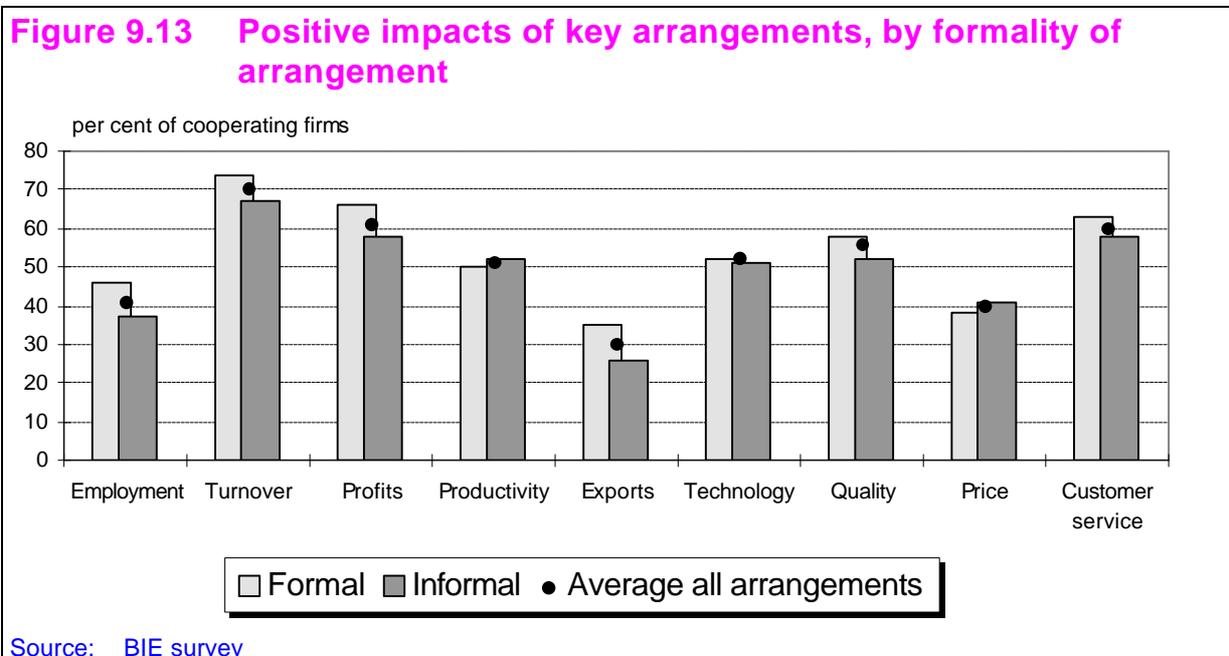
<sup>13</sup> Given the sample of firms facing little competition was less than 5 per cent (or about 20 firms), none of these differences were statistically significant.

improving the competitive position of firms, and information about how cooperative arrangements help in this aim will be valuable.

### 9.3.1 Formal and informal arrangements

There were slightly more informal key arrangements than there were formal ones (53 per cent were informal)<sup>14</sup>. However, formal arrangements tend to have slightly greater impacts than informal ones (see Figure 9.13). Across the nine measures, there is an average difference of almost 5 percentage points in favour of formal arrangements.

Firms with formal key arrangements more commonly have impacts in four of the five performance indicators, although once non-exporters are excluded, there is no difference in the impacts on exports. They are more likely to become bigger (in both turnover and employment) and more profitable as a result of that arrangement than those with informal key arrangements. In contrast, there are no significant differences in the broader competitive measures or in productivity.



The results here are weaker than those in Chapter 8 where we found that formal arrangements clearly lead to greater benefits than informal ones (see Section 8.1.3)<sup>15</sup>. For example, Figure 9.13 shows little difference in the impact of the key arrangement in the areas of quality and technology. However, when cooperation is considered more broadly, there are significant differences in major/critical benefits in these two areas. For quality, 35 per cent of firms with only formal arrangements obtained major/critical benefits compared to 18

<sup>14</sup> This is an interesting result. Interviews with cooperating firms suggested that the more important the relationship to the firm, the more likely it is to be formalised. One might therefore expect the majority of key arrangements - the most important arrangements - to be formal.

<sup>15</sup> Although the results for turnover/profits are consistent with those in Chapter 8 – formal arrangements more commonly lead to increases in turnover/profits than do informal ones.

per cent for those with informal arrangements. For access to technology the proportions were 32 per cent and 14 per cent respectively.

These data illustrate the point that the key arrangement is a *special* case of cooperation. The differences between formal and informal arrangements are greatly reduced when it comes to the most important arrangement.

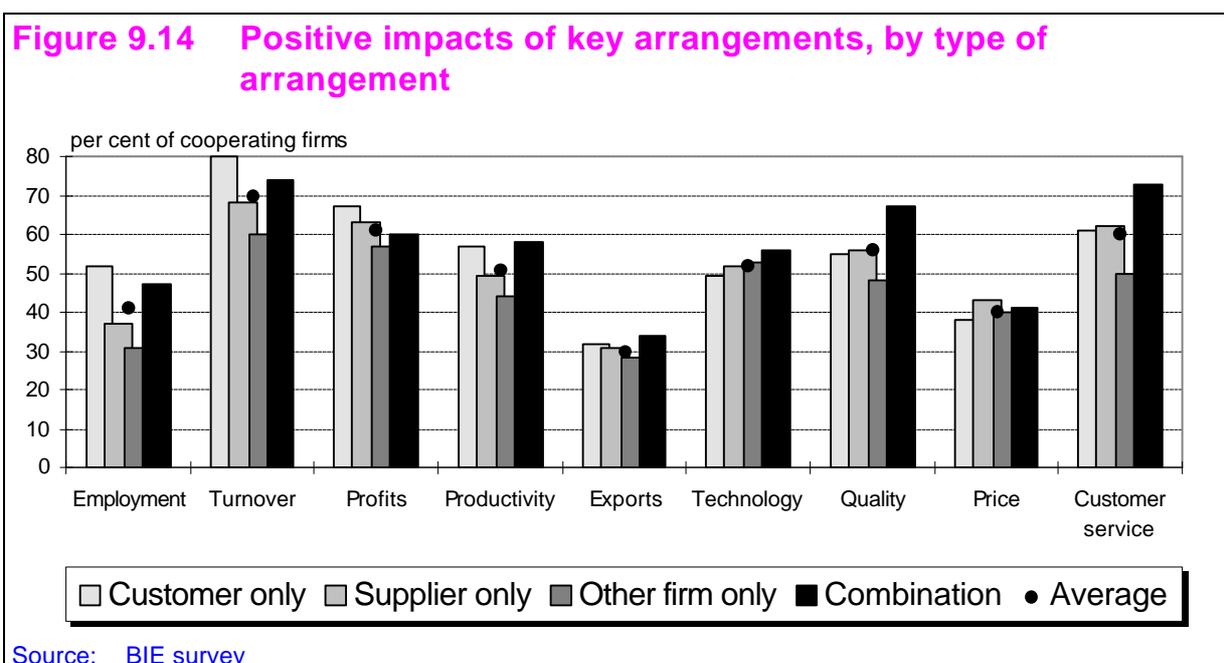
As noted in Section 8.1.3, differences in benefits between formal and informal arrangements may reflect varying levels of effort and commitment made by parties to the arrangement. However, it might be expected that similar levels of effort and commitment would be invested in the key arrangement given that it is the most important arrangement to the firm. To this extent, it would not be surprising to find smaller differences between formal and informal arrangements.

One particularly interesting result is that the impact of informal and formal arrangements on technology is the same (51 and 52 per cent respectively). While this result does not show the quality and types of improvements in technology to be the same, it does suggest that informal arrangements are useful conduits in the transfer and exchange of know-how, technology and so on. Moreover, given the informal nature of these arrangements, the extent of such transfers are likely to be less well documented and this is perhaps an area for further research.

### 9.3.2 Customers, suppliers and other firms

We now see if impacts differ depending on whether key arrangements are customers, suppliers or other firms. Figure 9.14 shows the impacts of these plus a combination category that includes those arrangements that had a mixture of partners. The total number of key arrangements were roughly equally split between the four categories.

The strongest performers were customer arrangements and mixed arrangements, while other firm arrangements recorded the lowest level of impacts in seven of nine measures.



One of the largest variations was in employment. Just over half of the firms whose key arrangements were with customers recorded an increase in employment as a result of that arrangement, followed closely by those with mixed arrangements at 47 per cent. In contrast, 37 per cent of firms with key supplier arrangements recorded increased employment levels and only 31 per cent of firms whose key arrangements with other firms recorded an increase in employment.

There were also substantial differences in impacts on turnover. Those with customer arrangements are more likely to achieve higher turnover as a result of their arrangements (80 per cent) than average, while those with other firm arrangements are significantly less likely (60 per cent). Supplier arrangements and mixed arrangements recorded roughly average levels (around 70 per cent). It is interesting to compare these results to those for profits where variations are much lower (a spread of 10 percentage points compared with 20 percentage points for turnover).

Because of their demand-side nature, customer arrangements might be expected to lead to higher turnover than, say, supplier arrangements. The latter are perhaps more likely to focus on inputs and the production process. In the short-run, lower costs can directly lead to increases in profits, as can higher turnover and it is therefore not surprising to find similar results for profits. However, cost reductions may also provide scope for firms to reduce prices, leading to increases in turnover over time.

Another interesting result is the above average impacts on quality and customer service for mixed arrangements. In these two areas, the effect of having a combination of partners is greater than the effect of having any separately.

Two-thirds of firms with mixed arrangements were able to improve their quality as a direct result of their key arrangement. Around 55 per cent of firms with either customer or supplier arrangements were able to do likewise and only 48 per cent of firms with other-firm arrangements reported a similar result. This probably reflect the advantage of working towards quality improvements from both ends of the value chain.

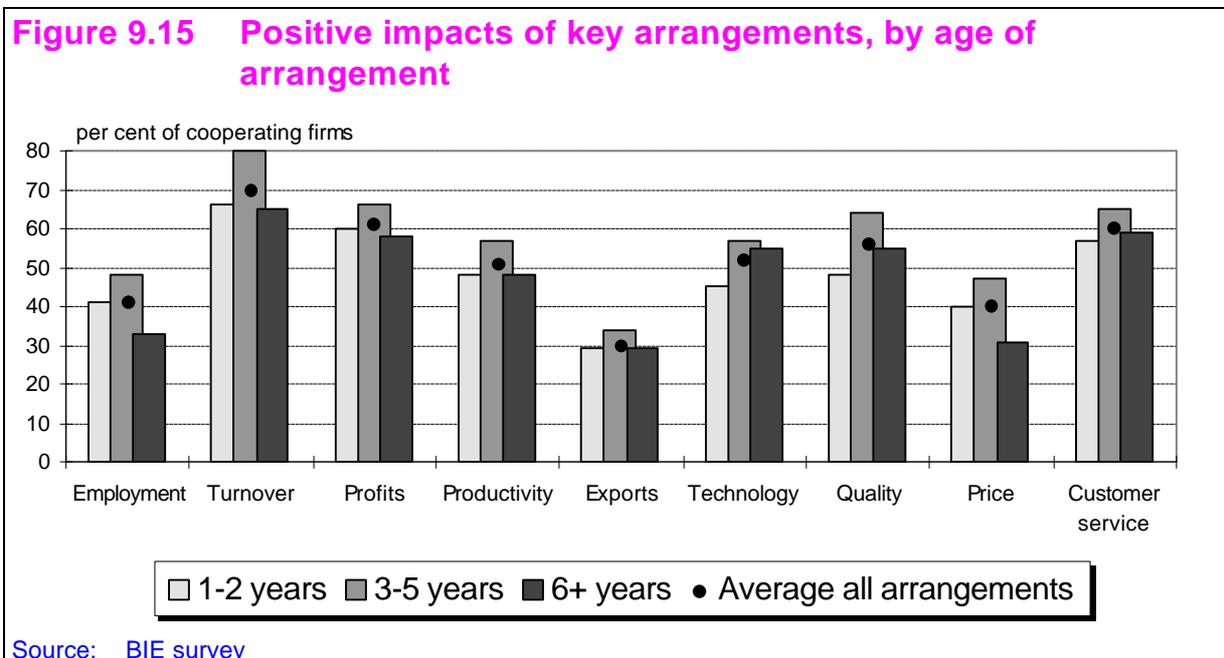
Working closely with customers provides firms with the opportunity to improve the quality of their product – indeed ‘leading-edge’ customers are seen as requiring such improvements according to the AMC (1994). In an analogous way, a firm can improve the quality of its inputs by working with its own suppliers, and in turn, this can lead to improvements in the quality of its own output. When both forces are at work, the likelihood of quality improvements being made is increased.

Figure 9.14 also shows some variation in impacts on productivity. Key arrangements with other firms were found to be less likely than average to lead to increases in productivity. One-fifth of firms with these arrangements reported increases in both productivity and employment numbers, a result similar to those with supplier arrangements. In contrast, over one-third of those with key customer arrangements experienced improvements in productivity and increasing employment. Across all arrangements, just over 70 per cent of firms recording increases in employment also experienced rising productivity. It would seem that cooperation can directly lead to larger, more productive and more successful firms.

### **9.3.3 Impacts and the age of key arrangements**

The key arrangements were grouped by age to assess whether impacts varied with the time they had been operating. Young arrangements (that is those 1-2 years old) accounted for 37 per cent of all key arrangements. Those that were between three and five years old made up 34 per cent. The remaining 29 per cent had existed for 6 or more years.

Figure 9.15 shows how impacts vary with the age of the arrangement. The average age of key arrangements was close to six years, while the median age was three years. Arrangements of 3-5 years recorded the highest proportion of impacts in all of the nine measures.



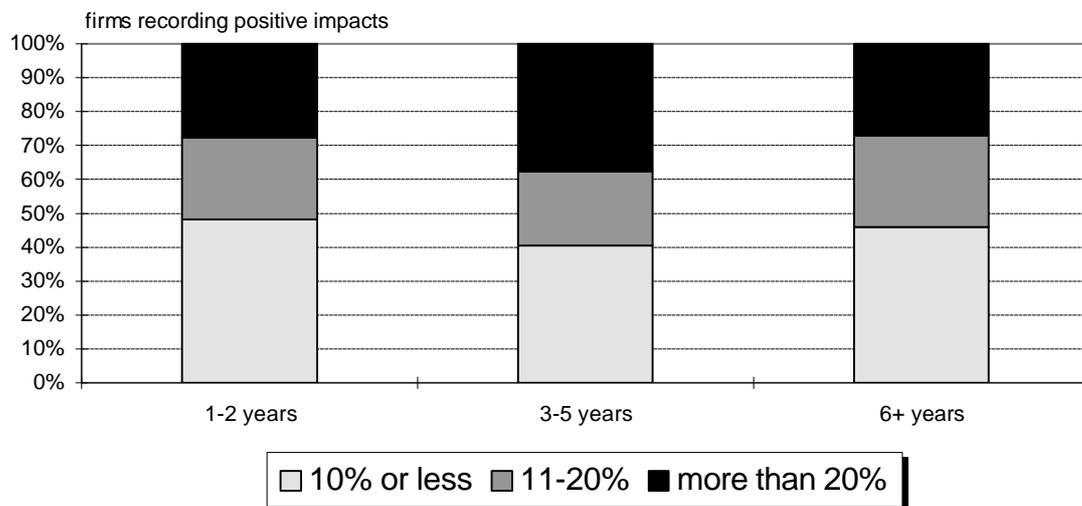
The greatest variation between the age classifications occurred in turnover where 80 per cent of firms with arrangements 3-5 years old recorded a positive impact. It is interesting to note the small difference between young arrangements (1-2 years) and older arrangements (6+ years).

Figure 9.16 provides an indication of the size of impacts by age of arrangement. It shows that relatively new and relatively long standing arrangements are distributed similarly.

In both cases, just under half of those reporting positive impacts on the performance indicators received impacts of 10 or less per cent. In the 3-5 year age group, almost as many firms recorded impacts of greater than 20 per cent as did impacts of 10 per cent or less, a result not matched in the other two size groups. Arrangements of 3-5 years therefore not only provide positive impacts more commonly (Figure 9.15), they also tend to be bigger impacts also (Figure 9.16).

These results suggest that cooperation tends to have its greatest impact in the medium term, although substantial benefits still flow from cooperation in the short and long run. Discussions with cooperating firms support this finding. For example, firms indicated that it can take up to a year before any substantial benefits start flowing from cooperative activities. It often takes considerable time to build the trust between parties that some arrangements require. In the longer term, markets and products change and the original impetus for establishing a cooperative arrangement may diminish or even disappear.

**Figure 9.16 Average size<sup>(a)</sup> of impacts on firm performance by age of arrangement**



Note: (a) Size of impact for each performance measure averaged across the five performance measures. Source BIE survey

### 9.3.4 Impacts and the characteristics of partner firms

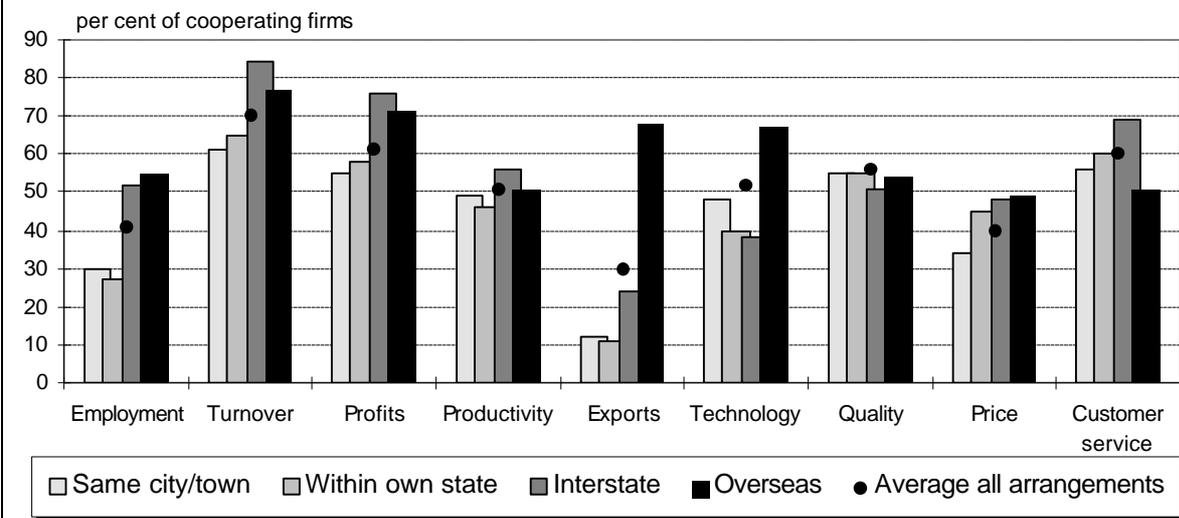
Does the location of partners make any difference when it comes to improving the performance and competitiveness of firms via the key arrangement? The distribution of arrangements by partner location is as follows:

- 40 per cent had all partners within the same city/town;
- 10 per cent had all partners within same state (but none in same city/town);
- 10 per cent had partners exclusively interstate;
- 20 per cent had partners exclusively overseas; and
- 20 per cent had partners in a combination of the above groups.

Figure 9.17 shows that impacts vary substantially with the location of partner firms. Arrangements within town/city and state boundaries tend to have average or below average impacts, whereas arrangements involving firms in other states or countries tended to have average to above average impacts. This is consistent with the findings of Section 8.3.3.

The most dramatic difference occurs with exports. Just over two-thirds of firms that have overseas partners (exclusively) in their key arrangement achieve higher export sales as a direct result of that arrangement. When non-exporters are excluded, the figure rises to over three-quarters. This is the highest result for any arrangement or firm characteristic. In contrast, arrangements that do not cross state boundaries are almost a third less likely to lead to increased exports.

**Figure 9.17 Positive impacts of key arrangements, by partner location<sup>(a)</sup>**



Note: (a) Locations are mutually exclusive (ie all partners are in one location)  
Source: BIE survey

The importance of access to overseas markets is highlighted by responses relating to the top three benefits of the key arrangement. Across all key arrangements, around a quarter of firms rank access to new suppliers/customers overseas in the top three benefits. The figure for those whose key arrangement was with a firm located overseas was 50 per cent.

AMC and McKinsey(1994) noted the importance of overseas customers as “door openers”. It found:

Thirty per cent of our emerging exporters said customers were very important or critical for finding and developing new overseas customers, second only to their offshore sales organisation (40 per cent) (p. 11).

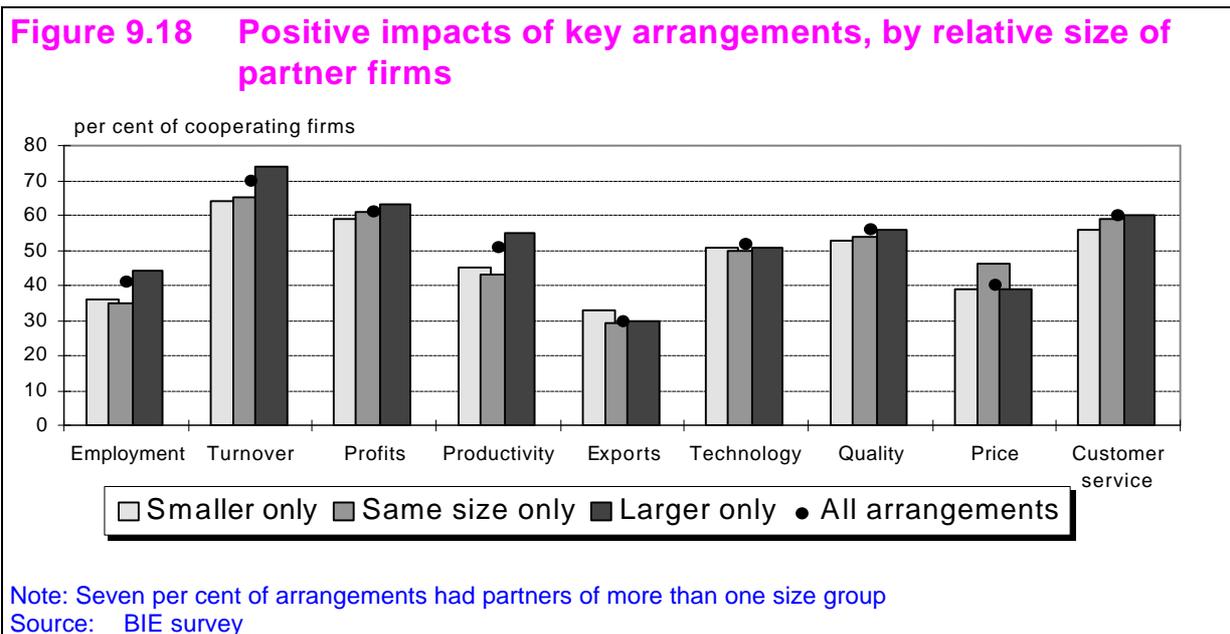
Establishing export markets can be expensive and time consuming. For example, exporters need to develop an understanding of market conditions, business regulations and develop distribution and other contacts in foreign countries. In many cases, managers also have to learn the customs and traditions of the countries they deal with before any trade can take place. These costs are largely sunk and act as a barrier for many (and particularly small) firms. Cooperative arrangements with overseas companies can reduce or even remove some of these barriers and therefore lead to increased exporting activities.

The other area in which arrangements with overseas-based firms seem to have a significant advantage is in the area of technology. Two-thirds of firms with overseas partners in their key arrangement experience improvements in technology as a direct result of that arrangement (compared to an average of 52 per cent). Of these firms, 45 per cent reported access to technology in the top three benefits of the key arrangement. Casting the net wider than the key arrangement, 36 per cent of firms which have overseas links ranked access to technology as a major/critical benefit of cooperation (see section 8.2.2).

A number of studies have examined technology transfers between Australian and overseas firms (for example BIE 1988, EPAC 1986, OECD 1986) and generally find that ‘imports’ of technology are a major source of technology and innovation for Australian firms. The fact that so many firms with overseas links are improving their technology via these cooperative arrangements supports these findings.

Not surprisingly, results similar to those for location are found when arrangements are analysed by the ownership (foreign or domestic) of partner firms. For example, arrangements with foreign-owned firms are far more likely to result in increased exports (52 per cent) than those with domestically-owned firms (18 per cent). However, differences in impacts by ownership are typically smaller than those by location.

Figure 9.18 shows that impacts generally do not vary greatly with partner size. Key arrangements with larger firms (over half of all key arrangements) tend to more commonly result in increases in turnover than do those with firms of a similar size (27 per cent of key arrangements). These results are in line with those of Section 8.3.3 which showed that arrangements with larger firms are more likely to provide major profit/sales benefits than other arrangements.



Cooperation with larger firms was also found to lead to productivity improvements more often than that with firms of a similar size. Arrangements with smaller firms (only 14 per cent of key arrangements) tend to provide average or below average impacts.

It is often argued that small firms receive significant benefits from working with larger firms. Data collected in the survey allow such a claim to be tested by comparing the impacts of arrangements between small (less than 20 employees) and larger firms with all other arrangements.

The only significant difference is customer service. Seventy per cent of small firms whose key arrangement is with larger firms reported positive impacts (the corresponding figure for all other arrangements is 59 per cent). In the other seven impact measures there is no notable difference between the two groups.

A comparison of the size of impacts for the performance indicators was also undertaken, comparing small firms whose key arrangement was with larger firms to all other cooperating small firms<sup>16</sup>. It found that cooperation with larger firms tends to produce only slightly higher impacts than that with other firms.

<sup>16</sup> Using other small firms rather than all other firms provides a better comparison for percentage impacts.

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These results suggest that for the majority of small firms, performance and competitiveness can be improved through cooperation *in general* – linkages with larger firms do not tend to provide additional improvements *per se*.

## 9.4 Modelling analysis

The previous sections have examined the impacts of cooperative arrangements on performance and competitiveness in a partial manner. For example, we looked at how impacts vary between exporters and non-exporters. Separately we examined differences between young and mature firms, and between small and large firms. Such characteristics can be interrelated – exporters are more commonly larger and older for example. In such cases, a partial treatment is clouded by these interrelations. To what extent are the findings for exporters a reflection of other characteristics such as age and size?

To examine these issues we constructed a number of models<sup>17</sup> to examine the relationships between firm and arrangement characteristics and the impacts of cooperative arrangements in four areas, namely, turnover, exports, productivity and technological competitiveness. In a nutshell, the models examined a range of firm and arrangement characteristics and whether or not a positive impact had occurred. The model then predicts the likelihood of a positive impact given a set of characteristics – it identifies the most significant explanators in determining impacts.

Generally, modelling supported the partial analysis of the previous sections. The bulk of the significant findings outlined above were supported, although in some cases, the significance of a particular firm or arrangement characteristic was somewhat lower.

There was, however, one notable exception. Figure 9.9 shows that exporters are far more likely to improve their technological competitiveness through their key arrangement than non-exporters. Modelling work, however, did not support this finding – in fact, the model predicted that if a firm exported, it was less likely to experience such an impact. It also predicted that having an overseas partner in the key arrangement substantially increased the chance of recording technology improvements. This suggests that the differences between exporters and non-exporters is largely a reflection of the importance of overseas linkages to exporters, and has little to do with the act of exporting *per se*.

## 9.5 Summary

Cooperative arrangements can and do play an important role in improving the performance and competitiveness of Australian manufacturers. In seven of the nine measures examined in this chapter, at least half of cooperating firms recorded positive impacts. While there are a few variations, generally speaking, the key cooperative arrangement provides improvements to the bulk of firms, regardless of industry, size, age, product type and so on. Impacts tend to vary more frequently with the characteristics of the arrangement than with characteristics of cooperating firms.

One of the things that matters most to a firm when it is examining cooperation as a strategic option is how it will affect its profit and loss sheet. In terms of improving turnover and profits, arrangements with firms based interstate and overseas recorded well above average impacts, as did arrangements established with customers and those that were 3-5 years old. Large firms and those experiencing high levels of growth more

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<sup>17</sup> See Appendix A.

commonly experienced improvements in these areas as well. In contrast, young arrangements and those with partners located in the same city were least likely to improve a firm's 'bottom line', but even in these cases, over half of the firms with such arrangements recorded positive impacts. Around half of those cooperating firms experiencing falling turnover (low performers) reported that their key arrangement made a positive contribution towards turnover and/or profits.

On the export front, arrangements with firms based or owned overseas offer a distinct advantage in improving the trading activities of Australian manufacturers. Firms with high turnover growth and those in the IT&T industry most commonly experience improving export sales as a result of their key arrangement. On the other hand, arrangements with firms in the same city or state are least helpful in boosting exports.

The pursuit of quality is a core focus for many firms, and cooperative arrangements of 3-5 years were found to be most likely to assist in this regard. Most arrangements provide close to average quality improvements and the only noticeably low performer is young arrangements. There is greater variation by firm characteristics however, and high-tech and small firms record well above average impacts on quality. Conversely, low-tech firms and low performers are least likely to experience improving quality, as are firms in the Sci/med industry.

The final area of particular interest is technology. Once again, arrangements with firms based or owned overseas record well above average levels of positive impacts. Not surprisingly, high tech firms, capital good producers, and those in the IT&T and Engineering industries are also more commonly able to improve their technology through their key arrangement. At the other end of the range, low tech firms, those in the Clothing and footwear industry and intermediate goods producers experience below average impacts. The only type of arrangement with noticeably lower technology impacts were those which were domestically based but with partners located some distance away.

The usefulness of business cooperation in improving performance and competitiveness varies with the age of arrangements. The data in this chapter suggests that it takes a number of years before cooperation yields its greatest returns. This is an important finding, particularly for administrators of government programs involving cooperation. Rushing the early stages of development may result in lower performance and competitiveness improvements than are possible. Cooperation is a medium to long run option if it is to be fully effective.

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## Part C Problems, failures and impediments

The previous section analysed the benefits and performance improvements that often flow from cooperative business arrangements. In doing so, it was possible to draw a picture of the type of arrangements and the type of firms which are apparently most closely associated with successful linkages.

There is, of course, a flip side to cooperation which must be taken into account. The ledger detailing the impact of cooperation on an Australian industry cannot be closed until the various ‘costs’ have been itemised and assessed. In addition, if business cooperation is beneficial to a considerable number of Australian firms, there is value in exploring the reasons why many other firms are apparently reluctant to form linkages.

These costs and impediments are respectively the subjects of this section of the report. The information provided relating to these matters give a good snapshot of the things that trouble firms about cooperation – whether actual or perceived.

The costs of cooperation are approached in two ways. First, we examine the nature and degree of problems firms face within their cooperative arrangements. For example, how important a problem is the administrative burden associated with maintaining arrangements with other firms? Second, we examine the reasons for ‘cooperation failure’ – situations where cooperative arrangements have been tried but later abandoned.

The discussion of the impediments to business cooperation is about those firms which have never adopted a cooperative business arrangement. The focus of the discussion is the major reasons stated by non-cooperating firms for not participating in cooperative arrangements.

A number of other studies have tried to measure the ‘downside’ of inter-firm cooperation and these will be referred to as appropriate.

The structure of Part C is as follows. Chapter 10 considers the problems different firms encounter within various forms of cooperative arrangements. Chapter 11 examines the reasons for firms abandoning arrangements. Finally, Chapter 12 discusses the reasons why non-cooperating firms have not participated in cooperative business arrangements.



# 10 Problems encountered in cooperative arrangements

In this chapter, the problems or negative aspects of business cooperation are considered from the viewpoint of firms currently involved in business cooperation. What problems are firms experiencing within their cooperative arrangements and how serious are they?

As with the discussion of benefits, the negative aspects of business cooperation are examined in isolation to gauge the strength of feeling about specific factors. However, it needs to be borne in mind that a major problem and a strong benefit may well go together. This particularly needs to be taken into account when judging the overall impact of different firm characteristics and types of arrangements.

The chapter is divided into four sections. Problems are first discussed in Section 10.1 at the aggregate levels, followed by firm characteristics (Section 10.2) and types of arrangements (Section 10.3). Finally, Section 10.4 summarises the findings of the previous three sections.

## 10.1 Overview

In contrast to the analysis of benefits in Part B of the report, the focus of this discussion is the proportions of firms reporting any, or ‘some’, problems with their cooperative arrangements<sup>1</sup>. It is of considerable interest to know about *all* the negative aspects associated with business cooperation, as even so called minor problems can be a source of irritation and possibly include aspects which could be easily addressed by external assistance (governments, industry associations or other bodies).

At the same time, the significance of major problems should not be underestimated as these problems might actually threaten the sustainability of their arrangements. Accordingly while the analysis below relates mainly to the wider measure of problems encountered, reference is also often made to the significance of major problems in particular forms of business cooperation<sup>2</sup>.

In the survey, firms were given a list of seven possible negative aspects associated with inter-firm cooperation as well as an ‘other’ category<sup>3</sup>. The basis for comparison across different arrangements are differences in both the degree of the problems and their order of importance.

As with benefits (which has the Benefit Index or BI), an averaging measure is used throughout the chapter to assist with comparisons<sup>4</sup>. This is called the ‘Problem Index’ (PI) and measures the total number of firms

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<sup>1</sup> In this chapter, firms with ‘some’ problems are those which indicated they had either a minor, moderate, major or severe problem with cooperation (see Q11 of Survey Form, Appendix A).

<sup>2</sup> For convenience, ‘major’ problems is used to encompass *either* major or severe problems with cooperative arrangements.

<sup>3</sup> The ‘other’ category is excluded from the analysis in this section as it typically only represents 2-3 per cent of firms. This in part may reflect the fact that a number of firms were not inclined to take the time to state other reasons. However, in the discussion of impediments in Chapter 12, it is observed that over 40 per cent of non-cooperating firms ticked the ‘other’ category. In this context, the very low proportion of cooperating firms with ‘other’ problems may in fact be fairly accurate.

which have experienced some problems across the seven problem categories (in a particular arrangement or type of firm), divided by seven to give an average problem ‘score’.

We can use the Problem Index as a shorthand measure for summarising the extent to which particular firms (or firms in particular arrangements) are encountering problems as a result of cooperation.

### 10.1.1 All industries

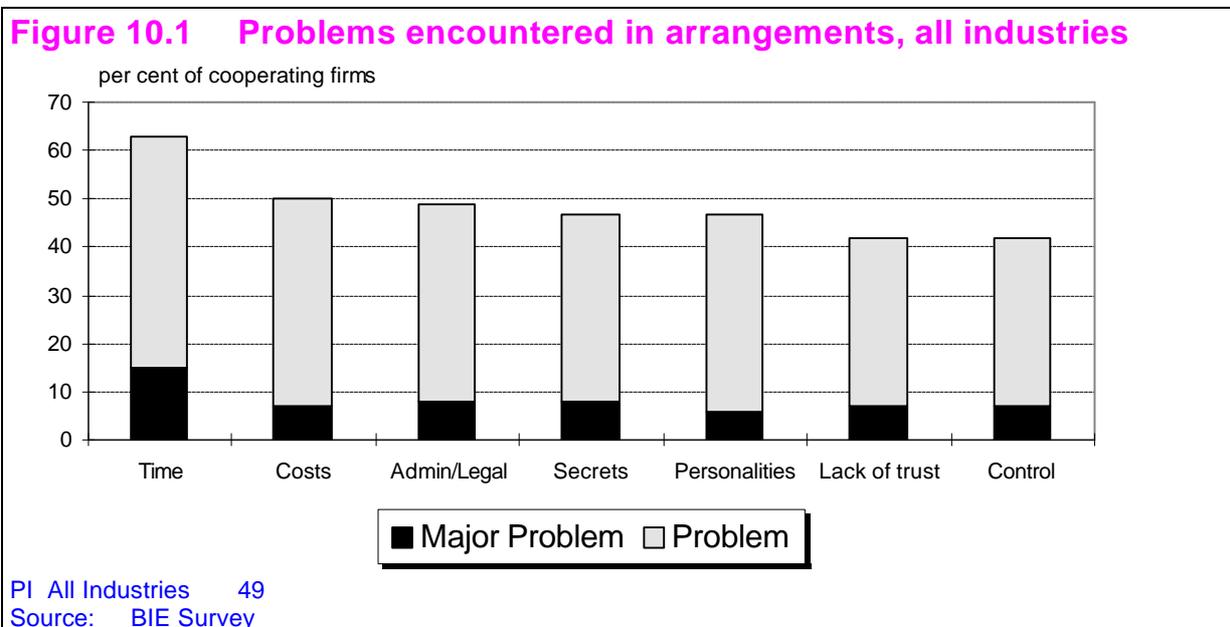
By way of introduction to the problems encountered by cooperating firms, almost 80 per cent of them have some problems with their cooperative arrangements. However, only 30 per cent encounter any *major* problems and a low 15 per cent face two or more *major* problems.

These proportions for major problems are much lower than the proportions of firms obtaining major benefits across all industries (see Chapter 6). Thus, 75 per cent of cooperating firms obtain some major benefits from business cooperation while two-thirds obtain two or more. This is very significant:

- the proportion of cooperating firms receiving at least one major benefit from business cooperation is two and a half times the amount experiencing at least one major problem; and
- the proportion of cooperating firms receiving two or more major benefits is over four times greater than the amount encountering two or more major problems.

These findings firmly place the ‘costs’ of cooperation in context. The fact that more firms benefit than encounter problems is not surprising, of course, but the relative differences are reassuring and are a big plus in favour of inter-firm cooperation.

Figure 10.1 shows the individual problems associated with business cooperation as rated by the firms with current cooperative arrangements. The percentages shown in this chart set the ‘norm’ as the basis for comparisons between different forms of cooperation. The Problem Index for all industries is 49.



<sup>4</sup> See Section 6.1.3 for a discussion of the Benefit Index.

The negative aspects of cooperation across all industries broadly fall into three main groups. The additional time commitments involved in managing cooperative arrangements is out on its own, with almost two-thirds of firms reporting difficulties in this area (it is also significant as a major problem of cooperation). The second group comprises four problem categories around the 50 per cent figure; thus approximately one half of cooperating firms experience problems with financial costs, administrative/legal matters, disclosing commercial secrets and personality difficulties. Finally, at a lower level, around 40 per cent of firms have cooperation problems relating to loss of control and lack of trust.

The major problems for cooperating firms are very clearly additional time commitments (15 per cent of firms) and the rest a distant second and all close together (6-8 per cent of firms). In the hectic world of modern commerce, the scarcity of the time resource obviously preys on minds of business managers. The time factor can be particularly important to small firms relatively new to the cooperation game and facing a steep learning curve (see Box 10.1). It says a lot about current firm behaviour and attitudes that this is ranked above all else. At the other end of the scale, firms are being relatively positive and mature in their attitude to trust and control – two aspects often seen as important barriers to business cooperation.

Of course all may not be as it first appears. Rather than looking at each problem as independent from the rest, it may often be the case that some are causes and some are consequences. The clearest example of this might be time as a consequence of other factors. Thus, the relatively high proportion of firms specifying time as a problem may be reflecting the fact that they need to devote so much time to dealing with some of the other matters (for example, trust, administration, control). The administrative and legal burden of business cooperation might also be intertwined with other factors, such as the handling of commercially sensitive matters and financial aspects.

#### **Box 10.1 Cooperation and time commitments**

*Breseight Australia Pty Ltd is a small engineering company with 20 employees. It is a family company which started in 1984. In the last couple of years it has won major contracts as a preferred component supplier to Telstra and Alcatel. As a consequence of these contracts, Breseight has found it necessary to develop cooperative arrangements with three of its own suppliers to help better manage its production processes.*

*The company has gained enormously through working closely with Telstra and Alcatel, particularly through improved distribution processes, increased productivity, better management techniques and quality enhancement. But it has also experienced some difficulties with its cooperative arrangements, on both the customer and supplier side.*

*The main problem has been the additional time required to manage the contracts. For a firm which until recently had dealt principally at arm's length with its customers and suppliers, Breseight has faced a very steep learning curve in dealing with very large partner firms. Management has had to make time to handle all the administrative and logistical aspects, as well as such matters as quality assurance. This is something which Breseight believes it had to face up to by learning on the job and could not be overcome by simply adding staff resources.*

Source: BIE interview

There is clearly something in this line of argument. The possible relationships between the various problems needs to be borne in mind in the following sections. At the same time, whether inter-related or not, the individual problems specified by the firms are real to them as separate, 'end-of-the-day' issues which have to be dealt with as a consequence of their cooperative arrangements.

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### 10.1.2 States

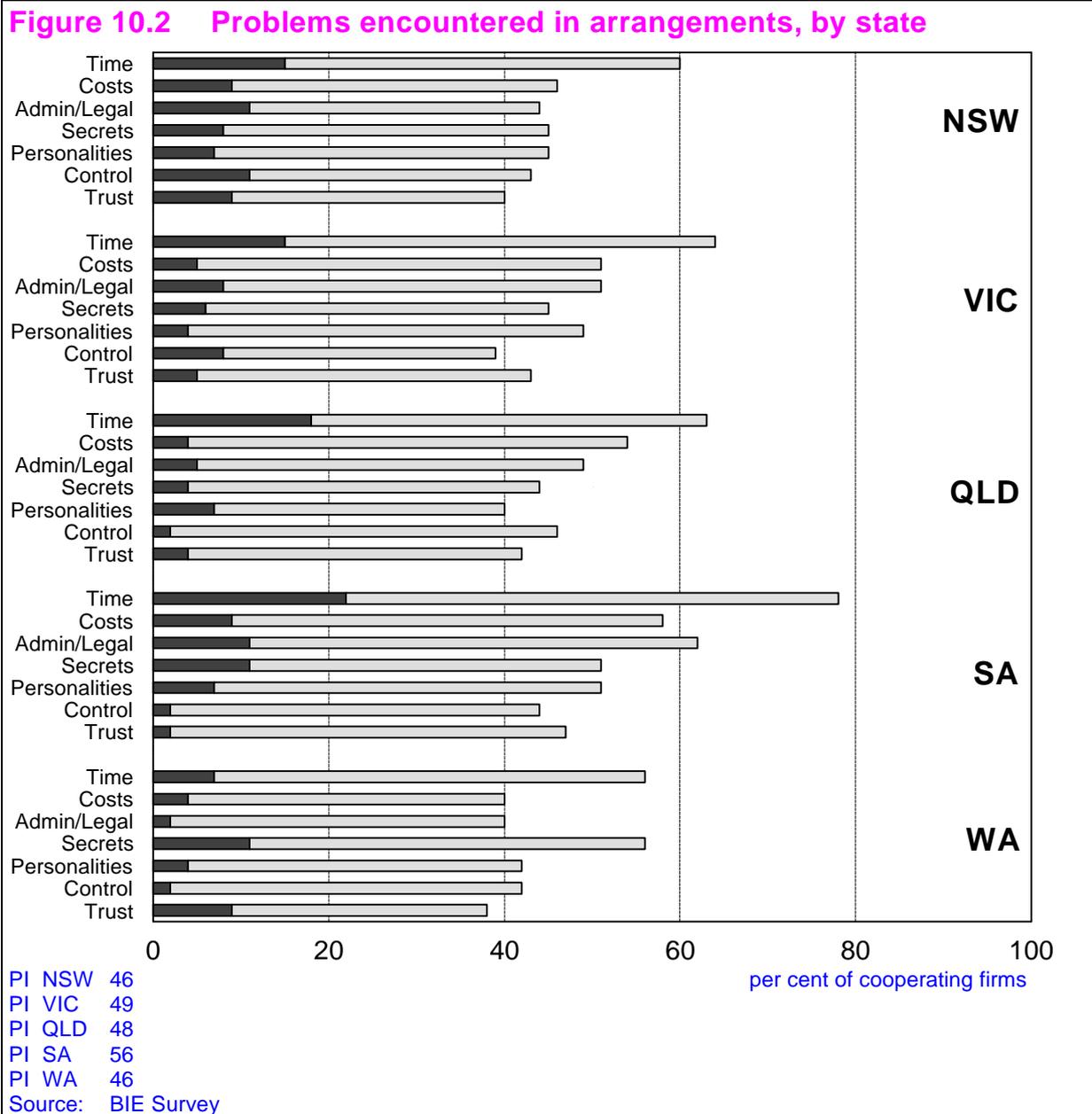
It was noted in Part B that state characteristics largely reflect the relative importance of the industries and different firm types within their borders. Accordingly, caution should be exercised in this part of the report in attributing state differences to intrinsic or inherent state characteristics.

In fact there appear to be few significant differences between the states with regard to business cooperation problems (Figure 10.2). South Australian firms are somewhat of an exception and easily have the most problems associated with their linkages (Problem Index of 56).

The most significant differences from other states are the very high proportions of SA firms complaining about additional time commitments (78 per cent) and having administrative and legal problems (62 per cent). The fact that around four-fifths of cooperating South Australian firms are experiencing problems with the degree of time involved in managing business cooperation is a little unsettling and could possibly threaten the long-term viability of these linkages. This is particularly so with 22 per cent of SA firms also regarding time as a *major* problem<sup>5</sup>.

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<sup>5</sup> In view of the generally very low proportion of firms reporting major problems with their cooperative arrangements, caution must be exercised in evaluating their significance at the industry and other disaggregated levels. In this example, the South Australian firms with major time problems represent only about 10 firms.



