

PRIME MINISTER'S SCIENCE, ENGINEERING
AND INNOVATION COUNCIL

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**MANAGEMENT SKILLS FOR HIGH GROWTH
START-UP COMPANIES**

Unleashing Australia's Entrepreneurial Potential

An independent working group, supported by the Prime Minister's Science, Engineering and Innovation Council (PMSEIC) Secretariat prepared this paper.

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1. Executive Summary

1.1 The Environment

Given the sound economic environment Australia is now poised to take advantage of the potential existing in the high growth start-up company sector. The general business environment has proven to be extremely resilient in coping with some major upheavals in the global economic scene. This underlying strength in our economy now provides an excellent platform to substantially increase the success rates of high growth start-up companies.

There are three other elements that necessary for accelerated expansion in the high growth start-up sector. These elements are:

- the development of world competitive innovation and technology;
- the ready availability of equity capital; and
- the appropriate management skills.

Over the last five years a number of major government and industry initiatives have greatly improved the first two of these elements. These initiatives include:

- *Investing in Growth* (1997);
- *Knowledge and Innovation Statement* (1999);
- *Backing Australia's Ability* (2001); and
- Changes to the taxation regime affecting private equity investments (2001 and 2002).

The Working Group has focused on the management skills element and its findings indicate that the level of business growth in this sector is below what might be expected given the investment that has occurred in the areas of innovation and access to capital. Our research clearly identifies that appropriate management skills are a limiting factor to achieving success in high growth companies.

As outlined in this paper, the high growth start-up sector is in urgent need of entrepreneurial managers with the blend of:

- Personal entrepreneurial attributes;
- Business management skills; and
- Experience and knowledge of successful high growth ventures.

1.2 The Solution

The Working Group has determined that there is no 'magic silver bullet' solution to this problem. Instead we have identified a suite of initiatives. Each on its own will have limited impact. Collectively, however, the Working Group considers that if the portfolio of measures recommended in this report is implemented, Australia's entrepreneurial potential will be truly unleashed.

Now is the time to address our deficiency in management skills for high growth start-up companies. As our National investment in the innovation process and the provision of patient equity begins to bear fruit it is crucial to address the element that constrains the system from reaching its true potential – the provision of

entrepreneurial management expertise.

The following recommendations address the critical needs identified by the Working Group:

1. The establishment of a Entrepreneurial Management Development Program which comprises a portfolio of initiatives to focus on enhancing the entrepreneurial management skills specifically identified as impeding the growth of this sector;
2. Modification of the management skills development component of the Commercialising Emerging Technologies (COMET) program to encourage the uptake of management development opportunities;
3. The establishment of a National Entrepreneurial Mentoring Group strongly supported by the Prime Minister. This will raise the profile and recognise the value of entrepreneurship to the Australian economy;
4. The encouragement of mobility between public sector research organisations/academia and high growth start-up companies; and
5. The introduction of an adequate set of metrics for the high growth start-up sector so that the health, overall performance and the success of interventions recommended in this report can be effectively monitored.

The Working Group is confident that implementation of these recommendations will leverage our ability to unleash Australia's entrepreneurial potential and place the high growth start-up sector on a more sustainable competitive footing with commensurate benefits for the Australian economy.

2. Introduction, Terms of Reference and Report Methodology

2.1 Introduction

At the 7th PMSEIC meeting held on 28 June 2001 the Council received a report from an independent Working Group¹ on the need to improve Australia's ability to turn great concepts into commercial success stories. That Working Group drew particular attention to the extraordinary performance of high growth companies such as ResMed, Cochlear, Gropep, Radiata and Vision Systems.

That Working Group found that while commercialisation is on the rise in Australia, if we could multiply by ten the number of high growth companies that currently exist in Australia, some \$20 billion could be added to our annual export earnings.

Australia's innovation system has received much attention over the past few years as governments and industry have worked together to establish a climate that fosters new ideas and brings them to life as innovative and exciting new products, services and businesses. This Working Group acknowledges that the Government has a strong commitment to developing excellence in research, science and technology and in subsequent successful commercialisation as evidenced by:

¹ PMSEIC Working Group, *Commercialisation of Public Sector Research*, 2001

Management Skills for High Growth Start-up Companies

- *The Investing for Growth* (December 1997) statement support for business innovation through the provision of additional funding for R&D grants, venture capital and technology diffusion was provided;
- *The Knowledge and Innovation* (December 1999) statement announced a new policy and funding framework for higher education research and research training;
- The Government's response to *The Virtuous Cycle*, the report of the Health and Medical Research Strategic Review injected a further \$614 million into health and medical research over six years;
- *Backing Australia's Ability* (February 2001) which injects \$3.0 billion over five years to stimulate innovation in Australia.

The effectiveness of these measures has been all the greater given the stable economic conditions Australia has enjoyed over the last few years and the general economic reforms initiated by the Government to foster business growth and entrepreneurial activity.

As evidenced by the Australian Research Council's *Year 2000 National Survey of Research Commercialisation* Australia does not lack for new ideas. While we have some way to go before we match the performance of the United States or Canada our performance is improving.

Similarly, there has also been a marked improvement in the availability of capital for small and medium sized enterprises generally and for high growth companies in particular. There are a number of factors behind this improvement:

- the favourable economic climate that Australia has enjoyed for a number of years;
- increasing acceptance by the financial community to private equity as an asset class; and
- the Government's taxation changes to encourage the growth of private equity and venture capital funds.

A study by Econtech², at the end of last year, estimated that the Federal Government's changes in October 2001 to the taxation treatment of private equity and venture capital funds would realise additional foreign venture capital from a low of \$700 million to a high of \$1.1 billion. Econtech went on to note that the reforms would add up to \$350 million to Australia's GDP.

The Working Group also notes the additional measures announced on 20 September 2002 to amend the tax treatment of:

- two types of limited partnerships: venture capital limited partnerships and Australian venture capital fund of funds; and
- foreign investors.

These changes can only add to the attractiveness of this class of investment in the future.

² Study commission by Australian Venture Capital Association and included in Australian Venture Capital Association and Gilbert & Tobin Lawyers, *Creating an Internationally Competitive Environment in Australia for Investment in the Venture Capital Industry*, Submission to Government, 5 September 2001.

While generating new ideas, ensuring that there is a ready availability of new capital to commercialise these ideas into new products and an attractive economic climate are all vital ingredients to having a successful high growth sector, the context for this Working Group is the realisation that there is another critical ingredient to accelerate the development and commercial success of high growth companies – entrepreneurial management skills.

The lack of this type of management expertise in Australia was initially highlighted from feedback received by the Innovation Summit Implementation Group. The *Commercialisation of Public Sector Research* report presented to the June 2001 PMSEIC meeting also identified management skills as an issue and led directly to the formation of the Management Skills in High Growth Start-up Companies Working Group to further investigate the situation.

