© Telecommunications and Information Highways

Australia - Information Highways - Research and Market Forecasts

1. INTRODUCTION

Research figures regarding the Information Highway have to be treated with extreme caution. When I was involved in market research projects in Europe in the early eighties, it was estimated that some 2 million Dutch people would be involved in interactive services by 1983-1985. By 1997, 15 years later(!), some 500,000 subscribers had signed on the dotted line.

In general, people are excited by such questions often resulting in unrealistic answers, as it involves decisions never made before by these respondents and about things well in the future. Their response is more based on a light-hearted approach rather than on serious considerations.

2. BROADBAND SERVICES

There are several initiatives for broadband services such as cable modems, high-speed Internet and cable telephony.

Telstra and Optus are currently leading the developments with trials and offerings combining voice, data and video services. Others, such as Austar and OzEmail, are also contenders in this market.

Penetration in 1999 is still very low, with fewer than 100,000 customers connected to broadband services – mainly cable telephony subscribers from Optus. US-based Strategis Group predicts that this figure will grow to 600,000 subscribers by 2003. Sixty per cent of these would use cable modem services and the rest DSL and ISDN services.

Business use will be the major driver of broadband services (over 90% of all revenues). Currently they spend $5 billion on data services. A large part of this will migrate to broadband; currently annual growth in this market is between 15%-20%.

3. WHAT DOES THE CUSTOMER WANT?

In assessing the information highway market, it could be more realistic to look at the results of research based on what is available now.

For good examples provided in tables, see:

- *Australia - Broadcasting - Free to air Overview and Statistics*;
- *Content Services and Applications - Services and Content, Introduction.*

Table 1 - Australian interest for accessing online services

Activity	
Watching videos	52%
Accessing information	47%
Socialising	37%
Shopping	24%
Playing games	23%
Gambling	7%

(Source: Roy Morgan Brand Planner)

4. TECHNOLOGY PENETRATION AND PAY TV AWARENESS

It has always been advocated that Australia is a country that quickly takes up new technologies. Colour TV, VCR, mobile communication and Internet are all cited in this respect. The cable and pay TV operators hope that the same will apply for pay TV, cable telephony and high speed interactive video services.

In early 1996, the Institute for Research from the Curtin University carried out a survey on the demand for broadband services. They interviewed 2,500 households in the capital cities – the result is a very extensive report published by the Bureau of Transport and Communications Economics (BTCE). In general terms, the survey indicates that close to 75% of all households are interested in subscription services, however, the numbers fall dramatically when price considerations are introduced. With the exception of people over 65 years, all other groups showed relative high interest in the service.

Table 2 - Demand for broadband services

Broadband service	Potential interest
Entertainment	44%
Education and information	39%
Communication services	24%
Transaction services	20%

(Source: BTCE, 1996)

More extensive demographical information is provided in *Content Services and Applications - Services and Content, Introduction.*

5. PRICING

5.1 PRICING STRATEGIES

There are two very distinct broad markets in cable/pay TV around the globe:

- a market enticed by the new offerings, but very price sensitive;
- a market that is prepared to pay a premium for choice.

Knowing in which market you operate, or want to operate, is essential in this respect. At the start of pay TV in Australia it looked like all three operators opted for the highly competitive and price sensitive strategy. We have always argued for more flexible pricing for pay TV services, away from bundling and exclusive channels. We repeated this message when Telstra and Australis indicated their bundled pricing structure; at that stage priced around the $50 per month mark. We further advocated that initially announced 6 or 12 channels would not be enough to entice users and we mentioned we would like to see literally hundreds of channels. Only from 50 plus channels onwards, users would be provided with a reasonable choice. At the same time, that would mean innovative new programming rather than more of the same 'commercial free-to-air' channel programming.

Competition will be driven by the number of channels until approximately a number of 50-100 channels have been made available. After that, the quality of the services as well as the total customer service will become the major driving force. A situation Australia could reach around 1999.

In 1994, we discussed the following price strategies:

- The $49.95 price based on the 8-10 bundled channels available at that time would have to be changed in a basic package of under $25 per month to initially attract a large number of subscribers.
- While halving their current bundled subscription rate they would have to double, and within 18 months triple or quadruple, their number of channels at the price of around $25.
- Profitable extra revenue to compensate for the financial consequences of the above can only be obtained by new innovative programming, interactive services and pay per view. Basic pay TV will, in the end, only account for 25% of the revenue.