These results are of course likely to reflect something about industry structure or cooperating firm characteristics. In addition, it will be recalled from Chapter 6 that South Australian firms are also the most likely to *benefit* from business cooperation. Their greater tendency to experience problems must be seen in this context.

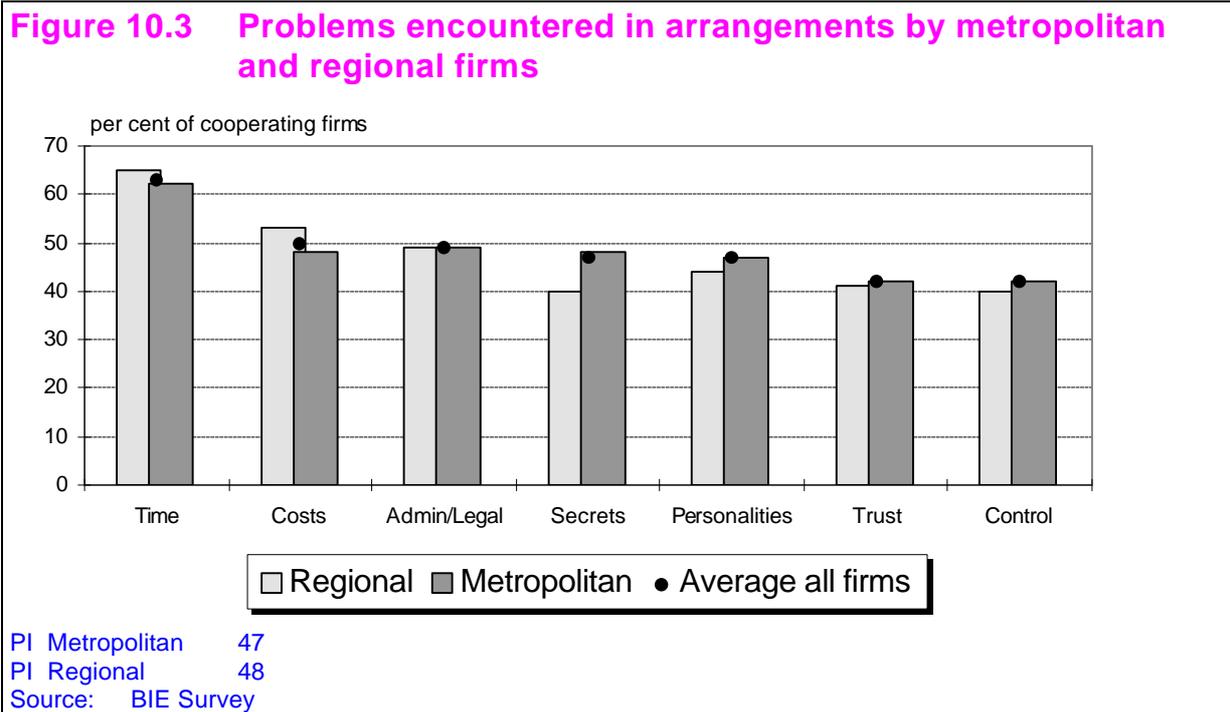
NSW firms provide an interesting story in their attitude to cooperation problems. On average they have relatively low proportions of firms experiencing general difficulties (only bettered in fact by WA firms), but score relatively highly with regard to ‘major’ problems. Victorian and Queensland firms come out fairly even for both general and ‘major’ problems and their PIs are around the national average.

The smallest state, Western Australia, has the least problems with cooperation both at the general and ‘major’ problem levels. The PI of 46 reflects the fact that the proportion of WA firms with problems is on

the low side in all categories, with the notable exception of commercial secrets. In this category WA firms are in fact the most likely nationwide to have problems – around 55 per cent of firms experience some problems with disclosing secrets.

### 10.1.3 Metropolitan/regional location

An examination of Figure 10.3 shows there to be very few differences in problems for cooperating firms in the major cities and the regional areas. The negative aspects are much the same wherever a firm is located.



Only one problem is worthy of mention. Firms in the major cities tend to be a little more concerned with disclosing commercial secrets than regional firms. In fact, at 40 per cent, disclosing commercial secrets is likely to be the least problem regional firms have with inter-firm cooperation

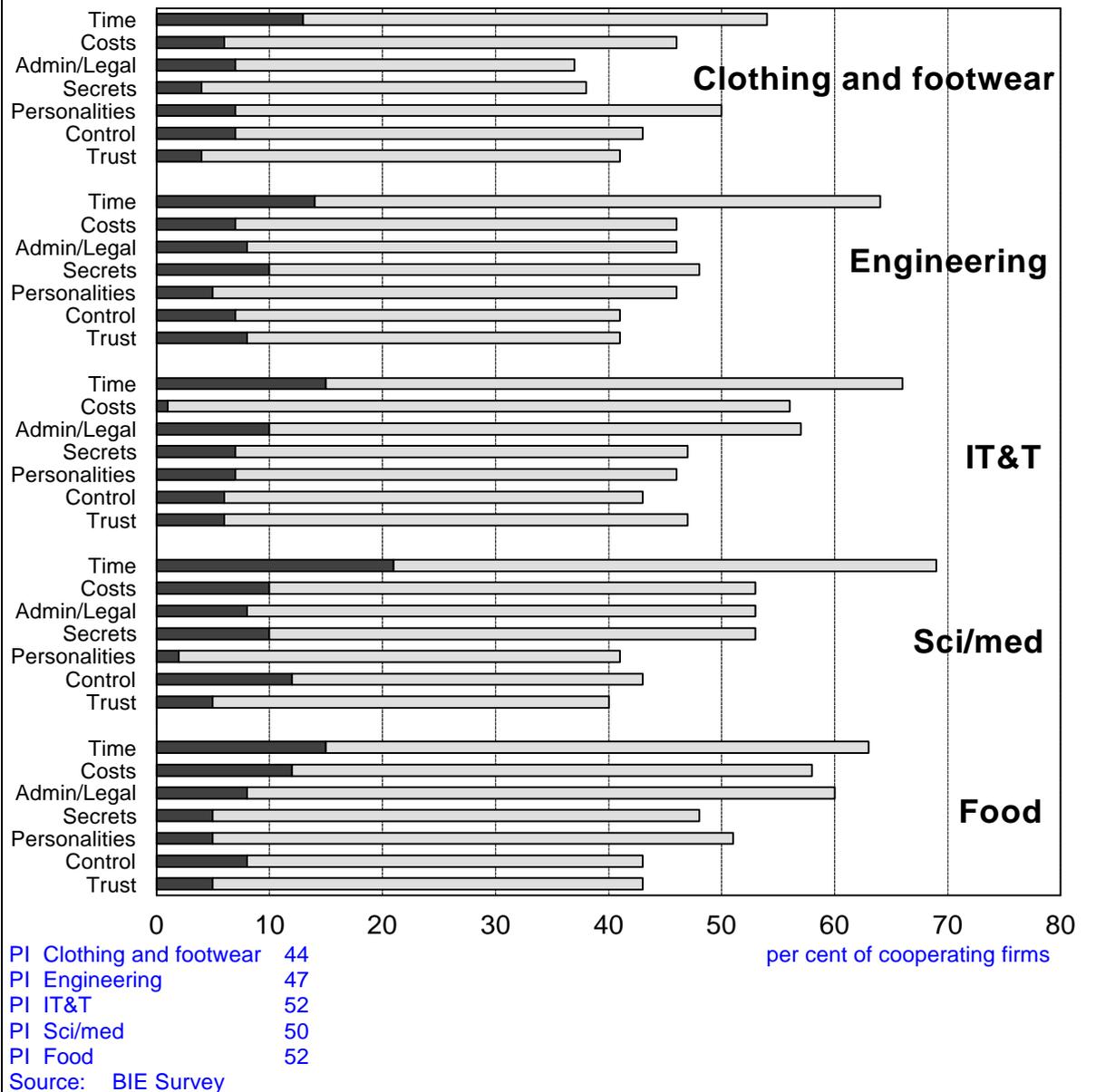
## 10.2 Problems and firm characteristics

This section considers whether certain types of firms face particular problems with their linkages. As in Part B, firm characteristics are classified according to industry, size and age of the firm, high and low performers, exporters/non-exporters, product type, technology content and the degree of competition in the market place.

### 10.2.1 Industry

Does the industry in which a firm operates make any difference when it comes to the problems it faces in its cooperative business arrangements?

**Figure 10.4 Problems encountered in arrangements, by industry**



The five industries in fact appear to fall into two groups, with the Clothing and footwear and Engineering firms somewhat less likely to experience problems compared to firms in the other three industries. Across the five industries, problems are apparently most likely for Food and IT&T companies and least likely for Clothing and footwear firms (Figure 10.4).

The Food industry has above average problems with administrative/legal problems and financial costs. The proportion of Food firms having ‘major’ problems with the financial costs of cooperation is also relatively high (12 per cent).

Firms in the IT&T industry have a few problems with administrative/legal aspects and financial costs. However, the proportion of IT&T firms with ‘major’ problems in these two categories provides a notable contrast. Although a reasonably pervasive problem across the industry, only 1 per cent of IT&T firms regard financial costs as a ‘major’ problem in their cooperative arrangements. In contrast, 10 per cent of firms regard the administrative side of cooperation as a ‘major’ problem.

Clothing and footwear firms experience generally fewer problems than other industries, but particularly so in relation to the administrative/legal burden and disclosing commercial secrets. The latter may seem surprising in view of the industry-wide emphasis placed on design and product differentiation.

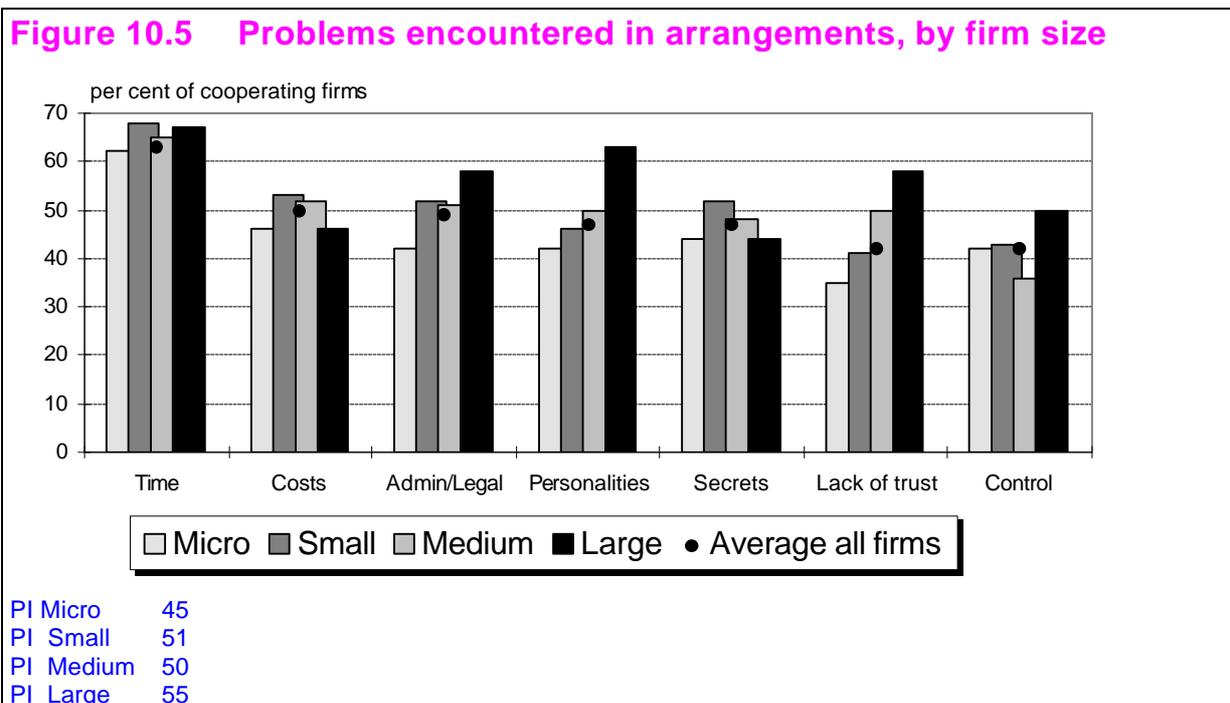
The industry experiencing the most ‘major’ problems in its cooperative arrangements is Scientific/medical. A high 21 per cent of firms complain about time as a major burden. The proportion of firms having ‘major’ problems with financial costs, disclosing commercial secrets and loss of control are also relatively high compared with other industries.

## 10.2.2 Size of firm

One of the most basic firm characteristics is its size. The differences in problems, if any, between larger and smaller firms, may be of interest to a wide audience.

Figure 10.5 shows the proportion of firms with problems for each employee size category adopted in this report. At the general level, the negative aspects of business cooperation become stronger as firm size increases. Thus the extent of problems encountered by large firms is measured at 55 by the Problem Index, compared with a Problem Index score of only 45 for micro firms. However, there is somewhat of a levelling out in the extent of the problems faced by the two mid-groups.

Larger firms are of course more likely to have multiple linkages than smaller firms and therefore potentially face more problems. However, only two problems can be *clearly* seen to get worse as firm size progresses: personality difficulties and lack of trust. For the former the chance of a personality clash increases steadily over the three smallest firm groups and then jumps to 63 per cent for the largest firms. This could be explained in part by the greater number of linkages which large firms have on average – the more people a firm has to deal with the greater the likelihood of personality difficulties. Alternatively, it might be due to the fact that large firms tend to be involved in more complex arrangements with higher stakes attached, thus placing more of a strain on personal relationships between firms.



Source: BIE Survey

Lack of trust varies substantially between each firm-size category and in some ways is contrary to the results that might have been expected. That is, rather than small firms having the *least* problems with trust (as in Figure 10.5), the fact they are less likely to cooperate (see Chapter 4) ought to perhaps make them relatively *more* suspicious of their partners.

One explanation for the data might be that smaller firms are much more likely to be involved in informal arrangements than large firms (see Chapter 5). In informal arrangements, trust takes the place of the contract.

The administrative/legal burden of business cooperation also appears to be generally more of a problem as firm size increases (although this plateaus in the middle groups). This could be a function of both the number of arrangements and their likely complexity. Interestingly, however, the problems of time management do not vary a great deal with firm size which is somewhat contradictory to this hypothesis.

At the 'major' problem level, the relationship between firm size and problems is virtually reversed<sup>6</sup>. If the micro firms are excluded, the probability of 'major' problems becomes less as firms become bigger.

On average, small firms are significantly more likely to experience 'major' cooperation problems than large firms. Especially significant is the 21 per cent of small firms with 'major' time management problems. However, the proportion of small firms having 'major' problems with financial costs, lack of trust and personalities are also all well above average. Some small firms (although not the very smallest) are clearly struggling a little with several of the negative aspects of business cooperation. Box 10.2 provides an example of one firm's problems with its cooperative arrangements.

#### **Box 10.2 The importance of size**

*Agen Biomedical has experience working with distributor groups as well as with multinationals. The latter provides access to joint R&D at a level greater than could be done alone and also provides intangibles such as market credibility.*

*As a medium-sized company Agen Biomedical has experienced some difficulties with credibility when dealing with large companies and also differences in priorities and their inability to influence these large companies. For a successful cooperative arrangement the smaller firm has to make itself more important to the other firm(s).*

*With its multi-partner relationships, Agen Biomedical's problems have included the distant geographical location of some member firms and getting all firms to understand the benefits of cooperation. It is important to have relationships with these similar-sized firms which can both be influential and also allow Agen to maintain its independence. There are plenty of such possible linkage partners in Australia.*

*Previous experience has taught Agen Biomedical that it is important to have good personal contacts at a number of levels within the partner firms. This reduces problems caused by staff changes.*

Source: BIE interview

<sup>6</sup> The 'major' problems will be referred to in the text throughout the chapter but are not shown in Figure 10.5 or subsequent figures - they are generally very small, vary little and would add to the complexity of the charts.

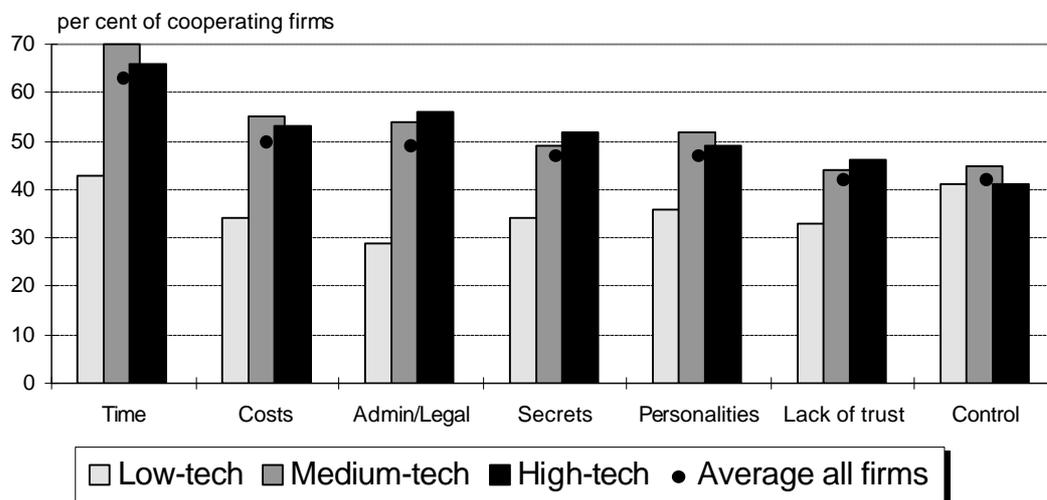
### 10.2.3 Technology content of product

Low-tech firms are considerably less likely to have problems within their cooperative arrangements than medium and high-tech firms (Figure 10.6).

Firms producing relatively unsophisticated products are not particularly enthusiastic about business cooperation (see Chapter 4). They tend not to face the same degree of complexity and uncertainty as higher tech firms. It may be that the low-tech firms that do take the plunge are not sufficiently committed to get over-concerned about the negative aspects.

In other words, cooperation apparently plays only a minor part in their business activities and the associated costs are of relatively small consequence to most firms<sup>7</sup>. Significantly, the only matter which makes an impact as a 'major' problem for low-tech firms is the fear of losing control. This suggests they are generally uncomfortable with the concept of cooperation.

**Figure 10.6 Problems encountered in arrangements, by technology content of firm's product**



PI Low-tech 36  
 PI Medium-tech 53  
 PI High-tech 52  
 Source: BIE Survey

Medium to high-tech firms, on the other hand, are more likely to cooperate as part of their usual business activities. For high-tech firms in particular, linkages with other firms are often part and parcel of their trade.

The negative aspects they experience probably reflect this greater involvement. The time these firms require to manage cooperation is particularly troublesome (and especially so for high-tech firms). Financial costs and administration problems also rate highly for both high and medium-tech firms.

<sup>7</sup> It will be recalled from Chapter 7 that they are also less likely to benefit from cooperation than higher tech firms.

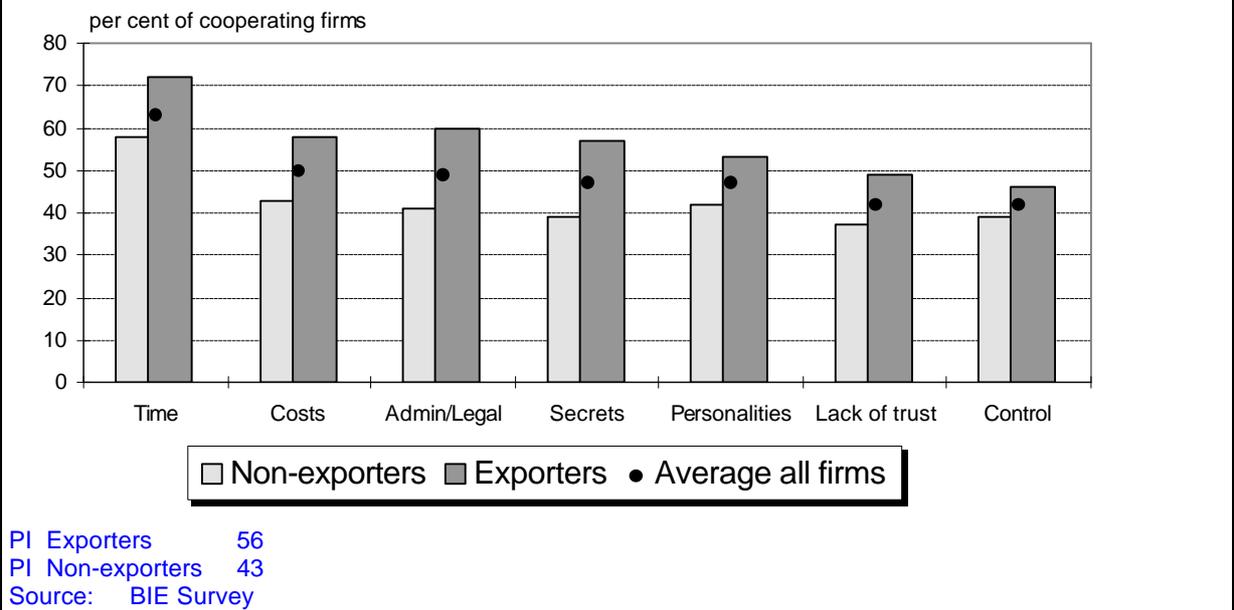
### 10.2.4 Exporters and non-exporters

The problems encountered by exporters (and non-exporters) are shown in Figure 10.7. Exporters are more likely to have cooperation problems across all the categories in comparison with domestic-focused firms (PIs of 56 and 43 respectively).

As usual with business cooperation, allocating time is by far the biggest problem for exporting firms (72 per cent). A second tier of negatives is headed by the administrative/legal burden of cooperation, which affects 60 per cent of exporters, closely followed by financial costs and disclosing commercial secrets.

Administration concerns and disclosing commercial secrets provide the biggest contrasts between exporters and non-exporters. On the other hand, exporters are no different from domestic-focused firms in relation to problems with loss of control.

**Figure 10.7 Problems encountered in arrangements by exporters and non-exporters**



The relatively high ranking by exporters of administration as a problem is not really surprising. In general, exporters are used to a fair amount of administration in the course of their business; for example, in the form of contracts, overseas orders, foreign exchange, local and foreign regulations. The high administrative problems may largely reflect the fact that firms with a greater reliance on exports are more likely to be involved in business cooperation (see Chapter 4). In other words, linkages are a regular feature of exporting and the distinction between general exporting problems and business cooperation problems become blurred.

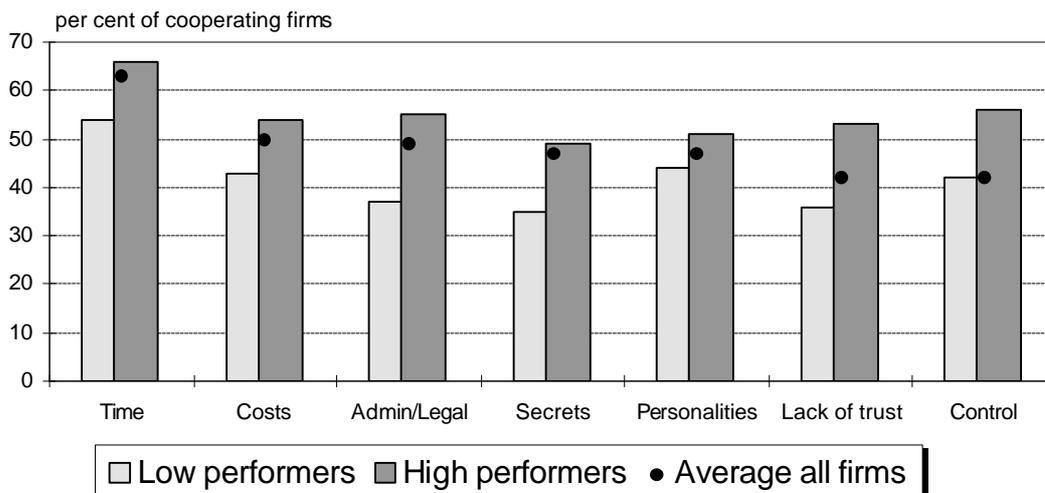
While experiencing significant general problems across the board, exporters are little different from domestic-oriented firms in relation to 'major' problems. Time commitments are above average, as is administration, but everything else seems well under control.

## 10.2.5 High and low performing firms

High performing firms are considerably more likely to have problems within their cooperative arrangements – a Problem Index of 55 compared with 42 for the low performers and 49 for the average firm (Figure 10.8).

The differences between the two firm types are substantial across all the negative factors, but with the most significant being administration and lack of trust. Only in the area of personality difficulties do the two firm types come relatively close to each other.

**Figure 10.8 Problems encountered in arrangements by high and low performers**



PI High performers 55  
 PI Low performers 42  
 Source: BIE Survey

The relative importance of problems encountered by high performers are quite unusual compared to other firm types. Additional time commitments (66 per cent) is first, as is usual, but the second most important problem, loss of control (56 per cent), is generally one of the least problems for other firms. Similarly, trust is a considerable problem for high performers but a minor problem for the average cooperating firm.

The ‘major’ problems of the high and low performers are much more closely aligned. Administration and time commitments stand out as the two main differences between the firms. The latter is particularly notable as a ‘major’ problem for high performing firms with over 20 per cent experiencing serious difficulties in managing the time taken up by business cooperation.

The low performing firms are in fact more likely to suffer ‘major’ problems in two areas, financial costs and personality difficulties. Firms caught in a period of declining sales and reduced cash flow are understandably more likely to be concerned about the financial expense involved in maintaining their cooperative arrangements<sup>8</sup>.

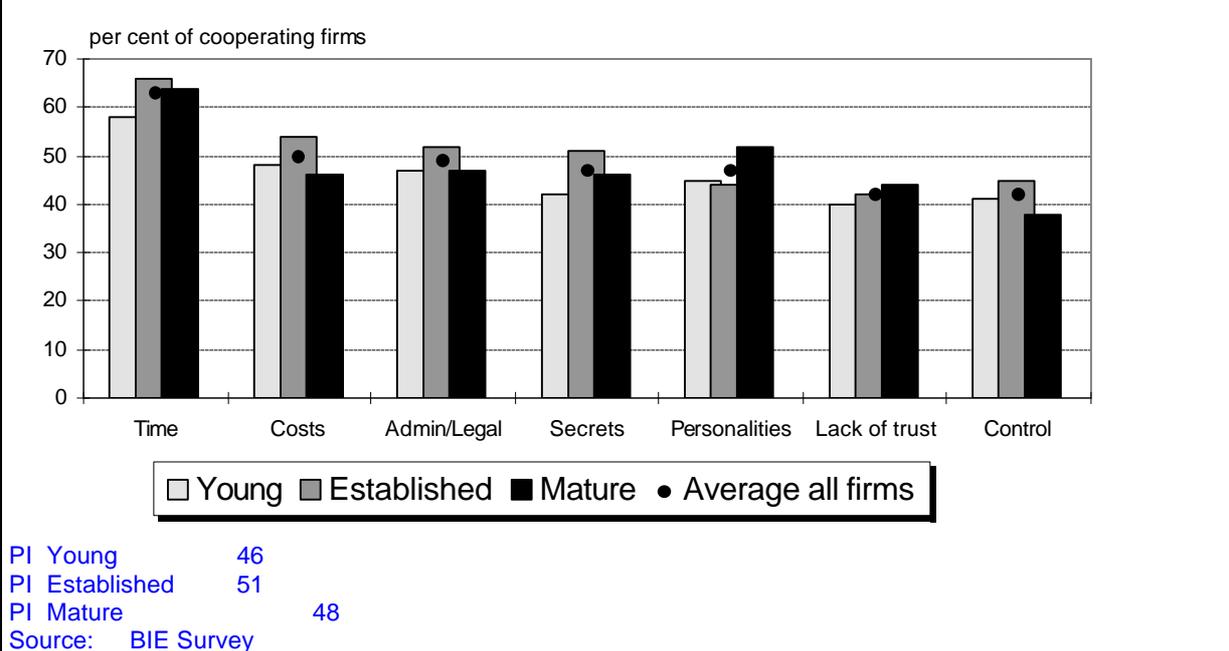
<sup>8</sup> It is somewhat mysterious that it does not feature more highly as a general problem (only 43 per cent compared with 50 per cent for the average firm).

### 10.2.6 Age of firm

Do inexperienced young firms find the world of cooperative business arrangements hard going and full of problems? Do mature firms know their way around sufficiently well to be able to nip in the bud any minor irritations before they become full scale problems?

Figure 10.9 demonstrates that established firms (6-24 age group) are a little more likely to face cooperation problems than the youngest and oldest firms. Interestingly, dealing with loss of control stands out as the most significant major problem after additional time commitments. Perhaps many firms in this group believe they have to cooperate to grow but are reluctant to give up the degree of control they have enjoyed in their formative years.

**Figure 10.9 Problems encountered in arrangements, by age of firm**



Young firms (5 years or less) do not have the same intensity of problems as older firms, with the percentage of firms experiencing problems generally in the early to mid forties. That young firms only face ‘average’ problems may be partially explained by the fact that these firms are often owned and managed by highly experienced personnel. This can make the link between the age of the firm and the outcomes of its arrangements somewhat tenuous.

However, the youngest firms are more likely to have ‘major’ problems with their cooperative arrangements and have relatively strong concerns about disclosing commercial secrets and lack of trust (12 per cent of firms in each case).

Mature firms (25 years or older) tend to have more difficulties with the personalities in cooperating firms. At the opposite end of the spectrum, loss of control is the least concern for most firms. This may reflect their security from being in existence for a relatively long time. This feeling of security and control may also explain the lower proportion of mature firms facing ‘major’ cooperation problems.

### 10.2.7 Other characteristics

Both the *product type* and the degree of *competition* in a firm's markets appear to have little impact on the negative aspects it experiences with its involvement in inter-firm cooperation.

## 10.3 Problems and different forms of cooperation

This section follows the pattern of previous chapters and discusses the differences in problems faced by cooperating firms in various types of arrangements – namely, according to the *intensity* of the cooperative arrangement (number of arrangements, number of firms in the arrangement, formal/informal) and the *nature* of the firms with whom they are cooperating (customers/suppliers/others or domestic/overseas firms).

### 10.3.1 Problems and the intensity of the arrangements

#### *Number of arrangements*

Over 70 per cent of cooperating firms have at least two cooperative business arrangements and 30 per cent have at least five. The negative aspects associated with single and multiple arrangements are shown in Figure 10.10.

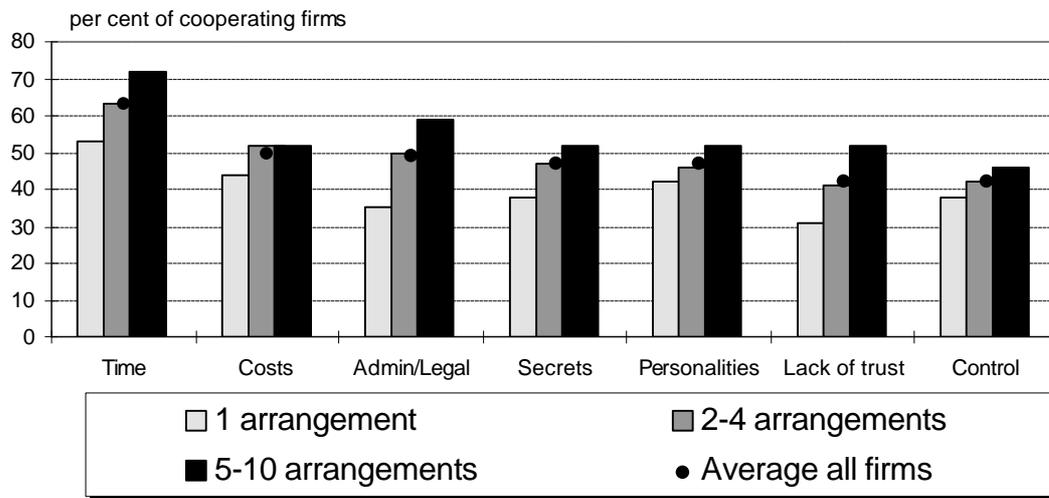
The data confirm the hypothesis developed in explaining the degree of problems in other arrangements – the greater the number of linkages a firm has, the more likely it is to experience problems with its cooperative dealings. In other words, with so many linkages to choose from, a firm is more likely to find some problems amongst them all.

The differences between the three groups shown in Figure 10.10 are quite striking. While firms with a single cooperative arrangement score only 40 on the Problem Index, this jumps to 49 for firms with two to four arrangements and 55 for firms with five to ten.

The two categories where problems for single arrangement firms get closest to multiple arrangement firms are personality difficulties and loss of control. The latter again provides interesting food for thought; even for firms with five to ten arrangements, loss of control affects only 46 per cent and is their smallest concern overall.

The additional time and extra administration associated with inter-firm cooperation both follow the expected patterns. However, disclosing commercial secrets and lack of trust also appear to be more likely concerns as a firm develops more linkages.

**Figure 10.10 Problems encountered in arrangements, by number of arrangements**



PI 1 link 40  
 PI 2-4 links 49  
 PI 5 to 10 links 55  
 Source: BIE Survey

In terms of ‘major’ problems, the variation between the three groups is not nearly so marked. There is still a tendency for firms with multiple arrangements to be more likely to experience difficulties, but the distinction is now only clear between two groups – firms with a single arrangement and other firms. Firms with two to four linkages and firms with five to ten have apparently very similar attitudes with regards to the ‘major’ problems associated with inter-firm cooperation. Only in the area of disclosing commercial secrets is there any difference between the two groups (7 per cent for 2-4 linkage firms and 11 per cent for 5-10 linkage firms).

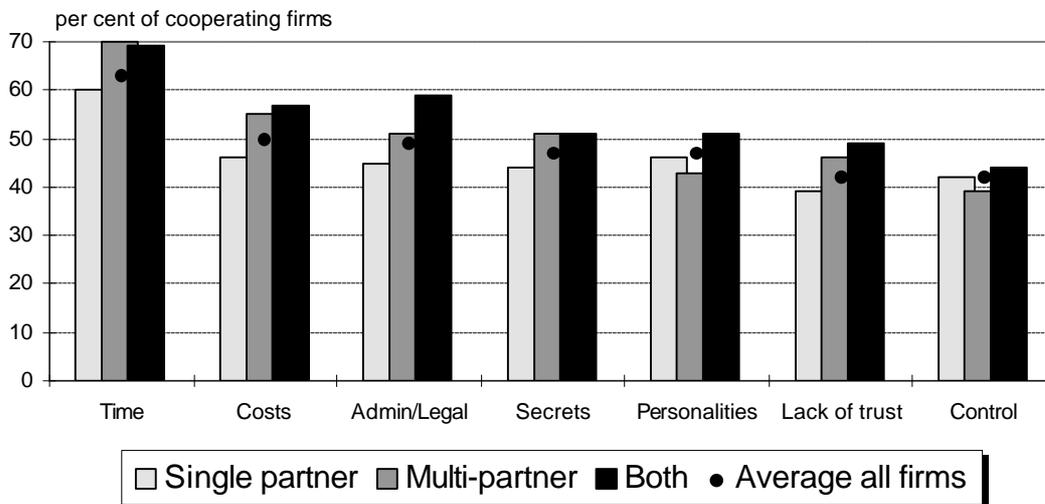
### *Number of partners in the arrangement*

Two-thirds of cooperating firms use only linkages involving one partner – they work together on a one-to-one basis. The other third is split between firms with only network arrangements and firms with a combination of single partner and network arrangements.

Firms which confine their linkages to one partner are a little more likely to have the least problems overall with inter-firm cooperation (Figure 10.11). Outside additional time commitments at the high extreme, and lack of trust at the other, the proportion of firms with general problems is very bunched.

Cooperating firms involved exclusively in network arrangements are apparently experiencing difficulties in coping with the amount of time required to manage their arrangements. They are also much more likely to be concerned with the financial costs of their cooperation than firms in one-to-one linkages. Box 10.3 outlines some of the problems faced by a firm in a network arrangement.

**Figure 10.11 Problems encountered in single partner and multi-partner arrangements**



PI Single partner 46  
 PI Two or more 51  
 PI Combination 54  
 Source: BIE Survey

Lack of trust is more likely to be a general problem for networks than one-to-one linkages, but is totally insignificant as a major problem. The only ‘major’ problems for firms in networks are time commitments and loss of control. The latter is high compared to single partner and combination linkages (12 per cent, 7 per cent and 6 per cent respectively)<sup>9</sup>.

**Box 10.3 Competition and cooperation – Robins Bush Food**

*This innovative company has only been operating since 1993 but already has an annual turnover of over \$1/2 million. There are two arms of operation (a) bush food, including preserves, chutneys, sauces, dressings and flavourings (b) both traditional and bush cakes for Qantas Catering.*

*Robins Bush Food is a member of the Victorian Food Network, a National Industry Extension Scheme initiative directed towards exporting. As yet, Robins Bush Food is not exporting. In 1994 it had six members, of which only two are founding members. Those remaining members recognise that gains resulting from promotional economies, the setting of standards and the development of a viable supply base, will be accrued to their companies in the long term. This lack of quick gains was a problem for some of the original members.*

*The informality of the network has also raised some problems. There are no rules on market behaviour and this is a major issue of concern to members which are all small, relatively young firms.*

Source: BIE interview

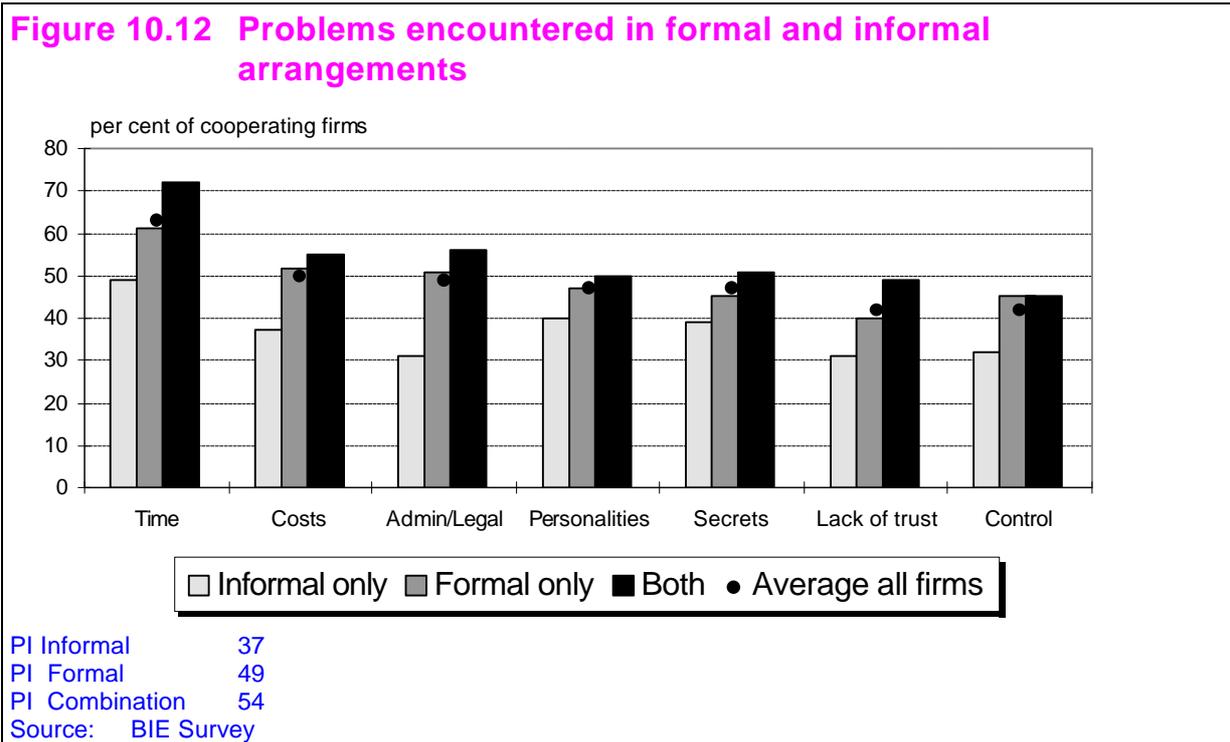
The problems within cooperative arrangements tend to be the highest for firms with a combination of arrangements (PI of 54). The greater administrative and legal burden involved stands out as the most significant difference between these and the firms in only one-to-one arrangements.

<sup>9</sup> However the figure for networks only represents about 9 firms.

### Formality of the arrangement

A formal cooperative business arrangement may, on the one hand, be expected to cause more headaches than looser, informal linkages because of the probable higher stakes involved and the complications of contracts. On the other hand, the presumed greater certainty associated with formal linkages could reasonably be expected to cause fewer problems with such things as trust and personality difficulties.

Cooperating firms around Australia leave no doubt, in fact, that the less formal an arrangement the less the chance of problems arising (Figure 10.12).



Across the board, a greater proportion of firms with formal-only arrangements experience cooperation problems than those firms with informal-only arrangements. Most of these differences are significant.

The biggest gaps between formal and informal arrangements are predictable, namely the administrative/legal burden and the financial costs. In essence, these two aspects are usually the key distinguishing factors between formal and informal arrangements and this fact is not lost on the firms involved. The relative complexity of formal linkages and the fact that firms cannot easily walk away from them comes at a price.

The other major story from Figure 10.12 is the comparison of problems between firms with exclusive formal arrangements and those with some form of formal/informal combination. Firms with a combination of arrangements are more likely to have significant business cooperation difficulties than firms with only formal linkages in two areas: additional time commitments and lack of trust.

The additional time commitments involved with a combination of linkages provides the most significant difference with formal arrangements. This again suggests that problems are correlated with the number of arrangements. As a combination must have at least two arrangements, the greater difficulties experienced is probably largely reflecting the additive nature of cooperation problems.

Ten per cent of firms with exclusive formal arrangements have ‘major’ difficulties with administration and legal aspects. This compares with 8 per cent for combined arrangements and 6 per cent for informal arrangements. While the differences are not significant, there is a suggestion that firms which make a point of dealing exclusively on a formal basis may pay for this by having to devote more resources to ‘managing’ the arrangements.

### 10.3.2 Problems encountered with different arrangement partners

#### Customers, suppliers and other firms

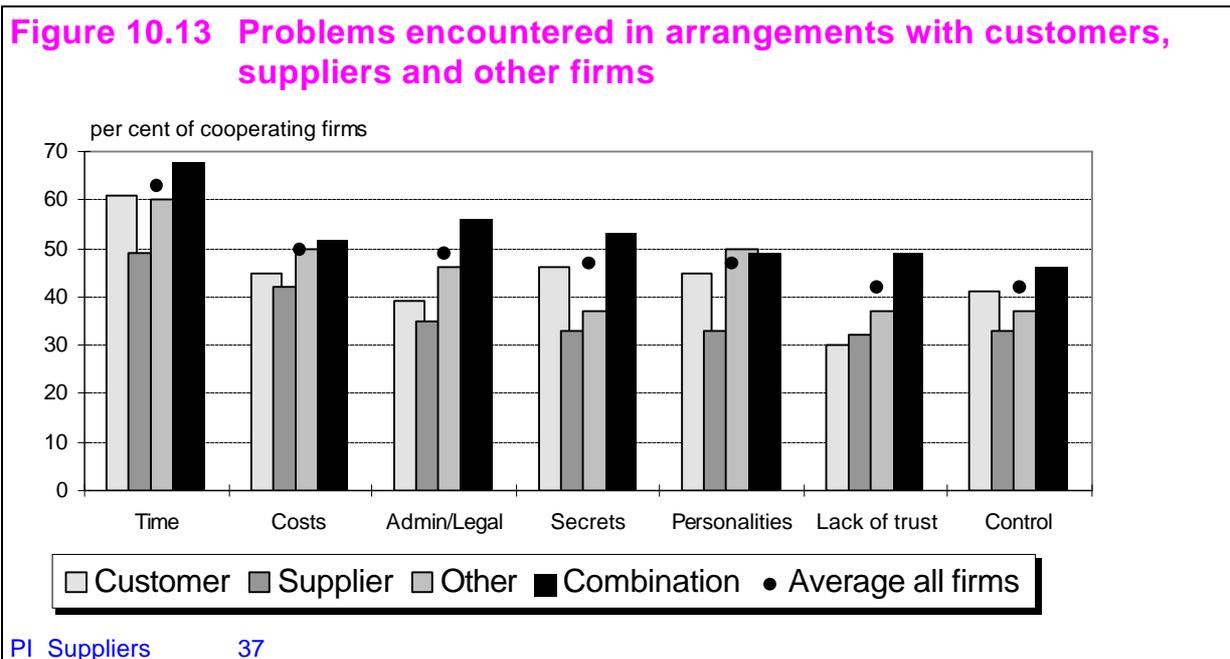
Linkages with customers, suppliers and other firms are the core of current interest in inter-firm cooperation. The negative aspects associated with these linkages by cooperating firms will provide further clues as to how the arrangements can work better and have more effective outcomes.

Figure 10.13 suggests that firms dealing exclusively in supplier arrangements have the least problems overall with business cooperation. The Problem Index (PI) for suppliers, at 37, is significantly lower than the PI for customers and other firms (44 and 45 respectively).

To a large extent, these results reflect the balance of power in inter-firm relationships. A firm dealing with its supplier is usually in the dominant position – if the supplier does not perform to the standards required by the firm then it will look around for an alternative source of supply. The onus is on the supplier to meet the demands of the firm in question.