Appendix 1 details the membership of the Working Group.

2.2 The Terms of Reference

The terms of reference set for the Working Group were as follows:

Prepare a paper and presentation for PMSEIC which:

- Describes the importance of entrepreneurial management skills for high growth start-up companies.
- Recommend practical government and business support mechanisms to develop management skills for high growth start-up companies, taking into account the current system of support in Australia given by business and government to creating and growing firms.

2.3 Report Methodology

In addressing the terms of reference the Working Group's approach was guided by the following parameters:

- current research has not been focussed on the issues related to entrepreneurial management. The perspective was an industry led 'outside in approach'; and
- practitioner perspectives via interviews and focus groups were a preferred data collection approach.

The Working Group conducted personal interviews with industry experts and held Focus Group sessions in Brisbane, Sydney and Melbourne. Participants included venture capitalists, managers of high growth start-ups, service providers (lawyers, independent directors and management consultants) and government experts. Appendix 2 lists the individuals and organisations contacted.

In keeping with the Working Group's view that the issue should be addressed from a business rather than an academic perspective, members developed the following model as set out in Figure 1 to provide a logic flow and rigour to the analysis.

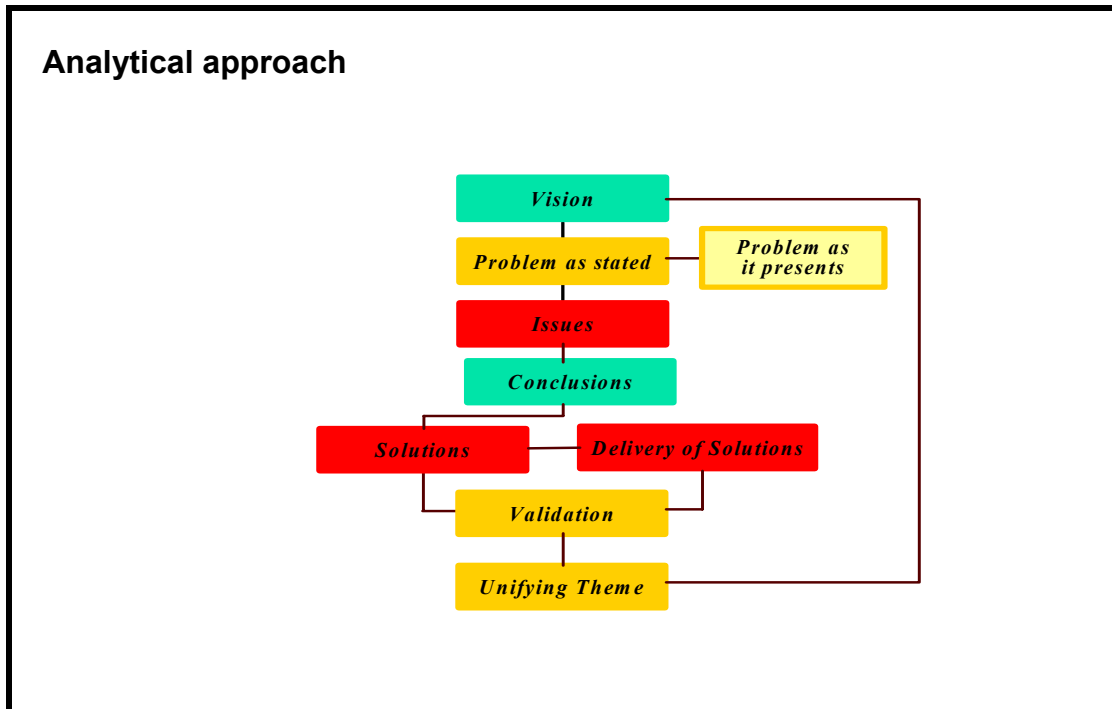


Figure 1: Analytical approach adopted by the Working Group

A search of the Australian and overseas literature on the subject was conducted. In Australia, specific literature and data on management skills for high growth start-ups is scarce, however, a substantial amount of generic material is available.

This material covers three main themes:

1. Many reports consistently identified management skills as a key problem.
2. Traditional management courses while useful for acquiring basic skills are not generally suited to entrepreneurial managers of high growth firms.
3. There is a lack of empirical studies on the management expertise needed in high growth start-up companies.

3. Focus

The Working Group adopted the following definitions in addressing the terms of reference.

3.1 High Growth Start-up Companies

High growth start-up companies tend to be early adopters of technology and innovation. They can be differentiated from more conservative growth firms by their singular commitment to sustain growth no matter what. They are fast movers and innovative solutions are found within the firm³.

³ The Dynamics of Growth: Analytical Report , Innovation and Business Branch, Ministry of Economic Development and Trade 2001 Detailed analysis is available on the Ministry's website: www.ontario-canada.com/wisdomexchange

In addition to this over-riding pursuit for growth, other characteristics shared by high growth companies include:

- generally employ 5 to 100 people; and
- sales grow by 50 per cent or more per annum over a three year period.

The segment of the business life cycle high growth start-up firms tend to operate in is illustrated in Figure 2 below.

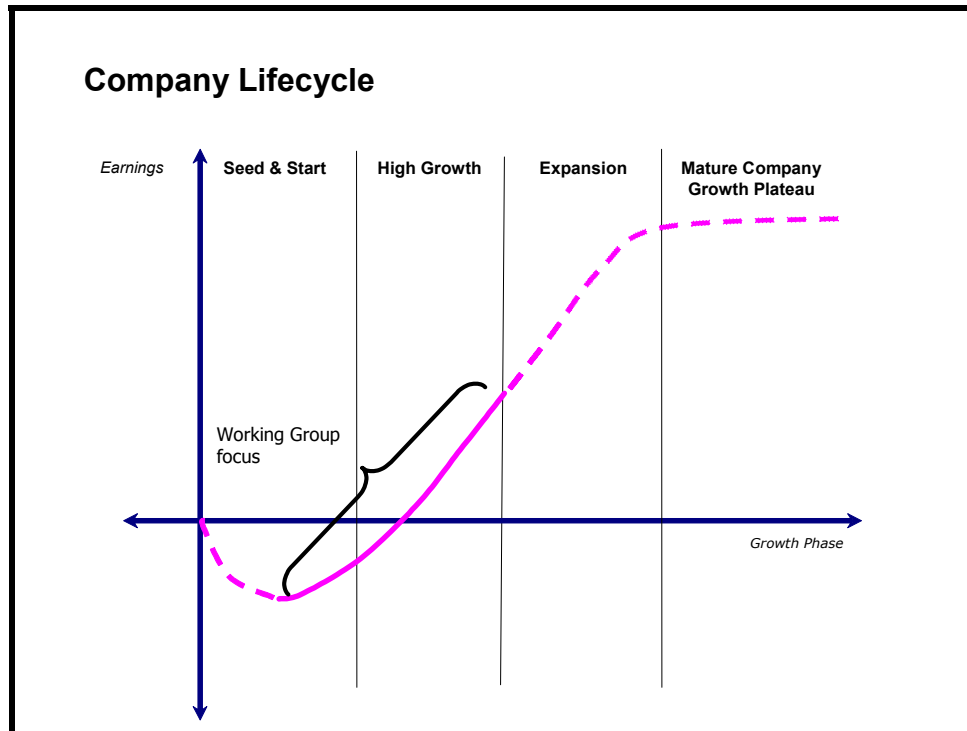


Figure 2: Company Lifecycle

Three examples of high growth companies are:

- Cochlear. Based on research in Melbourne in 1967, Cochlear has come to dominate the global market for implantable hearing devices, with three out of four people with hearing implants receiving the Cochlear system. Sales for the year to June 2002 grew 375 per cent since 1998 to \$255 million.
- Radiata. Basing its technology on work undertaken by CSIRO, Radiata developed a new way to connect wireless local area networks. The company raised its first private equity from Broadcom and Cisco Systems in 1998 and was acquired by Cisco Systems for \$567 million in late 2000. The company's Sydney office is now one of the cornerstones of Cisco's wireless networking business.
- ResMed. Formed in 1989, ResMed expanded university research to become a leading developer of medical devices to treat sleep disordered breathing. Its revenue grew from \$61.9 million in 1997 to \$370.9 million in June 2002, while its net earnings over the same period grew from \$9.4 million to \$68.2 million.

A feature of high growth start-up companies is their ability to maintain superior growth rates over time. While growth rates will inevitably decline in times of economic downturn

overseas research⁴ suggests that high growth firms tend to be quite resilient in maintaining their gains and resuming rapid growth rates as the economy picks up.

3.2 Entrepreneurial Management Skill Set

Through analysis of information arising from the Focus Group discussions and personal interviews with experts, the Working Group has identified three core dimensions of the entrepreneurial manager:

- formal business skills;
- transferable experienced based competencies; and
- personal attributes.

Formal business skills are defined as those skills usually acquired through formal education either at University, TAFE or through a number of private sector providers. These skills include:

Financial Management

- business planning;
- cash flow management; and
- raising capital.

Marketing and Sales

- market research and analysis;
- marketing strategies;
- competition analysis; and
- sales process management.

IP Management

- licensing; and
- IP portfolio management and creation.

Human Resourcing

- ability to attract, motivate, lead and retain a strong multidisciplinary team.

Transferable experienced based competencies are those skills that are normally acquired through on the job training, mentoring and networking. It is through this process that the formal business skills referred to above are effectively and efficiently applied to solve real life business issues.

Personal attributes refer to the personality traits of the entrepreneurial manager. Successful managers demonstrate strong and rapid decision making qualities, handle ambiguity effectively and universally demonstrate:

- perseverance;
- courage;
- vision;
- enthusiasm; and
- leadership.

⁴ The Dynamics of Growth: Analytical Report, Innovation and Business Branch, Ministry of Economic Development and Trade 2001. Detailed analysis is available on the Ministry's website: www.ontario-canada.com/wisdomexchange

3.3 Commercialisation

The term 'commercialisation' is used widely by different sectors and covers a broad range of activities. In the context of this report it is defined as follows:

Commercialisation is about generating sales and profit. It goes far beyond developing the technology and products. The commercialisation process calls for skills such as market analysis and strategies, financial and cash flow management, and human resource management if the business is to be sustainable.

Commercialisation is viewed by the Working Group as a holistic process that transforms an idea into a sustainable business. Commercialisation is the process outcome that involves the interaction of and feedback from a number of components within the system. Figure 3 highlights the key features of the commercialisation process.

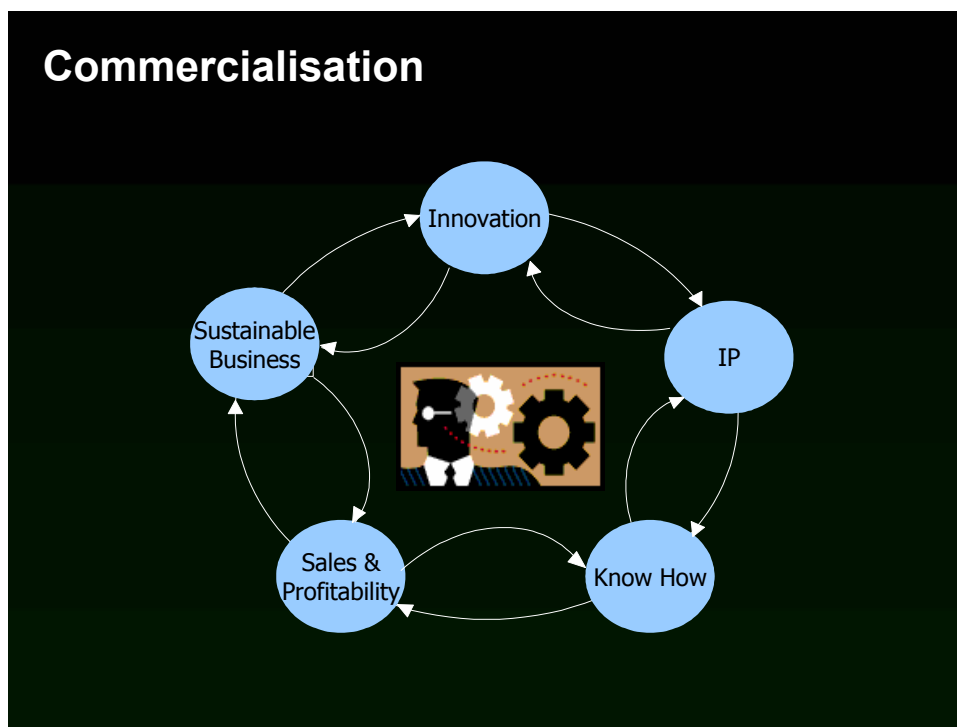


Figure 3: Commercialisation Model

4. Challenge

4.1 Successful Commercialisation – Balancing the System

The contribution made to the economy by high growth start-up companies was recognised in the PMSEIC report *Commercialisation of Public Sector Research* of June 2001. The report articulated a challenge to create ten times as many high growth start-up companies over the next five years.