- By not opting for price competition but to target markets that are prepared to pay a premium, a decrease in price would not have the same price-elastics.

Exhibit 1 - Pricing and its effect on penetration

At $50 per month for a basic package: • Less than 20% penetration in (premium) MDS/satellite services • Less than 10% in (competitive) markets where cable TV is passing At $25 per month for a basic package: • MDS/satellite could reach levels of 25% in premium markets • Cable TV could reach 20%-30% • Cable TV and telephony could reach 25%-35%%

(Source: Paul Budde Communication)

5.2 DEVELOPMENTS IN THE 'REAL' MARKET

The above mentioned analysis were made in the early process of pay TV. Since then we have much more life experience.

Pay TV is proven to be a successful product in the following markets:
- retirees;
- unemployed;
- 'couch potatoes'.

Despite earlier indications that these people would be inclined to shy away from the high ($50) pay TV prices, it has become clear that they are spending that sort of money on pay TV, even when, as in the case of Optus, lower price options are available.

Furthermore, from a user demographic position, the pay TV market is a completely different from the Internet market. While from a product point of view, pay TV and Internet can arguably be seen as different models for an information highway market, it has become clear that currently they both address totally different markets.

In general, pay TV subscribers are spending relatively lower amounts of money on PC equipment and Internet access, private education and housing. They however do spend relatively large amounts of discretional income on products such a cigarettes and beer and, what has become clear, pay TV also fits into this category.

However, it remains that in order to penetrate beyond the 20-25% new pricing strategies will have to be devolped.

5.3 COSTS BY TECHNOLOGY

The much-debated 'cost per subscriber home' is another moving target, difficult to understand for the investment industry. The costs are different for cable and wireless TV.

With cable, its has everything to do with homes passed. While Foxtel and Optus Communications prefer to quote costs at around $1,000 per household installation, this figure is very optimistic and is currently reached in countries with very high cable penetration in place. For the next few years, these costs will most likely be between $2,500 and $3,000 per household.

MDS (Multipoint Distribution Systems) and satellite TV are a bit easier to calculate. MDS currently costs around $600 per home and could drop to approximately $500. As the current digital satellite costs are still high, the per-home-costs are between $1,000 and $2,000 but with mass production and the success of DBS (Direct Broadcasting Satellite) in the United States, costs are set to fall rapidly here.

Over time, the distinction between the delivery mechanisms will disappear and after the first five years, penetration levels will rise towards the 50%. This could be reached early on in the next decade. From here on it will all depend on how the information highways are going to be developed. If they are valued similar to our current telephone and television system, we could soon see a further penetration to the 80%-90% levels between 2005 and 2010.

5.4 PRICE DEVELOPMENTS

The drastic decrease in the one-off connection by Galaxy from $295 to $99 soon after its launch (followed by a further decrease to just $19.95) was aimed at a head-on competition with Foxtel and Optus Communications. Next came the reduction in the monthly charge from $49.95 to $39.95 in a bid to reach their ambitious goal of 200,000 subscribers by the revised date of May 1996. But in early 1996, the company realised that it had a premium product, that could be targeted at a premium market. Prices were raised again at the end of February 1996 to $199 for connection and $49.95 per month. Foxtel had its first price increase in September 1997, from $39.95 to $42.95.

Table 3 - Cost comparison pay TV - July 1998

Operator	Installation costs	Monthly subscription	Channels
Austar	$49.95-$149	$42.95-$45.95	17
Foxtel	$19.95	$42.95	31
Northgate	No charge	$14.95	15
Optus Comms	$29.95	$9.95-$49.95	26

(Source: Paul Budde Communication, July 1998)

During 1996, several add on packages became available such as World Movies on Foxtel and Galaxy for $6.95. Galaxy also offers Night Movies (AO) for $6.95 per night (!), and TeleItalia and New World $10 each. Optus Communications provides extra Sports AFL for $6 and NHK (Japanese language) $25. Foxtel offers Entertainment plus (5 extra channels) for $9.95. Northgate offers Spice (AO).