A large number of firms interviewed as part of the study noted how they liked to maintain some flexibility with their supplier arrangements. They let their suppliers know they had to perform well or they would look elsewhere.

The mirror image of this, of course, is that firms dealing with their customers are generally in the weaker bargaining position and have more to lose if cooperative arrangements do not work out. Firms dealing with customers will find more problems with their linkages.



PI Customers	44
PI Other firms	45
PI Combination	53
Source:	BIE Survey

The largest differences in problems between customer only and supplier only arrangements occur in additional time commitments, disclosure of commercial secrets and personality difficulties. Interestingly though, it is not a case of customer problems being particularly high, relative to the average for all arrangements. Rather, these sort of problems are just not very common in supplier linkages.

Firms with a combination of arrangements between customers, suppliers and others are by far the most likely to suffer negative aspects through their involvement with inter-firm cooperation (PI of 53). Again, this probably largely reflects the fact that these firms generally have a larger number of cooperative arrangements and therefore more headaches in tow. Interestingly, even with a combination of different linkage types, loss of control is a relatively unimportant issue for cooperating firms – it is in fact the ‘least’ of their problems.

The ‘major’ problems confirm the difficulties with running combined arrangements. Additional time commitments and administration clearly go hand in hand in this case and provide the most significant differences with other arrangements. However, it is worth remembering that firms with a combination of arrangements also tend to benefit the most (see Chapter 8).

For the remaining categories, supplier linkages present more ‘major’ problems overall than links with customers and other firms – reversing the pattern we observed above. More than anything this seems to be due to the additional time firms have to spend with their suppliers (15 per cent of firms have ‘major’ problems with suppliers compared with 9 per cent for customers). This means that while a larger proportion of firms believe there are generally more problems involved in dealing with their customers, supplier linkages present the more severe difficulties to a small number of firms.

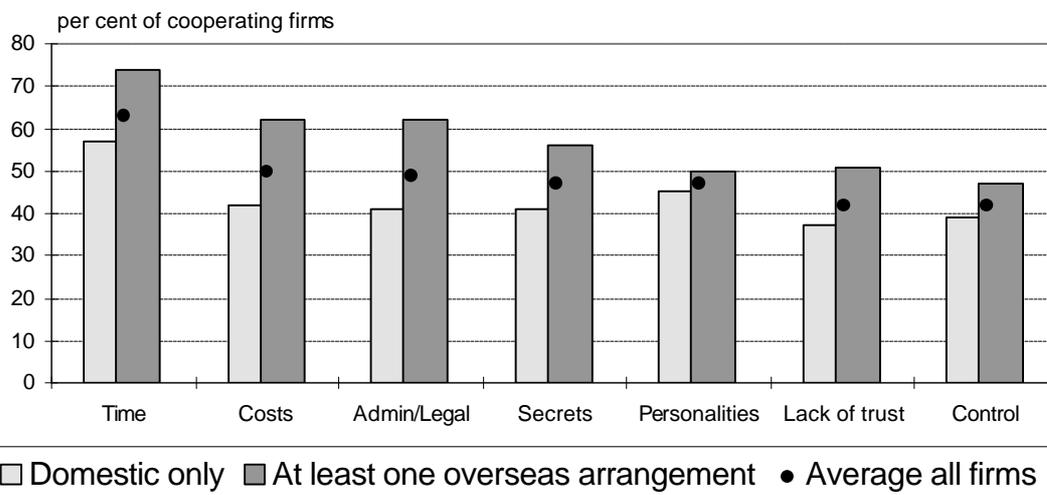
### *Overseas and domestic partners*

As previously noted, the BIE study was unable to consider the relative benefits and costs of exclusive overseas linkages.

What we are able to compare is the problems encountered by those cooperating firms with *some* overseas linkages (that is, at least one) and those cooperating firms with *only* domestic linkages (that is, no overseas linkages at all).

The results obtained from this study demonstrate that firms currently involved in arrangements with firms overseas are finding a lot of negatives in these relationships – they record a very high 57 on the Problem Index (Figure 10.14).

**Figure 10.14 Problems encountered in arrangements with overseas and domestic firms**



PI Domestic 43  
 PI Overseas 57  
 Source: BIE Survey

Almost 75 per cent of firms with some overseas links have difficulties with the additional time involved in managing these arrangements. Even more significant perhaps is the 60 per cent of firms that are unhappy with the financial expense – this compares with 40 per cent of firms which have only domestic linkages. Other significant concerns for overseas-linked firms are the administrative and legal burden, disclosure of commercial secrets and lack of trust. The only two factors apparently not particularly worrisome for firms with overseas arrangements are loss of control and personality difficulties.

However, despite the high proportion of firms facing general problems with their overseas linkages, the proportion with ‘major’ problems is not particularly unusual in any category.

Domestic-oriented firms (64 per cent of cooperating firms) are less likely to encounter problems within their cooperative arrangements – their PI of 43 compares with 57 for overseas-linked firms (and 49 for the average firm).

There is nothing unusual in the relativities between the domestic firms’ problems. Additional time commitments are clearly of greatest concern, but all other problems are basically on par with each other. Nothing stands out as a ‘major’ problem.

## 10.4 Summary

We know from earlier chapters that business cooperation brings substantial benefits and has positive effects on performance and competitiveness. It appears to work well for most firms which try it. But cooperation has a ‘downside’ too and one aspect of this has been investigated in this chapter.

Just as virtually all firms benefit in some way from cooperation, the majority of firms (80 per cent) have some ‘negatives’ associated with their cooperative arrangements. This is to be expected and it is in fact

surprising that one-fifth of cooperating firms apparently sail through inter-firm cooperation without problems of any kind.

However, a more telling comparison between problems and benefits is at the major/critical level. A low 30 per cent of firms encounter major/severe problems with their cooperative arrangements and only 15 per cent experience two or more major/severe problems. These figures compare with 75 per cent and 65 per cent respectively for benefits. Thus, on average, the likelihood of a firm obtaining major/critical benefits in its business cooperation dealings is around two and a half times greater than its chances of encountering major/severe problems. Even more significant, the chances of firms obtaining two or more major benefits are four times greater than the chances of experiencing two or more major problems. These are important findings and firmly place the 'costs' of cooperation in context.

On a related topic, firms encountering the greatest problems with their cooperative arrangements are generally the same ones who extract the greatest benefits. Large firms, exporters, firms with overseas linkages and firms with multiple arrangements fall into this category.

These all represent firms who tend to regard cooperation as a natural way of doing business and tend to have larger numbers of linkages than average. They have a greater commitment to cooperation as a business strategy. They expect and receive significant benefits from cooperation and in return have to wear some considerable problems along the way. In a sense, they 'get out what they put in' to their cooperative activities.

Additional time commitments stand out as the major problem encountered by cooperating firms. Almost two-thirds of firms report some difficulties in finding the extra time to manage their cooperative arrangements. A second group of problems affect around one-half of cooperating firms. These are concerns about the financial costs and disclosure of commercial secrets, administrative and/or legal matters and personality difficulties. At a lower level, around 40 per cent of firms have some cooperation problems relating to loss of control and lack of trust.

The scarcity of the time factor cuts across all types of firms and all types of arrangements. Cooperative arrangements have to be investigated, set up and then managed on a continuing basis. This contrasts with arm's length market transactions which can usually be dealt with fairly promptly.

In some respects, time requirements might be seen as a consequence of other aspects of cooperative arrangements. Thus, the relatively high proportion of firms specifying time as a problem may reflect the fact that they need to devote time to dealing with administrative and legal aspects, safeguarding secrets, trust issues or maintaining appropriate control over partner firms. While these other factors do not appear so prominently as 'problems', it is only because managers are keeping the lid on them by devoting a lot of time to managing the arrangements.

This hypothesis can be tested to some extent by comparing problems encountered within cooperative arrangements with the reasons for cooperation failure. Does the time factor become all too much for some cooperating firms so that they are forced to abandon some linkages? Or do other factors come to the fore in explaining why firms pull out of cooperative arrangements. These issues are the subject of the next chapter.



# 11 Why do cooperative arrangements fail?

In Chapter 10, the focus was on the negatives or problems faced by cooperating firms within their cooperative business arrangements. This chapter is concerned with the extreme costs of business cooperation, where problems become so large and unmanageable that firms are forced to abandon a cooperative arrangement.

In the survey, firms were requested to give up to three reasons for abandoning a cooperative arrangement. The reasons listed in the survey question were the same as the problems within cooperative arrangements discussed in the previous chapter. This provides a good opportunity for this chapter to explore the links between the reasons for abandoning cooperative arrangements and problems encountered in existing arrangements.

A total of 165 firms indicated they had at some stage abandoned a cooperative arrangement. Of this number, approximately three-quarters have a current arrangement and the other quarter are no longer involved in business cooperation.

In view of the relatively small number of firms in the population, it is not possible to examine abandonments by reason at the state or metropolitan level. In addition, some of the data for the section relating to firm characteristics have to be treated with caution because of small samples.

The chapter is structured as follows. Section 11.1 presents an overview of cooperation failure by looking at the major reasons for failure across all industries. Section 11.2 then tests if the reasons for abandoning linkages can be related to particular types of firms. Finally, Section 11.3 summarises the chapter's findings.

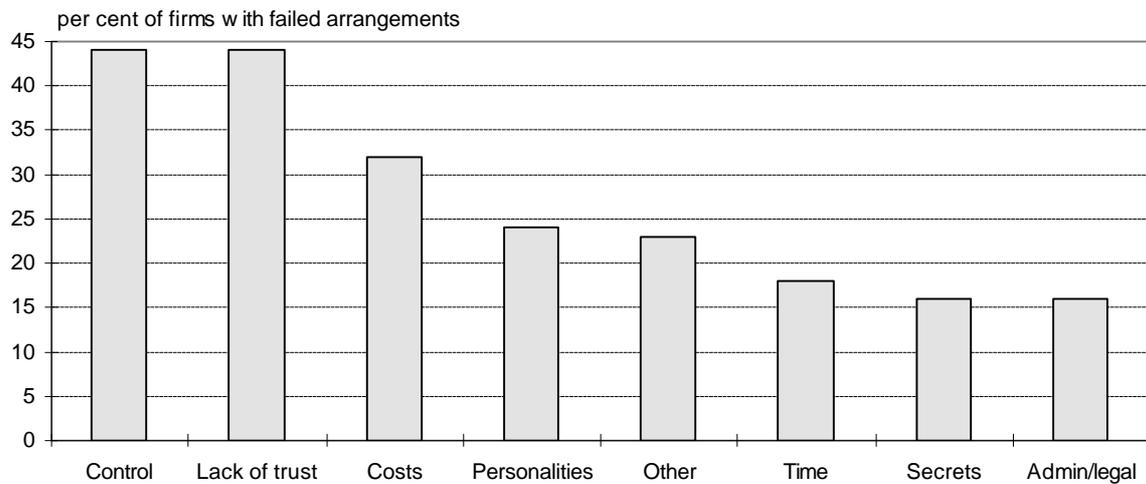
## 11.1 Overview of cooperation failure

### 11.1.1 *All industries*

The major contributing factors towards abandoning cooperative business arrangements are shown in Figure 11.1. The two outstanding reasons are loss of control and lack of trust – in both cases, 44 per cent of firms indicated them as major reasons for termination.

The only other notable major reason for cooperation failure is the financial costs of the arrangement (32 per cent of firms). Personality and 'other' reasons were cited by around one quarter of the firms. Finally, disclosure of commercial secrets, administration and time commitments are all relatively unimportant factors.

**Figure 11.1 Reasons for cooperation failure, all industries**



Source: BIE survey

The inability to trust linkage partners sits comfortably with loss of control as a major reason for termination. Both factors relate to uncertainty and uneasiness in dealing with other firms. They suggest that firms used to running their own affairs becoming anxious about matters getting out of hand.

It is interesting to compare and contrast these two major reasons for abandoning linkages with the cooperation problems discussed in Chapter 10. Loss of control and lack of trust were in fact the least important cooperation problems overall (42 per cent of firms). Only 7 per cent of firms indicated they had major or severe problems with these two aspects of cooperation.

So how are these contrasting data to be interpreted? The current cooperative arrangements analysed in this study are apparently successful on the whole and producing a variety of benefits to the firms involved (see Part B). The ‘negatives’ associated with these arrangements, while irritating, are clearly manageable on the whole and not sufficiently troublesome to threaten the viability of the linkages. So while firms do face some difficulties with the control and trust issues, they are apparently acceptable in the context of mutually beneficial cooperation.

Most cooperative business arrangements that ‘fall over’ have probably never established the necessary trust in the first place, or clearly sorted out the appropriate balance of power between the participating firms.

Around 60 per cent of the firms which have abandoned cooperative arrangements are small firms and two-thirds of these are micro firms. Perhaps many of these were first-time cooperators, reluctantly expanding their horizons. Small, privately-owned firms can be expected to be somewhat nervous about sharing aspects of their company’s business. It is not difficult to foresee how matters might easily get out of control.

Whatever the explanation, there is a clear lesson from failed arrangements for firms already involved in or about to embrace business cooperation. This is the need to work hard on both trust and sharing responsibility and never to underestimate their importance (see Box 11.1).

**Box 11.1 Surviving the test of time**

*PanBio, a Biomedical firm based in Brisbane, was involved in a cooperative business arrangement in which it manufactured for another company. It wanted to broaden this relationship but the other company did not. This taught PanBio that cooperating firms need to have the same long-term focus, particularly as PanBio's R&D is long term. Trust between cooperating firms is needed to allow confidence to develop.*

*PanBio estimates that about one third of potential cooperative arrangements get to first base and only half of these survive the test of time. Long-run relationships need strong personal commitment from both sides. Agreements allow risk to be shared but some have the potential to produce conflict, especially when they are with a multinational company.*

Source: BIE interview

The additional time involved in managing business cooperation is the *least* important reason for cooperation failure. Again this provides a fascinating contrast to the situation presented by firms within existing cooperative arrangements, where time is by far the most important problem. This suggests that firms will complain dearly about the amount of time chewed up but will put up with the problem indefinitely so long as the arrangement keeps on a sound footing. A shortage of time, it seems, is hardly ever a good enough reason for terminating linkages (although it does of course occur in some cases).

Almost a quarter of the firms that have abandoned business cooperation have done so for a collection of 'other' reasons. The majority of these relate to dissatisfaction with the performance of the cooperative arrangement. However other reasons cited by firms include:

“the other party changed direction”;

“loss of brand identity”; and

“lack of commitment and acceptance of responsibilities

The citing of lack of commitment is one of only a few references to this factor. This is interesting when compared with other research stressing the importance of commitment in inter-firm cooperation (Buttery 1993, for example). In addition, NIES officers in all states indicated that they regard the full commitment of participating firms as a vital ingredient for the success of formal business networks.

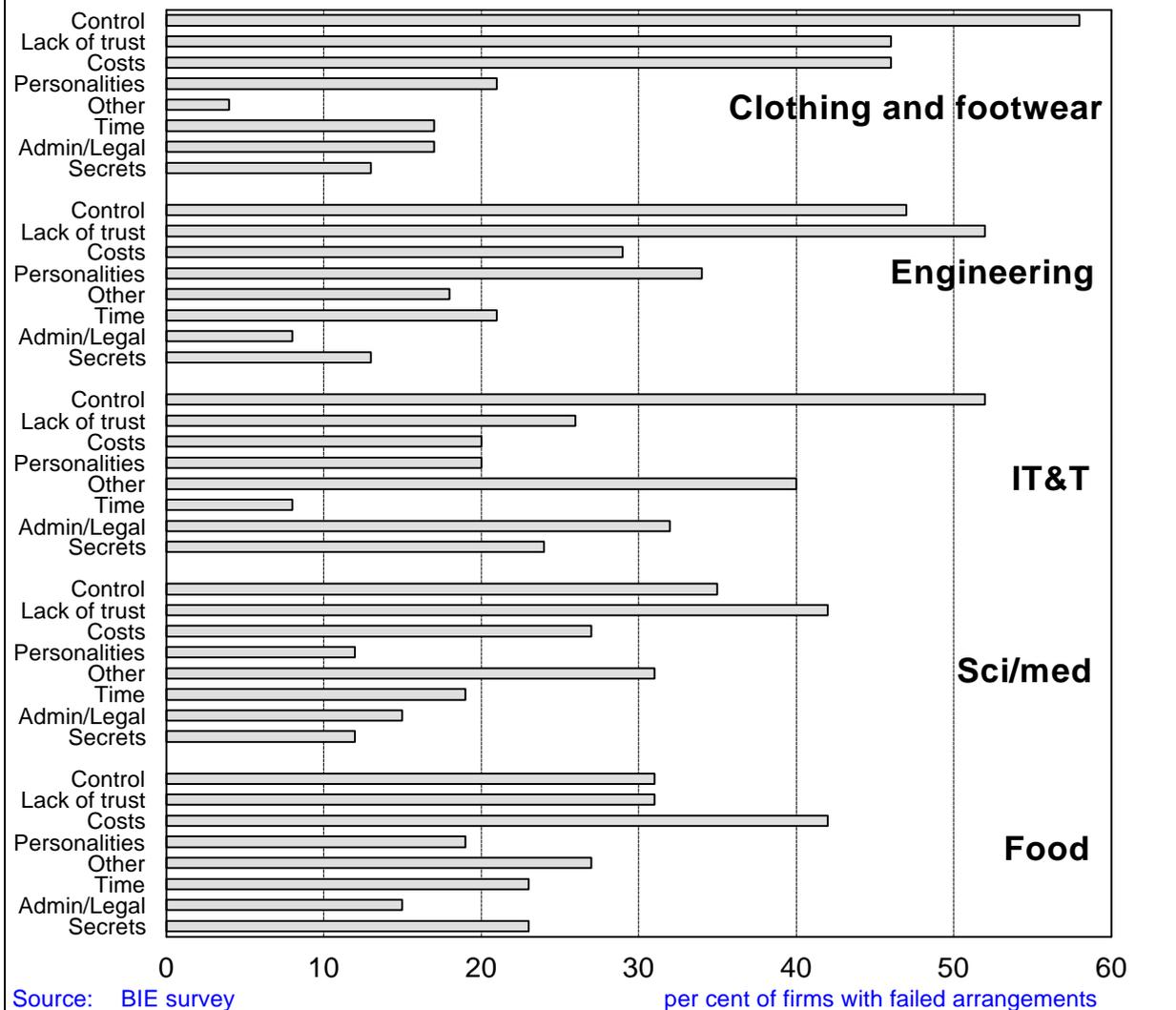
Perhaps lack of commitment spawns other major problems (like weakening trust). It may be that firms attribute linkage failures to these highly visible, if subsidiary problems, instead of identifying the fundamental cause.

## 11.2 Cooperation failure and firm characteristics

### 11.2.1 Industries

The data in this section needs to be examined with caution in view of the relatively small number of firms involved in four of the five industries. The analysis of the data can however point to some possible interpretations and conclusions without being too prescriptive.

**Figure 11.2 Reasons for cooperation failure, by industry**



The survey results suggest considerable variations between the industries (Figure 11.2). For example, there are three different major reasons for abandoning cooperative arrangements. Engineering and Sci/med firms find common ground in agreeing that lack of trust is the biggest problem. Clothing and footwear and IT&T firms emphasise loss of control as the key concern. Food firms, on the other hand, have the financial costs as the clear major cause of business cooperation failure.

Firms in the Food industry are actually the only ones which have a clear relationship between problems within cooperative arrangements and causes of termination. The emphasis Food firms place on financial expense is consistent with the unusually high proportion (58 per cent) experiencing financial problems within current cooperative arrangements (see Chapter 10). Moreover, a high 12 per cent of Food firms indicated they had major or severe financial problems with these linkages. Placing the results for problems and abandonment side-by-side suggests something amiss with the financial costs of operating cooperative arrangements in the Food industry.

Financial expense is also a major concern for Clothing and footwear firms, along with loss of control and lack of trust.

Engineering firms have an unusually high proportion abandoning business cooperation because of personality difficulties, a factor not particularly significant as a problem within their current arrangements. Lack of trust, which is obviously related to impressions about the personnel of partner companies, is the major reason for cooperation failure for firms in the Engineering industry. Overall, the high emphasis placed on trust and personality difficulties tend to set Engineering firms a little apart from other industries.

IT&T firms have quite a spread of reasons for termination. The particularly prominent reasons are loss of control, disclosure of commercial secrets and the administrative/legal burden. The latter is the only factor apparently causing above average concerns to IT&T firms within existing cooperative arrangements and is apparently somewhat of an irritation regarding business cooperation. Perhaps the complexity of contracts relating to intellectual property and software and the sheer pace of change in the industry place undue stress on the people managing the linkages.

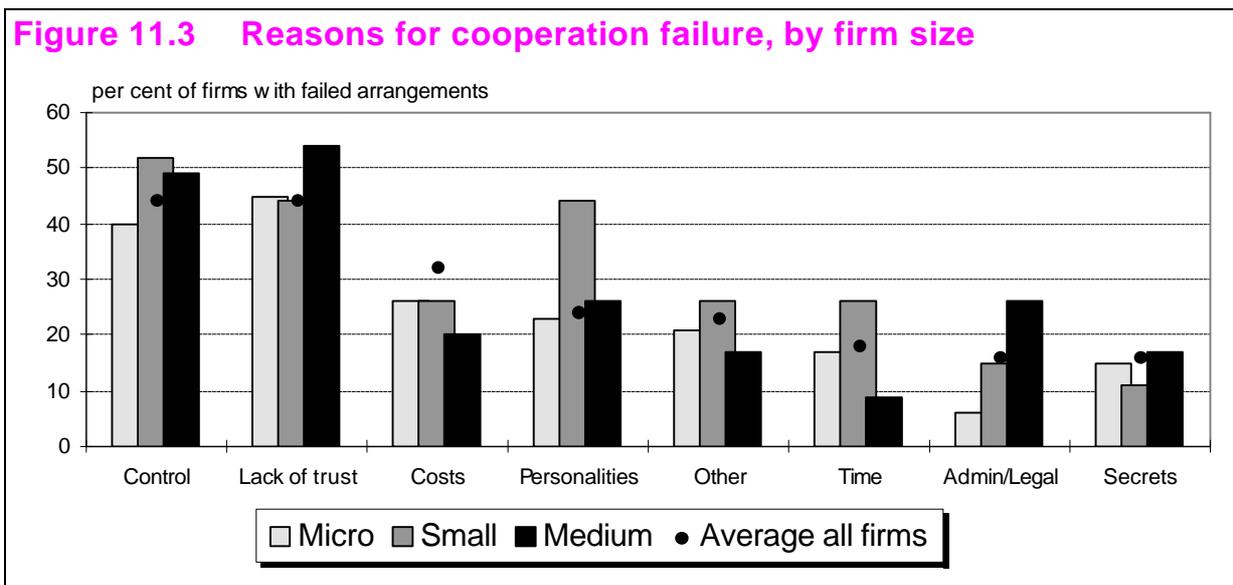
The other notable feature of the IT&T industry is the 40 per cent of firms which have abandoned for ‘other’ reasons. As noted above, these principally relate to the failure of the arrangements to live up to expectations. This high figure for IT&T may reflect the overall importance of linkages to the industry and the vital need to have them working well in order to survive and prosper.

Scientific and medical firms are below average for most reasons. Lack of trust is the most important factor and ‘other’ reasons are again relatively high – perhaps in part due to a similar explanation as the IT&T industry.

### 11.2.2 Size of firm

Due to the very small number of large-firm survey respondents which have abandoned cooperative arrangements, it is only possible to analyse cooperation failure for micro, small and medium size firms (Figure 11.3).

The two key reasons for cooperation failure, loss of control and lack of trust show some minor variations between the different firms. Interestingly, loss of control is not quite so important to micro firms as to small and medium firms. On the other hand, lack of trust is of greater concern to medium firms than small and micro firms.



Note: (a) Results for 'large' size group not shown due to small sample.  
 (b) Average figure for Costs is higher than the figure for the three firm categories due to missing data.  
 Source: BIE survey

Micro firms are clearly mainly affected by the control and trust issues. Small firms are too, but also have a relatively strong tendency to abandon cooperative arrangements because of personality difficulties (a significant major problem too within their cooperative arrangements). Medium size firms might be slightly more concerned with administration costs than smaller firms – which is supported by data on problems within cooperative arrangements – but lack of trust and loss of control again dominate.

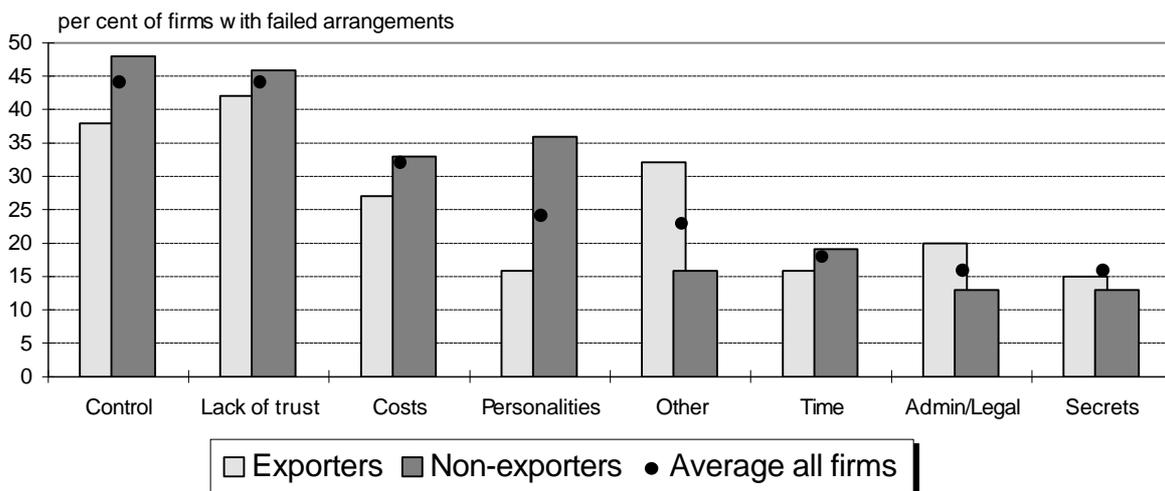
The financial costs involved in commencing and operating a cooperative arrangement might have been expected to be particularly problematical to smaller firms. At the same time, some of the more informal and softer forms of linkage on the cooperation continuum (see Chapter 2) are not especially expensive to set up and manage. Preferred supplier arrangements, for example, need not involve much expense save for some basic administration costs.

It may be the case, therefore, that the larger firms in the sample are responsible for a disproportionate share of the firms terminating for financial reasons. These firms are much more likely to be playing for bigger stakes involving complex contracts and substantial administration and legal expenses<sup>1</sup>.

### 11.2.3 Exporters and non-exporters

Around half the firms in our sample which have abandoned cooperative arrangements are active in export markets. Both exporting and non-exporting firms place a high degree of emphasis on problems of control and trust, and to a lesser extent on the financial costs of cooperation, when giving reasons for 'divorce' (Figure 11.4).

**Figure 11.4 Reasons for cooperation failure by exporters and non-exporters**



Source: BIE survey

<sup>1</sup> This would help explain the average firm figure for Financial Costs in Figure 11.3 being higher than the micro, small and medium firm categories.

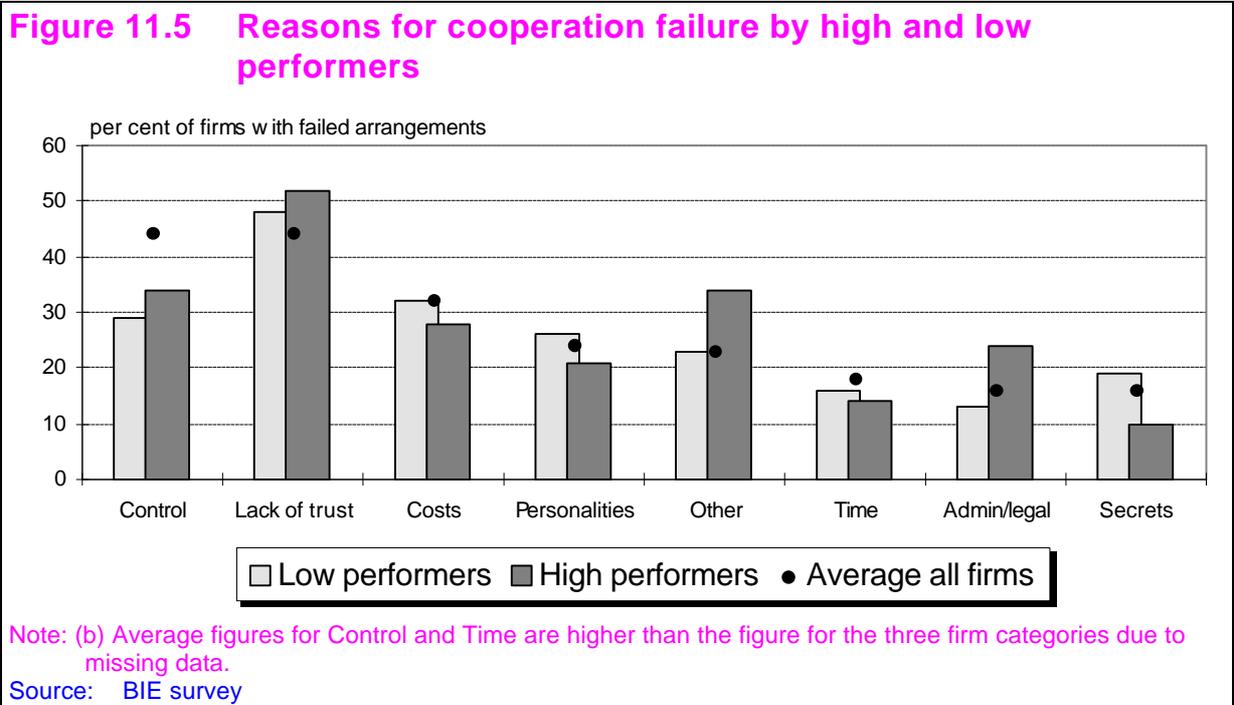
The two main points of contrast between the two types of firms are personality difficulties and ‘other’ reasons. For non-exporters, personality problems are the third most important reason for abandoning linkages, whereas they are just about the least important for exporters. The situation is virtually reversed for ‘other’ reasons, which often reflect dissatisfaction with the outcome of cooperative arrangements. This may reflect the fact that exporters have occasionally frustrated ‘great expectations’ about their linkages, whereas non-exporters have weaker aspirations, which are harder to fail.

The two most important problems to exporters within cooperative arrangements, relative to firms serving only local markets, are disclosure of commercial secrets and administration (see Chapter 10). Neither of these are significant as reasons for cooperation failure.

### 11.2.4 High and low performance firms

High and low performers have much in common when it comes to abandoning their cooperative arrangements (Figure 11.5). Both have lack of trust as by far the most important reason for failure. This is followed some considerable distance back by loss of control and financial costs (and also ‘other’ reasons in the case of high performers). The proportion of firms citing trust is a little above average for both groups of firms.

The really interesting point is that these firms cite loss of control as a basis for failure much less frequently than the average. Perhaps the high performers have more than a usual tendency to believe they *can* maintain control over partner firms, given their ability to successfully control their own destiny in other spheres. Low growth firms, on the other hand, may have a greater than usual acceptance of some diminution of power in cooperative arrangements as a trade-off for benefits.

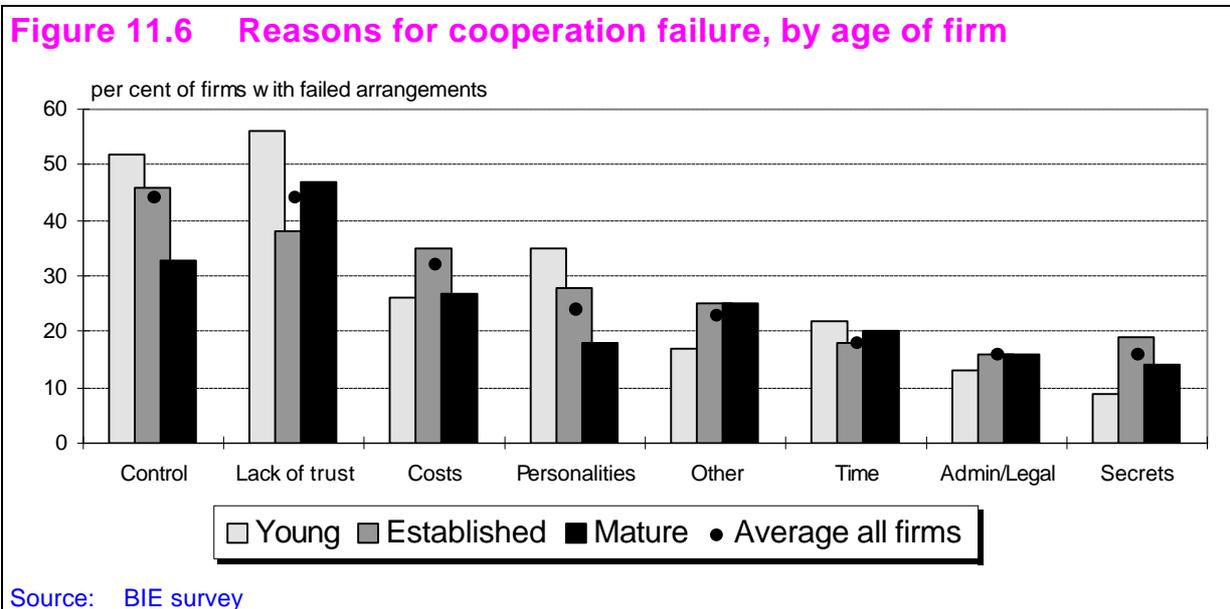


The relatively high proportion of high growth firms citing ‘other’ reasons for cooperation failure is logical, given that the key ‘other’ reason generally relates to dissatisfaction with the performance of the arrangement (see Section 11.1). High performers expect high performance.

Overall though there is little to distinguish the two firm types in their attitude to cooperation failure – from a fairly deep common mistrust of partner firms at one end of the spectrum to the few concerns about time commitments at the other.

### 11.2.5 Age of firm

Reasons for abandonment of cooperative arrangements by age of firm are shown in Figure 11.6. The youngest firms, those 5 years old or less, see loss of control and lack of trust (and also personality difficulties) as the major reasons for linkage failures. Lack of trust is also a ‘major’ cooperation problem for 12 per cent of young firms in current arrangements (see Chapter 10).



The established firms (6-24 years old) fit in quite closely with the general pattern of reasons for cooperative failure, which is hardly surprising given their predominance in the population. Problems with trust, however, are a little below average and this shows up in the comparisons with young and mature firms (25 years or older).

Mature firms do not have any particularly noteworthy reasons for abandoning linkages, outside loss of control and lack of trust.

### 11.2.6 Other firm characteristics

The type of product, technology content and the level of competition appear to have only a few minor influences on the reasons for cooperation failure.

Loss of control and trust are very similar in degree of importance for all three categories of product types, and this pattern is generally repeated for the other reasons. The only factor significantly different is the financial costs of cooperation. This appears important to firms producing intermediate products (equal first with trust and control), but is of only third and fourth importance to final goods and capital goods firms respectively.

Low-tech companies gave little emphasis to lack of trust as a source of failure. Only 26 per cent said this was a major reason for cooperation failure, compared with 50 per cent for medium-tech firms and 46 per cent for high-tech firms. This may reflect the fact that such firms do not have to protect valuable intellectual property from potential ‘predatory’ partners.

The level of competition a firm faces apparently makes no significant difference in explaining the causes of cooperation failure.

### 11.3 Summary

Business cooperation is not always successful. Sometimes things go wrong with cooperative arrangements and firms are eventually forced to abandon them. Some arrangements are abandoned fairly early in the piece, while others last a considerable time before succumbing to various pressures.

If business cooperation is so beneficial to firms, why do some cooperative arrangements fail? The analysis presented in this chapter has reminded us that businesses or firms are made up of people – and people have expectations about how cooperation should be conducted. They also have expectations about the extent cooperation should be allowed to impinge on their firm’s general business activities.

Lack of trust and the fear of losing control are the two outstanding reasons for cooperation failure. Almost half the firms which have abandoned cooperative arrangements indicated trust and control as the major reasons for termination. The only other notable reason for abandoning an arrangement was its high financial costs.

The inability to trust linkage partners and fear of losing control both relate to uncertainty and uneasiness in dealing with other firms. Some of this may be due to a mismatching of firms or a failure to establish basic communication channels. Around 60 per cent of the firms which have abandoned cooperative arrangements have less than 20 employees, and two-thirds of these are micro firms. Owners of small firms can be expected to be nervous about sharing aspects of their company’s business, and about larger firms exerting undue influence on their firm’s operations.

Clearly, firms need to work hard on trust and partnership responsibilities if cooperation is to be a success – and this may partially explain the high amount of time apparently required to manage *ongoing* cooperative arrangements (see Chapter 10).

Sometimes, of course, the actual performance of cooperative arrangements does not live up to expectations. The anticipated rewards may be too long in arriving or the financial returns are disappointing. High growth firms, exporters and firms in the IT&T industry appear to be the most likely to abandon linkages for performance-related reasons. These relatively ‘high performers’ expect high performance.

The good news about cooperation failure is that it does not appear to be an enduring problem for most firms which have terminated arrangements. There is strong evidence that cooperation failures are predominantly functions of specific arrangements (rather than being linked to particular firm types). Around three-quarters



of the firms which have previously abandoned cooperative arrangements are currently involved in other cooperative arrangements.

This implies that a certain 'cooperation culture' develops in some firms, whereby they see cooperation as a central business strategy and are not diverted by the odd failure. It also reaffirms, of course, the benefits of cooperation. Firms carry on cooperating because they expect to gain a lot more than they lose.

# 12 Impediments to business cooperation

The previous two chapters analysed the problems facing firms currently involved in cooperative arrangements and the reasons for cooperation failure. In this chapter, the spotlight switches to those firms not involved in business cooperation. We pose the question: why do some firms avoid cooperating with others? Is it the case, for example, that most firms simply believe they do not need inter-firm cooperation? How many firms are potentially interested in cooperation but are put off by their perceptions of problems associated with cooperative business arrangements?

The answers to these questions are of interest to a number of groups in the community. To try and understand the major impediments to business cooperation, the study targeted those firms which had never adopted a cooperative business arrangement.

A total of 310 firms answered the relevant survey questions asking firms to nominate up to three reasons for never adopting a cooperative arrangement. The choices offered were the same as for cooperation problems and cooperation failure discussed in Chapters 10 and 11. The links between impediments, problems and failure will be discussed throughout this chapter.

In the following sections the factors impeding firms from entering cooperative arrangements are discussed first at the aggregate level (Section 12.1). This is followed by firm characteristics to see if certain types of firms fear specific problems or are prone to avoiding cooperation all together (Section 12.2). The chapter is summarised in Section 12.3.

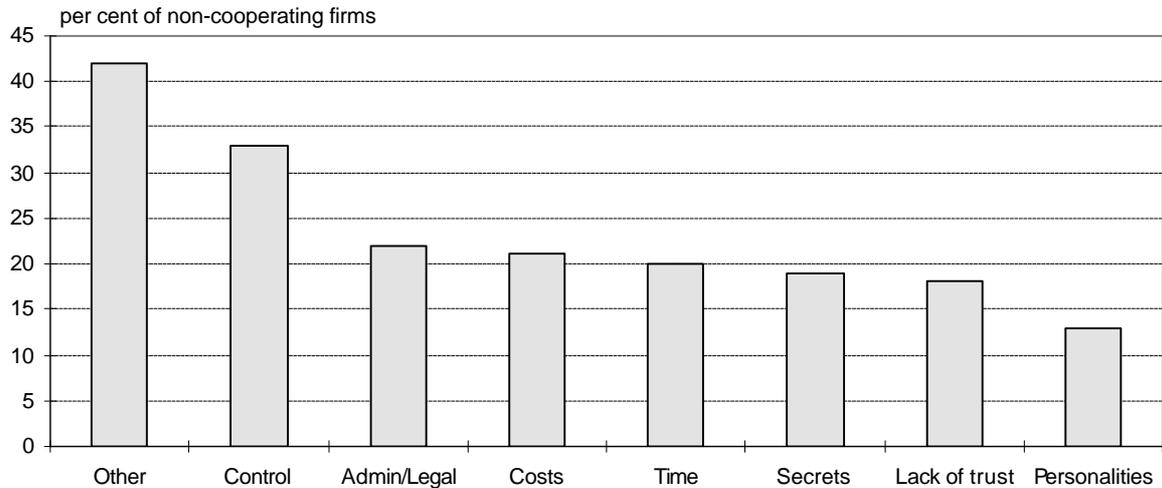
## 12.1 Why firms do not cooperate

### 12.1.1 All industries

The reasons for never adopting a cooperative arrangement are shown for all respondents across all industries in Figure 12.1. There are two outstanding impediments to cooperation: the loss of control and a collection of ‘other’ reasons. Each of the remaining impediments are nominated by around 20 per cent of firms, except for personality difficulties which is scarcely rated.

The fear of losing control is clearly the biggest individual reason why non-cooperating firms have so far avoided linkages with other firms. The wish to remain independent and retain complete control of their business operations are the issues at stake. This may be of particular concern to firms which have owner-managers, and/or to firms which have grown from small and uncertain beginnings through their own good efforts and without having to rely on others at any stage.

**Figure 12.1 Impediments to cooperation, all industries**



Source: BIE survey

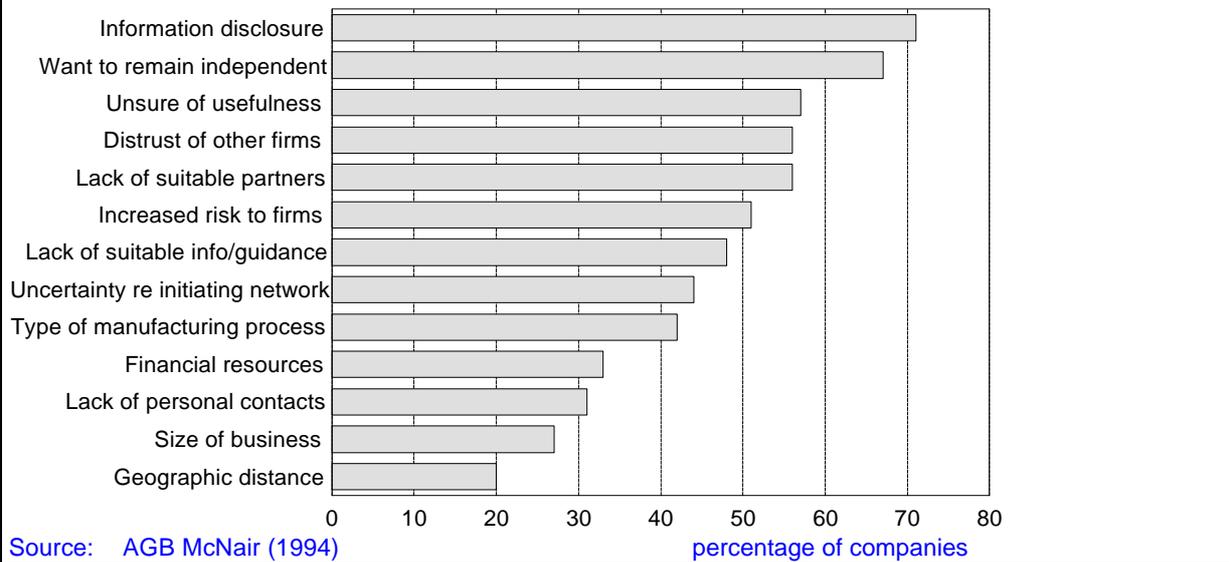
Loss of control also figured prominently in a study of Queensland firms by Buttery (1993) and in the AGB McNair Business Attitudes Survey (1994).

Buttery found that the inability to have complete control was by far the most important factor worrying firms about alliances and networks. The 20 per cent of firms worried by control was at least twice the proportion of firms concerned with virtually all other issues.

Similarly, the AGB McNair survey on networking revealed that the desire to remain independent was the second most significant reason inhibiting firms from becoming involved in business cooperation (Figure 12.2). AGB McNair claimed there was a need to demonstrate that networking does not have to destroy independence. Interestingly, the most significant factor in the AGB McNair Study concerned information disclosure. This is not particularly prominent in our study.

The effect of business cooperation on control was discussed in the previous two chapters. It is interesting to compare the realities with the perceptions of non-cooperating firms. Loss of control was in fact the most important reason (along with lack of trust) for firms *abandoning* their cooperative arrangements. This would seem to indicate that the fears of non-linked firms are supported by the facts. On the other hand, for firms with *existing* cooperative arrangements, loss of control was their least significant concern and only seven per cent regarded it as a major problem.