A study between 1989 and 1998 by the Ontario Ministry of Economic Development and Trade in 2001⁵ also identifies the importance of the high growth sector to the economy. The study found that of the 316,071 firms in Ontario in 1989, less than 4% (11,554) met the criteria of leading growth firms for the purposes of the study. Yet the small segment of leading growth firms was found to exert a powerful influence on the economy as a whole, accounting for almost 17% of the employment in that year and more than 50% of the new jobs created in the Province during the previous three years.

Taking account of this information the Working Group believes that the high growth sector provides a high leverage point for the realisation of general economic improvements. Consequently, enhancing the sustainability of high growth firms by increasing the level and suitability of management skills will positively impact on the standard of living enjoyed by all Australians.

The Working Group considers that while no magic silver bullet solution exists to correct the deficiency in entrepreneurial management expertise in Australia, there is a portfolio of practical measures that can be implemented to address and rectify the situation. The Working Group strongly believes that entrepreneurial management skills operate in the context of the other components of successful commercialisation:

- ideas;
- capital; and
- the right business climate.

A construct of successful commercialisation can be illustrated by comparing the commercialisation system to a three legged stool. As seen in Figure 4, the balance of the stool is influenced by the foundation – the level playing field of the macro and micro economic environment. The chair will only operate effectively if all three legs are in balance. The Working Group considers that the ‘ideas’ and ‘capital’ legs of the chair are roughly at an even height but more needs to be done to the level of the ‘management skills’ leg to ensure that the chair is stable and functioning effectively. Increasing the entrepreneurial management expertise will optimise the investments made in ideas generation and the provision of capital.

⁵ The Dynamics of Growth: Analytical Report , Innovation and Business Branch, Ministry of Economic Development and Trade 2001 Detailed analysis is available on the Ministry’s website: www.ontario-canada.com/wisdomexchange

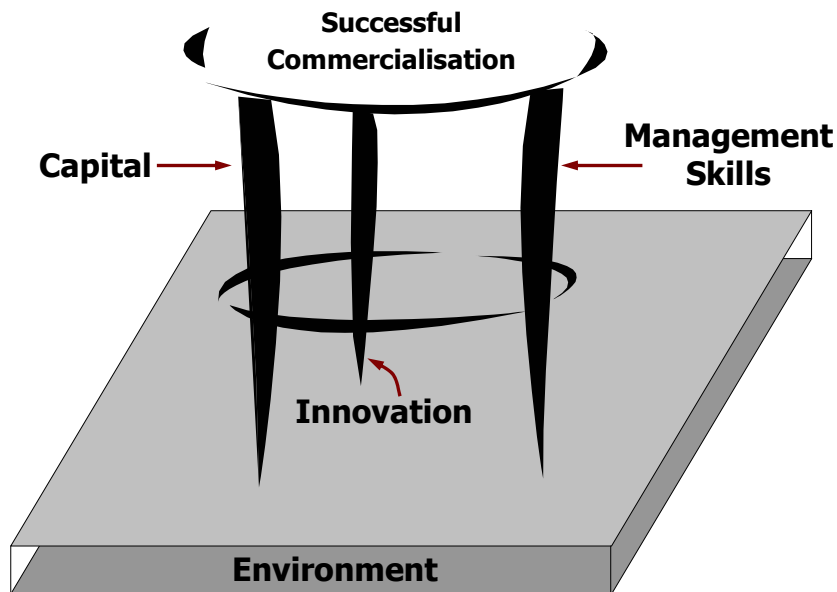


Figure 4: The essential attributes of successful commercialisation

It is important to note that the Working Group is strongly of the view that business should take the lead on this issue with Government playing a supportive enabling role.

The following sections briefly profile the current state of the components of commercialisation in Australia.

4.2 Australia's Innovation System

4.2.1 Having the Right Ideas and Level of Innovation

There is no one direct indicator used to measure idea generation. However, there is evidence to show that new ideas and innovation is not a limiting factor for Australia.

The Australian Research Council's *Year 2000 National Survey of Research Commercialisation* found that Australia is generating new ideas. Importantly the report concludes that Australia is on track to generate 250 start-up companies from its publicly funded research organisations over five years from 2004.

Australians are seen to be good at technical innovation, great ideas people and quick adopters of new technology but poor at commercialising their ideas to market.

The Government is keen to foster the generation of ideas in Australia through its commitment to expenditure on R&D through *Backing Australia's Ability*. In 2000-01, Commonwealth Government financing of R&D reached an all time high of \$3.9 billion – an increase of 13% over 1998-99. In the same year total Government financing of R&D in Australia was around 0.70% of GDP – above the OECD average of around 0.65% of GDP, and comparable with the USA (0.74%), Japan (0.58%) and Germany (0.78%)⁶.

⁶ Derived from ABS Catalogue 8112.0 (2002) and OECD Main Science and Technology Economic Indicators Number 1, 2002.

Further, with only 0.3% of the world's population⁷, Australia produces 2.8% of the world's science and technology papers.⁸

Australia has an outstanding list of 'world firsts' in science and innovation. This country's track record is world class. Our firsts over the years have included:

- ✓ solar hot water;
- ✓ the microwave landing guidance system; and
- ✓ the bionic ear.

While Australia is relatively strong at generating new ideas, we are perceived to have adopted a culture that is risk adverse in regard to funding high-risk ventures based on these ideas. The perception is that in America business failure is more accepted, whereas when businesses fail in Australia entrepreneurial managers find themselves with permanently tarnished reputations.

The Working Group considers that more needs to be addressed in this area. For example, Australia needs to foster a culture that does not view business failures as personal failures rather, we need to change our perspective of failure to one that places entrepreneurs in high regard for having a go. The Working Group considers that far too many good entrepreneurial managers are lost because of one failure whereas it is not uncommon in the United States for entrepreneurial managers who have failed to come back, learn from their mistakes and ultimately be successful.

4.2.2 Availability of Capital

Access to capital to finance high growth start-up companies is the second important element to commercialisation success.

The Working Group recognises that much has been achieved over the last few years to address the barrier of cash availability for companies, particularly during the early stage of business development where the company is working to create and commercialise intellectual property. For example, in 1997 the Government established the Innovation Investment Fund Program (IIF), a landmark for early stage venture capital.

The Government has committed \$220.7 million under the IIF Program which has been matched with private sector funding of \$137 million providing a total available funding of \$358 million. The Pre-Seed Fund has \$72.7 million committed by the Government leveraged with private sector funding of over \$30 million providing a total of, over \$100 million in capital available. A further \$720 million in private capital has been raised by the Pooled Development Fund program because of the attractive tax set up. It should be noted that, more than half of the funding has gone into projects being undertaken by small to medium enterprises.

