MEDICAL DEVICES INDUSTRY
Action Agenda

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Submission to the Productivity Commission Research Study into Science and Innovation in Australia

The Medical Devices Industry Action Agenda Implementation Group (MDIAAIG) welcomes the opportunity to comment on the Productivity Commission's (PC) study into Science and Innovation. The draft report raises a number of important points in relation to the medical devices industry.

This submission recognises the importance of the Australian medical devices sector to the Australian innovation system, and makes recommendations to assist in maximising the opportunities for national benefit and economic development that arise from the funding of science and innovation.

The Australian medical devices industry engages in a high level of innovation and plays a vital role in delivering safe, effective and high-quality care through the development of life-saving and life-enhancing products. Medical devices are diverse and the industry undertakes a wide range of innovative activities. It is a knowledge intensive industry with relatively high R&D expenditure. New technologies are often exploited to make medical devices. These new products contribute to health outcomes. The medical devices industry is characterised by strong collaborations with the health and medical systems, universities and health researchers in hospitals.

Collaborations between industry and researchers play an important role in promoting commercialisation of innovation in the medical devices industry. Collaborations of this nature promote knowledge transfer and knowledge spillovers which result in the application of new technologies to develop new products and help to build competitive Australian medical devices companies. One example of this is the collaboration with the University of Melbourne which resulted in the development of the Bionic Ear and the formation of Cochlear.
Recognising the importance of collaboration a number of the Medical Devices Industry Action Agenda (MDIAA) Actions encourage engagement between parties involved in the industry.

Infrastructure and Capability is a broad priority under MDIAA Action 4, which charges industry with consulting with publicly-funded research organisations to develop and advocate to the Australian Government a model that better enables Australian industry to access publicly-funded infrastructure and capability.

Another element of innovative practice often overlooked, which is essential to the development of a robust industry, is the partnering between mature businesses and those in a less mature phase. This form of inter-firm partnerships has facilitated the successful commercialisation of medical devices which otherwise would not have come to market. This area of innovation is funded almost entirely by industry.

The PC should consider partnerships in their many forms, from intellectual property transfer through licensing or acquisition, to integration of product. It falls cleanly within the definition of "innovation" used by the PC (see page 1.7) as "*the deliberative processes by firms, governments and others that add value to the economy or society by generating or recognising potentially beneficial knowledge to improve products, services, processes or organisational forms*".

The MDIAAIG notes that the draft PC report focuses heavily on the R&D aspects of innovation even though R&D makes up only 30% of business expenditure on innovation. However, the PC's Terms of Reference require the analysis to cover all elements of the innovation system, including for example, the various Australian institutions, industry and the effectiveness of information flows between them, as well as with overseas organisations. This is relevant to the medical devices industry because of inter-firm partnerships and collaboration with public sector research.

We recommend that the PC consider the broader innovation system, in particular the significant benefits generated from collaboration and commercialisation. While Australia's medical devices industry has a highly innovative culture, it needs public support to fully develop. The recommendations of the PC's final report when aligned with its Terms of Reference should address impediments to the commercialisation of innovation. The "development" side of R&D is also deserving of greater attention in the report and public support.

The Medical Devices industry is characterised by a small number of large companies that account for most sales and exports, multinational importers of product, some of which also partner with local companies or act as enhancer to product by undertaking manufacturing processes in Australia and a large number of small companies; each group contributes revenue in R&D innovation and each can be affected differently by public support.

R&D expenditure by small to medium sized companies (SMEs) is often 'lumpy' and varies from year to year. SMEs generally operate on small budgets and find it hard to increase funding for R&D. At the same time, R&D expenditure by large companies is often more fluid with flexibility to continually invest and possibly incrementally increase R&D expenditure. Recognising this fundamental difference in the ability of SMEs to access finance, the PC

should consider public support models that support orientating R&D assistance to firms who are increasing R&D expenditure; however, not to the detriment of start-up and early-stage firms just starting out and who require a constant flow of money. This may mean different support mechanisms for SMEs.

The prospect of re-orientating or diverting R&D assistance to firms who are incrementally increasing their R&D expenditure causes concern to SMEs. It is sometimes difficult for SMEs to maintain their level of R&D funding, let alone increase it. Moving to a model of this nature, might be inappropriate as it would likely result in fewer incentives being provided to firms to do R&D. The PC should seek for a balanced model that addresses the public support needs of large companies and SMEs.

The draft report asserts that non-R&D innovation does not require public support, because of competitive forces driving business innovation. However, this does not acknowledge that there are several factors which demonstrate a strong case for public support of non-R&D innovation, such as:

- the difficulties faced by SMEs in accessing finance, especially for the commercialisation of innovative activities;
- evidence presented to the PC of information failures; and
- reviews of Government programs on business innovation showing net benefit.

The MDIAAIG considers these factors are significant and notes that as the industry is comprised of a large number of SMEs, not recognising the importance of non-R&D innovation could have a significant adverse impact on policies affecting the Australian medical devices industry.

The report notes that, after adjusting for research intensities and industry structure, Australia's BERD is just below the OECD average. The PC should take a step further to address the issue of how to improve innovation system performance as well as taking into account the impact of global competition and likely changes to industry structure on innovation system performance.

The PC's final report should further explore the impact that framework conditions like taxation, regulation and education can have on the capacity and performance of Australia's innovation system. In addition, it should also make an assessment of the gaps in skills and in finance in Australia in relation to the pre seed or early stage venture capital market, issues which have been raised consistently as barriers to innovation in Australia. These issues are particularly relevant to the medical devices industry, as the industry is a highly skilled and technical sector. Medical devices companies often have difficulty obtaining skilled staff, which impacts on the competitiveness of the industry. Consequently the MDIAA is working on developing strategies to address skills issues as part of its work to increase the industry's growth, including working with the Department of Industry, Tourism and Resources to conduct a skills audit into the medical devices industries.

In addition, the PC's final report should consider innovation created within instrumentalities, such as hospitals where many high-technology medical devices are created and applied. Anecdotal evidence is that there are considerable net economic savings in innovation within hospitals, whether resulting from R&D or non-R&D, and any case for additional funding should be considered for innovation in hospitals as well as universities given the net economic benefits that accrue from such innovation. Funding should be dedicated to collecting data to investigate innovation within hospitals to more accurately capture all elements of, and public support towards, Australia's innovation system.

As a final point, there may be a need for ongoing data collection in relation to non-R&D innovation to assist in developing understanding of its impact on the economy and the innovation system.

We believe this study is vital to establishing strong policy leadership in relation to science and innovation and to ensuring ongoing support for a robust and world class medical devices industries sector. Australia's competitiveness, in light of the global economic pressures being placed on it by emerging markets, will rely heavily on our performance in science and innovation. It is essential that we recognise and build on past achievements, as well as identify and redress impediments to the success, so that the medical devices industries can realise its true potential to deliver national benefits across the fields of health and industry.

Yours sincerely

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Medical Devices Industry Action Agenda

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