**Figure 12.2 Factors inhibiting networking**

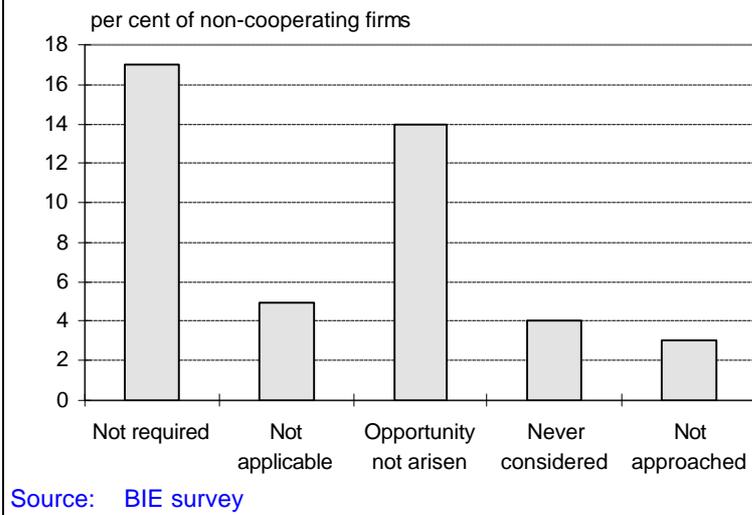


Even those cooperating firms in the survey which have abandoned linkages for control reasons have maintained their faith in the benefits of business cooperation. In most arrangements firms are obviously able to manage the independence issue reasonably comfortably, and only occasionally does it get out of hand.

For non-cooperating firms, the key message might be that while some will have to give up a degree of independence when forming linkages, the reality is that loss of control is not a major problem for the majority of cooperating firms.

Over 40 per cent of non-linked firms cited a variety of ‘other’ reasons for their behaviour (Figure 12.3). This comprised:

**Figure 12.3 ‘Other’ impediments to cooperation, all industries**



- 17 per cent which consider cooperation is ‘not required’;
- 5 per cent which considered linkages not applicable to their firm;
- 14 per cent which suggest no opportunity has arisen for inter-firm cooperation;
- 4 per cent which have never considered the option of linkages; and
- 3 per cent which have not formed links because they ‘await approaches’.

It would be hard, and possibly inappropriate, to convince the first group of firms of the value of inter-

firm cooperation. Interestingly, however, over 20 per cent of non-linked firms could be clearly amenable to business cooperation given the right circumstances. In Figure 12.3 this includes those firms which said the opportunity had not arisen, the ones which had never before considered cooperation and those which are apparently waiting to be approached. These firms are broadly comparable to those firms identified in the AGB McNair study which complained of ‘lack of suitable partners’ and ‘uncertainty in initiating cooperation’ (Figure 12.2). All these firms are indicating they do not have closed minds and have a potential interest in cooperating in the future.

Many cooperating firms did not realise how large the benefits of cooperation were until *after* they had formed an arrangement. This suggests that some of the non-cooperating firms miss out on a valuable business strategy through ignorance about the benefits. They may also be ill informed about *how* to form a worthwhile arrangement or find it hard to *identify* the best possible partner.

This potential information breakdown is not, of course, just related to the more positive sides of cooperation. Non-linked firms might be surprised (or shocked) to learn of the number of firms encountering problems with the time required to manage cooperative business arrangements. In addition, non-linked firms may be surprised by the significance of lack of trust and financial costs as reasons for failed arrangements. As well as easing some of their fears and assisting opportunities for links, better information flows about the realities of cooperation could also emphasise the need to allocate sufficient time and financial resources to make the linkages work.

Informing firms of the true benefits and costs of business cooperation is a very important issue and one with implications for the role of government. These matters are addressed further in Part D of the report.

### 12.1.2 *Impediments by state*

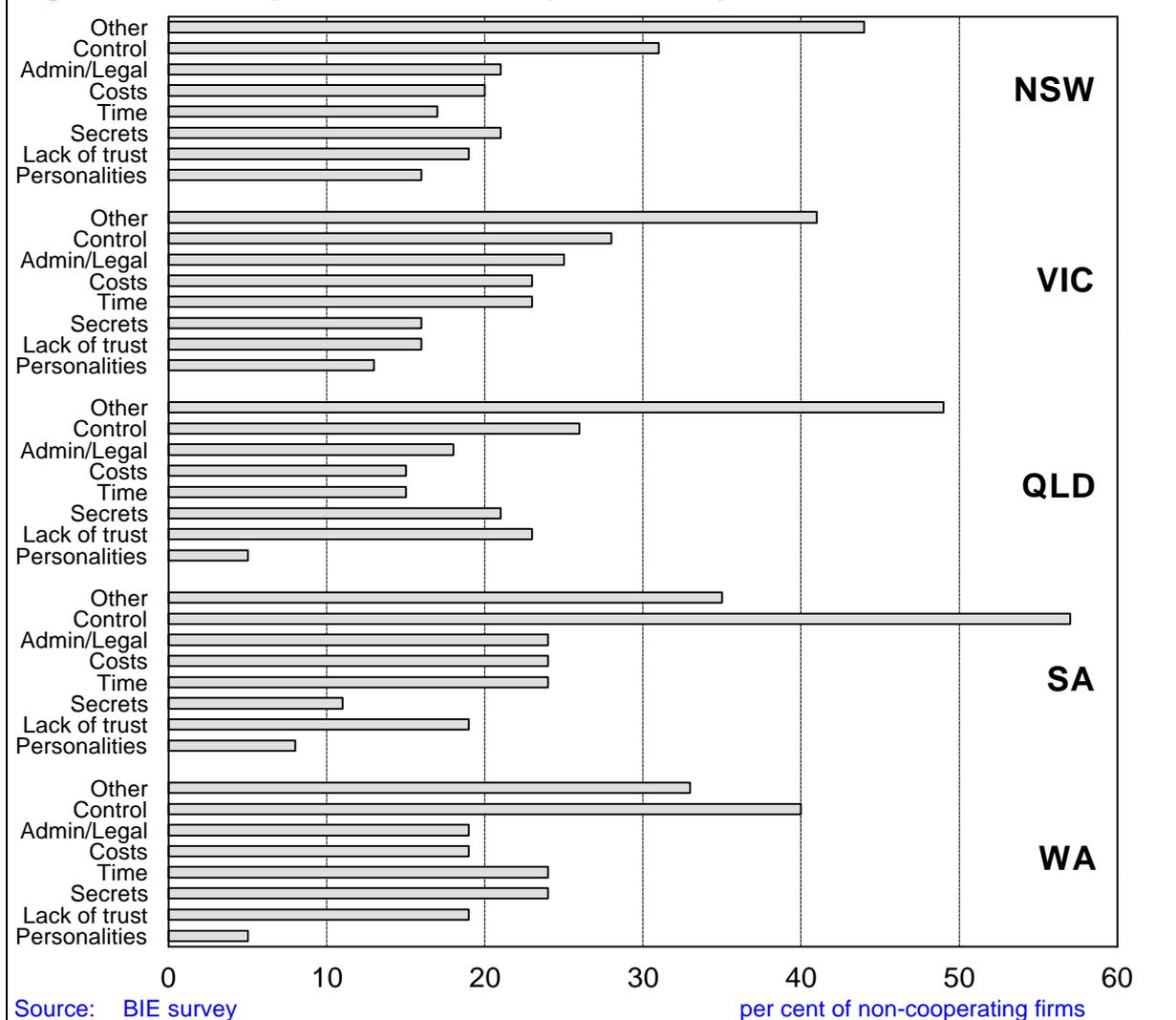
The reasons for not cooperating by firms in each state are shown in Figure 12.4. Some caution is required in interpreting the data in view of the small number of firms involved in some cases.

We found:

- The most important single impediment to cooperation, loss of control, appears to be particularly significant to firms in the smaller outlying states of South Australia and Western Australia<sup>1</sup>.
- It is possible that some firms located away from the eastern seaboard are somewhat more concerned about the potential threat to their independence posed by business cooperation. In practice, however, these concerns do not translate into particular problems for cooperating firms in either state. (See Chapter 10).

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<sup>1</sup> Although it should be noted that only 20 firms are involved in the case of Western Australia.

**Figure 12.4 Impediments to cooperation, by state**

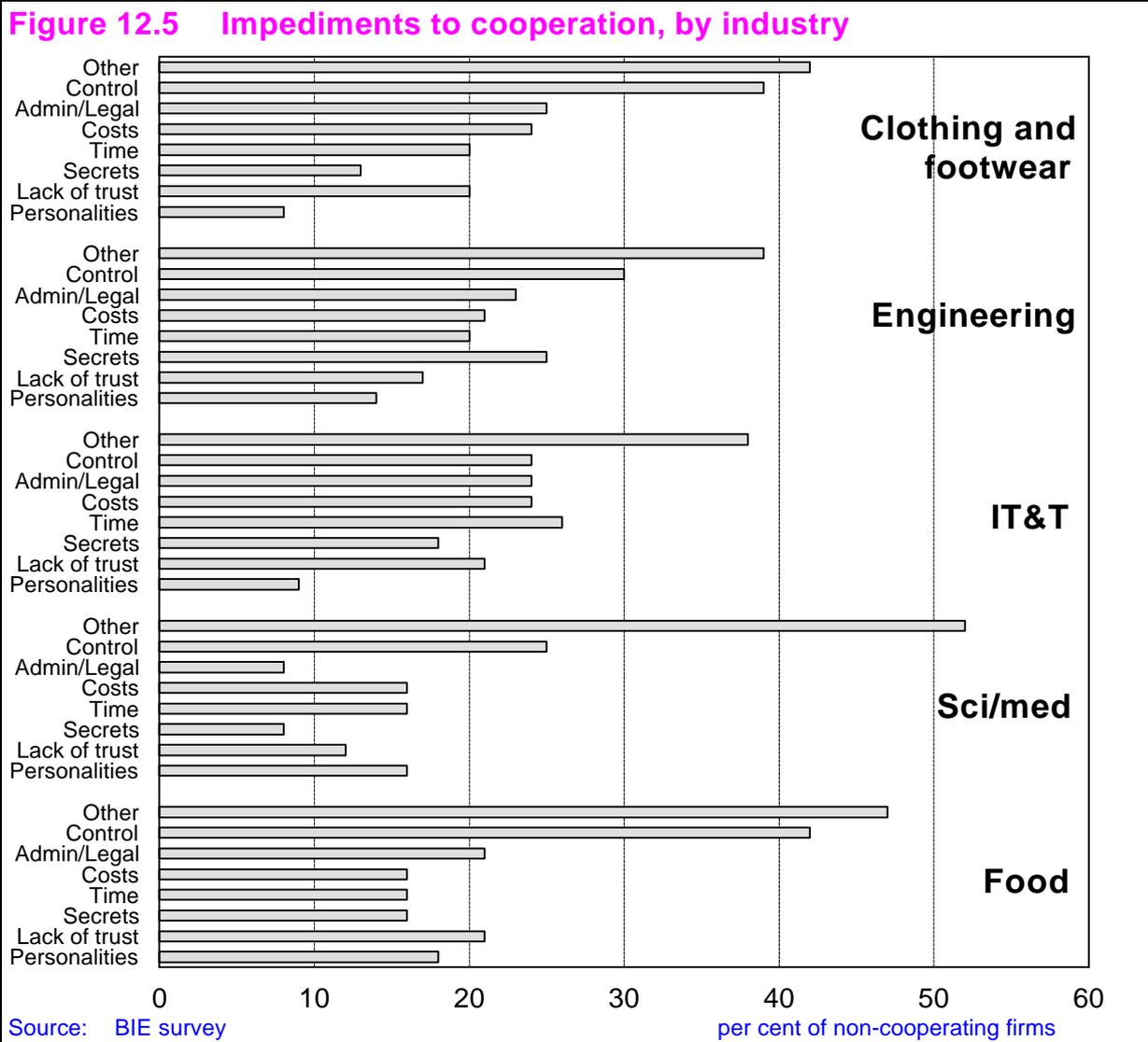
- SA firms have the least concerns about disclosure of commercial secrets. This contrasts sharply with WA where these concerns are foremost. This reflects the situation within existing arrangements in WA.
- Queensland firms are relatively more concerned about lack of trust.
- The two largest states, NSW and Victoria, have fairly similar patterns. These emphasise problems of control, the administrative and legal burden and ‘other’ reasons.

## 12.2 Impediments and firm characteristics

This section examines whether different types of non-cooperating firms have particular reasons for avoiding business cooperation. What, for example, most deters small firms, or firms producing a high-technology product, from cooperation? Understanding why certain categories of firms are reluctant to become involved in inter-firm cooperation is very helpful to agencies wishing to promote linkages.

### 12.2.1 Impediments by industry

This section examines whether there are any significant differences in cooperation impediments by industry. In Figure 12.5, the reasons for firms avoiding business cooperation are classified by industry. Again, caution is required in interpreting the data in view of the small number of firms involved in some cases.



The two most prominent impediments are control and ‘other’ reasons. The former varies considerably by industry. Food firms and Clothing and footwear manufacturers are the most concerned about their inability to retain control in cooperative arrangements, while IT&T and Sci/med firms rate this impediment relatively lowly.

Both Clothing and footwear and Food are traditional industries with a relatively large number of established firms and with an emphasis on design and product differentiation. They also have the least propensity to form linkages (See Chapter 4). IT&T and Sci/med, on the other hand are newer, dynamic industries where linkages are much more common. These firms, while not having linkages themselves, may be more familiar with the control and independence issues associated with business cooperation.

Around half the Sci/med firms listed ‘other’ reasons for not entering cooperative arrangements. Firms in the Food industry also rate well above average in this category. The ‘other’ reasons have not been disaggregated beyond the all industries level because of excessively small samples. It is therefore impossible to reliably distinguish between those ‘not requiring’ and those potentially amenable to cooperation. It should be noted in passing that both the Sci/med and Food industries contain relatively small numbers of non-linked respondents.

Looking at individual industries, Clothing and footwear firms show some concern with potential loss of control, although this is not significantly different from other industries. This did not show up as a major problem for firms currently cooperating in the industry, although loss of control is a very important cause of cooperation failure (see Chapter 11).

Engineering firms form the dominant group in the survey and therefore it is not surprising to find their answers are close to the overall average. One issue which does stand out, however, is the matter of disclosing commercial secrets. This is also quite important to currently cooperating Engineering firms and provides an example where a perception may have some factual basis.

In the other more traditional industry, Food, firms seem to have a greater fear of losing control than in some other industries. However, the concerns over loss of control by non-linked food firms is not replicated for those already involved in business cooperation.

Firms in the two newer and high-tech industries, IT&T and Sci/med, differ somewhat in the reasons for avoiding cooperation. Loss of control is of similar concern, but IT&T firms have more of a tendency to worry about time concerns and financial costs (and even trust). The only real concern of Sci/med firms are the ‘other’ factors discussed above.

In reality IT&T firms do have substantial problems with both time commitments and financial costs in their existing linkages, which may suggest a better understanding by IT&T firms about the true nature of cooperation. Sci/med firms in cooperative arrangements have the greatest problems of all firms with both time management and disclosing commercial secrets, yet these do not appear as strong impediments to the non-linked firms in the industry.

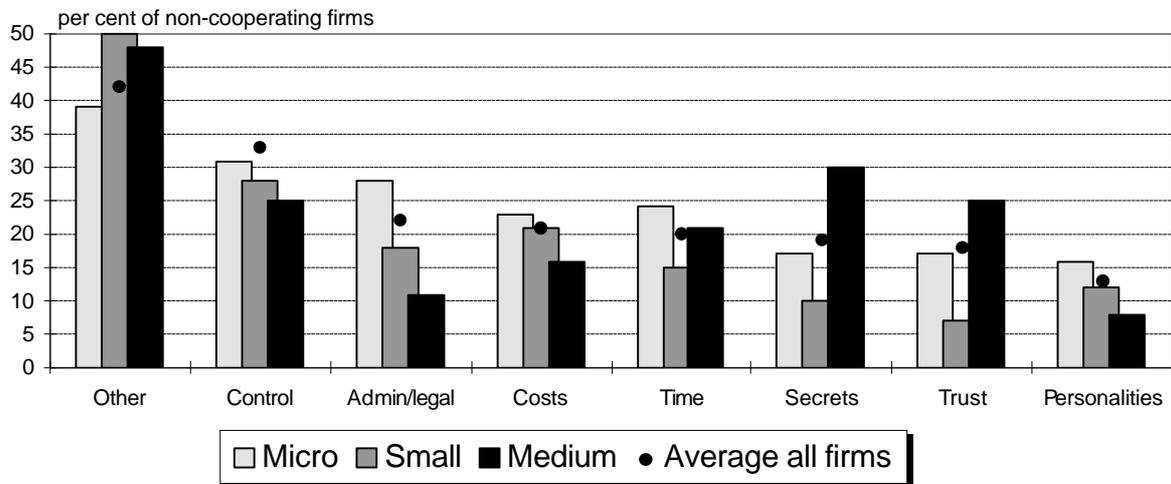
It is apparent that the impediments to non-linked firms are in some cases matched by the matters occurring within existing arrangements. Very rarely however is there much of a relationship between impediments and reasons for cooperation *failure* in the different industries. This reinforces the earlier point of the need to provide firms with better information on the benefits *and* costs of business cooperation.

### **12.2.2 Size of firm**

For consistency, it would have been desirable for the classifications of firm size used elsewhere in this report to have also been adopted in this section on impediments. Unfortunately there were only 10 large firms in the sample, which makes it impossible to draw any solid conclusions for these firms. However, we can analyse the survey results for firms with less than 100 employees.

The reasons for never adopting a cooperative business arrangement are summarised in Figure 12.6. The major impediment to cooperation, loss of control, does not appear to vary greatly for different-sized firms, although there is a slight tendency for this to be more of a problem in the smallest ones.

**Figure 12.6 Impediments to cooperation, by firm size(a)**



Note: (a) Results for 'large' size group not shown due to small sample.

(b) Average figure for Control is higher than the figure for the three firm categories due to missing data.

Source: BIE survey

In contrast to medium firms, almost 30 per cent of micro firms believe administrative/legal burdens are major reasons for avoiding linkages. These firms are also relatively more concerned about the additional time commitments and personality problems.

Small firms register very low levels of concern about disclosure of commercial secrets and lack of trust. A high 50 per cent of these firms answered 'other' as a major reason for not cooperating. Given our findings on this 'other' category (see Figure 12.3), this suggests a high proportion of these small firms may be receptive to cooperation.

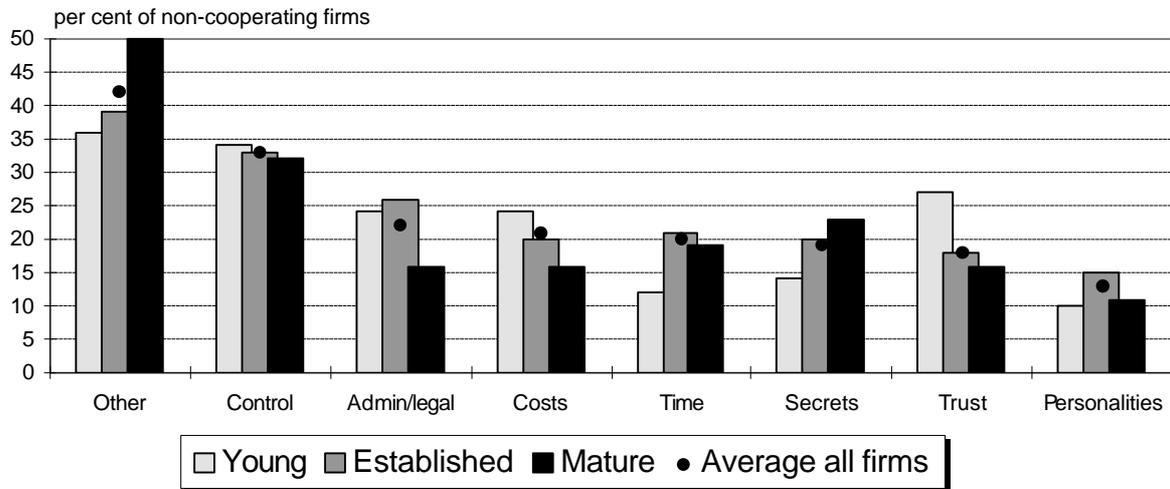
It is interesting to recall from Chapter 10 that small firms have the most major and severe problems within cooperative arrangements, and particularly in relation to financial costs, time management, personalities and trust (the latter two are also major reasons for abandonment of linkages). Only in relation to financial costs do the perceptions of non-linked firms of this size come close to matching the reality.

The medium-sized firms appear to have relatively high impediments in two specific areas. Disclosure of commercial secrets concerned 30 per cent of these firms, compared to only 17 per cent and 10 per cent for the two small firm categories. Lack of trust is also a particular problem for medium-sized firms viz-a-viz smaller firms.

Neither disclosing commercial secrets or trust appear to be significant negatives for medium sized firms currently involved in business cooperation. However a very high 54 per cent of medium-sized firms cited lack of trust as a major reason for terminating cooperative arrangements.

### 12.2.3 Age of firm

The impediments to business cooperation by age of firm are shown in Figure 12.7. Loss of control appears to be equally likely to be a significant problem for firms in the different groups.

**Figure 12.7 Impediments to cooperation, by age of firm**

Source: BIE survey

After loss of control, the biggest single reason why young firms do not cooperate is lack of trust of their potential business partners. This stands to reason for relatively new firms, perhaps lacking in market knowledge and without the experience to understand how trust can be developed in mutually beneficial relationships. Lending weight to this explanation is the fact that lack of trust is also a relatively major problem for young firms actually involved in business cooperation (and is a major reason for termination of their linkages).

Established firms (6 to 24 years old) are the most concerned with the potential administrative/legal burden associated with inter-firm cooperation. This perception could to some extent be based on a real appreciation of the problems of inter-firm linkages. Administering cooperative arrangements is likely to be more of an actual problem for established firms compared with more mature firms (see Chapter 10). At the same time, disclosing commercial secrets and financial costs are also more significant problems to established firms within their cooperative arrangements and yet they do not appear as major impediments for non-linked firms in this group.

Half of the mature firms (25 years old or more) cited a range of 'other' factors as their major reasons for not cooperating with other firms and many may therefore be receptive to cooperation in the future.

Turning to specific impediments, mature firms have more of a tendency than new firms to be put off business cooperation by the fear of having to disclose commercial secrets, but on the other hand are less concerned with the prospective financial costs and the likely administrative/legal burden.

The implications of these findings are that firms which have been around for a long time have a larger store of knowledge than younger firms and are inclined to be more reluctant to share this accumulated intelligence with new comers. At the same time, they have also been market players long enough to know their way around the administrative side of contracts and not to be over concerned about this issue.

## 12.2.4 Exporters and non-exporters

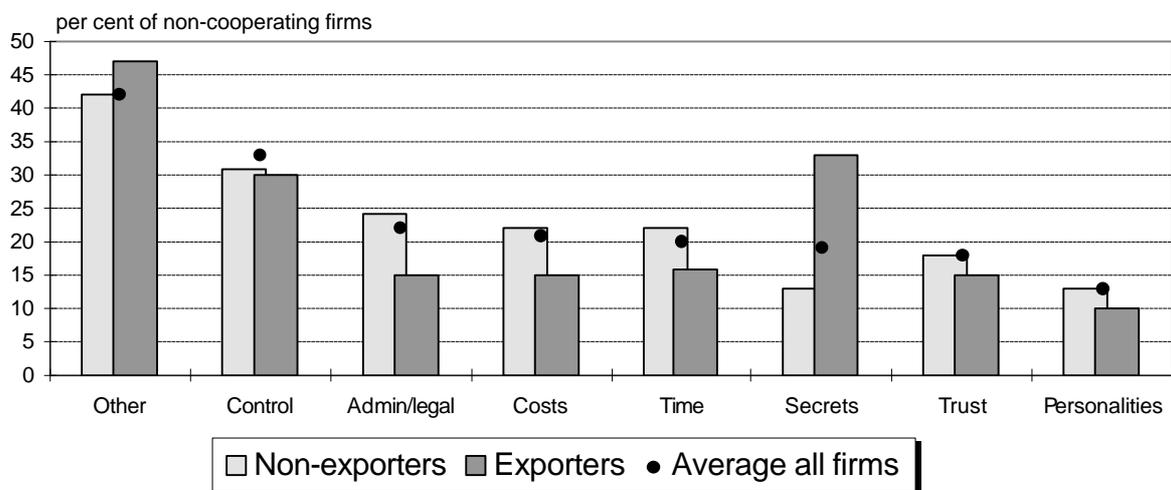
We demonstrated in Part B that exporters generally do well out of business cooperation and are substantially more likely to benefit than non-exporters. Almost 50 per cent of exporting firms increased their profits/sales and market knowledge, for example through their linkages (compared with around 30 per cent for non-exporting firms).

Over one-quarter of the survey respondents that have never adopted cooperative arrangements are exporters. We think it useful to analyse their major reasons for maintaining their arm's length relationships.

It is apparent that exporters are extremely nervous about the implications of business cooperation for information disclosure and protecting commercial secrets (Figure 12.8). One-third of non-cooperating exporters regard this as a major impediment to forming linkages. This is well over twice the proportion of non-exporting firms (13 per cent).

Exporters carve market niches in world markets by having competitive advantages over rivals. Many of these advantages are fundamentally underpinned by knowledge – knowledge of how to produce, market know-how and of course intellectual property. Some firms are apprehensive about their ability to quarantine their knowledge within a cooperative arrangement. The foundations for their fears are actually slight. Although exporters in current arrangements have concerns about disclosure of information, they rarely cite information as a reason for terminating a linkage.

**Figure 12.8 Impediments to cooperation, exporters and non-exporters**



Note: (a) Average figure for Control is higher than the figure for the two firm categories due to missing data.  
Source: BIE survey

Despite their worries regarding commercial secrets, exporters are not particularly concerned with lack of trust or the possibilities of losing control in a cooperative arrangement. Relative to non-exporters they are also unconcerned with some of the more 'down to earth' resource matters relating to financial costs, administration and time.

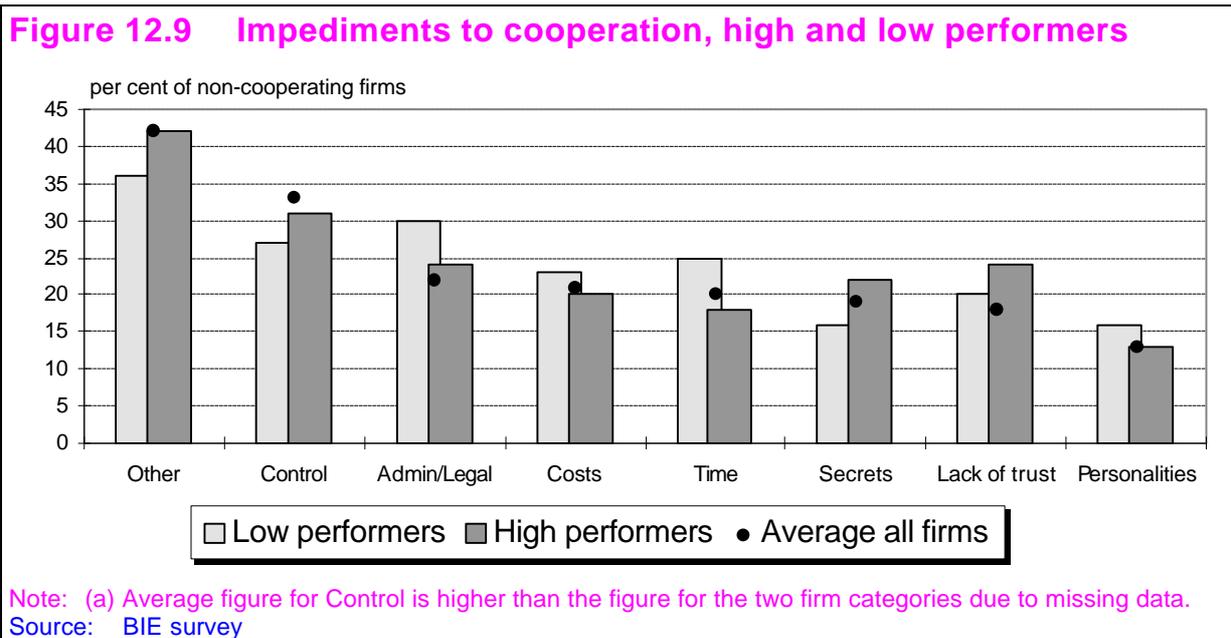
Like other types of firms, a high proportion of exporters (47 per cent) are however avoiding cooperation for a combination of 'other' reasons.

Firms producing solely for local markets do not have any particularly significant impediments beyond loss of control and ‘other’ reasons. Apart from disclosing commercial secrets, non-exporters do not differ a great deal from exporting firms. They have a few more concerns about the resource impediments – financial costs, time management and the administrative burden. None of these issues are unusual problems within existing arrangements.

### 12.2.5 High and low performing firms

We show the reasons why non-cooperating high and low performers avoid business cooperation in Figure 12.9. Low growth firms give prominence to the anticipated administrative/legal burden (30 per cent of firms). The concerns with this matter relegate loss of control to third place in the ranking of problems.

Low growth firms are also a little more concerned with the expected time commitments than average. This suggests these firms are a little more worried about the day-to-day realities of business cooperation, rather than the more esoteric questions of whether they will be able to trust their partners or whether they will be able to maintain control over their destiny. Firms ‘up against it’ generally, and perhaps desperate for business, seemingly are most concerned with sparing the time and the administrative resources to form and maintain linkages.

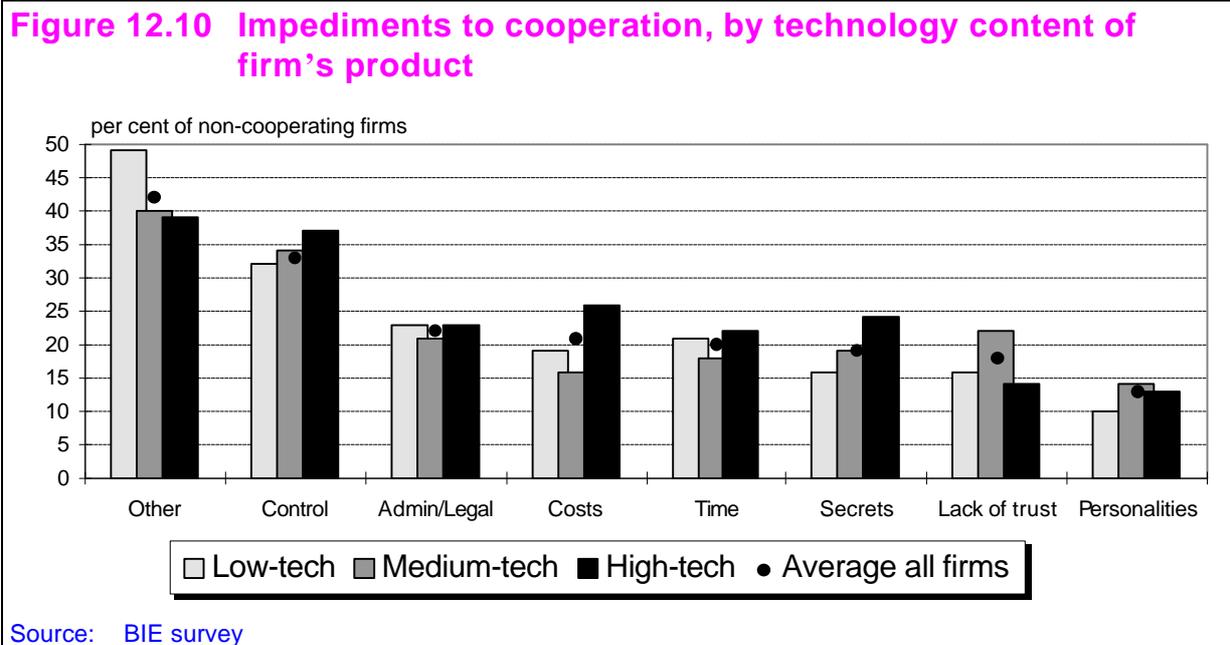


High growth firms follow a more familiar pattern. Lack of trust is the only reason that stands out as being noticeably different from the ‘average’ firm. This is also an important problem encountered by high performers involved in cooperative arrangements and it is easily their major reason for cooperation failure. Taken together it suggests a definite pattern of concern amongst high performers that their success might be compromised by working too closely with other firms.

## 12.2.6 Technology content

Low-tech firms are likely to achieve relatively fewer benefits and incur fewer problems as a result of inter-firm cooperation. This apparent tendency to not take business cooperation as seriously as high and medium-tech firms carries over into the perceptions of ‘maiden’ low-tech firms.

The only significant impediment for low-tech firms, relative to the other two groups, is the 49 per cent which cite ‘other’ reasons for avoiding cooperation (Figure 12.10).



Firms with a high-technology content in their products understandably tend to be relatively more concerned than other firms with disclosing commercial secrets, and are also concerned with the financial costs of cooperation. It is interesting to compare these findings with the industry breakdown of firms (Figure 12.5), which shows Engineering firms to have the greatest concerns with commercial secrets and IT&T and Clothing/footwear firms to be the most worried about financial costs.

We find a slightly higher proportion (22 per cent) of medium-tech firms believe lack of trust is a major reason for avoiding cooperation. Their concern with trust is justified when the reasons for abandonment are recalled. One-half of the medium-tech firms which have abandoned cooperative arrangements have done so because of a breakdown in trust (see Chapter 11). While a similar proportion of high-tech firms have terminated cooperative business arrangements for the same reason, trust does not appear as an inhibiting factor for non-linked high-tech firms.

## 12.2.7 Other firm characteristics

Variations in the type of product and the level of competition has very little effect on the decision not to participate in inter-firm cooperation. Firms producing goods for further processing (intermediate products) are particularly concerned with loss of control aspects (39 per cent), compared with 33 per cent for final

products and only 16 per cent for capital goods. For all other impediments, however, there are no major differences between the different firm types.

The degree of competition in its market(s) makes no difference whatsoever to the reasons why firms have never adopted cooperative arrangements. It was shown in Part B that firms facing relatively higher levels of competition are more likely to benefit from cooperation than low competition firms, although the differences were quite small. However, it seems that firms facing more intense competitive pressures have no special or significant reasons to either adopt or reject cooperation as a business strategy.

## 12.3 Summary

It is evident that business cooperation offers significant benefits, so why don't more firms have cooperative arrangements?

One-third of firms apparently conduct all their business operations at arm's length and many other firms are involved in only marginal aspects of business cooperation. This chapter has looked at the reasons why these firms fail to adopt substantive cooperative arrangements.

There are two major impediments to cooperation: fear of losing control and a collection of 'other' reasons. Loss of control is the biggest single reason why some firms have never entered into cooperative arrangements. The wish to remain independent and retain complete control of business operations are the issues at stake. To the extent that loss of control is a major reason for cooperation failure, this fear is somewhat justified. At the same time, loss of control is not a significant problem encountered by firms in their *ongoing* cooperative arrangements. It comes down to a question of choosing the right type of arrangement.

Over 40 per cent of non-cooperating firms outlined several 'other' reasons why they had avoided cooperation to date. For about half of these firms cooperation is thought to be 'not required' or 'not applicable'. However, the other half of these firms could be amenable to business cooperation in the right circumstances. The majority noted they had not formed any linkages because the right opportunity simply had not arisen, while others were waiting to be approached or thinking over the cooperation issue.

Accordingly, at least 20 per cent of firms without cooperative arrangements may be open to cooperation but require information on opportunities or potential partners. 'Information failures' could be quite pervasive.

Most non-cooperating firms are almost certainly uninformed about the prospective benefits of cooperation – particularly when many benefits are spin-offs not anticipated prior to the commencement of cooperative activities. In addition, the major concern of non-cooperating firms – fear of losing control – could also be based on misleading (or at least, incomplete) information. Loss of control is not a significant problem in ongoing cooperative arrangements.

If non-cooperating firms were more aware of the positive sides of business cooperation – and knew more about how to form linkages – it is hard to avoid the conclusion that many more would join the ranks of 'the cooperators'.

## Part D Assistance for business cooperation

We have seen that a significant proportion of Australian firms are benefiting from business cooperation. We have also seen that firms encounter problems within their cooperative arrangements and that other, non-cooperating firms are put off business cooperation by a variety of factors.

It is time now to consider the role of the government, and other agencies, in business cooperation activities. Firms may not automatically form cooperative arrangements, even when they would be ultimately beneficial to the firm. The government, recognising the advantages that cooperative arrangements can provide, has become involved in assisting firms in their formation. Industry associations are also undertaking this role.

There are several aspects to the discussion of external assistance. First, to the extent that governments and business organisations are involved, what forms of assistance do they currently provide to firms? Second, how effective is the assistance, in terms of both its delivery and its effect on outcomes? Third, what do firms say they need in the way of external assistance to encourage cooperation? Finally, what does the discussion of these factors and the analysis in the rest of this report mean for future external assistance to business cooperation?

In Chapter 13 we examine the various forms in which external assistance for business cooperation is delivered. We also assess its effectiveness and discuss the types of assistance firms say they want from governments. Chapter 14 takes the analysis in the previous chapter one step further by considering the policy implications of the study's findings and developing recommendations for future external assistance to firms.



# 13 Role and significance of external assistance

Many firms establish cooperative links without the aid of others. But sometimes external agencies – governments, industry associations and business advisers – provide assistance to form links. We assess the impact of this assistance in this chapter.

The purposes of the chapter are essentially twofold. The first is to report on the current types of assistance available and the effect they have on business cooperation. The second is to gauge the scope for policy changes: either amendments to existing policies or the development of new ones.

The structure of the chapter is as follows. We examine the different forms of assistance available to external agencies in Section 13.1. This is followed in Section 13.2 by an overview of the types of assistance actually provided in government programs and through industry associations. Section 13.3 reports from the firms' perspective on how good a job governments and industry associations are doing in providing assistance. This is followed in Section 13.4 by an assessment of the impact of external assistance on the outcomes (or benefits) of cooperative arrangements. We then examine the forms of external assistance preferred by both cooperating and non-cooperating firms (Section 13.5). The chapter is summarised in Section 13.6.

## 13.1 What ways are there of assisting firms to cooperate?

It is useful to classify the possible forms of external assistance into two main groups – information assistance and direct forms of assistance. The former, as the name suggests, relates to the provision of information to firms about various aspects of business cooperation. Firms are given the facts but are essentially left to make the running in forming and operating their cooperative arrangements. The latter involves governments (or others, such as industry associations) taking a closer and more active role in bringing firms together in cooperative arrangements. Firms are provided with more 'concrete' assistance to get cooperative arrangements up and running.

In the mail survey used for this study, firms were asked a number of questions relating to external assistance for business cooperation. Eight types of assistance were listed on the survey form, four of which can be categorised as information assistance and the other four as direct forms of assistance.

The information assistance categories are:

- information on how to form linkages;
- information on possible partners;
- information on the benefits of linkages; and
- identifying market/business opportunities for firms.

The direct forms of assistance are:

- the provision of a broker/facilitator;

- actively introducing firms;
- training in the formation of links; and
- financial assistance.

These forms of assistance are generally either provided through participation in specific government programs (such as AusIndustry's Business Networking Program) or by approaching governments and other bodies and requesting *ad hoc* assistance for specific purposes (for example, Austrade may provide *ad hoc* export assistance).

The remaining sections in this chapter analyse and assess external assistance for cooperation in the context of these two broad categories, and specifically in relation to the eight forms of assistance noted above.

## 13.2 What assistance do governments and industry associations provide?

Governments and industry associations are the two major sources of external assistance for firms interested in business cooperation. Accordingly, the data presented in this chapter, collected from the survey and firm interviews, is focused on these two bodies.

However, it became apparent during the study that several other bodies play a significant role in helping firms with their business linkages. Chambers of Manufactures and Chambers of Commerce in the various states are sometimes quite active in promoting business cooperation and in assisting firms to form links. Business advisers, consultants and accountants also play a role in assisting firms.

While the descriptions and analysis below refers only to governments and industry associations, the role of these other agencies should be borne in mind when considering the possible outcomes of external assistance and the requirements for future assistance.

### 13.2.1 Government programs

The federal government encourages inter-firm cooperation in several important ways. The most notable is AusIndustry's Business Networks Program. This is outlined below, followed by a brief description of other significant programs.

#### *Business Networks Program*

The Business Networks Program (BNP) was one of a number of industry policy initiatives announced in the federal government's *Working Nation* statement in 1994. It is a four-year program and is designed to assist groups of at least three businesses to undertake joint activities in order to increase their competitiveness or capabilities.

The program is funded by the federal government, and is being implemented in conjunction with a range of industry associations, federal and state government agencies, local government, regional development authorities and private consultants.

The government has allocated \$38 million to support the creation of networks, and the bulk of this has been allocated to the BNP. The Program is still in its early stages, but the broad aim is to create over a thousand networks in the four years it is to be run.

The basis of the BNP is a three-stage network formation process, in which network brokers facilitate cooperation among the participants. In Stage 1, the broker assists in establishing the feasibility of the network's business idea. This is followed by Stage 2 in which a business plan is prepared and an agreement between firms is finalised. The broker may also have a role in Stage 3, the implementation of the business plan.

Broadly, the government meets most costs associated with Stage 1 and half the costs associated with Stages 2 and 3, within approved limits. Further details of the Business Networks Program can be found in Appendix E.

Part of the origin of the BNP is a pilot networking program which was established in 1990 and run through the National Industry Extension Scheme (NIES). The pilot attempted to increase awareness of the benefits of networking by providing seed funding to assist with networking activities. These include a search conference, strategic and business planning, market identification and network facilitation.

### **Box 13.1 An overview of government-assisted networks**

*Number of networks identified: 144*

*Number of firms involved: At least 1500*

*Over half the networks identified were in a formative stage and not yet operational.*

*The strongest networking states are NSW (30 per cent of all networks), South Australia (27 per cent) and Queensland (25 per cent).*

*Around half of the networks are in the manufacturing sector, around one-quarter are in the services sector, while 11 per cent have a mixture of manufacturing and service firms.*

*One-quarter of the networks identified are vertical (members from different stages in the value chain), while three-quarters are horizontal (at the same stage in the value chain).*

*The majority of networks have 10 or less members. Around 30 percent have 3 to 5 members and 34 percent have 6 to 10 members. Around 20 percent have more than 20 members.*

*Partly reflecting the recent change in emphasis on networking as a policy tool, 44 per cent were established in 1994 following on from 25 per cent in 1993.*

*Source: BIE survey of government-assisted networks*

During the time in which the pilot program was run it received approximately \$2.5 million dollars in funding. As part of this study, the Bureau has examined the characteristics of government-assisted networks (the bulk of which were established under the pilot program). A brief summary of this analysis is presented in Box 13.1 and the full results are contained in Appendix F.

### **Other networking programs**

In addition to the BNP, the Commonwealth has two other major networking programs. The Food Industries Networking for Asia Export Program (FINA) is currently in its third year and is run by the Department of Industry, Science and Technology. It aims to increase exports of Australian high value added processed food and beverage products into Asian markets.

FINA is targeted at agri-food enterprises wanting to establish export markets in Asia, but are hampered by their comparatively small size and limited resources. By forming networks with complementary producers, processors and associated enterprises, smaller companies can pool resources and access specialist skills and services needed to win export contracts. Both horizontal and vertical networks are eligible for assistance. Further details of the program are outlined in Appendix D.

To date the program has assisted eight networks involving over 90 firms throughout Australia. Australia's Best Foods is one such network and is examined in Box 13.2.

### **Box 13.2 Australia's Best Foods – a FINA network**

*Australia's Best Foods is a network of 5 medium sized food firms based in South Australia exporting specialty food (honey, jams, pickles, small goods, chocolate and confectionary) to Japan.*

*The group received FINA funding in 1992 to support formation and facilitation costs, and in 1993, further funding was granted to implement the networks product and marketing strategies for the Japanese market.*

*The companies share the costs of establishing the Japanese export market including market research, interpreters, promotion, and travel and accommodation expenses.*

*Individual members of the network would not have been able to undertake the same degree of planning and market research nor develop the institutional and market contacts as was possible through acting together.*

*Through the ground-work laid by their joint efforts, individual members are also securing major contracts in their own right.*

*One of the member companies, Haighs Chocolates, has experienced a 60 per cent growth in export sales over the past year, all due to its involvement in the network. Annually around a quarter of a million dollars worth of chocolates leaves Haighs factory bound for overseas markets.*

*Australia's Best Foods are now self-funding, independent of government assistance. A levy on sales and periodic subscription fees are now the funding sources for the network to cover its ongoing operational costs. Business prospects are very promising with new export markets in Asia being explored for future development.*

Source: BIE interview

The other networking scheme is the Rural Enterprise Networking Program and is administered by the Department of Primary Industries and Energy. It aims to enhance the international competitiveness of Australia's agricultural and related industries by assisting the creation and development of linkages between agribusiness operators to achieve common objectives. More details are included in Appendix D.

### **Other government assistance**

Outside networking, there are many government programs at both the federal and state level that facilitate or encourage the formation of linkages between firms. These are detailed in Appendix D. Some of these, such as the Partnerships for Development Program have a specific industry development focus. Others are focused on areas of business activity such as research and development and exporting. With respect to the latter, Austrade has several initiatives to assist firms to win export orders by utilising inter-firm links. These include the Joint Action Groups and various consortia of Australian firms (such as Austenergy and Austmine).

### **13.2.2 Industry association assistance**

Although government is a key source of assistance, industry associations also play an important role. Traditionally, industry associations are the representative body of the industry. They have the role of attempting to influence the development of a favourable regulatory environment and addressing other key

issues facing the industry. Supplementary to this, they provide opportunities for interaction between members, as well as providing advice, information and training to meet member needs.