In April 1998, Optus launched, an 'at cost' pricing strategy, making a basic 10 channel package available for $9.95. From here on the users can pick and choose what they want from the menu. From this basic package, there will be dozens of extras added over the next 6-18 months, including pay TV, Internet and other services. The first results indicate that only a small percentage of new subscribers only take the basic package (10% according to Optus), the majority buys extra channels. The 'experts' can't agree if this indeed is a clever move from Optus or a desperate last action of a mortally wounded pay TV operator. I still believe it is a good move.

6. INFORMATION HIGHWAYS ADVICE AND FORECASTS

6.1 MARKET SIZE AND REVENUES

At conferences and in newspaper reports we have repeatedly learned that Australia cannot afford to duplicate its information highway infrastructure. We have vigorously opposed this view. We predict that within 10 years' time we will have 6-12 major information highway builders, between 50-100 medium-sized service providers and as many as 500-1000 smaller players and niche market service providers. An information highway infrastructure consisting of wired and wireless telephone, cable TV, MDS and satellite-based networks will be interconnected to offer this vast amount of services. Some areas will be overbuilt by at least five networks! A 1998 survey amongst leading businesses around the globe showed that cities with a large number (up to 10) competing telecommunications networks were also the most competitive cities to attract new businesses.

The top 10 companies in this new market will operate in the $2-3 billion+ revenue market; the next 50 in the $100 - $1 billion market; the rest below this level, with the majority of them under the $1 - $5

million market. I predict that by the year 2005 the total value of the Australian information highway market will be between $50 - $75 billion. Current estimates from carriers are around the $40 billion.

Table 4 - Australian information highways market - 2005

Players	Total number of players	Revenue per company
Major	6-12	$1 billion +
Medium	50-100	$100million-$1billion
Small	1000+	< $100 million
Total revenue	**$50 - $75 billion**	

(Source: Paul Budde Communication)

The $500 million+ companies all have the financial potential to partially operate their own infrastructures. By not duplicating the infra-structure or overbuilding, as it is called, defacto monopolies will be established, keeping user access prices artificially high.

Table 5 - Estimated information highways revenue per subscriber

Service	Monthly revenue
Local telephony	$15 - 20
Residential local services	$25 - 35
Internet access	$15 - 25
High speed capacity (ISDN)	$30 - 75
Total	**$85 - 155**

(Source: Paul Budde Communication, estimates)

A $50 billion+ market will be a great boost for the Australian economy. Allen & Buckeridge estimated that this would lead to an extra 75,000 jobs. This industry should also be able to generate 10% of export revenue.

To become a $1 billion+ company in the year 2005, the following ingredients will have to be in the company's current strategic plan (see next exhibit).

Exhibit 2 - Advice for information highway contenders

- Develop a market around customers not products/technology.
- Develop a strong brand name for your total service package.
- Your service needs to have at least 10-20 different service/product modules and dozens of optional price and package variations within each module.
- 100% customer focus, in depth under-standing of your customer's information and entertainment needs including how they access, when they use it, what they want, when the want it and why they want it.
- 'Intelligence service' to assist clients in selecting and accessing services, Help Desk
- Your own billing/intelligent customer management database system is the most essential element of your business.
- Unless you want to be in the top 10 don't buy switches and networks. It's not essential in becoming a $1 billion+ company.

(Source: Paul Budde Communication Pty Ltd)

The window of opportunity to become a $1 billion+ company by 2005 is closing in. Companies who have not made a strategic decisions by now will find it extremely difficult to reach this goal. Most top 10 companies have already made these decisions, the longer they wait the bigger the gap between the winners and the losers.