The Working Group would like to record that the Focus Group and individual discussions held with experts did yield a strong call for further reforms to be made to

⁷ From the ABS website: www.abs.gov.au, Australia's estimated resident population as at 30 October 2002 at 11:39:12 (Canberra time), is: 19,770,119. According to the International Programs Center, U.S. Bureau of the Census, the total population of the world, projected to 10/30/02 at 0:40:51 GMT (10/29/02 at 7:40:51 PM EST) is 6,252,903,590. Based on these figures Australia has 0.3% of the world's population.

⁸ Department of Education, Science and Training, *Australian Science and Technology at a Glance 2002*, Commonwealth of Australia, Canberra, May 2002, p. 69

reduce the red tape and simplify the Australian tax and regulatory system. For example, taxation compliance (BAS, FBT, GST etc.) was viewed as a major barrier to innovation – reducing the time available for creative, innovation process.

The taxation regime for share options was seen by industry experts as another issue which must be addressed to assist companies in attracting suitably experienced entrepreneurial managers. Capital gains tax and the way intellectual property ownership is managed were other areas identified as requiring improvement. While the Working Group acknowledges the importance of these issues they were considered to be outside the scope of the group's deliberations.

4.2.3 The Right Business Environment

If companies are to flourish, broad economic fundamentals must be in place and governments have a role to play in establishing financial, regulatory and commercial conditions to stimulate entrepreneurial behaviour and encourage business growth.

The Government has done much to improve the productivity and growth performance of the Australian economy, including deregulating financial markets, the reduction of trade barriers, labour market reforms, and reforms to business taxation. The economy has enjoyed a long period of expansion and the Working Group notes that both the Reserve Bank of Australia⁹ and the Treasury¹⁰ agree that given our sound policy environment there is no reason why this expansion won't continue.

The Working Group acknowledges that there are a number of environmental factors, affecting the performance of Australian firms in a global market, which are outside their control including the small size of the domestic market and the geographical location of Australia.

The Working Group considers that the business environment platform provides a compelling case for high growth companies to continue to invest and operate with certainty and confidence.

4.2.4 Management Skills

It is clear to the Working Group that industry and the government have been successful in their efforts to:

- establish the right business climate;
- create an environment where new ideas flourish; and
- make available capital to develop those ideas into commercial reality.

However, to meet the challenge of multiplying by ten the number of high growth firms, attention needs to be focused on adopting an active approach to developing entrepreneurial management skills. The Working Group considers that all elements of the system need to achieve a certain threshold in order for the challenge to be achieved. The limiting factor on the performance of the system is, in the view of the

⁹ *Medium Term Economic Prospects for Australia*, speech by Glenn Stevens, Deputy Governor, Reserve Bank of Australia to 4th Australia-Japan Joint Business Conference, Sydney, 14 October 2002. Available from the Reserve Bank of Australia website: www.rba.gov.au

¹⁰ *On the Economy and Fiscal Policy*, speech by Dr Ken Henry, Secretary to the Treasury, to the Australian Business Economics, 21 May 2002. Available from the Treasury website: www.treasury.gov.au

Working Group, the breadth and depth of the entrepreneurial management skills in Australia.

Now is the time to address this deficiency in entrepreneurial management skills for high growth start-up companies. The investment made in ideas generation and venture formation is beginning to translate into tangible outcomes. To optimise the potential of this investment we must ensure that these outcomes mature into companies that are able to maintain sustainable growth. This is achievable through the development of entrepreneurial management expertise.

The next section explores the importance of entrepreneurial management skills to effectively deliver on the challenge of multiplying ten fold the number of successful high growth companies.

5. Importance of Entrepreneurial Management Skills in Commercialisation

The importance of entrepreneurial management skills to achieving successful commercialisation has been understood and reported anecdotally for many years.

As far back as 1985, Peter Drucker, noted that there is 'no lack of would-be entrepreneurs in the United States, no shortage of new ventures. But most of them, especially the high-tech ones, have a great deal to learn about entrepreneurial management and will have to learn it if they are to survive.'¹¹ Other work from the United States has found that '...a successful small business manager needs versatile skills. Skills which are most lacking, are often not technical or technological... most entrepreneurs lack good marketing, financial and organisational skills'.¹²

Australian research has also identified that management skills need to be significantly improved to capture effectively innovation and growth in the economy. In 1995, for example, the *Industry Task Force on Leadership and Management Skills* found that:

- the proportion of Australian managers with formal training was very low compared with other major industrialised countries; and
- Australian managers were ranked poorly in terms of managerial skills by five major competitor countries.

The most recent GEM Australia Survey (2002) of the nature, level and impact of entrepreneurial activity in Australia points to a deeper problem, namely a general lack of entrepreneurial capacity within the country. The survey, which has been conducted over the last three years, suggests that Australia is an entrepreneurial nation in the good times and a non entrepreneurial nation when times are perceived as uncertain. The survey is highly critical of this situation and points to the need to change key aspects of Australia's national culture or we can expect to see a continuation of significant fluctuations in start-up activity.

¹¹ Drucker, P., *Innovation and Entrepreneurship: Practice and Principles*, Heinemann, London, 1985, p.133

¹² Wu, C. and Young, A., 'Critical operating problems and survival rates in small firms: A look at small business institute clients', *Journal of Developmental Entrepreneurship*, 7 (1), 2002, pp. 1-23

The survey points to the need for Australia to develop a pool of entrepreneurial managers who have:

‘ the ability to conceive a present opportunity and a vision of its future utility and plan a path to achieving the vision and adapt the plan to circumstance by managing uncertainty and thereby create durable value. To forecast the yield of assets over their whole life requires people who possess genuine entrepreneurial capacity.’¹³

In the GEM model, entrepreneurial capacity is split into two general categories of motivation and training. The survey results found that when it came to aggregate entrepreneurial capacity:

‘Australia’s predominant motivation factors are speculation and lifestyle rather than calculation and growth.....If you are a speculator rather than a calculator, if you value the comfort zone of lifestyle higher than the challenge of building a growth-oriented enterprise, if your time horizon is short and if you lack the skill to distinguish and manage long term opportunity any severe shock will kill any desire to create a new venture.’

Similar sentiments have been echoed by past and present Australian business leaders. Robert Joss, for example, argues that other countries have a lead compared to Australia in terms of ‘a national capability of managerial competence’, and the American lead is ten-years plus.

‘The American advantage lies in its considerable depth and breadth of managerial skill at implementing new business processes... There are millions of American managers with this experience’¹⁴.

The lack of such a culture is accompanied by a general lack of depth of experience among entrepreneurial managers of high growth start-up companies. The large majority of businesses fail in Australia not because of technical reasons, but because entrepreneurial managers lack the skills and experience to effectively respond to management, financial, human resource and legal problems.

‘What holds us back is a general lack of skills needed for new venturing and a tendency among Australian entrepreneurs to limit their ambition to lifestyle oriented rather than growth oriented businesses’¹⁵.