Industry associations are in a prime position to promote intra-industry cooperation and guide its development, being able to both inform and educate their members. They can also act as a peak negotiating body with customers and suppliers and help in the formation of these arrangements. Industry associations are themselves a form of cooperation and the propensity to join them may well be highly correlated with the propensity to form cooperative arrangements with other firms.

There is general support for the growing involvement of the industry associations. More than half the firms surveyed by Buttery (1993) felt that employer's associations or professional associations should become actively involved in encouraging cooperation.

Most industry associations are not in a position to finance linkage programs. The promotion of inter-firm cooperation is only a small area of their functions. Until recently, most of the industry association assistance tended to be *ad hoc* and often an unintended outcome of other actions. However industry associations are now more aware of business cooperation issues, as evidenced by their interest in AusIndustry's Business Networks Program. A considerable number applied for placement of network brokers under the program. Several were successful and now have brokers working with them. In this, and other similar ways, they provide a useful link between firms and government for the dissemination of programs (see Box 13.3).

### **Box 13.3 MTIA working with government**

*The Metal Trades Industry Association (MTIA) has a membership of around 7000 affiliates and has several specialist national groups catering for members with common business interests. The MTIA has worked closely with the Government in several areas relating to business cooperation, including:*

- *the Export Access Program over the past 12 months 17 companies completed this program and all were successful in either obtaining export sales, appointing overseas agents, or setting up joint ventures (or are in the process of doing so);*
- *the appointment of an MTIA/NIES Field Officer in 1994; and*
- *most recently, MTIA applied successfully for the placement of a network broker under AusIndustry's Business Networks Program.*

Source: MTIA Annual Report 1994 and BIE interview

As with government departments, industry associations disseminate information to members on various aspects of business cooperation. In addition, two main 'direct' industry association roles can be identified in promoting cooperative arrangements.

The first entails industry associations forming focus groups (for example, exporters) and trade missions amongst their members. These sometimes involve relatively large numbers of firms. In some cases, all the firms may have in common is a desire to penetrate particular markets. In others they might approach the issue from the perspective of winning export orders as a group and then sharing the business around. Many industry associations work closely with Austrade to try and find export markets for their members.

The other key direct role played by some industry associations is to help firms find partners or cooperation opportunities. The association brings members together by facilitating one-to-one cooperative arrangements. For example, it might help large companies looking for a smaller partner firm to sift through the 'minnows'. Alternatively, they may help small firms to make contact with prospective large partners. In addition, in cases where firms have already formed loose alliances, industry associations can help them to identify areas

where they ‘can do more than just talk’. They can also help firms in the early stages of forming business networks.

The facilitator type role for industry associations appears to be more common in the ‘newer’ industries such as IT&T (where inter-firm linkages are a more vital part of business), than in some of the more established industries. Although cooperation is more of a ‘natural’ phenomenon in the newer industries, firms still require assistance in finding the right partners.

Industry associations can also be effective when they combine their resources. They have a detailed understanding of their industry, and the challenges it faces, and they also have close contact with many participants. However, cooperation is often about combining resources from different areas – not necessarily only the formation of linkages between firms in their own industry. One way of addressing this, from a purely industry association perspective, is through greater liaison between industry associations or the formation of peak bodies. The Asian Oceanian Computing Industry Organisation (ASOCIO) is an example<sup>1</sup>.

### **13.3 Effectiveness of external assistance**

This section examines how effective government and industry associations are in providing assistance on business cooperation issues. The analysis is based on answers to questions in the survey.

#### **13.3.1 Effectiveness of government assistance**

##### **Rating government performance**

Around 10 per cent of the cooperating firms in the BIE survey have received government assistance with their cooperative business arrangements. Only five per cent of cooperating firms have been assisted by government with their key arrangement. Those respondent firms indicating the source of their assistance, nominated DIST (and in particular NIES) and Austrade as the leading providers<sup>2</sup>.

Firms which have received government assistance ranked government performance in the services provided (Figure 13.1). Between 40 and 70 per cent of firms felt government performance was good in all eight areas listed on the mail survey form. This result builds on that of AGB McNair (1994), which found 40 per cent of firms (in a survey of 2500 manufacturers) were positive about government initiatives.

The government’s efforts in providing finance is the most applauded role by assisted firms. But other direct methods of assistance were less favourably viewed. Overall, firms tended to be more satisfied with the government’s performance with information assistance.

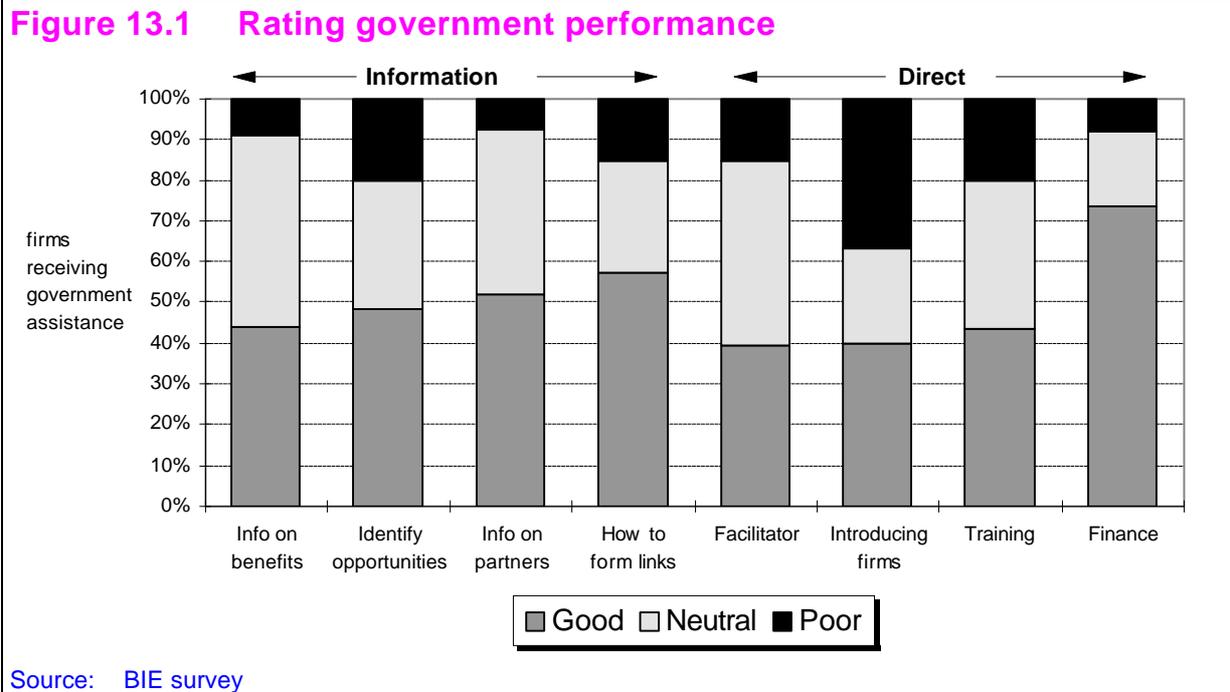
The areas where government assistance was most commonly ranked as poor were:

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<sup>1</sup> ASOCIO was established in 1984 to promote trade between various members and to develop the computing industry in the Asian and Oceanian region. It is composed of thirteen industry organisations from eleven countries and has been instrumental in providing linkages to the IT companies of its member countries.

<sup>2</sup> There were numerous other programs and government bodies from which firms said they had received assistance in forming cooperative arrangements. These included the Department of Industrial Relations (DIR)/AMC Best Practice Program, Office of Labour Market Assistance programs, Department of Employment, Education and Training (DEET), and Department of Primary Industry and Energy (DPIE).

- introducing firms (37 per cent of assisted firms who provided an opinion on the topic);
- identifying market and business opportunities (20 per cent); and
- providing training in forming links (20 per cent).



Small and large firms showed some variations in rating government performance. This contradicts the findings of AGB McNair (1994) which found no difference between firms classed into three size groups<sup>3</sup>.

In the BIE survey, small firms tended to express the opinion that the size and number of government departments made it difficult to find the correct people first time. Larger firms often had more experience of government and most very large firms employed someone in a government liaison position. It appears that large firms have a more positive view of government performance than small firms. However, there were not enough government-assisted firms among the respondents to allow this hypothesis to be tested on each form of government assistance.

### Access to government assistance

One concern for the government is the number of firms in the survey showing no knowledge of government programs in the area of business cooperation:

‘If these services are provided, then I was unaware of them. Perhaps the services need to be publicised.

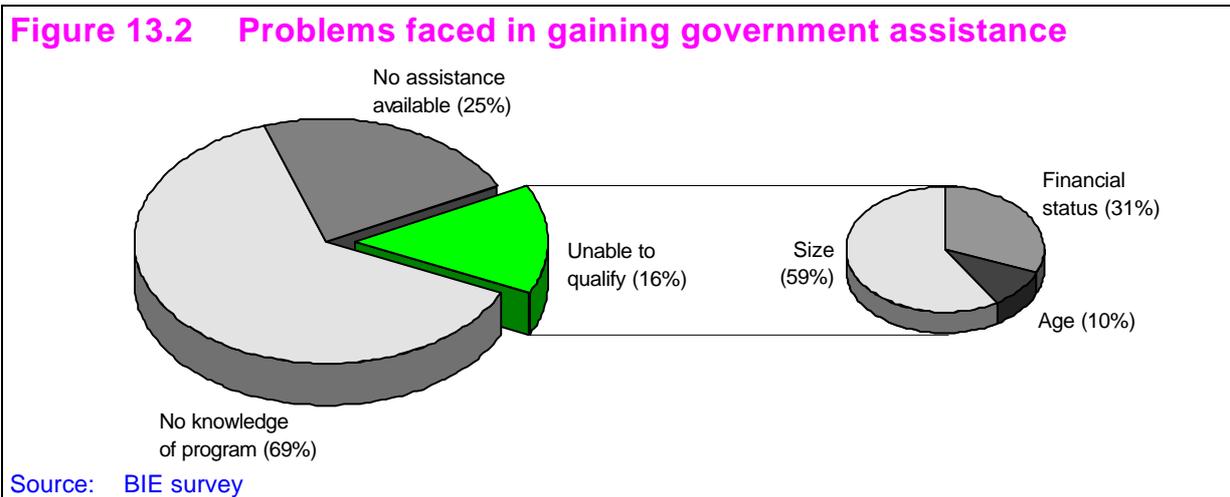
‘Size and complexity of government makes it difficult.

This suggests a more substantial effort is needed by government to provide clearer and more widely disseminated information on available government programs. In support of this, AGB McNair (1994) found

<sup>3</sup> The three firm size categories used were: less than 10 employees, 11 to 20 employees and 21 to 100 employees.

only 16 per cent of firms were aware of any government initiative to encourage business networks in Australia.

Around 12 per cent of firms surveyed by the BIE reported experiencing difficulties in obtaining government assistance to form cooperative arrangements (Figure 13.2). Nearly 70 per cent of these firms claimed they had no prior knowledge of appropriate government programs or departments which might help them form cooperative arrangements.



The reasons for the failure to qualify for assistance are also shown in Figure 13.2. Smaller (and often younger) businesses are the most prominent types – specifically, the very small ‘micro’ firms. A young age, low turnover and generally low or even negative growth are factors working against their acceptance.

### 13.3.2 Effectiveness of industry association assistance

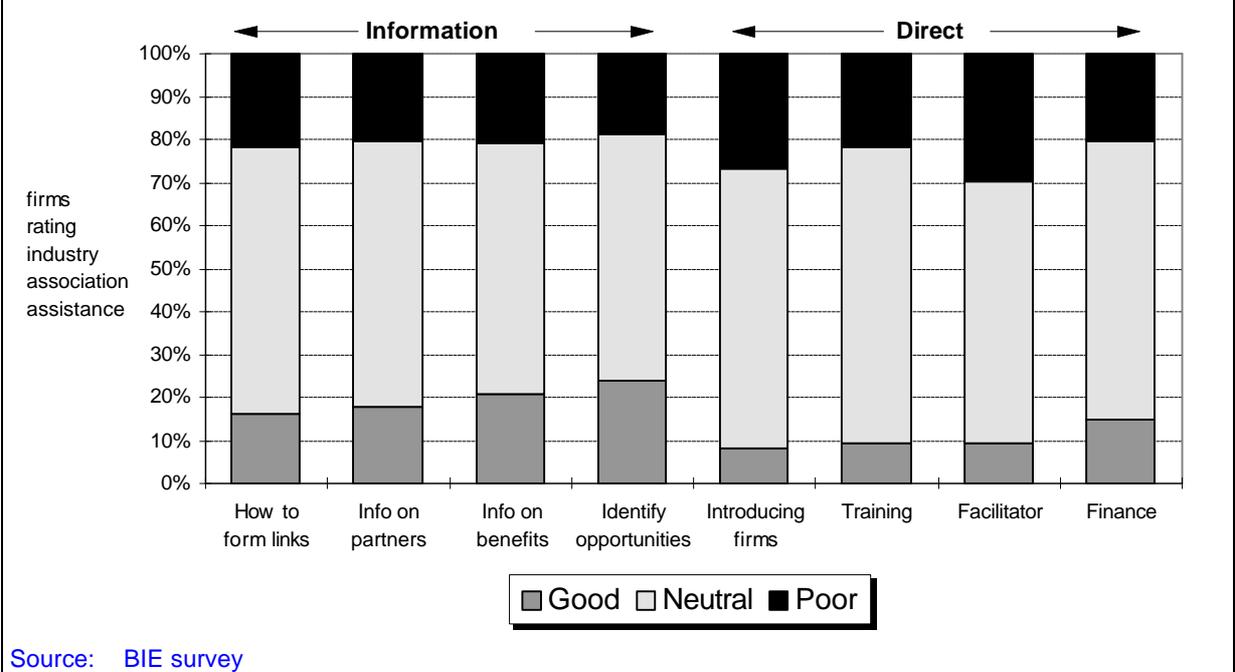
It was hypothesised earlier that the tendency for firms to join industry associations may be correlated with their tendency to cooperate with others. The evidence from the survey is that a large proportion of cooperating firms are, in fact, apparently industry association members. Nearly 40 per cent of cooperating firms indicated they had received assistance on business cooperation from industry associations, as compared to around 10 per cent receiving government assistance. Interestingly, only 4 per cent of cooperating firms claimed to have received industry association assistance for their key cooperative arrangement.

It seems then that firms have a much greater tendency to go to industry associations for assistance than to government. However, the large difference could be somewhat misleading. Firms receiving government assistance were, for the most part, able to identify specific programs. It is likely that more firms received *ad hoc* information from government departments but did not note this in the survey. On the other hand, *ad hoc* information probably accounts for a very substantial part of the assistance firms say they received from industry associations. These factors should be borne in mind in the discussion of the effectiveness of industry associations.

Despite the apparently wider reach of industry association assistance, its performance was rated as markedly lower than the government in the same areas (Figure 13.3). It seems that most recipients have a neutral view on the effectiveness of their assistance. Broadly equal numbers of firms believe industry associations are

performing well and poorly in helping them with business cooperation matters. The information roles are the most praised, with up to 25 per cent of firms happy with industry association performance. The direct forms of assistance come off worst on both counts – more firms rated them as poor, and less firms rated them as good.

**Figure 13.3 Rating industry association performance**



**Box 13.4 Medical Industry Association of Australia (MIAA)**

The MIAA is an industry association boasting over 100 member companies. It covers 85 per cent of the value of goods in the medical devices and diagnostics industry and around 25 000 product lines. Its goals include providing opportunities for interaction between members, and between members and other parties, and also to provide advice, information, education and training to meet members' needs.

Six special interest groups have formed among MIAA members, one of which is the Contact Lens Special Interest Group. In effect this is an example of networking between members. These special interest groups operate like mini industry associations but have also involved some joint purchasing and joint tenders for work. The MIAA has filled a facilitating role through assistance in developing business plans, budgeting, allocating tasks and in arranging trade displays for the Contact Lens Group.

There are many further opportunities for the MIAA to assist in the promotion of inter-firm cooperation in the future, in particular in the areas of benchmarking and joint training.

Source: MIAA Annual Report 1993/1994 and BIE interview

At a general level, industry associations have probably been slow to react to the changing business environment and the subsequent growth in importance of cooperation. However, many are now becoming involved in linkage formation. As this involvement grows, their performance in assisting firms is certain to improve. Box 13.4 provides another example of industry association involvement in this area.

## 13.4 Outcomes of external assistance

### 13.4.1 Outcomes of government assistance

Assisted firms feel that, overall, the government is doing a good job in the provision of assistance to encourage firms to cooperate. But does this assistance make any difference? Does it affect firm performance?

In the survey, firms were asked if government involvement had made inter-firm cooperation more or less successful (or had a neutral impact). Around 70 per cent of firms receiving government assistance indicated that government involvement had *increased* the success of their business cooperation (37 per cent said 'much more successful' and 33 per cent said 'marginally more successful'). The remaining 30 per cent of firms believed that government involvement had no discernible effect on the success of arrangements. None of the firms thought government involvement had actually made things worse!

Aside from asking firms whether they believe government assistance had made their cooperative arrangements more successful, another way of testing the effectiveness of government help is to compare the relative success of business cooperation for government-assisted and non-assisted firms. This is done by examining the benefit outcomes of cooperating firms. While this can only be a proxy measure, it provides some insights into how government assistance influences specific outcomes<sup>4</sup>.

Figure 13.4 outlines the major benefits for these two groups of firms. A comparison shows that government-assisted firms (Benefit Index<sup>5</sup> of 38) are more likely overall to gain greater benefits than non-assisted firms (Benefit Index of 32).

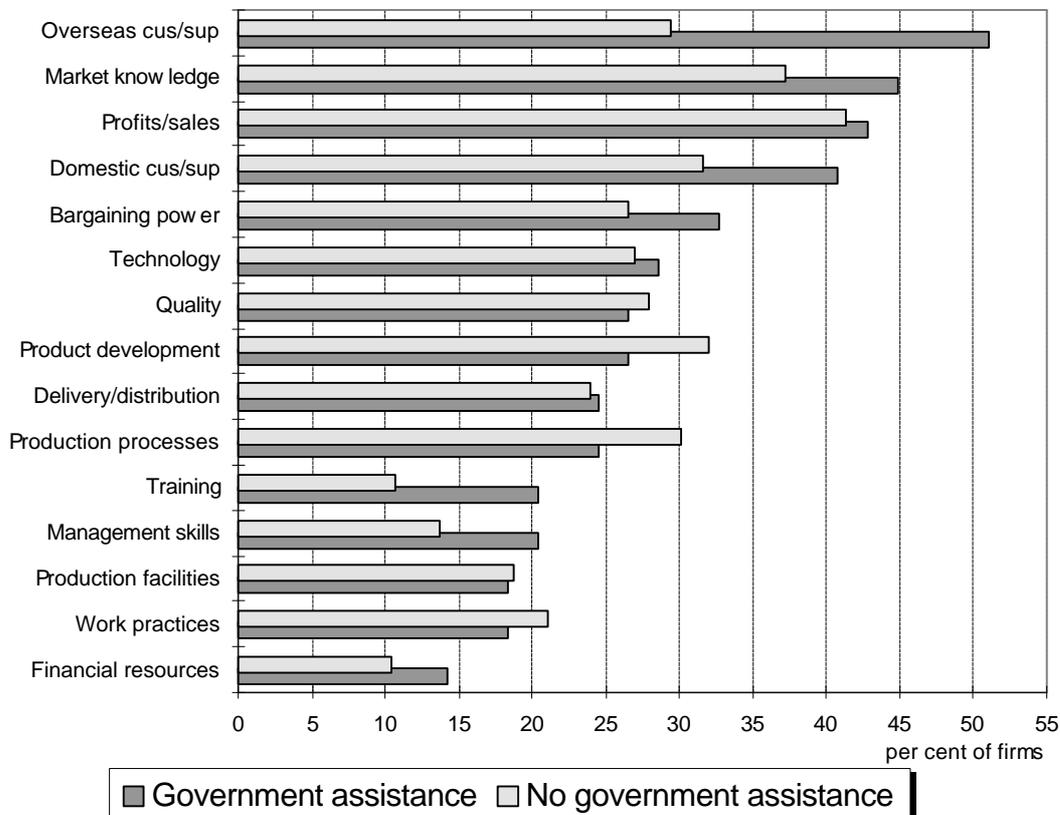
The most significant difference between the two groups is clearly with regard to new overseas customers and/or suppliers. Around 50 per cent of government-assisted firms obtained major benefits in this category, compared with under 30 per cent of non-assisted firms. Domestically too, government-assisted firms are also more likely to be successful in finding new customers/suppliers through their cooperative arrangements. These differences are a reflection of successful DIST/NIES/Austrade programs, nominated by the government-assisted firms. An example of the government helping firms to win new export markets is shown in Box 13.5.

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<sup>4</sup> There is obviously some problem with cause and effect in this method. Is it because firms obtain assistance they do better in some areas, or is it a case that the types of firms which seek assistance are more likely to be 'high flyers' and would do well anyway? The fact though that 70 per cent of firms indicated (in a separate survey question) that government assistance had actually made their business cooperation more successful, suggests that the greater benefits may well be induced by government assistance.

<sup>5</sup> See Chapter 6 for an explanation of the Benefit Index.

**Figure 13.4 Business cooperation benefits and government assistance(a)**



Note: a) There are 49 firms which have received government assistance for at least one of their cooperative arrangements.

Source: BIE survey

The other interesting differences are for training and management skills, which can be related to the sort of programs provided by NIES. Market knowledge is more often than not a spin-off of cooperative arrangements, but the higher proportion of government-assisted firms benefiting in this way may also be due, in part, to market information provided up front by agencies such as Austrade.

Interestingly, the non-assisted firms are a little more likely to benefit in some of the operational or efficiency areas as a result of business cooperation – namely, increased work practices/productivity and improved production processes. This may reflect the emphasis of government programs on the market-side benefits of cooperation. Firms using cooperation for efficiency-related purposes are less likely to call on the government for assistance. Accordingly, more of these firms benefit on the efficiency side than government-assisted firms because the focus of the assistance has been elsewhere.

Product development also seems to fall into this category. Innovation has been recognised by the government as vital to firm growth and performance. However, current government assistance for business cooperation is not apparently having any ‘spillover’ impacts in the product development area.

**Box 13.5 Southern Gold – a government-sponsored network**

*Southern Gold is a network of eight small confectionery manufacturers in Victoria and New South Wales who export sugar confectionary and chocolates under a single brand name Kazz. Kazz was launched at the Singapore Food Trade Fair in April 1994 with the objective of obtaining sales in Asia.*

*Small firms in the Australian confectionary manufacturing industry face a range of impediments to export success because, individually, they lack the resources necessary to gain the export knowledge, access export markets and maintain the production capacity to service export markets..*

*It took time for initial barriers to fall. A Code of Ethics was established to resolve potential difficulties. The Southern Gold network enabled the firms to overcome these impediments. The network's target is sales of \$8 million in at least three Asian markets by 1998.*

*The network's success can be attributed to two factors. Firstly, the companies involved have identified a significant market opportunity and have shown a willingness to cooperate with previous competitors to achieve that goal. Recipes are even changing hands. Secondly, the network has operated with the assistance of an independent facilitator (a network 'broker'). The broker has assisted in developing a network culture and fostering a sense of responsibility and trust between participants.*

Source: DIST (1994c)

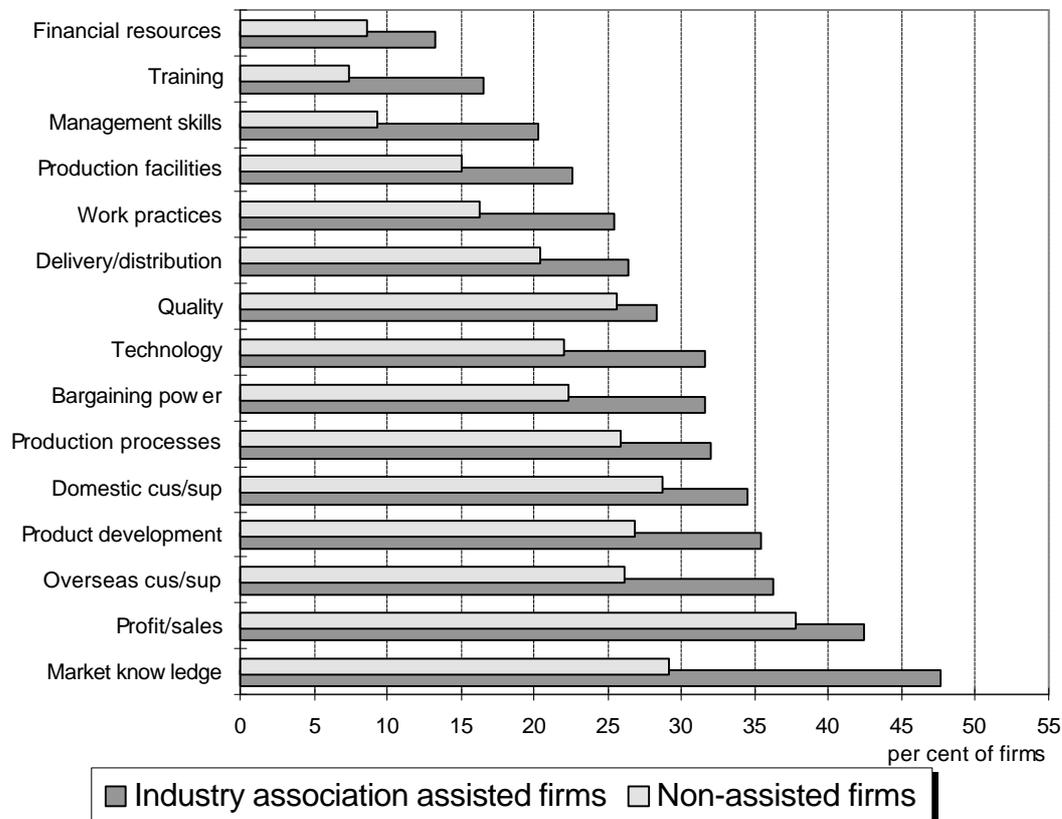
### **13.4.2 Outcomes of industry association assistance**

Industry association-assisted firms appear to gain significantly higher benefits from their cooperative arrangements (Benefit Index of 37) compared to non-assisted firms (Benefit Index of 28). Moreover, firms which have received industry association assistance obtain significantly higher benefits in *all* areas compared with the non-assisted firms<sup>6</sup> (Figure 13.5).

Improved knowledge of markets is the most likely outcome for firms seeking the help of their industry association. This is significantly more likely than for non-assisted firms (although broadly the same as for government-assisted firms). This result fits in well with industry associations' role of providing opportunities for interaction and providing advice and information to meet members' needs. In fact, firms using industry association assistance do particularly well in all areas except increased profits/sales and improved quality.

<sup>6</sup> As with the impact on government assistance on benefits, there is some question over how much of the higher benefits can be attributed to industry association help. Industry associations are forms of cooperation and their members may have a greater tendency to cooperate with other firms. We know from Part B of the report that the firms more likely to cooperate are also more likely to benefit from cooperation. However, as is the case with government assistance, it is reasonable to assume from the data that some form of positive relationship exists between industry association assistance and higher benefits.

**Figure 13.5 Business cooperation benefits and industry association assistance(a)**



Note: (a) There are 212 cooperating firms which have received industry association assistance for at least one of their cooperative arrangements.

Source: BIE survey

It is interesting to compare the outcomes for government and industry association-assisted firms. At the 'overall' level there is no difference in expected benefits. Both groups have a similar Benefit Index score (which, significantly, is much higher than for non-assisted firms in both groups and also higher than the 'average' cooperating firm).

However, we found some interesting differences. For the most part these can be categorised under the market and efficiency headings. Thus government-assisted firms are much more likely to benefit from new customers/suppliers, overseas and domestically, than firms assisted by industry associations. On the other side of the coin, firms which get help from industry associations are more likely than government-assisted firms to benefit from improved production processes, improved work practices/productivity and access to production facilities. Product development is also a more likely benefit for firms using industry associations for assistance.

These apparent 'comparative advantages' of governments and industry associations in assisting cooperating firms are perhaps not surprising, but illuminating nonetheless. They will need to be borne in mind when considering appropriate forms of future assistance in the final chapter.

## 13.5 The forms of assistance preferred by firms

We have explored the kinds of ‘cooperation assistance’ provided to firms, its effectiveness and impact on performance outcomes. But what do we know about these issues from the firms’ perspective? Do firms generally want assistance with their cooperative arrangements, and if so, what forms of assistance do they prefer? This section draws on the survey data to examine these issues with respect to government assistance<sup>7</sup>.

### 13.5.1 Do firms want any assistance?

Providing assistance to promote the formation of cooperative business arrangements may become more important in the future. The prospective demand for assistance is gauged by the fact that about 22 per cent of firms surveyed indicated an intention to enter a cooperative arrangement in the next 12 months.

Of those firms intending a future cooperative arrangement, 27 per cent intended to request government assistance in their formation. Using government assistance was much more common amongst firms with an existing cooperative arrangement<sup>8</sup>. This is possibly because it is a path they have been down before, so time and other costs tend to be reduced.

Of surveyed firms, only 1.5 per cent disagreed with the provision of any government assistance for business cooperation. A number of firms feel there are other concerns of more pressing importance to which the government should instead be concentrating its attention:

‘Cooperative business arrangements are of no interest to us

‘Do not feel this [the formation of cooperative arrangements] is a major problem, rather finance, imports, taxes etc are more important.’

A range of other arguments were put forward against government involvement. The major one is that the commercial nature of arrangements should preclude government involvement. Some firms argue that cooperating with other firms is a natural part of business and if any firm felt they didn’t need to do this, or did not know how, the market system would sort them out. They argued that the government should remain detached from the situation.

AGB McNair (1994) found that 10 per cent of surveyed firms believe government involvement should be limited to financial assistance and tax relief, while 8 per cent felt it should be excluded altogether. Buttery (1993) found 12 per cent of surveyed firms in Queensland felt governments should not be involved in this area.

A small number of firms noted, both in comments on the survey and in interviews, that the costs of dealing with government programs usually outweigh the benefits. One firm suggested a clearer up-front acknowledgment by government of these costs would make it easier for firms to make a decision whether to cooperate or not.

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<sup>7</sup> The survey did not include questions relating to preferred types of industry association assistance.

<sup>8</sup> 80 per cent of the firms intending to form an arrangement in the next 12 months already have a cooperative arrangement.

### 13.5.2 Favoured forms of government assistance

The vast majority of firms feel that there *is* a role for government to play in helping the formation of cooperative business arrangements. At the most basic level they argued this should involve providing a suitable environment for business operations – of which business cooperation is one part.

Almost 80 per cent of firms regard the provision of information, particularly on how to form linkages, as an important area for government assistance (Figure 13.6). Information provision was the most commonly demanded form of assistance:

‘The government should circulate a monthly magazine on firms cooperating, with stories of success and failure to simply introduce and stimulate business ideas and cooperation.

‘Education of industry on the mutual advantages to these companies and flow-on benefits to employees and the community is one area the government could get involved in.

On the other hand, direct forms of assistance are favoured by 65 per cent of cooperating firms on average<sup>9</sup>:

‘Practical assistance is required rather than just cocktail parties and card swapping.

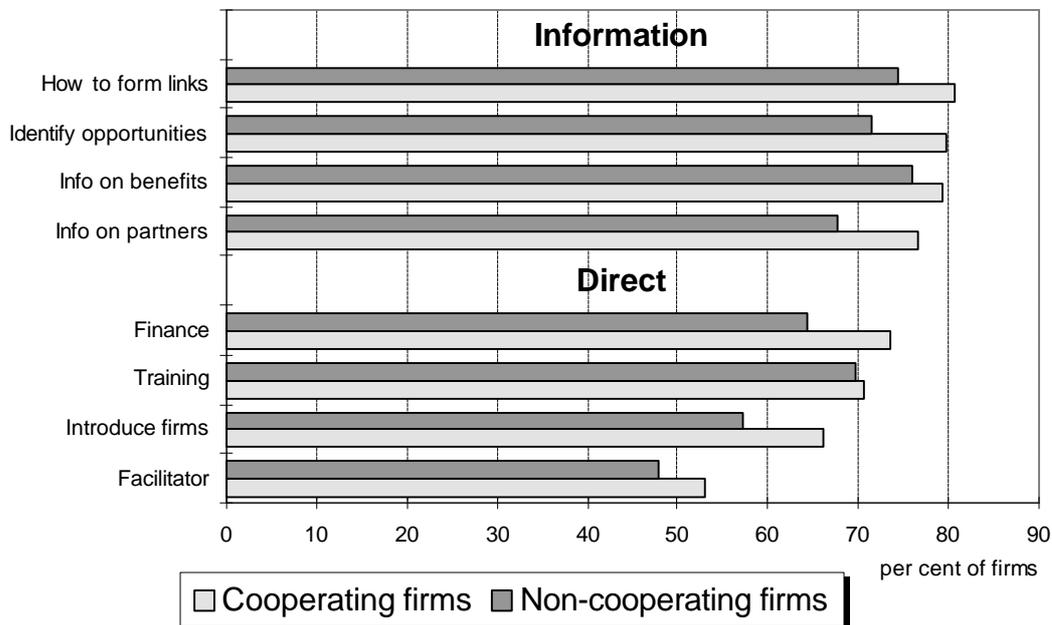
‘Practical and free training for management in the areas of access to information and new technology so that inexperience doesn't result in lost opportunities.

‘Facilitate the process [formation of cooperative arrangements] and provide the financial resources necessary to undertake expanded opportunities associated with new or better relations.

‘The government cannot be expected to be a matchmaker, and nor should it try, but it can play a big role as facilitator by providing the venue and opportunity for firms to meet and establish a dialogue; from that point it should disengage.

<sup>9</sup> It is not altogether surprising to find that firms are receptive to assistance. After all, they are being offered something extra for free or at a discount price.

**Figure 13.6 Firms agreeing with government assistance, cooperating and non-cooperating firms**



Source: BIE survey

Government provision of brokers or facilitators – one area where the government already plays a strong role through its Business Networking Program – is not very well supported, being seen as the least desirable role by both cooperating and non-cooperating firms.

Non-cooperating firms are strongly in favour of government assistance and placed the most emphasis on information provision. The firms not currently involved in cooperation indicated a greater need for the government to identify the benefits from, and opportunities for, entering these arrangements. Direct measures are favoured by 60 per cent while 72 per cent advocated an information provision role.

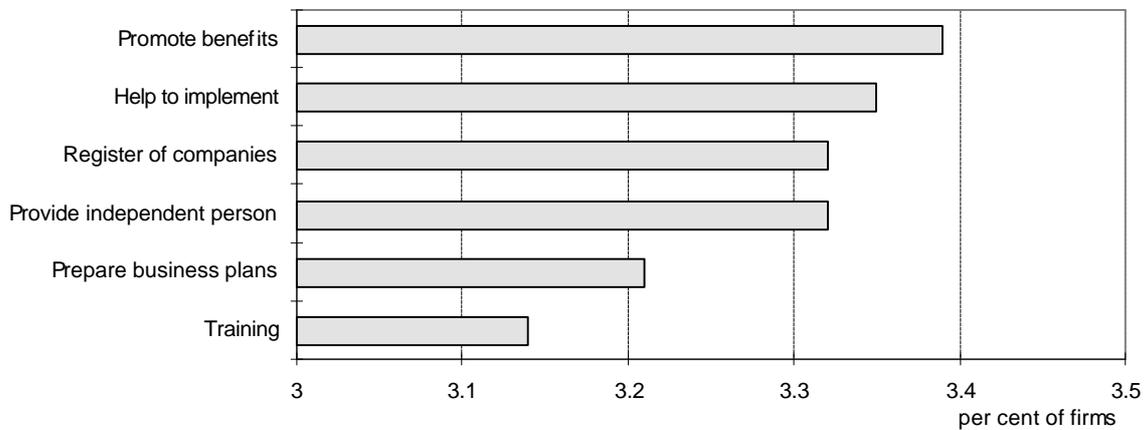
Many firms feel a combination of both information and direct assistance is required:

‘Government could publish details of firms seeking cooperative arrangements, and through teaching agencies provide training opportunities for staff of firms wishing to develop cooperative arrangements

‘Government needs to develop a culture of cooperation in industry – possibly by running training courses and giving publicity to concepts of cooperation. If it is advertised as “good” then companies will start seeking out cooperative arrangements

AGB McNair (1994) asked firms to rank the ways in which government assistance could be provided, on a scale from ‘not at all helpful (1)’ to ‘extremely helpful (5)’. Figure 13.7 shows the average rating for each of a variety of assistance measures. The AGB McNair (1994) findings place the greatest emphasis on information assistance to promote benefits.

**Figure 13.7 How can the government promote the use of formal networks?**



Note: The mean score is based on five possible firm responses on the role of government, with (5) being extremely helpful and (1) being not at all helpful.

Source: AGB McNair (1994), pp. 44-49

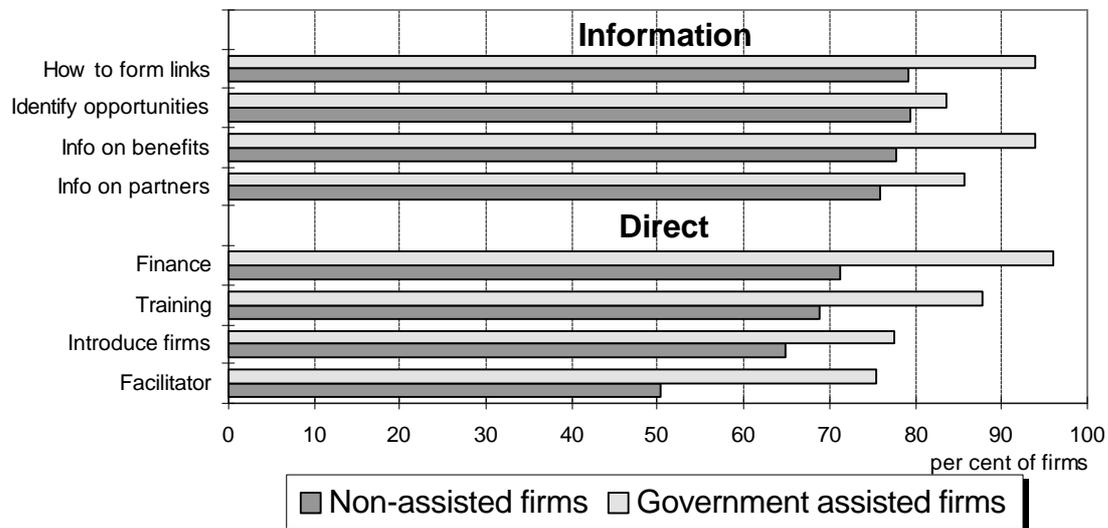
### **13.5.3 Preferred assistance varies with type of firm and arrangement**

How does the type of firm and type of arrangement affect the above findings? This section considers this question for a number of firms types and forms of arrangement.

The BIE survey found firms which have received government assistance are significantly more supportive of its provision in all areas of cooperative arrangement formation<sup>10</sup> (Figure 13.8). This is particularly so in the provision of finance and information on linkage formation and benefits. Assisted firms are more strongly in favour of direct assistance (84 per cent) than are non-assisted firms (64 per cent), and also more in favour of information assistance (89 per cent as opposed to 78 per cent). This suggests that once a firm has used one government program, and seen the benefits it can provide, it is more willing to continue or expand its use of government assistance. There is also a reduced cost of use due to the greater understanding of how the programs work and the requirements to achieve assistance.

<sup>10</sup> The non-assisted firms include both cooperating and non-cooperating firms.

**Figure 13.8 Preferred forms of government assistance, government-assisted and non-assisted firms**

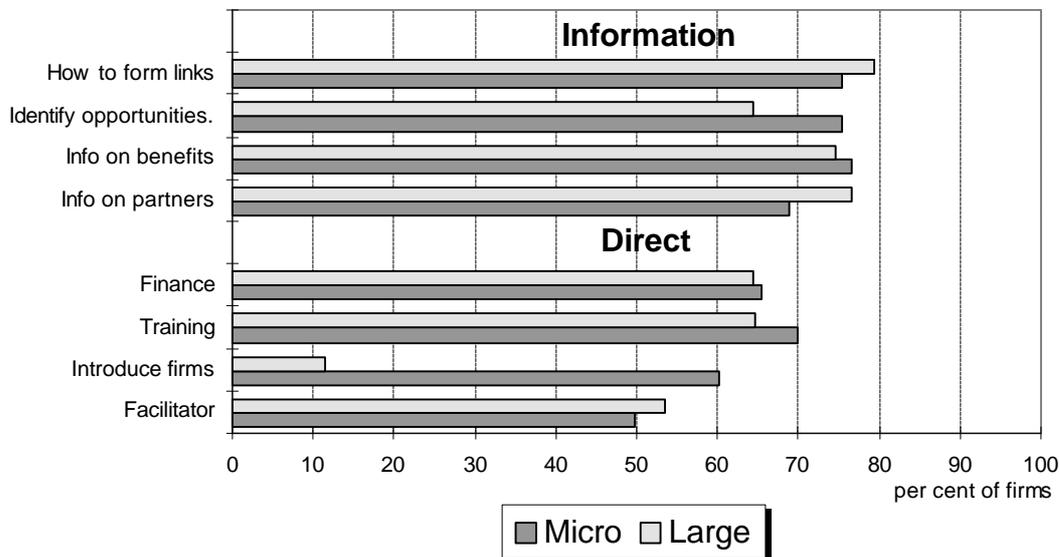


Source: BIE survey

The size of a firm (measured by the number of employees) was found in Chapter 3 to be positively related to a firm’s cooperative stance. Figure 13.9 compares the desired role of government for firms at the two extremes – large and micro firms<sup>11</sup>. These differ most markedly over government involvement in introducing firms. Only around 10 per cent of large firms agree with this role, and over 60 per cent actively *disagree* with the government getting involved in matchmaking activities. In contrast, around 60 per cent of micro firms would like to see governments taking responsibility for introducing firms (although this is still one of the least preferred government roles desired by micro firms).

Clearly, large firms tend to have higher profiles, or more to offer prospective partner firms, and so find it easier to initiate and follow through contact with prospective ‘partners’ than do micro firms. Overall large firms favour information (74 per cent) much more than direct assistance (49 per cent). Micro firms also favour information provision (again 74 per cent) but over 60 per cent still support direct forms of assistance.

<sup>11</sup> The large and micro firms include both cooperating and non-cooperating firms.

**Figure 13.9 Preferred forms of government assistance, large and micro firms**

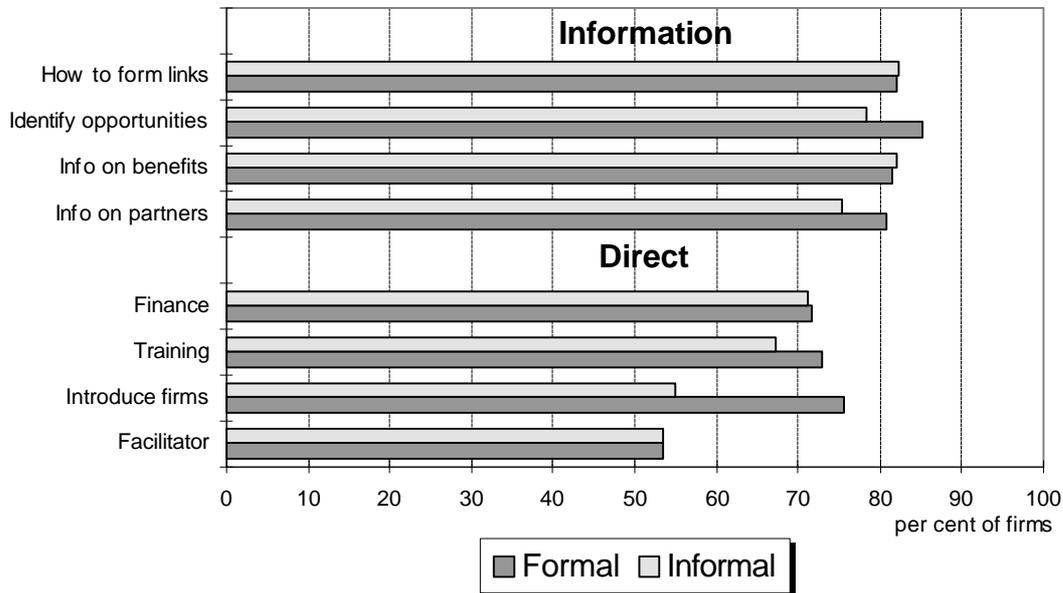
Source: BIE survey

Do firms with particular forms of cooperative arrangement prefer specific forms of government assistance? Firms with only formal or informal arrangements are very similar, except in the area of introductions (Figure 13.10). Firms with only formal arrangements feel a much greater need to have the government assist in introducing firms. This appears to conflict somewhat with data above relating to firm size, as large firms tend to operate on a formal basis more than small firms.

Overall, firms who cooperate on a contractual basis tend to be only slightly more supportive of government assistance (both direct and information provision) than informally cooperating firms. Interviews with firms indicated that informal arrangements were often the first step a business would take in cooperating with others. For this reason firms with only informal arrangements may be newer to the process of cooperation and therefore more uncertain of their assistance needs.