Exhibit 3 - The complex market of interactive video

Interactive video scenarios	Introduction	Initial application	Remarks
Telecommunication (POTS)			

ADSL	1999 - 2000	Internet, Movies, sport, news	New international standard (G.Lite)
Broadcasting			
Pay TV on satellites	since 1995	Movies, sport, news	Australia wide
MDS based pay TV	since 1993	Movies, sport, news	Inexpensive equipment for local/regional users
Digital TV	2000+	Movies, sport, news	Potential 2nd interactive platform (after Internet)
Broadband wireless (LMDS)	2000+	Internet, business, news, entertainment	Very high speed.
Multimedia/hybrids			
PC/CD-ROM + software + modem	since 1993	Education, desk top video	Business applications, PC hobbyist
Games computer + teletext (+ audiotex)	since 1994	Entertainment, interactive TV (game shows), interactive games	Developments Nintendo and Sega, audiotex option for charging - Europe/USA
Interactive TV			
Free-over-the-air + decoder	peaked 1994	Games, shopping and polling.	Very few services - USA
Teletext + audiotex + TV)[1]	peaked 1995		Few services - Europe
Teletext + cable TV	since 1994	Games, shopping, using analogue TV	United States
Internet + TV	1998-2003	Entertainment, business	USA/UK
Business Broadband			
Datacasting	since 1993	High-speed bulk data services	A range of new interactive
PC+ ISDN	since 1993	Internet access Videoconferencing, imaging,	Revamped in the Internet market (since 1997)
Cable modems	since 1996	high-speed Internet Broadband applications	Lack of good pricing models
B-ISDN	2000-2005	Linking in FTTH	uncertain
Full services network			
FSN	2000-2010	Movies, sport, news, games, (video)phone, shopping, education, business	Ultimate network + HDTV based user equipment

)[1] - very little activity in Australia
)[2] - still-born
(Source: Paul Budde Communication Pty Ltd, updated July. 1998)

6.2 INFORMATION HIGHWAY DEVELOPMENTS WILL BE NON-LINEAR

We know that there is a large demand for bandwidth and the consumer and business budgets for the services that will be provided over these networks don't reflect a linear relationship.

We also know that it will be impossible to predict exactly what is going to happen in this market. There are too many examples of totally wrong predictions. We have so far not been involved in any of these, and would prefer to avoid the linear approach and base our estimates on lateral thinking. Our projections focus on trends in human behaviour and social developments, rather than on the technological information relied upon by operators, suppliers and traditional telecommunications research companies.

We would therefore recommend that, rather than using traditional data which reflects the current voice and data traffic over the networks, it would be more relevant for future projections to produce forecasts based on the following assumptions:

- the necessary demand for bandwidth. (eg 100% growth per annum);
- the total revenue in 10 years' time (all voice, data, video) $50-$75 billion;

- estimated market shares of the various players (eg 25% for independent SPs);
- bandwidth cost of around 5%-10% of total SP costs.

A very rough calculation shows that in approximately ten years' time, independent SPs will spend at least $1 billion per annum on bandwidth alone.

It is estimated that the current capacity on major trunk backbone networks involves an over-capacity of 80%-90%. This is angrily denied by Telstra. Based on their requirements for redundancy this figure might perhaps be reduced to 50%. (However, we believe the figure is much closer to 80%.). This is seen as another reason why potential new players are not entering this market. The fact that the ACCC is adamant to open-up, this market for competition is an indication of where the truth lies.

At the same time there is a very large under-capacity in local access networks. Developments have come to a stand still with Telstra and Optus both abandoning further broadband roll outs. Telstra also abandoned their fibre-to-the-home plans within a year of starting their so-called Full Services Network in 1996. In addition, they still have not progressed with any commercial ADSL developments, which have been on their planning boards since 1994. The only difference between network capacity in the 1890s and 1990s, is that after a hundred years ISDN, was introduced. In 1998 Telstra announced their plans to introduce a Digital Services Network (DSN) based on IP technologies.

Another important issue often overlooked is that many of the independent operators and service providers would prefer not to be dependent on Telstra or Optus for ongoing supply of products and services. Furthermore, in the future, bandwidth will make up only a small percentage of their total cost structure. This will further diminish the importance of the incumbent operators/carriers to the SPs.

Looking at the broader picture, current capacity supply bears no importance to future needs. At a minimum of a 1,000-fold increase in current available capacity supply is needed. Compression technologies and alternative infrastructure such as mobile networks and satellites might reduce this; but, no matter how we look at this market, bandwidth will be sold at a premium for years to come, since so far, very few new initiatives have been undertaken to satisfy future demand.

2643 George Downes Drive, Bucketty NSW 2250 Australia
Telephone: +61 2 4998 8144 Fax: +61 2 4998 8247
Email: pbc@budde.com.au Web: www.budde.com.au