The Working Group, from its investigations and discussions with the Focus Group participants and experts has concluded that developing entrepreneurial management skills has not been addressed to the same extent as the other legs of the innovation system. This lack of attention retards the performance of the system and constrains the realisation of the benefits of successful commercialisation.

¹³ K Hindle and S Rushworth, *Sensis™ GEM Australia 2002*, Swinburne University of Technology, Melbourne Australia, 2002, p 25

¹⁴ Joss, Robert, Management, *Australian Journal of Management*, 26, 2001, pp 89-103.

¹⁵ Hindle KG and Rushworth SM *Yellow Pages @Gem Australia 2001* Melbourne Australia: Swinburne University of Technology. Downloadable at www.gemaustralia.com.au, p 49

To enhance the effectiveness of the commercialisation system and to meet the challenge of a tenfold increase in the number of high growth companies over the next three years the Working Group considers that:

- the depth or quality of entrepreneurial managers needs to be enhanced;
- the breadth or quantity of entrepreneurial managers needs to be expanded; and
- the velocity of entrepreneurial managers moving through the business cycle needs to be substantially increased.

6. Key Issues

Analysis of the material gathered through the literature review and views articulated during focus groups and individual expert discussions have resulted in an identification of issues that the Working Group considers are constraining the growth and development of entrepreneurial management expertise in Australia. These include:

- The lack of a deeply rooted entrepreneurial culture within Australia which would see entrepreneurship becoming a more socially legitimate activity.
- Anecdotal evidence suggests that too often entrepreneurial managers in the early stages of their company's development do not understand what is required to build a sustainable business. There is a lack of understanding and experience of the importance and role of market research and analysis, cash flow management and financial management.
- The speed or velocity at which entrepreneurial managers are transitioning through the business cycle is not rapid enough to ensure that there are sufficient entrepreneurial managers available to meet the challenge of a tenfold increase in the number of high growth companies in operation in Australia over the next three years. A process of accelerated learning is required.
- The depth or quality of the entrepreneurial management pool in Australia is currently too shallow. Very few serial entrepreneurs are appearing in Australia.
- The breadth or quantity of experienced entrepreneurial managers who have been through the successes and failures of starting up a high growth company is too narrow.
- Within the sector there is a lack of general awareness of the importance of the need to nurture and develop management skills within their business – entrepreneurs don't know what they don't know.
- There is a lack of formal and semi-formal courses to address the special needs of the high growth sector. Entrepreneurial managers are time poor and require well targeted and timed, action based learning options.
- A number of institutional impediments appear to exist which are hindering and discouraging the movement of potential entrepreneurial managers and entrepreneurial staff between academic and public sector research organisations

and start-ups.

- There is poor connectivity and linkages between experienced entrepreneurial managers both within and outside Australia and technologists and investors who are willing to transfer their management skills and experiences.
- There is a serious lack of systematic data collection and analysis of entrepreneurial management. Specific data on management skills for high growth start-ups was found to be scarce. The lack of data means that it is difficult to benchmark and guide the management skills debate. In addition, the effectiveness of interventions are not being measured and monitored.

A further factor in the lack of entrepreneurial management expertise evidenced in Australia is the sector's current stage of development.

In the United States, high growth companies as a discrete sector have been through two or three business cycles over the last thirty or so years and a pool of entrepreneurial managers has emerged who have experienced managing high growth firms both in the good times and bad times. As a consequence, these entrepreneurial managers have finely honed skills and can effectively mentor up and coming entrepreneurial managers on the lessons to be learned from these various cycles.

Australia, on the other hand, is a much newer entrant to the high growth company business cycle. The Working Group considers that Australia's current crop of entrepreneurial managers is only just now completing their first full business cycle.

As argued previously, the Australian culture of not being prepared to forgive failure results in a significant numbers of promising entrepreneurial managers who fail in a venture moving on to other activities rather than pursuing a career as an entrepreneurial manager. This causes a deficiency in both serial entrepreneurs and specialised entrepreneurial managers.

As the GEM survey points out, Australian entrepreneurs have tended to gravitate towards speculative or lifestyle activities rather than pursuing growth oriented business. Equally, very few entrepreneurial managers have had the opportunity to go through the full lifecycle of a business. The net effect has been the lack of development of entrepreneurial capacity in both serial and specialised entrepreneurial managers.

7. Conclusions

7.1 Entrepreneurial Management, Capital and Ideas Attract – the Commercialisation Accelerator

The Working Group considers that entrepreneurial management expertise is the key to unlocking the Commercialisation Accelerator. The Commercialisation Accelerator contains the elements required by the commercialisation process. These elements are illustrated in Figure 5. By increasing entrepreneurial management expertise each element within the cycle would be completed quicker and more efficiently. The results would be demonstrated by:

- enhanced business performance by managers making better use of capital and commercialising innovations faster;
- increased investor confidence which in turn acts as a catalyst for the attraction of more capital;
- encouragement of more skilled people into the system;
- acts as a multiplier effect for developing further expertise; which in turn attracts even more capital.