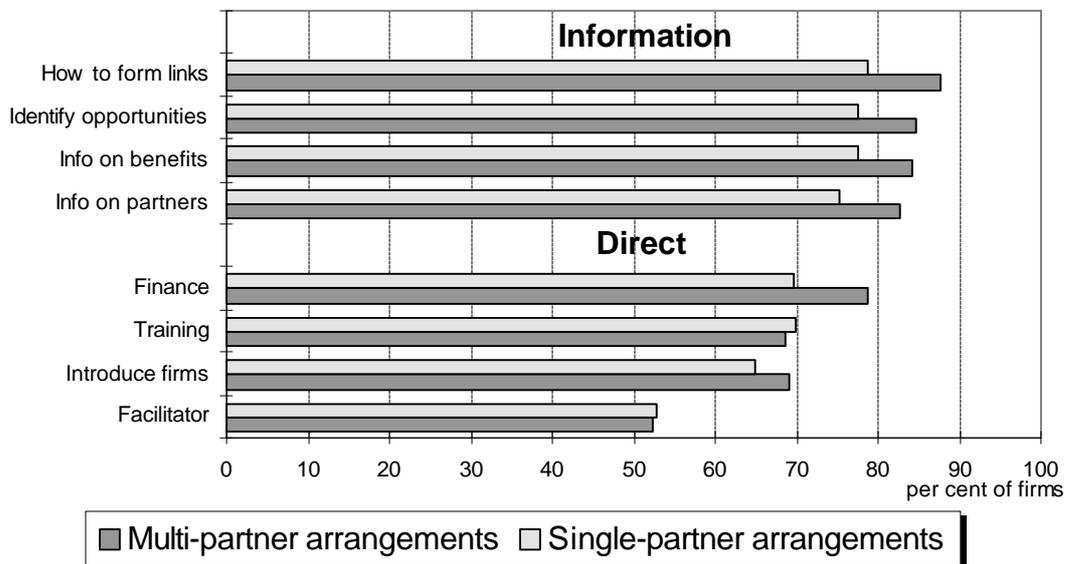
Figure 13.11 shows the preferred forms of assistance for firms in multi-partner, or network-type, arrangements and firms with one-to-one arrangements. Both are more strongly in favour of information provision (85 per cent for the former and 77 per cent for the latter). There was approximately the same emphasis on direct assistance by firms in each type of arrangement – 67 per cent of network-type firms and 64 per cent of one-to-one type firms.

**Figure 13.10 Preferred forms of government assistance, firms with formal and informal arrangements**



Source: BIE survey

**Figure 13.11 Preferred forms of government assistance, number of firms in arrangements**

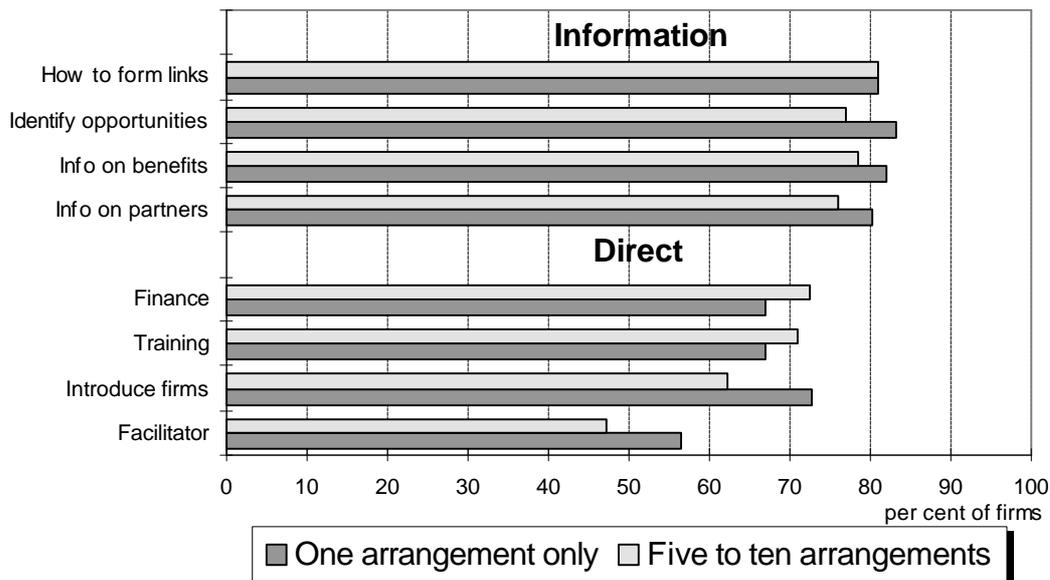


Source: BIE survey

Grouping firms on the basis of their number of cooperative arrangements reveals that both firms with only one arrangement, and those with five to ten, are in greater favour of government provision of information

rather than direct assistance (Figure 13.12). Firms with only one arrangement have 81 per cent of their members in favour of information provision and 66 per cent wanting direct assistance. A slightly smaller proportion of firms with five to ten arrangements are in favour of these forms of assistance. The most marked differences between these groups is that firms with many links are less intent on government providing introductions to other firms and also on the provision of facilitators. This is to be expected as these firms will have developed greater skills in finding firms with which to cooperate, and in establishing their arrangements.

**Figure 13.12 Preferred forms of government assistance, firms with one or multiple cooperative arrangements**



Source: BIE survey

Of course, not all differences in firm and arrangement characteristics result in differences in views on the role of government. There is no significant difference in responses either between industries, or across states, to the question of the possible areas for government assistance. In all cases, firms are predominantly in favour of the government undertaking an information provision role.

Additionally, whether a firm is involved in an arrangement with a customer, supplier, or a firm in the same or a different industry, does not influence its view as to the role for government. For these firms, information provision is the favoured role for government - 78 per cent of firms with customer or supplier links support this as do 85 per cent of firms with other links. Similarly, direct assistance is supported by 60 per cent of firms with customer or supplier arrangements and by 72 per cent of firms with other links.

Comparing firms with domestic and overseas arrangements, 79 per cent of both groups are in favour of the government providing information and 66 per cent want the government to give direct assistance. The only major difference between the groups is the greater emphasis on the part of firms with overseas arrangements on the provision of finance to assist with cooperation.

There is no real difference in what exporting and non-exporting firms see as the role for government. Information provision is most supported by both groups - 76 per cent of exporters and 75 per cent of non-

exporters. Equivalent levels of both groups feel direct assistance is appropriate for governments (63 per cent of exporters and 61 per cent of non-exporters).

Firms of divergent ages may be expected to see government as most usefully playing very different roles. However, overall these two groups do not differ markedly in the role they want government to play in linkage formation. About 75 per cent of both groups support information provision and 63 per cent of young firms and 60 per cent of mature firms support direct assistance.

Finally, firms experiencing low and high levels of performance might be expected to require different form of assistance from government. However, around 74 per cent of firms in both groups want the government to provide information to help in the formation of arrangements and approximately 62 per cent from both groups want direct assistance.

## 13.6 Summary

External assistance is not the panacea for all cooperative business arrangement problems and impediments. At the end of the day firms have to make the fundamental decisions themselves. External bodies can, however, play a significant role in informing and educating firms, as well as in overcoming impediments to cooperation – both informational and practical.

Governments and industry associations currently provide assistance to firms wishing to form cooperative arrangements. More firms acknowledge help from industry associations. For both these bodies there appears to be some way to go in improving their effectiveness in delivering assistance and in increasing the reach of the assistance provided. Different firms request varying types of assistance and it is important that they know where to go to have these needs met.

The impact of external assistance on the performance of cooperative arrangements appears to be positive. Firms receiving either government or industry association help with their linkages and networks are more likely to benefit overall from these arrangements than non-assisted firms. There are some interesting differences in the individual benefits associated with assistance from the two groups. Government-assisted firms are more likely to benefit in the market-related aspects of cooperation – from new customers/suppliers in overseas and domestic markets. Firms which get help from industry associations are more likely to benefit from improved production processes, improved work practices/productivity and access to production facilities. These ‘comparative advantages’ of the two agencies have implications for future program design.

The findings in this chapter have shown that a significant proportion of firms believe that the government can play a productive role in aiding the formation of inter-firm cooperative arrangements. This is particularly through the dissemination of information, but also through direct assistance. Government assistance can be improved by targeting the areas firms regard as their major needs, and also by providing firms with a clear idea of both the benefits and ‘costs’ of business cooperation. The wider promotion of relevant programs could also be of benefit.

There are good arguments for the involvement of both government and industry associations, and persuasive arguments for their working together in this area. In this way the government’s resources can be combined with the industry association’s ‘local knowledge’ and close contact with industry participants to develop specific, targeted packages for industries.

# 14 Policy implications and recommendations

Two facts stand out. Many firms cooperate. And they obtain large benefits from doing so. But so what? Why is this relevant to industry policy? After all, if linkages and networks are beneficial to firms, then firms will surely adopt them as business strategies. This would leave no role for government.

We think there are three major gaps in this argument, which create a niche for government action:

- When governments try to develop industry they use a tool box of policies and apply these to some raw materials. Linkages add another tool to this box. This helps to achieve the objectives of industry policy. As well, a group of linked firms may be a useful *target* (or raw material) of many industry policies, rather than individual firms or whole industries.
- Firms, like people, are imperfect. They sometimes lack information and skills. Many SMEs may fail to form worthwhile links because they don't know how to forge them or they don't know about their benefits. Governments may be able to help.
- Markets don't always work well either. They may be inefficient, hampered by regulation or not exist at all. Markets where information is traded suffer special problems, because buyers don't always know what is useful or true information. Governments can help set up markets, establish standards and other institutions that allow markets to work, or provide substitutes where markets cannot work well.

However, these failures offer only the *potential* for government intervention. To be successful any program aimed at dealing with these problems must be easy to administer, cheap to the public purse and actually change the behaviour of the right firms. And in any case, the role of government is almost certainly limited to greasing the wheels of business networking, while leaving the fundamental decisions – the who, what, where and how of networking – to businesses themselves.

In this chapter we discuss how governments may find business linkages a useful policy tool, how the very existence of linkages can change the orientation of policy and why and how government should encourage such links.

## 14.1 Linkages as a tool

Industry policy is fundamentally about finding better ways of using our nation's resources. The government has all sorts of direct tools for doing this. Subsidies, soft loans, free information, new laws and regulations are all designed by government to directly achieve some change in how industry uses its resources.

But firms can also learn indirectly how to do things. Thus often industry policy aims to improve industry in a roundabout way. For example, take exports. The government has many programs aimed at increasing

exports. However, increasing exports may not be the *ultimate* goal of these policies, but a subsidiary one<sup>1</sup>. When firms export they are forced to be more productive: they learn from leading edge customers, must market ever more effectively, minimise inefficiency and increase their innovativeness. The export market is useful to firms because it is an advanced business school, where the learning is by doing. But it is this learning, not exports themselves, which is the final goal of the export policy. Accordingly, exports are themselves tools of industry policy.

So too with linkages. Linkages can:

- improve the overall business performance of firms;
- help gain access to new markets overseas and increase exports which in turn encourages efficiency gains;
- encourage innovation and technology uptake in firms; and
- improve management and business skills, though we think this is less important.

The implication of this is that policy makers and program designers need to be aware of the potential role of business linkages and networks in enhancing the success of industry programs.

However, there are potential problems if the government has a highly prominent role in creating linkages. Cooperation is something that firms will inevitably manage themselves. Successful cooperation requires that firms trust and feel comfortable with each other. The BIE survey showed that firms liked government to provide the backdrop – such as information – which makes cooperation an easier business strategy. But firms were less receptive to government as an active matchmaker. Too much push from government for linkages can undermine the careful, tentative steps firms take by themselves towards cooperation. Governments need to promote and make firm marriages easier – but not ride shotgun on the wedding limousine!

#### **Recommendation 1**

**In designing and marketing industry programs, policy makers and program designers/deliverers should take into account the potential role of business linkages and networks as means by which the program objectives can be assisted.**

## **14.2 What should industry policy be applied to? A new role for linked firms**

Whenever we think about anything, we sort our ideas in a conceptual framework. This helps us to think carefully about some things, while stopping us from seeing others altogether. It blinds us to some choices and solutions. We all know how frameworks can limit choices. Parents might say to children: ‘What would you like for dinner: liver, kidney or brains?’ The children are given a choice between the offal, but excluded from other options. Industry policy, like gourmet menus, also uses a framework that makes some choices

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<sup>1</sup> There is debate over the issue that exports are worth encouraging primarily because of their effect on the current account deficit, and Australia’s debt. The arguments for and against this proposition are beyond the scope of this report.

obvious while cutting off others. In particular, industry policy focuses on firms and industries. We design policies *for* firms and industries.

But industry policy might also be usefully designed for and applied to other organisational forms. We have found that networks and other firm linkages blur the boundary of firms and even industries. We could treat such groups of linked firms as single entities and deliver programs to them<sup>2</sup>.

An example of what we mean might help. Think of how governments deliver services to firms. Small firms can be costly for governments to access, particularly on a regular basis. Multi-firm cooperative arrangements, such as the AusIndustry business networks, provide an organisational form which could allow governments to deliver services to small firms better and more cheaply. For example, AusIndustry could provide the network with information on a new small business program. The network then diffuses the information to each of its members<sup>3</sup>. The scope obviously exists too for other government departments and agencies to market their programs and services at the business network level. Other areas of DIST or Austrade, for example, could often find it very effective to deal with the network organisation rather than individual firms.

### 14.3 Government assistance for business cooperation

Business cooperation works well for most firms that try it. It improves their capabilities and competitiveness. Yet, only one-third of firms have substantial cooperative arrangements. This might indicate a potentially huge reservoir of untapped opportunities for cooperation, particularly for SMEs. However, we do not suggest that *all* the remaining two-thirds forge relationships.

Readers may be surprised by this. It may seem obvious that if the firms that currently use linkages benefit from them greatly, then those not in linkages would fare likewise. Not necessarily so. The sort of firms that *select* linkages may be different from those that do not in a way that would affect the benefits of linkages.<sup>4</sup> Our survey results indicate the size of the benefits for firms currently in linkages – but they are an upwardly-biased guide to the benefits available to firms who are currently not in linkages. The only way to enumerate exactly the benefits of linkages would be to coercively assign linkages to randomly selected firms, and compare the outcomes with a control group. But what we observe in the market in no way resembles this form of controlled experiment. Firms with certain attributes favourable to linkages (complex goods, fluid markets etc) form such arrangements and benefit from them. Other firms, like the souvenir retailer in Chapter 3, have very good grounds for avoiding cooperative strategies.

**However, we think it likely that some firms do miss out on the benefits of linkages due to failures in markets and firms. Such firms would choose to link if:**

<sup>2</sup> For example, Singapore devised development plans for clusters of firms, rather than for whole industries (MTI, 1991).

<sup>3</sup> Or AusIndustry could provide the information to a leading firm in the network on the understanding that it would diffuse the information to other network members.

<sup>4</sup> This problem is called the selection bias problem. Consider a more common-place example of this situation – education. Many people get benefits from education. For example, more educated people get higher wages. But should everyone study for a higher degree? The obvious answer is no. The people who obtain higher degrees differ from those who have not – people with certain attributes choose to study for higher degrees (they have a certain determination, intelligence etc). It is at least partly these attributes, rather than the degree itself, which lead to higher wages for this group. Forcing everyone to undertake additional training would be a waste of resources – and an unhappy experience for many.

- they had *credible* information about the benefits and costs of linkages (**information and firm failures**); and/or
- they could appropriate more of the benefits of their links (**spillovers**).

### *Information and firm failures*

As we explored in Chapter 3, firms are not all perfect. Some are myopic. They use simple rules of thumb to run their businesses and may be slow to change these rules. As well, information on the best rules may not be freely available, or its application may require skills that the firms do not possess. These inefficient firms may not die out very quickly (or costlessly) and/or markets may not develop to provide the information needed. In this case, governments *may* have a role in providing information or demonstrating the benefits of linkages.

We discovered evidence of ignorance of the benefits of linkages:

- Many of the benefits of business cooperation arise unexpectedly as ‘spin-offs’. Firms usually have specific aims when they enter cooperative arrangements and have expectations about corresponding benefits. But it is the additional spin-off benefits of working closely with other firms that surprise many firms. Most commonly these involve market knowledge, improved production processes, product development and improved quality.

- Firms not in linkages were deeply concerned about the loss of control that might occur if they entered a cooperative arrangement (Chapter 12). In fact, loss of control is not a significant problem for ongoing linkages (Chapter 10). The fear may be based on misperceptions.

So we cannot assume that firms will always know what benefits to expect from cooperative arrangements. Apart from hearing about the benefits, firms may also gain from other types of information about business cooperation. They may be interested in cooperation but not know how to form closer ties with their customers or suppliers. Alternatively, they may be looking for a joint venture or alliance but do not know how, or where, to find good partners. They might also lack information on where the best (or most appropriate) business or market opportunities happen to be. And critically, information markets may not always develop to meet these needs.<sup>5</sup> Governments *may* be able to help provide some of this information or activate information markets.

### Spillovers

Spillovers occur when some of the benefits of certain activities by firms affect other firms and individuals that are not directly involved in that activity. The classic example is R&D. A firm might invest many resources in an innovation, only to find other firms copying the idea. The firm may fail to invest in such innovation unless it can capture most of the benefits. Such spillovers could affect the incentives for linkage formation.

In *Networks: A Third Form of Organisation* (BIE, 1991) it was suggested that there may be grounds for government support of networks because of such spillovers. However, there may also be grounds for support in *some* single-partner linkages too. Imagine, for example, two large companies (A and B) which are fiercely competing with each other. A wants to improve the productivity of a supplier, S. The supplier provides inputs to both A and B. A would transfer the skills and information to S if it obtained a certain share of the benefits of the productivity gain. However, A knows that B will free-ride. They will also secure cost reductions from S, so that A would have no competitive advantage vis-à-vis B. It may be very difficult to coordinate an agreement between A and B to jointly form the supplier linkage. A potential productivity gain is lost.

However, the firms we surveyed did not indicate lack of appropriability as a major impediment in forming one-to-one linkages. For this reason we suspect that spillovers from *single-partner linkages* are small, and that this would be a fragile basis for government support of linkages.

### Policies

We have established *some* grounds for government intervention. But this is a relatively weak condition. Many other questions have to be addressed:

- Should this take the form of information, and or direct financial assistance?
- Should it be permanent or temporary?
- What sort of firms should it target?
- What sort of linkages should it target?
- What are the costs of having a policy relative to doing nothing? After all, while firms and markets can fail, so too can governments. What are the risks to the public purse of pursuing any interventions?

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<sup>5</sup> See BIE (1993b, pp24ff) for a description of some of the problems affecting information markets.

Encouraging further business cooperation by providing **information** has a number of advantages. In this study we found that firms do not always have the information they need to form, maintain or strengthen business links. In addition, firms believe that governments can best assist business cooperation by providing information rather than direct forms of assistance (Chapter 13). Moreover, providing information allows governments to reach a larger audience cheaply while leaving it up to individual firms to form closer relationships. Most would argue that this is how things should be in a market economy.

The basis for **direct** forms of assistance – financial assistance, matchmaking services, training in linkages, provision of brokers or facilitators to “kick-start” cooperative arrangements – **is less strong**, especially for the simple one-to-one linkages. Direct assistance is more costly and is unlikely to reach as many firms. As well, it is hard to design assistance programs that aren’t used by firms who were going to form linkages anyway. If programs don’t target firms well, they dissipate most of their resources without changing firms’ behaviour. In addition, we noted in Chapter 12 that a major impediment to business cooperation is the fear of losing control. This is not an issue which governments can easily address through direct assistance.

But two possible exceptions exist:

- There are stronger grounds for direct support of networks of SMEs. Firstly, such networks are a fairly novel form of organisation in Australia. If they succeed, then the demonstration of the benefits of this form of organisation is a public good, which cannot be appropriated by the networked firm (a spillover). As well, such arrangements can be difficult to establish without an impartial outsider – a role that the government can exercise through hiring an independent private sector consultant. Thirdly, the coordination problems of determining the appropriate levies for firms making up a network can be very high, especially in early ‘untrusting’ stages of a network. By reducing the costs of start-up, the government may weaken these coordination costs. Fourthly, potentially networking firms may know little about the qualities of the consultants who present themselves as network facilitators. Governments can signal quality by certifying a group of adequately trained consultants. Finally, if governments coordinate such networks they can potentially pool information about how best to manage networks and improve future network performance. Most of these arguments suggest an active, but temporary, role for government in helping network formation.
- Talk is cheap, but not always credible. We indicated that there were potentially large information failures. The solution looks easy – simply *provide* the information. But information is not always credible, even if it is true. There may be grounds, therefore, in subsidising an activity in order to demonstrate its real benefits to the user. There would also be grounds in this case for reclaiming the costs of such demonstration afterwards – but that can be administratively difficult. It is an issue we return to later and in Appendix G.

We think there is some basis for varying the mix of direct and information assistance depending on the nature of the linkage. Arrangements more towards the ‘soft’ end of the cooperation continuum (see Chapter 2) are most suitable for information programs and low levels of facilitation (through, for example, NIES or industry associations). Alternatively, there may be a role for direct assistance for ‘harder’ forms of cooperation with their greater complexity and need for more financial commitment by partners.

We think that firms can be encouraged to cooperate more by providing them with better information. Most of the policy initiatives outlined below aim to provide information to firms. However, we believe there *may* be scope for new direct assistance measures targeted towards firms involved in one-to-one cooperative arrangements.

## Recommendation 2

**In encouraging further business cooperation, the government should consider providing information to firms. Information can help address the information deficiencies identified in the study, can reach a wider audience and is preferred by most firms. There is a weaker basis for some form of direct assistance aimed at one-to-one cooperative arrangements.**

### **14.3.1 Promoting network arrangements**

Industry policy already promotes inter-firm cooperation. Current policy mainly aims to encourage cooperative arrangements among three or more firms. The major program is the Business Networks Program, which the government announced in *Working Nation* in May 1994<sup>6</sup>.

Approximately one-third of cooperating firms are in cooperative arrangements involving three or more firms. On average, firms are more likely to benefit from such networks than from one-to-one arrangements. Firms in networks get larger benefits from new domestic customers/suppliers and from market knowledge (see Chapter 8). These findings lend support to the rationale behind the Business Networks Program.

AusIndustry could promote the Business Networks Program to firms by drawing on the results of this study to highlight the benefits of multi-firm cooperative arrangements. According to non-cooperating firms, the most important role of governments in the area of business cooperation is, in fact, to provide information on its benefits (see Chapter 13). AusIndustry now has a lot more data to meet these requirements.

AusIndustry could put together a package of information to show the types of benefits available to cooperating firms, the impact of cooperation on overall firm performance and a number of case studies of successful networks. A reasoned explanation of the many benefits and other positive aspects of networking would help allay concerns some firms have with the idea of firms being ‘pulled together’ and the involvement of facilitators.

A central feature of the Business Networks Program is the use of a private sector facilitator or broker (funded and certified by government) to assist firms in forming and developing the networks. However, we found that many firms are sceptical about the idea of governments providing specialist brokers to help form networks.<sup>7</sup> Non-cooperating firms identified this as the least preferable form of government assistance for business cooperation, with less than half of these firms agreeing with government involvement in this area (see Chapter 13). Whether this comes mainly from opposition to the facilitator concept or a lack of knowledge about the facilitator’s role is unclear.

The reliance on network brokers might result in some resistance to AusIndustry’s efforts to establish large numbers of new networks. The government needs to be aware of firms’ scepticism. They may need to overcome adverse perceptions of their role. It would be helpful if AusIndustry supplemented its Business

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<sup>6</sup> Other network programs include the Food Industries Networking for Asia Export Program, the Rural Enterprise Networking program, and Austrade’s export networks.

<sup>7</sup> In fact, the current Business Networks Program is effectively *delivered* by the private sector. The brokers are in the private sector. They are either private consultants or appointed to host organisations, such as industry associations (see Appendix E). However, there is a perception by some firms that the government is directly delivering the program.

Networks information material with a clear exposition of their role in network formation. It may also be worthwhile getting the facilitators together to work out how to market themselves better.

### **Recommendation 3**

**In support of the Business Networks Program, AusIndustry should supplement its information material about the program with new data highlighting the many benefits of networks. The role of network facilitators needs to be marketed if they are to become acceptable to a wider range of firms.**

#### **14.3.2 A new program for one-to-one cooperative arrangements**

The bulk of business cooperation in Australia involves just two firms. Over 80 per cent of all cooperative arrangements are ‘one-to-one’ affairs. Almost 90 per cent of cooperating firms have these single-partner arrangements. Two-thirds of cooperating firms have *only* these forms of arrangement. Most involve a close relationship with a key customer or key supplier. Other one-to-one business cooperation may involve distributors or transport operators, or may be in the form of joint ventures and partnerships.

All firms have customers and suppliers. We have found that those firms which form a *close* relationship with their customers and/or suppliers can reap significant benefits. These include increased profits, better market knowledge, increased quality, new product development and improved production processes.

Despite their dominance, and their value to the economy, these one-to-one forms of cooperative arrangements have not so far received the same degree of support from governments as multi-firm arrangements. From a practical viewpoint this is not surprising as customer-supplier relationships occur in some form in every firm. Yet the very number of customer-supplier relationships in Australian industry means there is a large potential for governments to make a difference in the way firms conduct their relationships with others. Recent studies undertaken by the Australian Manufacturing Council (AMC 1994, AMC and McKinsey 1994) support this. These emphasised the value of linkages with customers and suppliers in driving innovation and export performance and helping the spread of best manufacturing practices.

In promoting these forms of business cooperation, the main issue is not principally about bringing firms together to form new ‘partnerships’ (as in the Business Networks Program), but about helping firms to improve existing relationships and produce better outcomes. Of course some firms *are* interested in forming one-to-one cooperative arrangements with entirely new firms and this matter is taken up below.

In view of their overall importance to firms, AusIndustry should develop a new program to promote the benefits of *close* relationships with customers and suppliers (and others such as distributors). The new program (we will call it the *Business Linkages Program* to distinguish it from AusIndustry’s network program) should be solely focused on one-to-one cooperative arrangements and would run in parallel with the existing Business Networks Program. Under the new program, firms would be supported principally through information provision, and *possibly* via some direct forms of assistance.

### **Recommendation 4**

**AusIndustry should develop a new program to promote one-to-one cooperative arrangements between firms and their customers, suppliers and others. This *Business Linkages Program* would**

**emphasise information dissemination. There might also be a limited role for direct assistance.**

### *Providing information for one-to-one links*

The two forms of government assistance *most* wanted by non-cooperating firms are information on the benefits of cooperation and information on how to form closer relationships with other firms (see Chapter 13). Accordingly, the majority of non-cooperating firms would probably welcome a program which included these features.

The main objectives of the information elements of the program would be:

- To accumulate information on the key aspects of one-to-one cooperative arrangements, drawing on this study. Case studies, that give a ‘warts and all’ treatment of cooperative arrangements, would also provide concrete evidence of the value of such links.
- To demonstrate to firms how single-firm cooperative arrangements can enhance their capabilities, competitiveness and performance and help them overcome specific barriers.

Showing firms the many advantages of cooperation would also be aimed at allaying negative perceptions about strategic outcomes. The major reason non-cooperating firms do not have substantive linkages, or are not in networks, is their fear of losing control over their business operations (Chapter 12). Owners and managers of firms need to be convinced that some sharing of their responsibilities and control is more likely than not to enhance the firm’s prospects.

Convincing firms to embrace cooperative arrangements will not be achieved by brochures alone. Firms want to see the ‘experts’ come to them and provide face-to-face briefings and explanations. This offers a personal touch and is also more likely to grab their attention. There are a number of fora which would be appropriate for reaching interested SMEs through seminars and demonstrations. For example, Chambers of Commerce, the Australian Institute of Management and the Company Directors Association have members from diverse industries and would all be suitable hosts. Industry associations too would of course be good for targeted discussions.

AusIndustry/NIES can also look to some of its existing programs to disseminate information and provide advice on one-to-one cooperative arrangements. It has direct access to many SMEs through these programs.

In promoting cooperative arrangements, it may be undesirable for AusIndustry to try and promote only formal business cooperation. Currently, there is a fairly even split between formal and informal arrangements in Australian manufacturing. Some firms have clear preferences regarding formality. Younger and smaller firms may wish to start with informal arrangements before trying more complex formal arrangements. At the same time, firms should know that the likelihood of benefiting from cooperation appears to be much greater when they are involved in formal arrangements (see Chapter 8).

### **Recommendation 5**

**The first component of the AusIndustry *Business Linkages Program* should be a new information program. The program would mainly aim to disseminate information to firms on the benefits of one-to-one cooperative arrangements and provide information and advice on forming closer relationships with customers, suppliers and others.**

### ***A ‘cooperation plan’***

While many firms could benefit from an information program, there are also some direct ways by which firms can be assisted with their one-to-one linkages. These will often be more appealing to owners and managers as they are given the chance to see how things might work for their particular firm (rather than at the abstract level).

The important point for AusIndustry/NIES to get across to firms is that cooperative arrangements can be an important strategic option. Firms should consider this option in any planning exercises.

One way of assisting firms would be for AusIndustry/NIES to sit down with owners and managers and develop a business cooperation strategy. A key element of this would be a *cooperation plan*. The aim of such a plan would be to build a firm’s relationships with its most important customers and/or suppliers. In some cases, other key links such as distributors could be included.

The idea would be to examine the firm’s current value chain and the nature of its relationships with other firms. The consultant adviser would assess what opportunities there might be for firms working together, sharing information, sharing resources or jointly undertaking tasks – and how these opportunities could benefit the client. Non-cooperating firms may be particularly receptive to this, as they nominated training in linkage formation as the most favoured direct form of assistance (Chapter 13).

The *cooperation plan* would:

- relate to the firm’s key relationships (customers, suppliers, distributors);
- outline what outcomes the firm would like to see from building closer relationships; and
- devise a strategy for forming or enhancing cooperative arrangements.

The plan would be a blueprint for action. But it would require the firm to implement the plan with its own resources. It may not be suitable for the smallest firms with limited resources and limited potential gain. Medium to larger firms are more likely to have thought about business cooperation and be ready to form arrangements – but need some help to get things moving.

AusIndustry/NIES could also use the ‘plan of action’ in the NIES enterprise improvement program as a vehicle for cooperation planning. Currently NIES helps firms to develop a ‘plan of action’ to begin a change process in their businesses. This plan could be extended to take on elements of the *cooperation plan*.

### **Recommendation 6**

**A second component of the new *Business Linkages Program* could be the provision of consultant advice to suitable firms about a business cooperation strategy. This would include the development of a ‘cooperation plan’.**

### *'Best practice' cooperative arrangements*

A variation of the cooperation plan, but which could be included as part of a business cooperation strategy, would be for AusIndustry/NIES to provide advice and disseminate information to firms on how to form and maintain *best practice* one-to-one cooperative arrangements.

Think of all the ingredients of a good customer supplier linkage. How do you form such an agreement? What exactly should it specify? What 'milestones' should you have? What should be the duration of the link? How will you exchange information? What goals should you set? The information could give a comprehensive guide to these questions, which firms could adapt to their own needs. It would cover formal and informal arrangements. The box provides an example of how this might work.

#### **Box 14.1 Hypotheticals: finding out about best practice**

*Jack and Jill run a small manufacturing company. They have five major suppliers. They think these suppliers are OK. Jill is reading some NIES material and notices an advert for a program called "How to get the best from your suppliers".*

*They obtain the information. It provides a detailed list of how to be a demanding customer. It tells them exactly what a best practice supplier would be providing to their business. They are shocked when they look at how their own suppliers measure up. Only one is really very good. Three are passable and one is poor.*

*They contact their suppliers and tell them that they want more. They tell them exactly what they want, and when they want it. Jack and Jill are even able to provide a few clues on how the suppliers might lift their game. Six months later, Jack and Jill are much happier with their suppliers and they have formed a much closer working relationship with them. Productivity and profits are up.*

Unlike the 'cooperation plan', it would not always be necessary for firms to bring in a consultant adviser to deal with the specific circumstances of the firm. Information alone might suffice. However, the option of seeking and obtaining expert advice through AusIndustry/NIES should be available to firms. One scenario would be NIES representatives visiting firms to sit down and discuss both the cooperation plan and what the firms should expect out of best practice suppliers or customers.

Although the concept of 'best practice' has become quite familiar around industry in recent years, we do not believe that we have reached the stage where firms are overloaded with relevant information. Firms can benefit from more information on *what best practices are*, and more information on *how to use best practice data* to their advantage.

### **Recommendation 7**

**A third component of the new *Business Linkages Program* could be advice to firms on how to form and maintain ‘best practice’ one-to-one cooperative arrangements.**

#### *Liaising with Austrade*

Some of the most significant benefits from business cooperation arise through overseas linkages. This shows itself in two ways – Australian firms who are in cooperative arrangements with overseas firms, and Australian exporters who have some form of cooperative arrangement.

Under the proposed AusIndustry *Business Linkages Program*, Austrade’s involvement will be vital in promoting cooperation with overseas customers or suppliers (and distributors), and in encouraging exporters to form cooperative arrangements. There would need to be close liaison between AusIndustry and Austrade relating to:

- promoting and encouraging cooperative arrangements;
- informing firms of the benefits of these arrangements;
- exchanging information on business cooperation opportunities; and
- directing firms to relevant areas of each others’ organisations for specific advice.

Austrade could also look at the *cooperation plan* and *best practice cooperative arrangement* concepts for possible use with its own operations and clients.

AusIndustry and Austrade have already developed a close working relationship in some areas (for example under the Export Market Planning Program). This will continue as the government more clearly delineates domestic and overseas enterprise assistance programs as a result of the Burgess Report.

### **Recommendation 8**

**There should be close liaison between AusIndustry and Austrade on aspects of the new *Business Linkages Program* which relate to exporters, and Australian firms with overseas customers, suppliers or distributors.**

#### *Liaising with industry associations and other business organisations*

The information and advice program recommended as part of the new *Business Linkages Program* would need to extend widely across industries and types of firm. To be effective in spreading the word about the benefits of these arrangements, and encouraging participation, AusIndustry will need to work closely with other key agencies which provide business assistance to firms.

There are three key private sector groups which should be involved in the working relationship with AusIndustry. These are the various industry associations, the business organisations (such as the Chambers of Manufactures) and business advisers (including accountants). Many of these bodies and advisers already have good working relationships with AusIndustry. In addition, numerous industry associations and business organisations were recently announced as host organisations for brokers under the Business Networks Program.

These agencies may have a role in the design and implementation of any new linkage policy. Government agencies, industry associations and business organisations need to investigate and consider each others' relative strengths and weaknesses and devise 'horses for courses' strategies. Agencies which have a comparative advantage in particular aspects of business cooperation should make the running on those issues. For example, industry associations appear to have a better record in providing assistance relating to operational or efficiency outcomes, while governments are better in helping firms to access markets (see Chapter 13). If all these agencies cooperate with each other, then firms looking for expert knowledge on specific business linkages can be referred to the right organisation.

#### **Recommendation 9**

**AusIndustry should seek the cooperation of other major industry assistance agencies – industry associations, business organisations and business advisers – in designing and implementing its new *Business Linkages Program***

#### *Financing elements of the new program*

The recommendation relating to the *cooperation plan* involves consultant advisers meeting with firms and devising a strategy specifically suited to the client firm. The mechanism for providing advice on *best practice cooperative arrangements* could also include a consultant adviser.

It is envisaged that the financial arrangements for these proposals would be along the lines of current NIES enterprise improvement programs. That is, AusIndustry would subsidise the cost for firms of engaging consultants to help with their business cooperation strategies.

However, a more novel approach that could be considered is a 'contingent reimbursement scheme'. This would provide insurance for firms taking on consultants to devise business cooperation strategies. In essence it would involve the government offering a 'guarantee' to firms that seek to develop *cooperation plans* or *best practice cooperative arrangements*. The government would refund firms for the cost of engaging accredited consultant facilitators if the chosen strategy did not actually work well. The more novel approach is an attempt to design a policy which:

- Selected the firms who weren't going to form a linkage anyway, thus reducing costly transfers.
- Was largely self-financing. This seems appropriate when the grounds for intervention are demonstration effects rather than spillovers.

If the novel approach is not appropriate for the *Business Linkages Program*, the Bureau believes the contingent reimbursement scheme, and the principles underlying it, could nevertheless be applied to other industry programs.

Further details of this scheme are contained in Appendix G.

#### **Recommendation 10**

**It is envisaged that the financial arrangements for assisting firms under the *Business Linkages Program* would involve a government subsidy along the lines of current NIES enterprise improvement programs. However, the government could also consider**

introducing a ‘contingent reimbursement scheme’ to fund elements of the program.

### **14.3.3 Identifying partners, business opportunities and markets**

So far we have emphasised the value of promoting business linkages by providing firms with facts about the workings of cooperative arrangements and their many benefits. But government can play another key information role. They could assist firms that are interested in cooperation issues that fall outside ‘business networks’ or their traditional customer/supplier relationships.

Firms may already have a business opportunity in mind and be seeking a joint venture partner or partners. Alternatively, a number of firms may have already formed an alliance and be looking to break into a new overseas or interstate market, but need some expert help on which market to target. Or a firm may have reached a growth plateau and be seeking a new business opportunity involving one or more other firms to shake up the firm and lift its performance.

Governments can and do help firms to identify potential export markets, to find joint venture partners with complementary resources and to advise firms of potentially lucrative business opportunities. The role of governments in identifying market and business opportunities for firms was very highly rated by non-cooperating firms (only slightly behind information on benefits and forming linkages). Interestingly, very small firms and young firms rated this as the *most* important role for government.

The message seems to be that government efforts in this area are worthwhile. It may be of course that not enough SMEs are being reached through existing government programs. There may be scope for AusIndustry to use better the network of Austrade, industry associations, business organisations, and business advisers to provide more useful information to these firms.

Linking with industry associations and other agencies will only be helpful if there is useful information to circulate. Governments could perhaps do better in preparing and updating data bases of potential cooperation partners or business opportunities. AusIndustry could, for example, build on the recommendation contained in the BIE evaluation of the Partnerships for Development program (BIE 1995) for:

A more effective comprehensive listing of the capabilities and interests of local firms...in support of enhanced brokerage and matchmaking services to foster the creation of business links with partners. (p.154)

AusIndustry could extend this idea to listings of firms’ interests in joint ventures, alliances, and consortia that would offer opportunities to interested partners. While examples of such ‘registers’ occur in some states, there is merit in extending these to national databases.

The government should consider disseminating such information on potential partners, business opportunities and markets through AusIndustry’s *BizLink* electronic information program. *BizLink* could also be an effective channel for some of the other information initiatives outlined above.

#### **Recommendation 11**

**AusIndustry and Austrade, in conjunction with industry associations and business organisations, could consider expanding their efforts in identifying partners, business opportunities and markets for SMEs interested in business cooperation. They could**

**develop and disseminate more comprehensive listings of opportunities through electronic programs such as *BizLink*.**

#### ***14.3.4 More effective use of information technology***

Fundamentally, government linkage policies aim to correct information deficiencies. They are about firms receiving correct and timely information on various aspects of the cooperation strategy – what are the benefits? how do firms form closer links? how do firms deal with legal and ethical issues? what are the essential elements of a cooperative agreement? So, information is central.

But age decays information – it can grow old and irrelevant. It can also be hard to find. And different agencies can speak in different tongues – so that Babel-like confusion reigns. This suggests that:

- information on best practice cooperation, and its effects should be up to date;
- firms should find it easy to obtain the information; and
- key government agencies, industry associations and others providing linkage services need to work closely with each other so that the information they provide will fit better together.

Electronic exchange and storage of information can help all three of these objectives. It has several advantages over printed material. It can move around large amounts of data more easily. It is easier to manage and store. It allows parties to instantly access and exchange facts and ideas.

Governments could create an electronic ‘cooperation network’. This would link government agencies, industry associations, business organisations and business advisers. The network would provide a forum to monitor and exchange up-to-date information relating to matchmaking, opportunities, case studies, financial assistance, training and so on. The network could include a ‘best practice’ bulletin board with a focus on making cooperative arrangements work better (see Recommendation 7).

Linking the assistance agencies electronically – networking the networkers – would improve information flows and help to ensure that firms cooperate more effectively. It would be a major step.

However, it would also be a major step to encourage as many SMEs as possible to access directly the so called ‘information super-highway’. This would link firms to information services from AusIndustry, industry association and business advisers. But more ambitiously it would open up opportunities for talking directly to other firms about strategies for improving their business, including linkages.

An example of soon to be available technology is the International Business Exchange (IBEX). Australia will be among the first countries to be linked to the US developed worldwide interactive electronic network designed to allow SMEs to do business around the world through their personal computers (AFR, 1995). Using personal computers and a modem, firms will be able to enter their company profile and information about the products they want to buy, sell or invest in. IBEX will then search and continuously match companies with which the user could do business. The potential business partners will then be able to use IBEX to negotiate their contracts.

The accessibility of SMEs to the information bahn goes beyond the government’s interest in promoting business cooperation. It cuts across other policies relating to information technology strategies. But from the narrow perspective of this study, there are two related steps the government could take which would assist inter-firm cooperation. These are to encourage computerisation in SMEs and to provide information to firms on available electronic networks and other relevant on-line services.

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**Recommendation 12**

**The government could consider creating an electronic ‘cooperation network’ linking all the key cooperation assistance agencies. The network would provide a forum to monitor and exchange up-to-date information relating to matchmaking, opportunities, case studies, financial assistance, training and so on. In addition, the government could assist the spread of inter-firm cooperation by encouraging computerisation in SMEs and providing information to firms on available electronic networks and other relevant on-line services.**



# Appendix A

## Survey and modelling methodology

### A.1 The mail survey

The major source of data for the study was a survey sent to approximately 5000 firms in five industries, namely:

- Clothing and footwear;
- Engineering;
- Information technology and telecommunications;
- Scientific and medical equipment; and
- Processed foods and beverages.

The sample was structured to be broadly representative of Australian industry – with a mix of new and traditional industries, large and small firms, varying importance of technology, exports and so on.

The other main consideration in constructing the sample was relevance to the Department of Industry, Science and Technology. We consulted with the various industry divisions throughout the Department to identify those areas where it was felt that the research project could most usefully make a contribution to understanding business operations in particular industries.

The sample was drawn by the Australian Bureau of Statistics (ABS) and included all management units employing between 5 and 500 persons in 18 ANZIC codes<sup>1</sup>. The ABS was also responsible for the mail out, collection and data entry, as well as providing advice on the structure of the survey form.

The structure of the sample and the response rate by industry is shown in Table A.1. The overall response rate of just over 30 per cent is considered by both the ABS and the BIE as being satisfactory for a non-compulsory survey<sup>2</sup>.

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<sup>1</sup> The ANZIC codes making up the sample were 2241, 2242, 2249, 2250, (Clothing and footwear); 2769, 2851, 2864, 2869 (Engineering); 2841, 2842, 2849 (IT&T); 2543, 2832, 2839 (Sci/med); 2111, 2130, 2172, 2183 (Food).

<sup>2</sup> The response rate would have been higher but for the fact that less than one in four Clothing and footwear firms returned the form.

**Table A.1 Sample structure and response rate**

<i>Industry</i>	<i>Sample size<sup>a</sup></i>	<i>Returns</i>	<i>Response rate (%)</i>
Clothing and footwear	1250	291	23.3
Engineering	1694	578	34.1
IT&T	343	131	38.2
Scientific and medical equipment	330	122	37.0
Processed foods and beverages	477	156	32.7
<i>Total</i>	<i>4094</i>	<i>1286<sup>b</sup></i>	<i>31.4</i>

Notes: (a) Sample size is equal to the number of forms dispatched less number of firm “deaths” identified by returns.

(b) Industries could not be assigned for 8 respondents.

Source: BIE survey.

A draft of the survey was pilot tested on 10 firms to identify any areas of confusion or weakness in the survey design. This resulted in some small modifications. The final survey form is reproduced at the end of this appendix.

## A.2 Response bias check

Even with a relatively good response rate, the possibility of bias in the survey results is very real. Around 60 per cent of those firms who were sent a survey form did not complete and return it. Many of these firms may well have no cooperative arrangements at all and therefore did not see the survey as relevant to them. Those that did return the survey may have been those that had arrangements or were particularly interested in them. If this were the case, the results of the survey would be biased, overestimating the proportion of firms who have cooperative arrangements.

To check for this type of bias, we contacted 100 non-respondents from the original sample and asked them a subset of the questions from the main survey. The break up of the 100 was roughly the same as the structure of the original sample.

The main finding from the exercise was that only 22 per cent of non-respondents indicated they had one or more cooperative arrangements. This conflicted with the findings of the mail survey, which suggested that 40 per cent of firms were involved in cooperation, indicating that bias was a problem<sup>3</sup>.

It is possible to correct for the response bias however. For example, we can estimate the proportion of firms involved in cooperation across Australia using the data presented above. We know that 41 per cent of respondents cooperate (from the survey returns) and that 22 per cent of non-respondents also cooperate. Across the whole sample, therefore, we estimate that 28 per cent of firms are involved in business cooperation<sup>4</sup>.

<sup>3</sup> The main problem is in examining issues around cooperating versus non-cooperating firms (Chapter 4). When comparisons are made between cooperating firms (as in Chapter 5 onwards), this form of bias is not of concern.

$$4 \quad \frac{0.41 \times 1286 + 0.22 \times 2808}{4094} = 28 \text{ per cent}$$

It would be possible to adjust all the results in this report (for example cooperation by industry, state, product type) provided the degree of bias is known. We chose not to adjust throughout the report because the scale of the non-response survey needed to adjust all the factors considered in the report is prohibitively large. Rather than impose an across-the-board adjustment of 32 per cent<sup>5</sup>, regardless of whether it actually describes the bias for a particular group of firms, we consider it better to use the unadjusted data.

### **A.3 Testing the interpretation of ‘cooperative business arrangements’**

As noted in Chapter 2, there is a plethora of terms used to describe business cooperation. What someone might call a joint venture another might call a consortium and yet another might call a strategic alliance. Some may not view these as cooperative at all if they have a contractual basis, even though cooperation is very much present and vital for success.

Moreover, the distinction between cooperative and arm’s length relationships becomes very blurred at the latter end of the spectrum. A simple arm’s length transaction might be the purchase of an ‘off the shelf’ product from a supplier. If, for example, the two exchange information about future requirements to assist one or both in planning production runs on an informal basis, the relationship starts to take on cooperative aspects.

It is not clear from the survey results where firms have generally ‘drawn the line’ between arm’s length and cooperative activities. In addition, the survey form contains some specific examples of the types of cooperative activities with which we believed firms might commonly be involved. The risk of providing examples, however, was that respondents may have interpreted them as the only forms of cooperation in which we were interested.

To resolve some of these issues, we conducted a follow-up telephone survey of 100 respondents<sup>6</sup> who indicated in the mail survey that they had no cooperative arrangements. These firms were asked about their relationships with their customers and their suppliers to identify areas where cooperation may take place. In addition they were asked if they had been involved in a range of activities with cooperative aspects<sup>7</sup>.

Interestingly, when the definition of cooperation was explicitly broadened to cover those areas that may not have been considered in responses to the mail survey, 50 of these firms indicated that they in fact currently had one or more cooperative arrangements. This result suggests that the findings of the mail survey understate the proportion of firms involved in cooperation in Australia.

It is important to note, however, that the additional arrangements identified in the telephone follow-up survey were typically, though not solely, towards the arm’s length end of the cooperative continuum (see Chapter 2). Assuming that these 100 firms are representative, around half of all those who indicated in the mail survey they were not involved in cooperation, are in fact involved in more ‘marginal’ forms of cooperation.

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<sup>5</sup> Going from 41 per cent to 28 per cent is a fall of 32 per cent.

<sup>6</sup> The structure of the sample was 59 small firms, 27 medium firms and 14 large firms.

<sup>7</sup> Including: joint ventures or networks; joint production; equipment sharing; joint implementation of quality, best practice, training or benchmarking programs; research and development partnerships; and joint bidding for consortia.

We can now estimate the proportion of firms who are involved in both ‘core’ and ‘marginal’ cooperation<sup>8</sup>. Accordingly if a broad definition is adopted, up to two-thirds of firms are currently involved in cooperation. It would seem then that around one-third have no cooperative arrangements at all.

The proportion of firms involved in substantial or ‘core’ cooperative arrangements is probably somewhere around one-third. That is, the 28 per cent of firms identified in Section A.2 and the additional core forms of cooperation arising from the telephone follow up survey. In sum:

- one-third of firms are not involved in cooperation
- around one-third of firms have ‘core’ cooperative arrangements
- up to two-thirds of firms have ‘core’ and/or ‘marginal’ cooperative arrangements.

## A.4 Significance tests

Throughout the report we compare various groups to see if there are any differences between them. For example we examine the propensity to establish cooperative arrangements by firm size in Chapter 4 and find that large firms are the most likely to cooperate, with 63 per cent having at least one arrangement, compared to the average figure of 41 per cent.

But, given that these are survey results, the question arises: to what extent does this finding apply to large firms more generally? After all, this finding concerning large firms is based on only 76 firms. How confident can we be about a result based on these 76 responses? If another survey was taken of a different group of firms would it too find that large firms are more likely than average to cooperate?

Testing the statistical significance of results provides a basis for answering these types of questions. It provides a measure of how sure we can be that large firms are, in fact, more likely to cooperate than average.

Significance testing is particularly useful when important differences are identified but these are based on fairly small samples. In these cases the chances that the result simply reflects sampling variation is relatively high. The testing procedure used takes account of the size of the sample.

The test used is based on the hypothesis that two observed proportions are, in reality, the same. A test statistic is calculated based on the difference between the two proportions and their standard errors<sup>9</sup>. The larger the test statistic, the more confident we can be that this hypothesis is false – that the observed difference between large firms and the average is a ‘real’ difference.<sup>10</sup>

$$^8 \frac{0.28 \times 4094 + 0.5(0.72 \times 4094)}{4094} = 64 \text{ per cent}$$

$$^9 \text{ Specifically, the formula is : } Z = \frac{p_a - p_b}{\sqrt{\frac{p_a(100-p_a)}{n_a} + \frac{p_b(100-p_b)}{n_b}}}$$

where  $p_i$  is the observed proportion for group  $i$  and  $n_i$  is the number of firms in group  $i$ .

<sup>10</sup> The value for the test statistic (Z) is compared to the relevant figure from tables of values for the distribution of the standard normal curve to give the level of significance.

In our example, the test statistic is calculated to be 3.83. This is a very high result, and we can be very confident (99.8 per cent) that the observed difference for large firms is not simply the result of the sample. There is only a 0.02 per cent probability that our confidence is misplaced and the two proportions are actually the same – that large firms are as likely as average to cooperate.

Of course, given that the difference in this example was so large (63 per cent compared to 41 per cent) this is perhaps not a surprising result. What about the case where differences are not so large? For example, 36 per cent of micro firms were found to cooperate compared to the average of 41 per cent. In this case a test of significant differences is more useful. The test statistic is calculated to be 1.84, which gives us a confidence limit of 93.4 per cent. We can be quite confident that micro firms are less likely to cooperate (there is only a 6.6 per cent chance that micro firms are as likely to cooperate).

Finally, let us look at the case for medium firms. Chapter 4 shows that 43 per cent of medium firms have arrangements, which is slightly above average. But a test of significant differences tells us that we can only be 44 per cent ( $Z= 0.58$ ) confident that medium sized firms are more likely to cooperate than average. We would therefore conclude that the difference is not statistically significant – that medium-sized firms are as likely as average to cooperate.

## A.5 The probit model

### A.5.1 Overview

The probit model is a non-linear binary choice model used in situations where a dependent variable has only two possible outcomes. For example, a firm is either cooperating or it is not, or it gains a particular type of benefit from its cooperation or it does not. It allows the determination of the probability of a firm with a given set of attributes (both in terms of its own characteristics and the characteristics of its arrangements) having one outcome, rather than the alternative. Hence the model can also show the strength of relationship between the explanatory variables and the dependent variable.

The probit model is not the only possible choice of model for these situations. The logit model is another. In practice, however, the logit and probit models tend to yield extremely similar results, the only real difference being that the logit model estimates all tend to be larger than the probit estimates (Davidson and Mackinnon 1993). The probit model was chosen because the smaller, more conservative, estimates produced would be less likely to include unimportant variables as being influential.

The model results are more robust than the partial analysis findings as they take into account the interaction between different variables (firm characteristics), whereas a partial analysis looks at only two variables in isolation from all others. Thus a partial analysis of individual survey findings will tend to give the same results as the model but will also additionally give some misleading results. Partial results provide a useful basic test for hypotheses but, where possible, they should be compared with the results from a more robust model.

The data collected concerned:

- whether a firm was in a cooperative business arrangement or not
- which industry the firm was in
- the state the firm was located in
- metropolitan or regional location

- level of employment\*
- level of turnover\*
- level of exports\*
- age of firms\*
- competitive advantages of firms
- constraints on firm performance
- ownership of firms
- level of processing of goods
- technology used
- competition faced
- benefits from cooperation
- performance/competitiveness changes due to cooperation.

The four marked ‘\*’ are continuous variables. The others are all represented by dummy variables where ‘1’ indicates the presence of the characteristic and ‘0’ means it is absent.

Initially the models were run incorporating all the variables listed above, as well as some which were generated from the primary data (turnover growth, export propensity, log of employment and log of turnover). This was reduced down to contain only significant explanatory variables. Simultaneously, another probit model was built up from *a priori* knowledge. The point at which these two models converged became the final model form.

It is necessary to exclude one of the dummy variables from each exclusive set to avoid singularity. The impact of any single variable can still be inferred.

Many different models were constructed using the principles described above. The dependent variables modelled were:

#### *Chapter 4*

- arrangement(s)/no arrangement

#### *Chapter 5*

- formal arrangement
- informal arrangement
- arrangement with a customer
- arrangement with a supplier
- arrangement with a non-customer/supplier firm
- arrangement involving one other firm
- arrangement involving two or more other firms
- arrangement involving an overseas-based firm

#### *Chapter 8*

- five or more major/critical benefits from all arrangements
- three or more major/critical supplier benefits from all arrangements

*Chapter 9*

- increase in exports from key arrangement
- increase in exports turnover from key arrangement
- increase in exports productivity from key arrangement
- increase in exports technological competitiveness from key arrangement

**A.5.2 Goodness of fit and hypothesis testing**

Methods of hypothesis testing for single parameters, joint hypotheses and hypotheses about the goodness of fit of the model as a whole can be used with probit models. These are parallel to the procedures which can be applied to OLS models.

In regression models, it is common to test the hypothesis that all slopes are zero by using an  $F$  test. For binary response models, the same hypothesis can easily be tested by using a likelihood ratio test. The method produces a statistic that follows, approximately, a chi-square distribution when the null hypothesis is true.

There is no close parallel with the measure of  $R^2$  in OLS. The  $R^2$  test measures the proportion of the variance that is 'explained' by the exogenous variables. There are some surrogate measures, but the nature of the estimation problem renders all such measures problematic. The McFadden  $R^2$  is the simplest surrogate, being:

$$1 - (\text{unrestricted value}/\text{restricted value})$$

This is a plausible measure of goodness of fit because it lies between 1 and 0. However the number of surrogate  $R^2$  measures and the lack of a dominant one makes it difficult to use any with great certainty, although it does serve the purpose of allowing comparison between models.

Finally, the percentage of right predictions can be used instead of the surrogate  $R^2$  values to estimate the goodness of fit of the model. This gives the ratio of the number of firms a model predicts to have an attribute to the proportion of firms with an attribute.



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## A.6 Survey form



























# Appendix B

## Background information on industries

This study uses data from an extensive survey of, and interviews with, firms in five large industry groupings<sup>1</sup> – Clothing and footwear, Engineering, Information technology and telecommunications, Processed foods and beverages, and Scientific and medical. These groupings provide a balance of ‘old’ and ‘new’ industries and together are representative of Australian industry. An overview of the structure and trends of each group is given below.

### B.1 Clothing and footwear

The Australian clothing and footwear industry employs over 66,000 people, excluding outworkers of whom there may be as many as 300,000. There are approximately 3,500 establishments, around 2,100 in the clothing sector and 1,400 in the footwear sector. In both sectors establishments tend to be small and privately owned, with a concentration in Victoria and NSW. In 1992/93 the value of manufacturers’ sales was around \$3.7 billion for clothing and \$600 million for footwear. In the same year the industry’s exports were valued at nearly \$550 million, mainly to New Zealand and the USA.

This mature industry is declining in importance in the total economy. While pockets of the industry may have strong future growth prospects, this is not true for the industry as a whole, despite high levels of government assistance. The Industry Commission estimates that effective assistance to the Clothing and footwear sector was 65 per cent in 1993/94, which is to be reduced to 34 per cent by the year 2000/01. Falling tariff levels have raised the degree of import penetration in the domestic market to 40-45 per cent for clothing and 60-65 per cent for footwear. In 1992/93 imports were valued at nearly \$4 billion, mainly from China, Europe and Korea. Domestic products are not generally internationally competitive with imports due largely to the high Australian labour costs faced by this labour intensive industry.

The Federal Government has assisted adjustment through the implementation of a strategy that aims to increase efficiency and international competitiveness and identify export opportunities. The strategy is implemented by the Textile, Clothing and Footwear Development Authority and consists of both reduced tariff protection and positive adjustment measures. For example, an import credit scheme is in place which allows Australian producers to ship Australian designed textile pieces to low-wage countries to be made up and then imported back as completed articles, while only paying import duty on the cost of overseas assembly. A 40 per cent duty has also been applied to imports from the developing countries, except for China, Hong Kong and Taiwan.

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<sup>1</sup> These industry overviews use data from BIE Research Reports (1995, 1993); DIST (1994a, 1994b); IBIS Business Information System (1995); Industry Commission (1995, 1994a, 1994b); Standard and Poor (1994, 1993a, 1993b); and Textile Clothing and Footwear Union of Australia (1995).

In response to the assistance package and the market conditions, emphasis within firms has been on improving labour productivity and increasing capacity utilisation. Some large players have improved their efficiency through significant capital investment in new technology. They have also developed brand strengths through efficient marketing strategies to retain their market share against imports and improve their export performance. Another option taken by several manufacturers is to move offshore to low wage cost countries. Other factors which have been identified as contributing to success are close liaison between retailers and suppliers; quick response techniques; a diversified product portfolio of leading branded products; a strong market position; a strong track record of responding quickly to fashion trends; entrepreneurial skills; and, vertical integration.

The segments of this industry group surveyed comprised *Men's and boy's wear manufacturing*; *Women's and girl's wear manufacturing*; *Clothing manufacturing n.e.c.*; and *Footwear manufacturing*.

## B.2 Engineering

This industry group consists of establishments manufacturing a wide range of items including office, business and industrial equipment or machinery, whitegoods, gas and water fittings, and nuts and bolts. In many cases this industry supplies enabling technologies to many other sectors. In effect the engineering industry is extremely diverse and consists of relatively small and fragmented sectors. This makes it difficult to provide a general industry outlook as some segments are performing well, while others are fairing poorly.

Real growth in turnover was fairly slow across all sectors from 1986/87 to 1991/92. This reflected in part the impact of the recession. Over the same period exports grew relatively strongly, as sluggish domestic demand forced firms to look overseas for markets. A number of other factors, including tariff reductions and the general improvement in the price and technological competitiveness of Australian firms, are also likely to have contributed to this growth in exports. The fact that these firms tend to be coming off a low export base also partly explains the fast growth in exports.

Prospects for firms are dependent on the level of economic activity, activity in user industries (and the degree of gross fixed capital expenditure undertaken by them), the level of import competition and the export performance by firms in the industry. Activity in this industry has been cyclical. Some areas have benefited from the Federal Government's Heavy Engineering Adjustment and Development Plan, which was introduced in 1986 to assist technology transfer between firms.

The segments of this industry group surveyed comprised *Fabricated metal products manufacturing n.e.c.*, *Household appliance manufacturing*, *Machine tool and part manufacturing*, and *Industrial machinery and equipment manufacturing n.e.c.*

## B.3 Information Technology and Telecommunications

The performance of this industry is best considered in two segments – the information technology sector and the telecommunications sector – as there is little shared business between major computer and telecommunications equipment manufacturers.

In the **information technology** sector Australia's competitive advantage is in the niche product area, such as local and area wide networking, as there are no major barriers to IT imports into Australia from the United States. The industry in Australia comprises some 1600 firms, made up of a small number of large

multinationals, and a large number of domestic firms of varying sizes. The information technologies market is fast growing and was valued at \$11.2 billion in 1993 and forecast to grow to \$14.6 billion by 1997. Significant factors influencing the development of the industry include the ability of local firms to gain access to global distribution networks controlled by multinationals; intellectual property issues; effect of existing regulations and standards on innovation; access to standards, testing, accreditation and certification; and, access to government customers.

Most recent figures indicate the **telecommunication equipment** industry generates \$2.8 billion revenue, employs 15 000 people, and generates exports worth around \$500 million. The major players in Australia are seven multinationals, and one Australian-owned company. Positive growth factors for the telecommunications equipment industry include close cooperation with service providers on product development, significant local manufacturing operations, and market orientation towards government customers.

The segments of this industry group surveyed comprised *Electronic equipment manufacturing n.e.c.; Telecommunications, broadcasting/ transecting equipment manufacturing;* and *Computer and business machine manufacturing.*

## B.4 Scientific and medical

This is a diverse industry with two clear segments – those firms producing medicinal and pharmaceutical goods and those producing scientific and medical equipment. Australian manufacturers tend to be small and medium in size, with over 380 establishments producing goods worth \$900 million annually. More than half of the production is exported. This increased rapidly recently as international opportunities were recognised and the effects of the ‘Factor f’ scheme were felt by the pharmaceutical sector.

Domestic production of pharmaceutical products is mainly of branded products, although a small number of firms manufacture generic ones. The formulation and packaging of finished products makes up the bulk of the domestic pharmaceutical industry, as there is little local production of packaged ingredients. This is a result of the structure of the international industry, with Australian production dominated by subsidiaries of overseas manufacturers. The major basis of competition in the industry is product innovation which requires considerable expenditure on research and development and is heavily concentrated in the home countries of the major multinationals.

The scientific and medical equipment industry comprises a heterogeneous group of manufacturers with products ranging from hand tools to highly complex instruments. The major factors determining the performance of firms in this industry are the level of research and development conducted in-house, the level of domestic demand, the degree of import competition and the export performance of the firms. The shortage of skilled labour, the possible shortage and high cost of venture capital and failure to develop export marketing capabilities within the industry may provide some impediments to growth.

The segments of this industry surveyed comprised *Medicinal and pharmaceutical product manufacturing;* *Medical and surgical equipment manufacturing;* and *Professional and scientific manufacturing n.e.c.*

## **B.5 Processed food and beverages**

The food processing industry had a turnover of \$35 billion in 1991-92 and accounted for 21 per cent of total manufacturing production. The industry employed more than 160,000 people over the same period, 18 per cent of total manufacturing employment. Overall, there are more than 4,000 firms in the industry but less than 9 per cent of these have more than 100 employees.

The industry saw extensive rationalisation in the 1970s and 1980s and a concentration of ownership. Despite this, the performance of the processed food industry in export markets has been patchy. In recent years, a number of studies have been conducted by government and industry bodies to identify the opportunities and impediments and to implement appropriate reform programs. In July 1992 the government announced a \$12.7m four year package of measures to boost exports of processed foods, particularly to Asia, and the establishment of the Agri-Food Council to drive the development and internationalisation of the food sector.

The survey covered four distinct segments of the Food industry which are discussed in further detail below.

### ***B.5.1 Meat processing***

The meat processing industry in Australia employs around 30,000 people and in 1993/94 exported \$3.7 billion worth of product. Changes in turnover result from seasonal changes in prices, availability of livestock, and exchange rate volatility. Between 1980-81 and 1992-93 value added increased from 25 per cent of turnover to 30 per cent. However, this was due to lower input costs rather than increased processing. Individual meat markets are dominated by foreign-owned companies and in 1993/94 the top six companies were responsible for more than 60 per cent of the industry turnover.

The meat processing industry has good prospects, as the demand in Asia is forecast to increase strongly while trade barriers are being reduced. However, a recent Industry Commission report on meat processing recommended a more commercial focus and a transition from a regulatory to a quality-based system. The industry is subject to considerable regulation in areas of public health and environmental controls to meet export requirements.

### ***B.5.2 Fruit and vegetable processing***

The major fruit processing activities are the production of canned and dried fruit and fruit juices. In 1991/92 there were 101 establishments involved in this, employing over 4,000 people, with an annual combined turnover of \$1.1 billion. In the same period there were 75 vegetable processing establishments involved in the production of frozen, canned, pickled and juiced vegetables. They had a combined turnover of \$1.2 billion and over 7,000 employees. There is a concentration of multinationals in the market and a high degree of foreign ownership overall.

To ensure continuity of supply, processors enter contracts with local growers; indeed some of the processors are partly owned by grower cooperatives. The need to buy local inputs is a characteristic of the industry which results in higher costs than for many of their overseas competitors. High labour, packaging and transport costs also reduce competitiveness. The industry is facing growing competition from both the fresh fruit and vegetable industry and also imported processed products. Faced with falling domestic demand for processed fruit and vegetables (except fresh fruit juice), and cheaper imports as tariff protection is reduced, the industry has been declining. There is not a large export market and limited prospects of it expanding.

### ***B.5.3 Wine manufacturing***

Although there are around 800 wineries in Australia the market is highly concentrated with 75 per cent of the market being accounted for by only seven companies. Since 1988-89 domestic wine consumption has fallen fairly steadily, due mainly to higher relative prices and adverse economic conditions. Australian wine exports were worth \$368 million in 1993/94, going mainly to the UK, USA, New Zealand, Canada and Sweden. The industry does have the advantage of little competition from imports – they make up only 2.5 per cent of total wine sales – although they have an estimated 30 per cent share of the market for higher-priced wines.

The industry has formed a number of key organisations to plan and coordinate their central activities including the Winemakers Federation of Australia, Grape and Wine Research and Development Corporation and the Australian Wine Export Council. In particular the Export Council has developed a five year plan incorporating production estimates, market predictions and research and development.

The Industry Commission is conducting an inquiry into the wine industry and has released a draft report (March 1995) which recommends considerable changes in three areas: taxation; industry regulation; and, promotion and R&D. The report proposes that a new regulatory body be set up at arm's length from the industry, as well as a new promotion/R&D body with strong industry ties.

### ***B.5.4 Confectionary manufacturing***

The confectionary industry employs over 6,800 people and consists of 130 establishments, generally located close to large markets. There are a relatively large number of small producers, but the top three producers are responsible for 76 per cent of sales and are all foreign owned. In 1993 Australian confectionary sales were \$1.8 billion, and in the year to June 1994 exports were \$170 million while imports were \$125 million. The industry has faced low growth since 1990, although exports have tripled since 1989 (albeit from a very low base).

The confectionary industry is facing the prospect of slower growth in domestic sales due in large part to health concerns. However, exports are continuing to expand, especially to Asia where economic growth is stronger, sugar consumption is at a low level, and Australia is the closest large confectionary producer. Australian producers are also beginning to establish offshore production facilities. Competitive pressures within the industry seem likely to produce further rationalisation aimed at modernisation, reduced duplication and economies of scale.

## Appendix C

# Summary of types of cooperative arrangements

As explained in Chapter 2, cooperative arrangements can be examined in their own right, as distinct from a firm-by-firm basis. Table C.1 gives the proportion of total cooperative arrangements in a number of categories for each industry studied.

**Table C.1 Types of cooperative arrangements by industry(a)**

	<i>Clothing &amp; footwear</i>	<i>Engineering</i>	<i>IT&amp;T</i>	<i>Scientific &amp; medical</i>	<i>Food</i>	<i>Total (b)</i>
Formal	48.9	49.5	44.0	73.4	37.7	50.1
Informal	51.1	50.5	56.0	26.6	62.3	49.9
Customer	37.6	36.8	42.3	43.8	36.9	39.7
Supplier	41.1	35.1	23.8	31.0	38.3	33.3
Other	21.3	28.1	33.9	25.2	24.8	27.0
One firm	91.7	76.8	82.6	85.5	82.6	83.8
Two or more	8.3	23.2	17.4	14.5	17.4	16.2
Overseas	5.9	13.7	13.2	16.2	5.7	11.0
Domestic	94.1	86.3	86.8	83.8	94.3	89.0

Note: (a) The figures in this and all following tables show the percentage of arrangements that are of a particular type.

(b) These figures have been weighted by industry.

Source: [BIE survey](#)

The split between formal and informal arrangements is fairly even overall, except in the Scientific and medical industry which strongly favours formal arrangements and the Food industry which leans towards informal arrangements. The high level of technology in the Scientific and medical industry and the need to protect ideas and developments makes the formalisation of arrangements necessary. These problems are not faced in the Food industry.

Customer links are slightly more common than supplier arrangements, while arrangements with firms other than these are least common. There are two exceptions. The first is in the Clothing and footwear industry, where supplier links are the most important – perhaps reflecting the cost-driven nature of this industry. The second is in the IT&T industry, which favours arrangements with customers followed by arrangements with other firms.

The majority of cooperative arrangements are one-to-one with another firm, particularly in the Clothing and footwear industry, but less so in Engineering.

In the case of most industries the majority of arrangements are with other domestic companies. In the Clothing and footwear and Food industries there are very few arrangements with overseas firms at all. The Scientific and medical industry has the strongest links with overseas companies, reflecting the international marketplace that these products are often developed in and sold to. However, the proportion of arrangements involving overseas firms is likely to have been underestimated in Table C.1, as respondents were not questioned as to how many of these types of arrangements they had (only to indicate whether they had any or none).

## C.1 Formal/informal

When the proportion of various types of arrangements that are formal and informal are examined it is apparent that there is a very strong tendency to formalise arrangements involving overseas firms (Table C.2). This is understandable given the geographic distances between the cooperating firms, as well as the cultural differences which may exist. Formalisation of the arrangement gives the firms involved a greater degree of control and security.

**Table C.2 Formal and informal arrangements**

	<i>Formal</i>	<i>Informal</i>
Customer	46.6	53.4
Supplier	47.5	52.5
Other firms	54.5	45.5
One firms	48.8	51.2
Two or more firms	51.6	48.4
Overseas firms	61.6	38.4
Domestic firms	47.7	52.3
Overall (a)	50.1	49.9

Note: (a) These figures have been weighted by industry.

Source: BIE survey

The other point worth noting is that arrangements involving customer and suppliers are most often informal, while those involving other firms tend to be formalised. Interestingly, the number of firms in the arrangement does not seem to point to whether the arrangement will be formal or informal.

## C.2 Customers, suppliers and other firms

Although customers are the most common cooperative arrangement partner overall, they do not predominate in all types of arrangements. They make up a smaller proportion of multiple firm arrangements and are also less likely to be the partner of choice in an arrangement involving an overseas firm (Table C.3).

**Table C.3 Arrangements with customers, suppliers, and other firms**

	<i>Customers</i>	<i>Suppliers</i>	<i>Other firms</i>
Formal	37.2	33.1	29.7
Informal	41.0	35.1	23.9
One firms	40.6	33.9	25.5
Two or more firms	30.0	35.7	34.3
Overseas firms	31.9	34.6	33.5
Domestic firms	39.9	33.7	26.4
Overall (a)	39.7	33.3	27.0

Note: (a) These figures have been weighted by industry.

Source: BIE survey

On the other hand, arrangements involving non-customer/supplier firms are the opposite. These are predominantly involved in arrangements with two or more other firms and are often the overseas firms with which Australian firms choose to cooperate. Joint ventures, strategic alliances, technology transfers and distributorships are all possible examples.

### C.3 Single and multi-firm arrangements

The majority of cooperative business arrangements used by Australian firms are one-to-one relationships. Multiple firms arrangements tend to involve firms which are not customers or suppliers of each other, and often involve firm(s) based overseas (Table C.4). Business networks working to internationally market their products are a prime example of this type of arrangement.

**Table C.4 Single and multiple firm arrangements**

	<i>One firm</i>	<i>Two or more firms</i>
Formal	81.3	18.7
Informal	83.0	17.0
Customer	87.8	12.2
Supplier	83.5	16.5
Other firms	79.8	20.2
Overseas firms	77.4	22.6
Domestic firms	82.8	17.2
Overall (a)	83.8	16.2

Note: (a) These figures have been weighted by industry.

Source: BIE survey

### C.4 Overseas and domestic arrangements

When the location of partner firms in the cooperative business arrangement are considered, the majority of these firms are also located in Australia, particularly when the arrangement is informal in nature (Table C.5).

As noted previously, arrangements with overseas-based firms are more common when the arrangement involves two or more firms or when it includes firms that are not customers or suppliers of each other.

**Table C.5 Arrangements with overseas firms**

	<i>Domestic firms</i>	<i>Overseas firms</i>
Formal	85.6	14.4
Informal	91.3	8.7
Customer	88.8	11.2
Supplier	86.0	14.0
Other firms	83.2	16.8
One firms	89.6	10.4
Two or more firms	86.0	14.0
Overall (a)	93.1	6.9

Note: (a) These figures have been weighted by industry.

Source: [BIE survey](#)

## Appendix D

# Government involvement in inter-firm cooperation

The preceding chapters have outlined the current state of inter-firm cooperation in Australia. We know which firms cooperate and how. We also understand the benefits and problems of cooperation. But what of government? What roles do the various government programs and policies play in cooperation between Australian firms?

The federal and state governments have an array of policies and programs to encourage innovation, the take up of technology, better management skills, easier access to finance, and exports.

Chapter 6 has demonstrated that cooperation plays an important role in improving the performance and competitiveness for the majority of firms who have established arrangements and can directly have positive impacts in areas such as those noted above.

This chapter examines the convergence of these themes by outlining how government is assisting the formation of cooperation in Australia. Programs have been divided into two broad groups; those that actively seek to form networks (Section D1); and those broader programs that result in the formation of linkages between firms (Section D2)

## D1 Networking programs

Many governments around the world have established networking programs to encourage firms, and particularly SMEs, to exploit opportunities that would otherwise be out of reach of a single firm with limited resources.

Australia is no exception, and at the federal level, there are three programs that revolve around networking including: the Business Networks Program (BNP); the Food Industries Networking for Asia Program (FINA); and the Rural Enterprise Networking Program.

The BNP is the leading networking program and is discussed fully in Appendix E (see also Chapter 13).

### *D1.1 Food Industries Networking for Asia Export Program*

The federal government's Food Industries Networking for Asia Export Program (FINA) is currently in its third year and is run from the Department of Industry, Science and Technology. It was launched as part of the Agri-Food Industries Statement in July 1992 and is scheduled to finish at the end of 1995-1996. The program aims to increase exports of Australian high value added processed food and beverage products into Asian markets.

FINA is targeted at agri-food enterprises wanting to establish export markets in Asia, but are hampered by their comparatively small size and limited resources. By forming networks with complementary producers, processors and associated enterprises, smaller companies can pool resources and access specialist skills and services needed to win export contracts. Both horizontal and vertical networks are eligible for assistance.

The FINA Program focuses on supporting new networks by providing funding for a network facilitator (or broker). The facilitator's role is to co-ordinate the network, help establish group dynamics, mutual trust and communication between participants, as well as assisting enterprise improvement by participants.

Other eligible activities for funding include the development and implementation of product and marketing strategies in specific Asian markets.

FINA only meets part of the cost of network development. Participants are expected to contribute around 25 percent of on-going network costs. Assistance focuses on activities which develop the export knowledge and expertise of the network members allowing them to realise network objectives independent of government assistance. Continued assistance beyond the original 6-12 months is considered on a case-by-case basis.

The eligibility criteria for FINA assistance include:

- cohesion of and commitment to the network by all members;
- export focus of the network;
- extent of value adding proposed;
- financial viability of individual network members; and
- financial soundness of the proposal including the level of contributions by members.

The demonstration effect of the proposal and the extent of previous government support are also taken into account.

To date the program has assisted eight networks involving over 90 firms throughout Australia.

## ***D1.2 Rural Enterprise Networking Program***

The Rural Enterprise Networking Program is administered by the Department of Primary Industries and Energy. The program is an Agri-business program and its aim is to enhance the international competitiveness of Australia's agricultural and related industries. Priority for assistance will be given to projects that have a clear commercial focus, an ability to improve Australia's international competitiveness and which benefit a significant number of rural producers.

The Rural Enterprise Networking Program assists the creation and development of linkages between agribusiness operators. Up to \$100,000 is available for the costs of network formation, and funds are generally available on a 50 percent cost sharing basis. These funds can be used to contribute toward the cost of a search conference, obtaining advice on an appropriate network structure, and expenses related with engaging a network facilitator.

## **D2 Other Government Programs**

There is a raft of programs at both the state and federal levels that either directly or indirectly forge linkages between firms. Some programs have linkage formation as an explicit objective (such as the Partnerships for Development program and Asia Infrastructure Consortia program), while others indirectly lead to links

between participants (such as the R&D tax concession). In compiling this Appendix, the Bureau has particularly focused on the major programs in the former group.

Programs have been grouped according to their main theme: industry development (D2.1); exporting and investment promotion (D2.2); innovation, research and technology (D2.3); development links with Asia (D2.4); and finally state programs (D2.5).

## ***D2.1 Industry Development***

This section describes government programs designed to develop industries or to increase industry sales.

### ***i) Partnerships for Development and Fixed Term Arrangement***

The Partnerships for Development (PFD) and the Fixed Term Arrangement (FTA) programs were introduced in 1987 and 1991 respectively as part of the federal government's Information Industries Strategy.

Their objectives are to get multinational IT&T firms to do more in Australia, thereby linking local IT&T firms into world markets and enhancing their ability to develop new products and services. Under the programs the multinational IT&T firms (or partners) agree to undertake agreed levels of export, R&D and other activities, and provide their Australian subsidiaries and other local firms with access to their worldwide marketing networks and technological base. In exchange for these commitments, they get access to government markets for IT&T products and services. Governments also provide infrastructure support and promote the activities of partner firms.

There are currently 24 partner firms with PFD agreements (including companies such as Apple, IBM and Microsoft), and 25 companies have established FTAs (including companies such as Compaq, Sony and Kambrook).

The Bureau recently completed an evaluation of the PFD and FTA programs (BIE 1995). As an integral part of the evaluation, the Bureau surveyed local firms in the IT&T industry to assess the impact of the program. Of the 86 respondents, three-quarters had commercial relationships with partner firms. More generally, the Bureau identified over 300 linkages between partner firms and local firms and research institutions.

The program was found to have generally 'kick-started' relationships between local firms and partner companies that would not otherwise have formed. This is most often needed because multinational IT&T firms are generally hesitant to use local firms which have not demonstrated their capabilities – capabilities that often can not be developed without an initial association with a multinational company.

### ***ii) Marine Industry Development Program***

The Marine Industry Development Program targets the growth and sustainable development of Australia's marine-based industries. Priorities for the program include:

- development of strengthened links and cohesion between firms to improve innovation and competitiveness;
- facilitating industry development by encouraging pursuit of international markets;
- encouraging improved strategic planning and business development; and
- encouraging stronger links between marine research institutions.

Grant support is provided for eligible networking and export promotion activities.

All marine-related enterprises and marine-focused scientific, research and education institutions are eligible to apply for program assistance.

### *iii) Business Advice for Rural Areas*

The Business Advice for Rural Areas (BARA) scheme is administered by the Department of Primary Industries and Energy. Under the BARA scheme the Commonwealth provides grants to rural community groups to meet part of the costs of employing a business facilitator. The facilitator assists rural communities to diversify, stabilise and expand income opportunities by assisting local entrepreneurial capacity, fostering business talent and ideas and improving individual and rural economic diversification.

BARA is a collaborative program relying on three levels of cooperation and resources: federal government, states/NT government, and the local rural community.

## **D2.2 Australian Trade Commission**

The role of the Australian Trade Commission (Austrade) is to assist Australian exporters win business overseas and encourage inward investment. Austrade has 27 Business Units focusing on specific industries that form the link between opportunities and Australian firms.

These units currently foster 18 export networks. The networks disseminate information about trade opportunities and assist the formation of consortia to win export contracts. Austenergy, Austmine, and Agritech are three examples of the export networks established with the assistance of Austrade and are examined below.

### *i) Austenergy*

The Australian Energy Systems Exporters' Group Limited (Austenergy) was founded in July 1989 with the assistance of the Heavy Engineering Projects Corporation of Australia and Austrade. Austenergy brings together organisations with a declared intention to promote Australian industry and committed to profitable expansion for Australian exports to international energy and infrastructure developments. Austenergy aims to increase exports of equipment and services by 30 per cent per annum over a three year period.

Austenergy operates principally as an information network hub, facilitating cooperation, coordination and collaboration between its members within the energy systems industry by fostering the development of strong relationships. In addition it provides an industry input to government and its agencies.

Austenergy is not directly funded by the government. However, Austrade does fund member organisations for special missions such as trade shows, and Austenergy pays a fee to Austrade to maintain its secretariat.

### *ii) Austmine*

Australian Mining Equipment, Services and Supplies Limited (Austmine) was founded in 1988 with the support of Austrade. Austmine aims to enhance the international business performance of the Australian mining equipment, services and supplies industry. Austmine functions principally as an international marketing network of Australian companies involving:

- collaboration of industry and government to market mining goods and services into global mining and mineral processing operations.
- networking of companies via:

group marketing of complementary products  
shared commercial intelligence  
co-operative promotional intelligence  
consortia and team formation (for example Joint Action Groups)  
identification and capture of market opportunities.

Austrade's involvement in Austmine is similar to that for Austenergy.

### *iii) Agritec*

Agritec Australia Ltd is a network of companies owned by Australia's leading suppliers of agricultural goods and services. Agritec's overall goal is to bring together Australian companies and organisations in the rural sector in order to provide overseas clients with the appropriate package of technology, equipment and associated infrastructure to meet their specific needs. Like the other export networks, Agritec assists in forming Joint Action Groups as required. Alternatively opportunities identified by Agritec can be pursued by individual member companies if appropriate.

### *Joint Action Groups*

Once specific opportunities are identified, Joint Action Groups (JAGs) are formed to pursue them. Participants share both resources and costs in order to win contracts. Examples of JAGs include:

- *Film Services Australia*, attracted \$40 million in new film and television production and post-production processing work to Australia in 1993/1994 with an intensive program to Hollywood and Japanese producers to present Australian facilities and expertise;
- *Austemex* environmental management industry group – led by Clough Engineering and involving several Australian water authorities, engineering contractors and consultants – is bidding for two major sewage treatment projects in Bangkok, each worth US\$ 200 million;
- an Australian consortium coordinated by Austrade's Marine Business Unit won a \$200 million contract to build naval patrol boats for Turkey and has also launched its own defence export strategy for South East Asia;
- a JAG consisting of the Australian Coal Industry Research Laboratories, the University of NSW and three State TAFE networks is pursuing a contract in Vietnam for mining industry education and training;
- another JAG organised by the Aviation Unit focused on building up aviation training as a potential \$200 million annual money earner for Australia within five years.

### *The International Trade Enhancement Scheme*

The International Trade Enhancement Scheme (ITES) is also administered by Austrade and encourages the collaboration of small companies that is needed to successfully undertake export ventures. The scheme offers low cost loans to support export marketing activities and is directed towards applicants with a demonstrated track record in exporting. It also supports the efforts of industry associations and groups to promote international business.

ITES supports expenditure such as offshore set-up costs, travel, promotion, advertising and salaries. The recipient must show that a minimum cumulative net foreign exchange (NFE) earnings of \$10 million could be generated over the first five year period. ITES can contribute up to \$1 for every \$20 of prospective NFE

earnings. Financing is available up to \$5 million over three years. Funding is repayable as a loan or in the form of royalties.

### *The Asia Infrastructure Consortia Program*

The Asian Infrastructure Consortia Program is a federal government initiative administered jointly by Austrade and DIST with \$12.4 million funding over the period 1994-98.

AICP is designed to assist Australian consortia bidding for large infrastructure projects in Asia. Preference is given to consortia bidding for contracts worth over \$A100 million.

AICP aims to:

- assist Australian companies to bid for infrastructure projects in Asia, in particular projects large enough to require a consortium approach by Australian companies;
- encourage new consortia of leading Australian contractors, consultants and suppliers and small and medium sized enterprises to pursue projects in the Asian infrastructure market;
- improve the collaboration of Australian government assistance to such consortia; and
- increase Ministerial and diplomatic support for such consortia.

The primary targets of the AICP are economic development projects undertaken for the host government or its agencies, including schools, hospitals, urban development, water supply/treatment, and energy, transport and communications infrastructure. Major resource or industrial projects of special economic significance undertaken for the private sector may also be considered.

### *The Investment Promotion and Facilitation Program*

The Investment Promotion and Facilitation Program (IPFP) promotes Australia as an attractive investment location and provides facilitation and 'match-making' services for potential overseas investors, including funding for pre-feasibility studies.

The program was originally introduced in 1987 and initially concentrated on generic promotion of Australia as an investment location. It now targets specific firms with potential for direct overseas investment, joint venture arrangements, technology transfer, or improved market access arrangements.

The program is jointly administered by Austrade and DIST. The Bureau is currently conducting an evaluation of the program due to be completed in August 1995.

## **D2.3 Innovation, Research and Technology**

R&D and innovation are supported in many ways. While inter-firm cooperation is not their key objective, linkages are a frequent by-product of several programs in this area.

### *i) Intelligent Manufacturing Systems*

In January 1995, Australia joined Canada, Japan, Europe and USA in the Intelligent Manufacturing Systems Program (IMS). The program, administered by AusIndustry, provides a framework for cooperation across national boundaries to develop greater efficiency and sophistication in manufacturing operations. It offers opportunities for Australian firms and research organisations to gain access to a wider range of technology partners and clients than most could expect to achieve through their own efforts.

Funding will be available on a competitive basis to Australian firms and research organisations in the IMS program. To be eligible for consideration, collaborative projects must: meet the criteria under the IMS Terms of Reference; demonstrate potential for the application of outcomes in Australian industry; show that an Australian organisation will benefit in some other identifiable way.

### *ii) International Science and Technology Program*

The International Science and Technology Program (ISTP) promotes collaboration between research teams in Australia and overseas on projects of significance to Australian industry and national research priorities.

Under the Bilateral S&R Collaboration Program, grants are available to support the costs of overseas travel and accommodation for Australian scientists who wish to work with their overseas counterparts for periods from a few weeks to a few months. Any science or technology other than social science may be supported. Proposals are judged by a peer review process on the basis of excellence of the research and benefit to Australia. Small-scale targeted bilateral workshops can also be supported.

### *iii) French Australian Industrial Research Program*

The FAIR program commenced in 1991 and currently has nine projects receiving funding. It is coordinated by DIST and aims to promote cooperation between Australian and French entities which are interested in developing strategic alliances based on joint development and application of new technology.

To be eligible for assistance under the FAIR program joint ventures must: consist of at least one private participant; involve industrial research; and have a commercial outcome within 3 years.

The French Australian Industrial Research Program provides assistance to collaborators in three main ways:

*Project funding sponsorship* – Specific industrial research projects which meet the FAIR criteria are recommended to the relevant funding agencies in each country as deserving of support.

*Brokerage* – Support is given to researchers or companies in one country to locate a prospective partner or partners in the other country, for the purpose of collaboration in industrial research, technology transfer and commercial developments.

*Workshops* – FAIR sponsors one workshop each year, in a selected field of technology to assist researchers, industrialists, financiers and end-users from each country to identify and advance mutually beneficial commercial objectives.

### *iv) 150% Research and Development Tax Concession*

The aim of the 150% Tax Concession is to encourage research and development in Australian industry. The Concession allows claimants to deduct 150% of eligible expenditure incurred on Research and Development (R&D) activities when lodging their corporate tax return.

R&D activities need not be undertaken directly by the firm receiving the concession, and this aspect of the program encourages the formation of important linkages between firms. The Bureau recently conducted an evaluation of the scheme (BIE 1993a) and found numerous cases where important R&D linkages had been established via the program.

## D2.4 AusAID

AusAID (formerly the Australian International Development Assistance Bureau or AIDAB) has two programs that develop linkages between Australian firms and their counterparts in Asia. These programs are the AAECF Linkages Stream and the Private Sector Linkages Program.

### *i) AAECF Linkages Stream*

The AAECF<sup>1</sup> commenced in July 1994 and is to run for 4 years. It is funded by the federal government's overseas aid program to strengthen cooperation between Australia and member countries of the Association of South East Asian Nations (ASEAN). The Linkages Stream provides part-funding for projects in a range of 'priority' sectors<sup>2</sup> that are likely to enhance trade and investment links between Australia and ASEAN countries.

Projects must involve an Australian entity (private businesses, research or academic institutions, industry and professional associations and government business enterprises and agencies) and partners from at least two ASEAN countries. Eligible activities include:

- cooperative and industry supported collaborative or adaptive research that has trade potential;
- technical and investment feasibility studies which aim to encourage investment flows and the facilitation of joint ventures;
- demonstration, adaptation and supply of appropriate ASEAN and Australian technology;
- familiarisation visits and short term training, conferences, workshops and seminars with a clear plan to foster commercial links; and
- mutually beneficial trade and investment promotion activities.

The program will contribute up to 60 percent of eligible project costs, with a minimum contribution of \$25,000 up to \$250,000 depending on the nature and duration of the project.

### *ii) Private Sector Linkages Program*

This AusAID program supports the establishment or expansion of long-term links between Australian market-oriented enterprises (private businesses and government business enterprises) and counterpart enterprises in selected developing countries (China, India, Indonesia, Laos, Malaysia, Pakistan, Philippines, Thailand and Vietnam).

Development activities that may be considered for funding support include:

- short-term training and secondments for representatives from market-orientated enterprises in developing countries;
- pre-feasibility, feasibility studies and expert advice where there is a high probability of subsequent supply of Australian goods or services;
- pre-investment studies for joint ventures;
- demonstration, adaptation and supply of Australian technology or equipment; and
- short-term training and feasibility studies.

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<sup>1</sup> ASEAN-Australia Economic Cooperation Program.

<sup>2</sup> Including environmental management, transport, biotechnology, IT&T, and agriculture/agro-based industries.

Eligible applicants include Australian businesses, industry associations and government business enterprises.

Contributions under the PSLP range from \$25,000 to \$250,000, and successful proposals will be provided up to a maximum of 50 per cent of total eligible activity costs incurred by the Australian applicant.