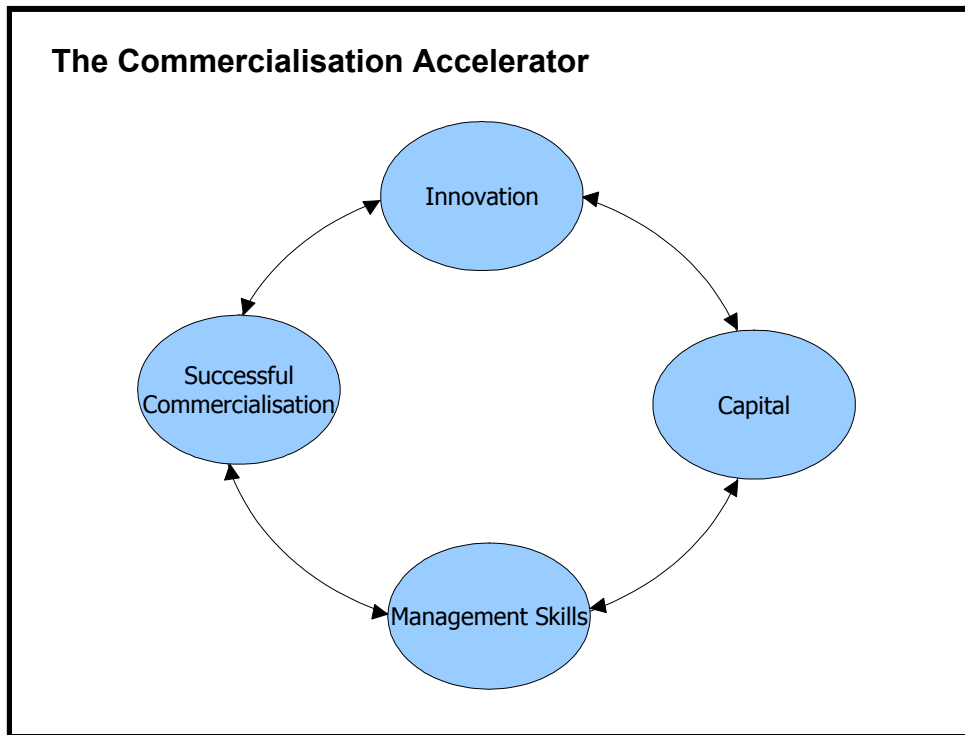


Figure 5: The commercialisation accelerator

7.2 No Silver Bullet Solution Exists

The Working Group found that there is no magic silver bullet solution to resolve the lack of entrepreneurial management skills, rather a portfolio of short, medium and long term initiatives which are led by business are required to adequately address the problem. Each element within the portfolio of initiatives will have unique value in targeting the deficiency in entrepreneurial management skills in Australia. As such, it should be recognised that the portfolio in total will provide the impact required. Selectively choosing elements within the portfolio will detract from the necessary outcome.

The Working Group considers that there are a number of leverage points within the system that can produce improvement. It is not intended to duplicate what is already in existence but rather to enhance existing structures.

7.3 Leverage Points to Enhance Entrepreneurial Management Skills

Leverage points were found that could improve the knowledge of entrepreneurial managers as well as correct community views and perceptions of entrepreneurs. These include:

- targeting the perception of entrepreneurial management as a legitimate and important professional pursuit;
- increasing the velocity through the system to accelerate the development of expertise;
- increasing the depth;
- increasing the breadth; and
- improving the feedback and analysis of the entrepreneurial management system (through better data collection research and analysis).

8. Unleashing Australia's Entrepreneurial Potential

To effectively respond to the challenge of creating ten times as many high growth start-up companies and to optimise the investment made in the generation of ideas and their commercialisation, an important mission for Australia is to unleash the potential of our entrepreneurial talent and adopt a leadership position in changing cultural attitudes towards entrepreneurship.

As discussed in the previous section, the following portfolio comprise a matrix of short term, medium and long term initiatives that are targeted towards changing public attitudes, increasing the velocity within the system, the breadth of the entrepreneurial management pool in Australia and the depth of knowledge contained within this pool.

8.1 Increase the Pool of Quality Entrepreneurial Managers in Australia

The Working Group considers that there are a number of actions that will increase velocity, depth and breadth of Australia's entrepreneurial management expertise. These can be clustered into three broad areas of activity which are:

- Entrepreneurial management development;
- Mentoring and networking; and
- Mobility.

8.1.1 Entrepreneurial Management Development Program

A clear deficiency in business and marketing skills, coupled with a lack of awareness concerning the importance of these skills, was consistently raised by Focus Group participants and stakeholders as applying to the entrepreneurial manager. This has also been identified in a number of reports. The observation that early stage/high growth companies do not understand the need for market research and analysis, cash flow management, capital requirements and financial management was repeatedly made to the Working Group. There was also general consensus that many of the formalised training courses did not offer an adequate solution to filling the knowledge gap in this area. Part of the reasons for this is the mismatch between the flexibility and applicability of courses on offer and the 'immediate and relevant applicability to the entrepreneurial process'¹⁶.

To ensure that Australia is equipped with its future entrepreneurial management requirements, the Working Group considers that a number of elements of this

¹⁶ Timmons, J.A., *New Venture Creation: Entrepreneurship for the 21st Century*, 5th Edition, McGraw-Hill, Boston, 1999, p 518.

program should focus on the next generation of potential entrepreneurs. An added advantage of targeting this group of young Australians is that there is a real opportunity to influence cultural attitudes towards entrepreneurial behaviour.

The Working Group envisages that an Entrepreneurial Management Development Program would comprise a portfolio of development options specifically targeted to:

- developing a more relevant entrepreneurial management skill set; and
- promoting entrepreneurial management as a career / educating on entrepreneurship.

It is envisaged that the Program would build upon existing initiatives and consist of a number of elements that would have short, medium and long term benefits. These elements would be determined after an assessment was undertaken to identify gaps in development options and determine the specific needs of this sector. The Australian Venture Capital Association (AVCAL) has offered assistance in designing and promoting the various development options required. Other commercial organisations may be happy to assist in this process.

Some elements of the program could include:

Entrepreneurial interaction program

Australia lacks people with experience in enterprises operating within larger markets. This program will provide the opportunity for Australian entrepreneurs, CEOs and middle managers to spend a few months in entrepreneurial firms and for service providers to this sector to spend time in more competitive markets such as the USA. Examples of people who would benefit would be IP lawyers, marketing executives, chief finance officers responsible for fundraising, technologists, R&D managers and supply and distribution managers.

Industry run 'Manage like a Pro'

The Working Group has concluded that entrepreneurial managers prefer accelerated learning from engagement with other successful entrepreneurial managers. The 'Manage like a Pro' program could offer a week long intensive immersion into the lessons learnt from peers who have done it before. The immersion course could be driven and sponsored by industry and the instructors will provide their time for a nominal fee in order to keep costs at a reasonable level.

The Venture Capital peak body, AVCAL has already agreed to facilitate this course by seeking industry and Government sponsorship, developing the course and sourcing presenters and key note speakers.

The objective will be to profile and highlight the traps and pitfalls and to build models of successful approaches and behavior based on the hands on experience of serial entrepreneurial managers. These instructors will have the credibility and wisdom to massively accelerate the learning of the course participants – with the aim that they will be turbo charged toward managing like a pro when they complete the immersion program.

The participants would be subject to selection criteria that will seek to develop a rich and diverse experience for those in attendance.

Entrepreneur in Residence Program

The aim is to implant successful entrepreneurs into high growth companies, public sector research agencies and universities. The entrepreneurs would be charged with identifying innovative opportunities and marshalling the necessary funding and management to transform these opportunities into profitable companies. An entrepreneur in residence could be involved with upwards of three companies during the formative first two to three years of the entity's life.

Offshore Immersion Program – a deep dive into entrepreneurial hotbeds

Based on the successful programs in Europe where managers are taken to various centres of entrepreneurship, such as the fashion centres in Italy; Silicon Valley; Israel etc to allow the entrepreneurial managers to experience the culture, the networking and the intangible elements that produce favourable environments for entrepreneurship.

A selection of Australian entrepreneurial managers would immerse themselves for two weeks in the operations and environment of 2-3 hotbeds of entrepreneurship offshore. They would have face to face contact and be allowed real time questioning and analysis of the success factors of businesses in these environments.