### ***D2.5 State Programs***

State governments play an important role in assisting the formation of linkages between firms. State governments, particularly those in the smaller states, tend to have fewer formal industry programs, (there is little point in a state government duplicating a Federal program).

Where formal programs do exist, they generally target SMEs and often focus on enterprise improvement or regional issues (such as employment). Nevertheless, there are several programs at the state level that aim to develop linkages between firms. Box D1 provides some examples.

### **Box D1 Examples of State government programs relating to inter-firm linkages**

#### ***Victoria's Strategic Partnering Service***

The Strategic Partnering Service is administered by the Victorian Department of Business and Employment. The aim of the program is to assist Victorian companies to become more internationally competitive by finding them an overseas partner to expand their business. Companies are required to develop an individual company profile in conjunction with the Office of Trade and Investment containing relevant business information and the desired partnering opportunity they seek.

#### ***Queensland's Export Advice and Inquiry Service***

The Export Advice and Inquiry Service is administered by the Queensland Department of the Premier, Economic and Trade Development. The Trade and Investment development Division (TIDD), in collaboration with other government agencies, provides assistance and advice to businesses on export opportunities and overseas markets.

The TIDD acts a facilitator and networker for businesses with proven export capability by providing referrals to specialist agencies, market advice, market information and introductions, complementing Austrade activities.

#### ***NSW's Co-operative Development Fund***

The Co-operative Development Fund is administered by the NSW Registry of Cooperatives, part of the Department of Local Government and Cooperatives. The Fund provides assistance with the development and growth of networks and has been created to help co-operatives to assess new market opportunities and develop improved business practises.

Funds are available to both existing Co-operatives and new enterprises wishing to ascertain the feasibility of incorporating a co-operative business.

Assistance is available by way of a subsidy of up to 50 per cent of the cost of engaging a mutually-agreed specialist or consultancy service for advice in fields such as: financial planning, feasibility studies, business planning, market research, production techniques reviews, product development studies, quality assurance programmes and training of key personnel.

#### ***Queensland's Manufacturing Investment Register***

The Department of Business, Industry and Regional Development maintains a register of Queensland manufacturers seeking specific and general project investment (such as capital, joint venture or equity partners, technology, or market development). The Register is updated and republished every six months. Copies are distributed throughout Australia and internationally to interested organisations such as major investment companies, financial institutions and Australian embassies.

The role of state government in providing *information* is a crucial one in the formation of linkages between firms. State industry departments (and their equivalents) work closely with industry, and are very much 'hands-on' in their approach. Frequent contact with business people and their operations provides the opportunity to collect a great deal of information about a company's strengths, constraints and opportunities.

With a detailed knowledge of an industry and the local firms within it, state governments act as conduits for information flows between firms and are in a unique position to informally assist in the formation of linkages between firms, without using formally structured programs. For example, an industry department may alert firms to an upcoming opportunity that requires them to work together, or it might suggest possible partners to a firm that requires skills and expertise not contained in-house.

# Appendix E

## The Business Networks Program

The Business Networks Program (BNP) was one of a number of initiatives announced in the federal government's *Working Nation* statement in 1994. It is a four year program and will assist groups of at least three businesses to undertake joint business activities in order to increase their competitiveness or capabilities.

The program is funded by the federal government through AusIndustry, and is being implemented in conjunction with a range of industry associations, federal and state government agencies, local government, regional development authorities and private consultants.

The federal government has allocated \$38 million to support the creation of networks, and the bulk of this has been allocated to the Business Networks program. The broad aim is to create over a thousand networks in the four years the program is to be run.

### E1 Overview of the program

The basis of the Business Networks Program is a three-stage network formation process, in which network brokers facilitate co-operation among the participants.

In Stage 1, the Facilitation and Feasibility Report Stage, the broker assists in establishing the feasibility of the network's business idea. This is followed by Stage 2, the Business Planning Stage in which a business plan is prepared and an agreement between the participants is finalised. The broker may also have a role in Stage 3, the Implementation of the Business Plan. Each of these stages are explained in greater detail in Section E2.

Broadly, the Business Networks Program pays most costs associated with Stage 1 and half the costs associated with Stages 2 and 3, within approved limits.

To be eligible for the program participants must:

- be in a sound financial position;
- be independent and unable to exert substantial control over each other;
- not be receiving financial support for the networking proposal from other government agencies; and
- appoint senior staff to the networking project that have authority to commit the participants they represent.

In addition, the networking proposal must:

- involve at least three participants, two of which must be SMEs;
- produce an internationally traded good or service; and

- involve cooperation in an area of strategic business activity to improve participants' competitiveness, including areas such as production, product development, marketing and sales, after sales service, distribution or purchasing.

One of the key features of the program is the role of the broker, indeed, support for Stages 1 and 2 is not available unless an accredited broker is used. As a part of the program, 23 full time brokers have been appointed to 'host organisations' through out Australia. Firms may either use these facilitators or other private sector consultants, provided that they have been accredited by the program<sup>1</sup>.

## **E2 Program details**

### ***E2.1 Stage 1 Facilitation and preparation of a feasibility report***

Stage 1 involves the participants working with a network broker to assess the basic feasibility of the network idea.

This Feasibility Stage involves the preparation of a Feasibility Report together with some preliminary consideration of the legal issues regarding the operation of the network, an initial outline of an agreement between the participants, and proposed arrangements for proceeding to Stage 2.

The Feasibility Stage must be completed and the Feasibility Report produced within six months of the participants accepting an offer to enter the program.

#### ***E2.1.1 The network broker's role in the feasibility stage***

The Network Broker's role in Stage 1 is to facilitate the participants' discussions regarding the objectives of the network proposal and how the network might function. The Network Broker will be able to assist in preparing participants for meetings, taking minutes, and facilitating meetings. The Broker will also be able to undertake desk research to obtain basic market data and may provide technical input in preparing the Feasibility Report.

#### ***E2.1.2 Assessment leading to admission to Stage 1***

If the basic eligibility criteria are met, admission to Stage 1 of the Program is based on the following considerations:

- The business logic of the proposal: the application should make good business sense and it should be evident that it will improve the competitiveness and ultimately the profitability of the network participants.
- The number of participants: experience has shown that networks with a smaller number of members are more likely to succeed and are easier to operate.

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<sup>1</sup> The program is structured so that participants receive the same package of support regardless of which type of broker is used. The main difference is that if a private consultant is used, their fees are fully or partly reimbursed, whereas if broker attached to a 'Host Organisation' is used an equivalent amount has already been funded directly via the program. These differences will become apparent in the discussion of the funding arrangements for each stage of the program.

- The size of the individual businesses in the network: the primary target group is businesses with at least 15 employees. However factors such as the sector the businesses are in and their length of establishment will also be considered.
- The commitment of the participants to the proposal.
- The level of support the participants have already received from Commonwealth and/or state agencies.
- The potential demonstration effect of the network including geographic, sectoral and functional spread.
- A proposal from the accredited network broker nominated by the participants outlining the process to complete the facilitation process and produce the Feasibility Report. This must include an estimate of expenditure on eligible travel and, in the case where the network employs a consultant broker, the budget which is sought to complete Stage 1.

### *E2.1.3 Contents of the feasibility report*

The Feasibility Report must contain:

- (1) an assessment and analysis of:
  - the network's business objectives;
  - market demand for the network's proposed product or service;
  - financial capacity of the participants to be involved in the network; and
  - the decision making structures available to the network.
- (2) statements dealing with:
  - the form and scope of the intended co-operation between the participants, including what each participant will contribute to and receive from the network. This is to be in the form of an initial and non-binding draft agreement.
  - whether the participants wish to proceed to Stage 2. If they do, information about how it is intended to proceed should be provided, including an outline of the intended process. This would include a proposed budget including estimates of costs associated with legal advice and any other specialist input or other necessary inputs.

### *E2.1.4 Stage 1 support using a consultant network broker*

Where a consultant network broker is nominated and the application is approved, the participants will be notified by the State Manager of the maximum level of reimbursement available. In Stage 1 reimbursement is only available for expenditure on the service provided by the broker. The participants contract with the network broker and reimbursement is available once the Feasibility Report is completed and expenditure records are received by the State Manager.

Reimbursement of up to \$15,000 may be made for the broker's services in Stage 1. Typically the approved level of reimbursement will be less than this maximum.

If there are additional services, such as market research required to complete the Feasibility Report, it is the participants' responsibility to obtain these directly at their own expense.

### ***E2.1.5 Stage 1 support using a host organisation's network broker***

The State Manager will notify the broker whether their application has been successful. The participants and the Host Organisation will agree on a timeline for the completion of the Feasibility Report.

Again, if there are additional services, such as market research required to complete the Feasibility Report, it is the participants' responsibility to obtain these directly at their own expense.

## ***E2.2 Stage 2 The business planning stage***

The Business Planning Stage involves the preparation of a formal Business Plan to which the participants are committed and against which progress can be measured in implementing the objectives of the network. There should also be a resolution of legal issues and the conclusion of an agreement on how the network will operate.

The Business Planning Stage must be completed and the Business Plan produced within six months of the participants accepting an offer to join the program.

### ***E2.2.1 The network broker's role in the business planning stage***

The broker's role in the Business Planning Stage is to facilitate meetings and provide technical input in order to prepare a Business Plan and to assist the participants to arrive at a formal agreement on how the network will function.

Unless the broker is a qualified legal practitioner, the network will need to obtain legal advice during this stage of the program.

### ***E2.2.2 Assessment leading to admission to Stage 2***

If the Feasibility Report is positive and the participants wish to proceed further, approval to proceed to Stage 2 is sought through the State Manager.

For admission to Stage 2 of the Program, the following will be taken into account:

- the level of funding sought (this applies to the consultant broker);
- the content of the Feasibility Report; and
- the level of participant support and enthusiasm to proceed to Stage 2.

### ***E2.2.3 Required outputs of the business planning stage***

At the conclusion of Stage 2, a Business Plan must be produced. For the purposes of this program the Business Plan must include all the information specified in this section.

The Business Plan will contain:

- a detailed assessment and analysis of the network's business objectives;
- detailed financial projections for the network activity;
- a situation and market analysis for the business idea;
- a time line setting out milestones for the implementation of the Business Plan;

- at minimum, a statement indicating the anticipated type of formal legal business structure for the network, together with a statement of each participant's role in the initial and on-going financing, operation, ownership and management of that structure;
- the potential application of the *Trade Practices Act 1974* to the activities of the network; and
- a statement indicating whether the participants wish to proceed to Stage 3, and, if so, a proposed budget for the initial year of operation if this is not contained in the financial projections for the network activity.

#### ***E2.2.4 Stage 2 support using a consultant network broker***

The State Manager will notify the participants whether their application to proceed to Stage 2 has been successful, and, if so, the 'approved budget' for this stage. The approved budget will set out the available levels of reimbursement for expenditure on the broker's fee, the cost of legal advice and any other specialist consultant input. Reimbursement of up to one-half of actual expenditure on these items may be made on satisfactory completion of the Business Plan and receipt of the expenditure records.

Reimbursement of up to \$30,000 may be made for Stage 2. Typically, the approved level of reimbursement will be less than this maximum.

#### ***E2.2.5 Stage 2 support using a host organisation's network broker***

The State Manager will notify the broker whether their application has been successful. If the participants are admitted to Stage 2, the Host Organisation and the participants agree a timeline for the completion of a Business Plan.

There is no charge for the broker's service at this stage, but the participants must meet the cost of legal advice and any other additional services such as market research required to complete the Business Plan. It is the participants' responsibility to obtain these directly at their own expense.

#### ***E2.2.6 Direct admission to Stage 2***

Networks may be accepted directly into Stage 2 of the Business Networks Program without being accepted into Stage 1 if they meet the basic eligibility criteria and produce a Feasibility Report equivalent to that outlined above. An application will be required, and this will be assessed as outlined above. The participants will be required to use a broker accredited to the program for Stage 2.

Costs associated with the completion of the Feasibility Report in these cases will not be reimbursed.

### ***E.2.3 Stage 3 Implementing the business plan***

Once the Business Planning Stage is completed, participants can apply to proceed to Stage 3. This stage involves the implementation of the Business Plan. This may involve a range of activities such as employing a network manager, undertaking joint purchasing or rationalising production.

#### ***E2.3.1 Assessment leading to admission to Stage 3***

Once the Business Planning Stage is complete, the participants may apply for admission to Stage 3 of the Program. The following criteria will be taken into account:

- the network's financial requirements during its first year of operation;

- the amount of support already provided by the Program and the level of financial input the participants have made in Stages 1 and 2;
- potential availability of assistance from other agencies; and
- the demonstration effect that the network will provide.

### *E2.3.2 Stage 3 support*

Stage 3 support is in the form of reimbursement of operational costs incurred during the network's first year. These costs are reimbursed up to the limit in the approved budget, in two payments. The first reimbursement is payable on receipt of expenditure records six months after the participants receive approval to proceed to Stage 3. The second reimbursement is payable on receipt of expenditure records twelve months after the participants receive approval to proceed to Stage 3.

Reimbursement of up to \$60,000 may be made for Stage 3. Typically reimbursements will be for less than the maximum amount and the State Manager will notify the participants of the actual amount to be offered.

### *E2.3.3 The network broker's role in Stage 3*

The network broker's task is to assist in a smooth transition to the operation of the network's permanent management and operational structure without the continuing involvement of the network broker.

If a consultant broker has been used, the approved budget may make available a limited reimbursement for the broker's fees in performing this task.

Where the services of a Host Organisation's broker have been used, the cost of the broker's time in Stage 3, if any, will be deducted from the level of reimbursement available in the approved budget in order to ensure equity between private consultant and Host Organisation brokers.

In their application for admission to Stage 3, the participants may propose engaging a consultant broker to provide network management services. Expenditure on these services may be included in the approved budget. However participants should be aware that this arrangement may present a conflict of interest to the broker.

### *E2.3.4 Direct admission to Stage 3*

Networks may be accepted directly into Stage 3 of the Business Networks Program without being accepted into Stages 1 and/or 2 if they meet the basic eligibility and produce a Business Plan equivalent to that outlined above. An application will be required and this will be assessed as outlined

Costs associated with the completion of the Business Plan in these cases will not be reimbursed.

In summary, the Business Networks Program is the Federal Government's major networking program. The aim of the program is to improve the capabilities and competitiveness of Australian firms, particularly SMEs. It is open to all industries, provided the networking projects are geared towards internationally traded goods and services.



## Appendix F

# Taxonomy of government-assisted networks

As noted in Chapter 13, the Federal Government has a number of networking programs, the most extensive of which is the Business Networks Program announced in its 1994 White Paper *Working Nation*. Under this program \$25 million is to be spent on the formation of over 1000 networks in the coming four years. Business networks comprise three or more firms cooperating in an area of strategic business activity to improve international competitiveness.

But what of government-sponsored networks today?

As part of this study, the Bureau has undertaken a ‘stocktake’ of the networks that the government has assisted and are currently either in formation or operational<sup>1</sup>. This information will prove useful in assessing the impact of the Business Networks Program and is also of public interest – it is the first time it has been collated and published.

The bulk of the networks identified for analysis in this chapter were funded under a pilot network program, the precursor to the Business Networks Program. We contacted the existing network coordinators in each state and asked for details about their networks. In some cases coordinators assisted in forming networks with funding from other programs such as FINA or OLM<sup>2</sup>, and they provided information on these also.

We were able to identify a total of 144 networks Australia wide. The data collected from state coordinators, mainly from the National Industry Extension Scheme (NIES), provides information on the age, stage of development, focus and structure of each group and these are discussed in detail below<sup>3</sup>.

### F.1 Number of networks

Figure F.1 shows that over half of all the identified networks are involved in manufacturing – 45 per cent are solely in the manufacturing sector, while another 11 per cent have both manufacturing and service sector aspects. Six of the networks are integrated across the primary and manufacturing sectors.

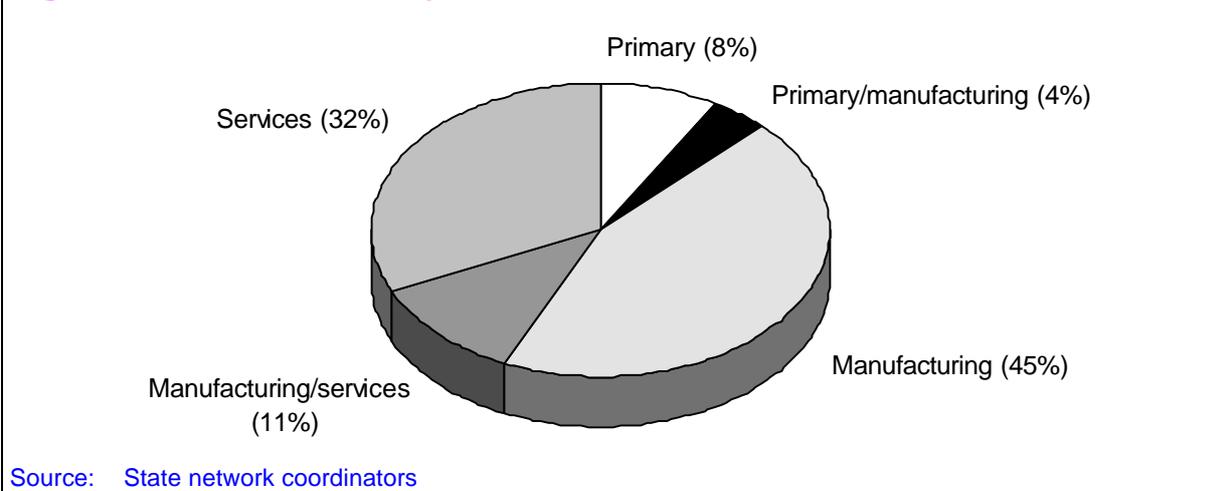
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<sup>1</sup> The information in this appendix is the most recent available and was correct at December 1994.

<sup>2</sup> FINA is the Food Industries Networking for Asia Export program and OLMA is the Office for Labour Market Assistance.

<sup>3</sup> We also collected data on the nature of government involvement (over and above simple funding) .

**Figure F.1 Networks by sector**



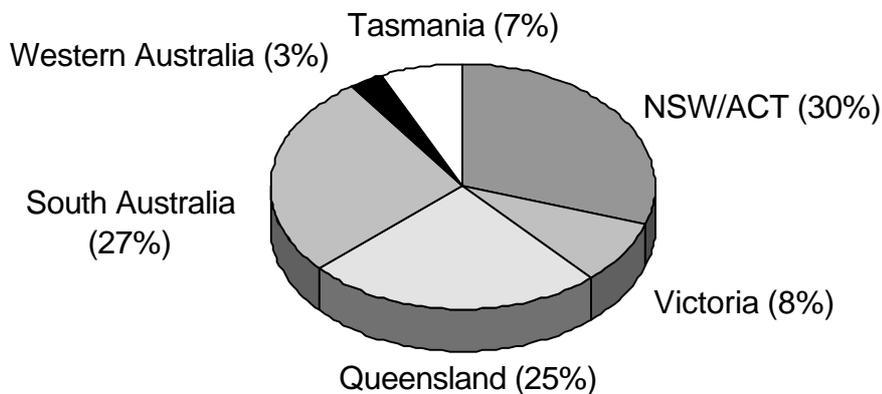
Around one-third of the networks are concentrated in the services sector, while a total of 62 (or 43 per cent) have some involvement with the services sector. More information on the products and services at the centre of networks can be found in Section 10.4

A related issue is the structure of networks along the value chain. Around 80 per cent of the networks identified in this study are horizontal in nature. Typically these networks are groupings of firms producing related goods or services working together to increase exports or for import replacement.

The remaining 20 per cent are vertical in nature, involving members along the value chain. Networks which involve members from both manufacturing and services sectors are clear examples of this type of network. An example of this type of network is AMASE which is a group aiming to supply turnkey hospital projects overseas. This group includes architects and project managers, manufacturers of hospital equipment, and firms specialising in training hospital workers. The focus of these groups are generally similar to that of horizontal networks, that is, increased exports or import replacement.

A break-up of the networks by state shows that NSW/ACT has the greatest number of networks, accounting for 30 per cent of the total of 144 (Figure F.2). The number of networks in Victoria is perhaps surprising given its relatively large business base. Of the 144 networks identified in this study, only twelve are in Victoria.

In contrast, South Australia with 39 networks has the highest number relative to its industrial base (see Figure F.2) and is the second largest networking state.

**Figure F.2 Networks by state**

Source: State network coordinators

Queensland has 36 networks, representing one-quarter of the total, while the Bureau could only identify four networks in Western Australia.

To put the number of networks in each state in context, it is interesting to examine how the figures compare when they are adjusted by the size of the industrial base in each state. Table F.1 shows the number of firms in each state per network. South Australia has the highest concentration of networks, with one for every 1700 firms. Tasmania also has a high number of networks relatively to the number of firms in the state, with one per 2000 firms. At the other end of the spectrum is Western Australia and Victoria with one network per 19000 and 17000 firms respectively.

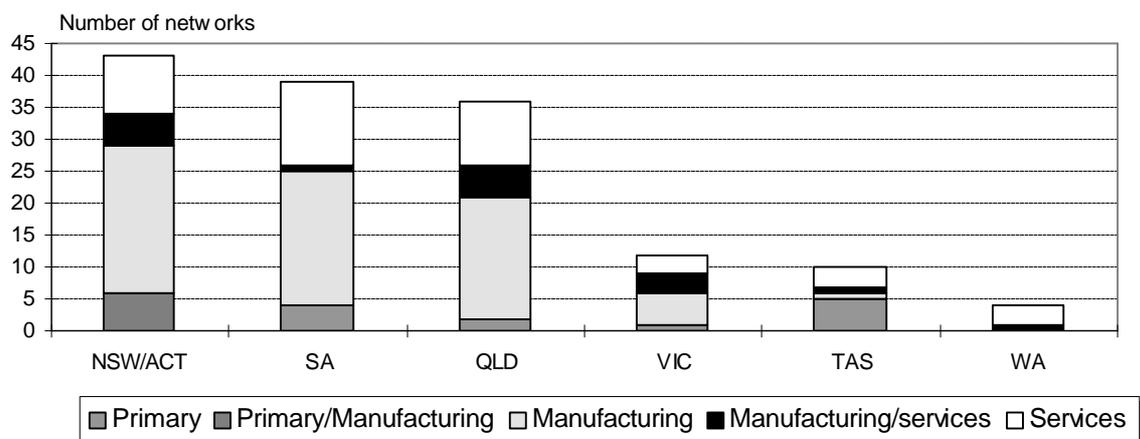
**Table F.1 Number of firms per network**

State	Number of Networks	Number of employing firms ('000)	Number of firms per network ('000)
WA	4	76.9	19.2
VIC	12	205.7	17.1
NSW/ACT	43	272.5	6.3
QLD	36	137.9	3.8
TAS	10	20	2.0
SA	39	65.4	1.7

Source: State network coordinators and DIST (1994c) p.6

Finally, Figure F.3 shows the distribution of the networks in each state by sector. One notable feature is that all the primary/manufacturing networks identified in the course of this study are located in NSW/ACT. Five of these networks are involved in food/wine and one revolves around health products.

**Figure F.3 Number of networks by state and sector**



Source: State network coordinators

Another point to note is the proportion of service networks in South Australia, accounting for one-third of that state's total number of networks (compared to an average of 28 per cent across Australia). Finally, half of the networks in Tasmania are in the primary sector. This largely reflects the importance of the primary sector in the Tasmanian economy. These networks are in several areas, including seafood, horticulture and plant propagation.

## F.2 Network development

To assist in examining the development of networks, we have adopted the three stages of network development used in the Business Networks Program. The three stages are:

**Stage A:** Initial facilitation and feasibility report;

**Stage B:** The business planning stage in which a business plan is prepared and agreement between the participants is finalised;

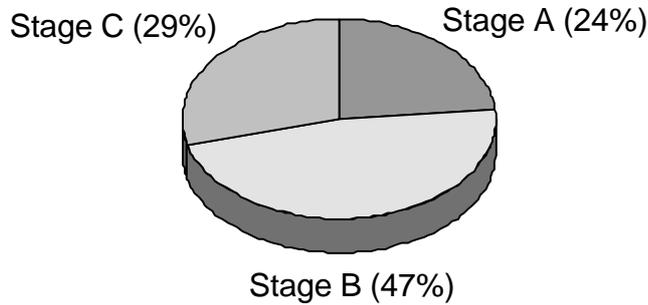
**Stage C:** The implementation of the business plan (that is, the network is up and running).

More information on these stages can be found in Appendix E.

Figure F.4 shows the stage of development of networks in Australia. Close to half of the networks are in Stage B – they are not yet up and running, but have progressed past the feasibility stage and are developing a business plan.

Around 30 per cent of the networks have progressed passed this stage and are actively working towards the goals they have set for themselves. These networks are typically separate legal entities from the participant firms and business conducted via the network is usually viewed by members as distinct from their 'normal' business operations.

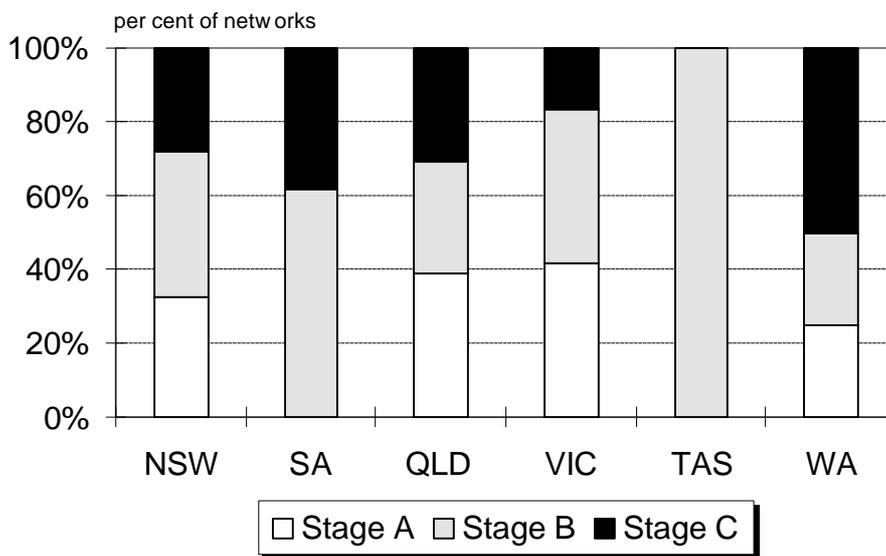
**Figure F.4 Percentage of networks at each stage of development**



Source: State network coordinators

Examining development on a state by state basis reveals that none of the networks in South Australia are in Stage A (Figure F.5). South Australia also has the highest proportion of networks that are up and running (ignoring the WA figures as this is only for four networks).

**Figure F.5 Number of networks at each stage of development**

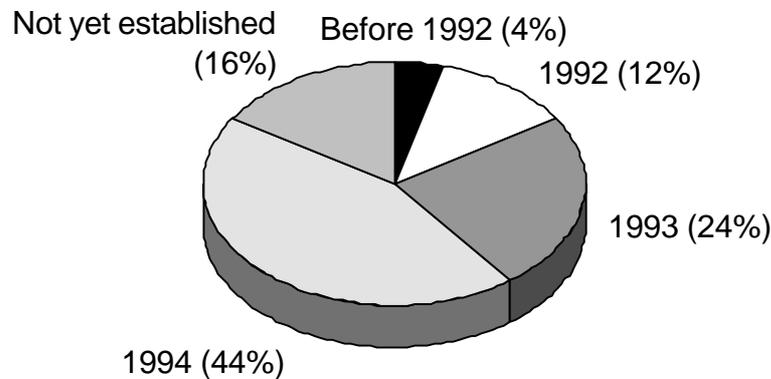


Source: State network coordinators

Interestingly, every one of the 10 networks identified in Tasmania are in Stage B of their development. Some of these networks are more advanced than others, with a few almost at Stage C.

Of course, the stage of development a network is in largely reflects the length of time the members have been working together. Figure F.6 shows the age distribution of the networks. The networks in the ‘not yet established’ category are ‘on the drawing board’ but yet to formally complete the feasibility stage.

**Figure F.6 Networks by age**



Source: State network coordinators

As noted above, the bulk of the networks covered by this study were formed under the networking pilot program run by NIES. This program was established in 1991 and the small number of networks established prior to 1992 reflects this.

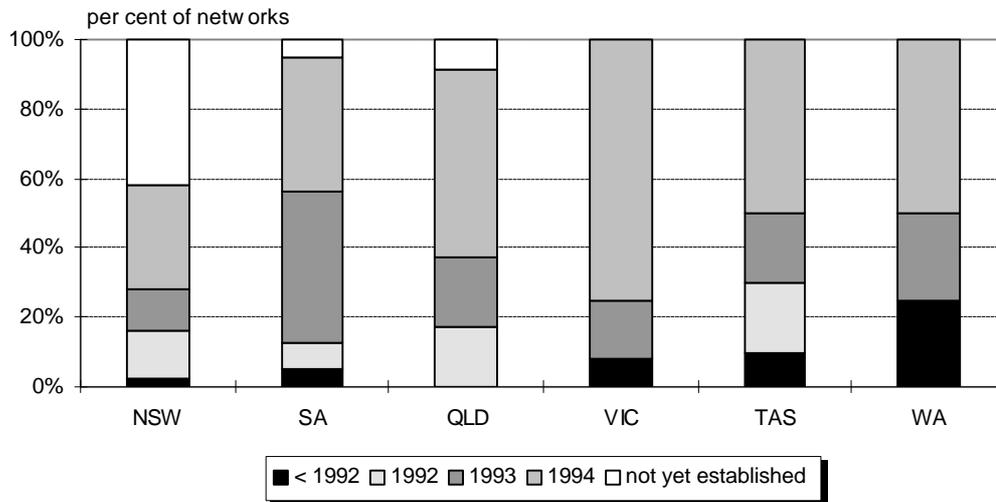
The large number of relatively new networks (those established in 1994) is mostly due to the increases in funding for the pilot program. In 1994 funding for the program was almost tripled, from half a million dollars to \$1.3 million. With more money available, more networks could be established.

A final point to keep in mind is that these data relate only to those networks that are currently in formation or up and running. They do not show the number of networks which have made it to Stages A, B or C and since failed. Additionally, there may be networks that originally started under government programs but then become self supporting and are no longer documented by government.

On a state basis, three-quarters of Victoria's twelve networks were established in 1994 while one was established prior to 1992 (Figure F.7). Government-assisted networking in Victoria is a relatively new phenomenon compared to the other states.

The bulk of the very newest networks are located in NSW/ACT which has 18 of the 23 networks yet to be established. This represents a little over 40 per cent of all networks located in this region.

**Figure F.7 Networks by age and state**

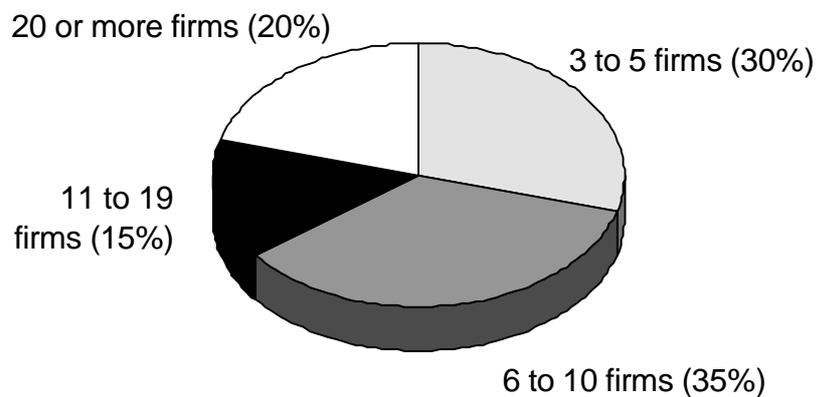


Source: State network coordinators

### F.3 Network size

The total number of firms involved in the 144 networks is around one and a half thousand – an average of around ten firms per network. Figure F.8 shows that, in fact, 65 per cent of networks have less than ten firms. At the other end of the spectrum, one in five networks have 20 or more participants. Most networks in this group have between 20 and 40 members, although a few have more than 60. These are very large by normal business networking standards and are perhaps more akin to industry associations or regional organisations than networks.

**Figure F.8 Networks by number of members<sup>a</sup>**



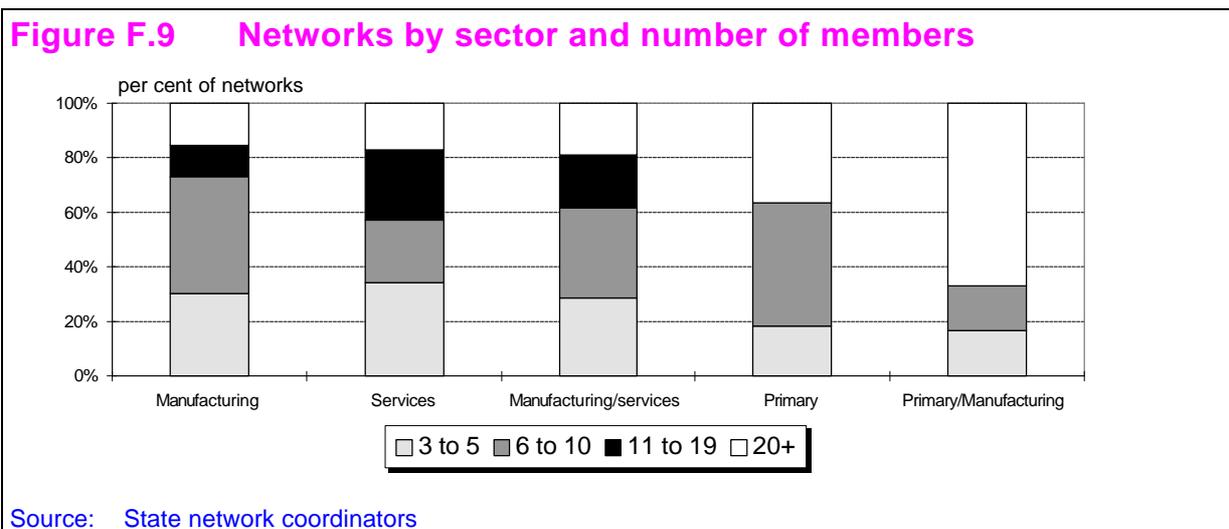
Note: (a) Information on member numbers was not available for 12 networks and thus the total number of networks shown is 132 rather than 144.

Source: State network coordinators

The fact that the majority of networks have ten or less members partly reflects the belief held by network program managers that smaller networks tend to work better. For example, the program guidelines for the Business Networks Program state:

Experience has shown that networks with a smaller number of members are more likely to succeed and are easier to operate.

Figure F.9 examines the size distribution of networks by sector. The networks involving the primary sector are notable for the number of very large networks. Eight of the 27 networks with twenty or more members are in the primary or primary/manufacturing sector.

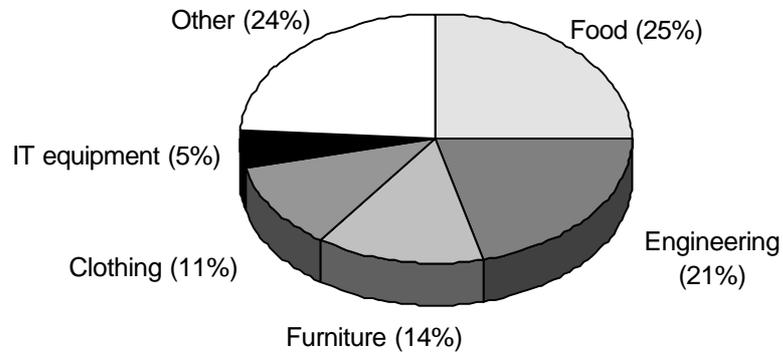


The other notable feature of Figure F.9 is the relatively large number of networks with ten or less members in the manufacturing sector. Around three-quarters of the networks in the manufacturing sector have ten or fewer members, which is ten percentage points higher than the all sectors average.

## F.4 Network products and services

As shown in Section F.1, approximately half of all networks are involved in the manufacturing sector. Figure F.10 provides a more detailed description of what is produced (or planned to be produced in the case of networks not yet operational) in the manufacturing sector. Food, wine and agriculture account for 25 per cent of all networks in Australia.

One in five networks in the manufacturing sector are in engineering, while one in seven produce furniture. The ‘Other’ group includes fifteen networks producing separate and distinct products, including: auto, electronics, pharmaceuticals, agricultural machinery, boat building, building and construction, medical equipment, robotics and machine tools, timber products and toys.

**Figure F.10 Networks in the manufacturing sector, by product**

Source: State network coordinators

Networks in the services sector are spread widely across a range of services. By far the biggest category, however, is tourism. Ten of the 46 service networks were focused on tourism or related areas. Other examples of networks in the services sector included those focusing on product design, architecture, entertainment, education and training, and multimedia.



## Appendix G

# A new way of delivering financial assistance

Just because the government says that cooperation is good does not mean that firms will take their word for it. Talk is cheap, and so may lack credibility. How can government signal that cooperation is really a worthwhile business strategy?

Governments do this sometimes by giving out grants in so-called demonstration programs. They foot the bill because the potential business user is not convinced of the benefits. Unfortunately, many demonstration programs do not induce much new activity but simply provide transfers to firms that were going to undertake the activity anyway. However, we think there is scope for a new economical and effective scheme that demonstrates the benefits of cooperation.

The new program would be a ‘contingent reimbursement’ scheme – it would provide insurance for firms wishing to develop a ‘cooperation plan’ or a ‘best practice cooperative arrangement’:

- The government would produce a list of certified, high quality private sector consultants. These could help firms with their cooperation plans or best practice arrangements.
- Any firm could use this consultant database to engage a consultant adviser.
- The consultant would be responsible for drawing up a detailed cooperation strategy in conjunction with the firms involved.
- The arrangement would not necessarily have to take the form of a formal contract, depending on the circumstances and nature of the business cooperation.
- Firms would pay the consultant’s fees. However for a modest processing fee, firms would be able to request the government to underwrite failure of the resulting cooperation strategy. Thus, if after say 12 months the firm is unhappy with the results of its cooperation plan or best practice arrangement, it could claim a refund of all (or maybe part) of its facilitator fees from the government. That, in itself, is only a partial refund – the firm incurs other substantial costs in management time.

Such a program would have a number of built in safeguards. First, the government would only keep consultant advisers on the accredited list if they performed well – too many failures and you are off the list. This would discipline the consultants to carefully select firms suitable for cooperation and maximise the chances of the program’s success.<sup>1</sup> Second, the government would drop the program itself if it had too many failures. This would provide a clear signal to firms participating in the program that if they lie this would be at the expense of other firms.

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<sup>1</sup> A possible variant might allow consultants to have an initial meeting with the firm, and then choose to drop out, without any penalty points against their reputation. This would stop cooperation strategies going ahead which the consultants think are likely to fail.

The program would also have the advantage of alleviating the usual problems associated with inducement. Most programs provide assistance to activities that were going to happen anyway. But under this arrangement, firms that were going to enter one-to-one cooperative arrangements anyway would face little incentive to enter the program. Such firms clearly expect the arrangement to succeed (else they wouldn't undertake it autonomously). Unless they are willing to lie they therefore would not expect to claim reimbursement. They also face an up front fee for joining the program. The more likely you think cooperation will succeed, the less willing you will be to pay such a fee.

The only real risk of such a program would be if firms consistently misrepresented the benefits and costs of their cooperative arrangements – saying they had failed when they had really succeeded. In this case they hurt other prospective users of the program and the consultants (who will be trying their best to make things work and have firms tell the truth).

However, it is also possible that firms may resist the program if there are significant transaction costs under the scheme (such as legal and administrative costs) compared with the actual set up costs of the arrangements. Much will depend upon the complexity of the arrangement and its degree of formality.

These additional costs may be a particular disincentive for smaller firms. The new program could address this issue in two ways:

- The government could accept that many small firms will not be attracted to the program because of the relatively high transaction costs and target the program more towards the medium-sized firms.
- Alternatively, the program could try and reach smaller firms by funding a satellite private sector body which would act as the insurer. Such a private sector body could economise on the administrative and legal costs. Why is this possible? Governments tend to have 'gold plated' contracts which are costly for themselves and others. The private sector is able to choose better risk-management procedures, because the fallout from occasional errors is less. After all, contracts do not have to be complex to generally work well. A shop receipt, for example, is a form of contract. This would minimise the transactions' costs. And it would help to reduce the risks for both the participating firms and the government.

The program need not cost too much money to administer and could potentially be very beneficial. However, we realise that the idea is novel. The government may not find it practicable, or they may need to refine it to make it work. But it is worth trying to design programs which have high inducement rates, and are cheaper because the user pays in some circumstances.

The government could apply contingent reimbursement, and the principles underlying it, to other industry programs.<sup>2</sup>

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<sup>2</sup> Note that if such schemes became more widely used, it might be worthwhile adding another variation. Recipients would be penalised for too many failures. So if a firm had tried many programs and declared them all failures (thus being reimbursed every time) then the government would cease to act as guarantor. The firm, like an accident prone motorist, would simply have become uninsurable.



## Glossary of terms

Arm's length relationship	A pure market relationship where the only exchange is money for a good or service.
Australian private	The firm is an Australian-owned private company.
Australian public	The firm is an Australian-owned publicly listed company.
Australian subsidiary	The firm is the subsidiary of an Australian-owned company.
Benefit Index	The total number of firms which receive major/critical benefits for the leading seven benefit categories (in a particular arrangement or type of firm), divided by seven to give an average benefit score.
Business cooperation	A special relationship between at least two firms that is beyond normal market transactions and has some permanence. The term is used to cover various forms of business linkages and networks.
Business linkage	See 'cooperative arrangement'.
Capital goods	Products sold to other firms as capital equipment.
Consumer goods	See 'final goods'.
Cooperative arrangement	A special relationship between at least two firms that is beyond normal market transactions and has some permanence. The term is used to cover various forms of business linkages and networks.
Cooperative business arrangement	See 'cooperative arrangement'.
Core cooperation	Substantial forms of cooperative arrangements, such as joint ventures, formal networks, and preferred customer and supplier agreements.
Customer arrangement	A cooperative arrangement where the partner buys the product of the surveyed firm.

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Domestic arrangement	All the firms in a cooperative arrangement are located in Australia.
Established firm	A firm between 6 and 24 years old.
Exporters	Firms which export at least some of their product.
Final goods	Products sold to distributors or final consumers.
Foreign owned	The firm is majority foreign owned.
Foreign subsidiary	The firm is the subsidiary of a majority foreign-owned company.
Formal arrangement	An arrangement which involves some form of contract or written agreement as to the role of each firm involved.
Further processing	See 'intermediate goods'.
High growth firms	The top 20 per cent of firms in the survey in terms of the highest turnover growth rates over the last three years.
High performers	See 'high growth firms'.
High tech firm	Firms with a high technology content in their product (in the opinion of the surveyed firms).
Informal arrangement	An arrangement without any written agreement - tacit arrangement based on trust and reputation.
Intermediate goods	Products sold to other firms for processing.
Key arrangement	The cooperative arrangement which the firm itself considers to be its most important arrangement.
Large firm	A firm with 100 or more employees, or a turnover of more than \$100m.
Linkage	See 'cooperative arrangement'.
Low growth firms	Firms in the survey experiencing negative growth in turnover over the past three years.
Low performers	See 'low growth firms'.
Low tech firm	Firms with a low technology content in their product (in the opinion of the surveyed firms).
Marginal cooperation	Less substantial forms of cooperative arrangements, such as forecasting and feedback.
Mature firm	A firm 25 years or more old.
Medium firm	A firm with 20 to 99 employees, or a turnover of between \$5m and \$99m.
Medium tech firm	Firms with a medium technology content in their product (in the opinion

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	of the surveyed firms).
Micro firm	A firm with less than 10 employees, or a turnover of less than \$1m.
Multi-partner arrangement	A cooperative arrangement involving the surveyed firm and at least two other firms.
Network	See 'multi-partner arrangement'.
Non-exporters	Firms which do not export any of their product.
One-to-one arrangement	A cooperative arrangement involving the surveyed firm and only one other firm.
Other firm arrangement	A cooperative arrangement involving a firm which is neither a customer nor supplier of the surveyed firm.
Overseas arrangement	At least one firm in the cooperative arrangement is located overseas.
Partner firm	Other firm or firms in a cooperative arrangement with the surveyed firm.
Problem Index	The total number of firms which encounter some problems across the seven problem categories (in a particular arrangement or type of firm), divided by seven to give an average problem score.
Single partner arrangement	See 'one-to-one arrangement'.
Small firm	A firm with 11 to 19 employees, or a turnover of between \$1m and \$4.9m.
Supplier arrangement	A cooperative arrangement where the partner provides inputs to the product of the surveyed firm.
Unincorporated	The company is an unincorporated firm.
Young firm	A firm 5 or less years old.

# Acronyms

ABS	Australian Bureau of Statistics
AMC	Australian Manufacturing Council
AusIndustry	Coordinates and delivers business assistance programs within DIST
BI	The Benefit Index (see definition above).
BIE	Bureau of Industry Economics
DIST	Department of Industry, Science and Technology
GATT	General Agreement on Tariffs and Trade
IT&T	Information Technology and Telecommunications industry
MNE	Multinational enterprise
NIES	National Industry Extension Scheme
PI	The Problem Index (see definition above).
SMEs	Small and medium enterprises

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