An organisation such as IMD (Switzerland) that have experience running these programs could be used to facilitate and set up the immersion program. To encourage uptake the costs could be subsidised by industry and government. Selection criteria would apply to applicants.

Entrepreneurial Business Skills Development

This component would comprise short well targeted courses aimed at increasing expertise in specific areas such as:

- market research including industry, customer and competitor analysis;
- cash flow, capital and financial management;
- leadership and team dynamics;
- business models and sales process; and
- intellectual property and structures.

Repatriation Fellowships for Entrepreneurs

The aim is to offer competitive salary or tax breaks for experienced entrepreneurs to return to Australia to mentor start-up companies.

Expatriate entrepreneurs, particularly in the US are highly remunerated both in salary and stock option plans. It may not be possible to match US or European salaries in absolute terms but there may be a greater willingness to accept lower Australian salaries if a significant compensation component would be in tax advantaged stock options or equity. The expectation of senior employees in the US is that the stock option plans will provide significant wealth, usually beyond their retirement. In order to attract expatriate entrepreneurs back to Australia, they will need to see the same level of potential as they have in the US or Europe. The National Innovation Awareness Council might be one vehicle for developing this initiative.

Entrepreneurship Unit

An entrepreneurship unit could be introduced into all technical tertiary qualifications studies. The course would comprise a high level overview of the entrepreneurial process. It would be focused on students in engineering and the natural sciences and would seek to inform them in the business skills required to form and build a high growth company. Components could include venture formation, marketing and finance.

Entrepreneurship as a Career

Develop new curriculum options for high schools, vocational and tertiary educational institutes that promote 'entrepreneurship' as a valid career option.

This option would draw a linkage between entrepreneurship and its desirable outcomes which would positively effect community perceptions of entrepreneurial behaviour. It would also introduce and build awareness on the necessary components of entrepreneurship.

Exposing students at the high school stage is seen by the Working Group as an important step in changing community perceptions and attitudes towards entrepreneurs and winning acceptance within the community that employment within high growth start up companies is a legitimate career option.

Recommendation 1

The Government support the development of the portfolio of initiatives under an Entrepreneurial Management Development Program

8.1.2 Modify the Management Skills Development Component of COMET

The Commercialising Emerging Technologies (COMET) Program was announced in November 1999 as a \$30 million, 3 year program. Due to the high demand and the initial indicators of success, a further \$40 million was provided for the COMET Program as part of the Backing Australia's Ability package.

The Program is designed to increase the commercialisation of innovative products, processes and services by providing individuals, early-stage growth firms and spin-off companies with a tailored package of support to improve the potential for successful commercialisation. COMET is delivered by private sector business advisers located throughout Australia.

As at September 2002, the number of customers that have been supported by COMET was over 600 and over \$120 million in capital had been raised by COMET customers. In addition, 54 customers had developed strategic alliances, and 80 products or services had been launched.

The Working Group has been made aware that the uptake of the Management Skills Development element of COMET is relatively low. To encourage the uptake of suitable management development options, the Working Group considers that this element of the COMET program could be enhanced by increasing subsidies to 80 per cent of costs as per the Tailored Assistance for Commercialisation stream, reducing the application fee and simplifying the application process. It is suggested that the Government consider these adjustments as part of the future development of the program.

Recommendation 2

Enhance the management skills development component of COMET.

8.1.3 Mentoring and Networking

A number of reports identify mentoring and networking as a highly effective means of accelerating learning and knowledge development in entrepreneurial managers. For example, The Enterprising Nation, Research Report, *Leadership and Management Needs of Embryonic Industries*¹⁷ asserts that the traditional management paradigm is no longer relevant. Networks and knowledge sharing is required, particularly in regard to shorter product life cycles and increased product complexity. The report continues by considering networking as 'an important strategy to enhance management skill development'.

Focus Group participants and other stakeholders consulted by the Working Group concurred with these sentiments – 'These companies need to tap into the relevant networks - people who have experience in market development and raising capital, people who have been through this process and know from experience rather than from second hand knowledge'... 'Get a lot of grey hairs for mentors, "been there done that" type of people are essential'.

The Working Group also believes that mentoring and networking will have a large impact on nurturing and accelerating the development of entrepreneurial management expertise through enabling the transfer of experience based competencies.

A range of Government programs currently exist to facilitate mentoring and networking opportunities. Commonwealth Government programs which incorporate mentoring elements include the Commercialising Emerging Technologies Program (COMET), Building Information Technology Strengths Program (BITS), the Pre-Seed Fund and the Innovation Investment Fund (IIF). These programs encourage mentoring of early stage companies with potential for high growth, providing such companies with access to experienced business people to assist in developing their management capability. State Government programs to encourage mentoring and networking are also in existence. Some examples include the Queensland 'Capital Raising Pipeline' and the Tasmanian 'Commercialisation Ready Program'. Further information on the Queensland Pipeline networking initiative is detailed below.

¹⁷ Report of the Industry Taskforce on Australia's Leadership and Management Skills, 1995, DEETYA: Canberra.

Queensland 'Capital Raising Pipeline' networking model

The Venture Capital Unit (VCU) in Queensland has, over the last three years, created a public/private pipeline of networks and programs known as the Queensland Capital Raising Pipeline.

The Capital Raising Pipeline provides inventors, start-up companies, expanding companies and investors access to a wide range of public and private sector organisations to assist in getting products to market.

The main purpose of the Pipeline is to provide networks at every stage of the commercialisation process. The VCU acts as a facilitator - it links those with the resources to those seeking the resources in both the private and public sectors.

Stage 1 So you have a business concept/idea

Links to websites, inventors associations, business training course, mentoring programs, and investment ready educational programs.

Stage 2 Becoming Investment Ready

In depth investee and investors education programs, negotiating & presentation workshops, business incubators, service providers (legal, marketing, accounting etc) and business consultants.

Stage 3 Networking

Business angel networks, various industry networking events, corporate partners, social clubs. The events are publicised through the pipeline.

Stage 4 Show me the money

Government grants, debt financing, factoring, local business angel groups, corporate partnering, referrals to venture capitalists and other equity providers.

Stage 5 Going global

International investment series, QLD Government overseas offices, Austrade, Sister City business links, University overseas business links.

A number of industry initiated networks are also in operation throughout both capital and country Australia.

However, there is still a perception that more could be done, and in particular, an initiative that has high impact on the mind-set of Australia business on the benefits and value of sharing knowledge and experience in the high growth sector.

The Working Group acknowledges that mentoring opportunities may be limited by the availability of suitability experienced experts and entrepreneurial managers who are prepared to share their insight and experience.

The Working Group considers that continued identification and promotion of available networking and mentoring opportunities by industry and government is vital in assisting entrepreneurial managers to access the opportunities available.

However, the Working Group believes that an identifiable gap in mentoring and networking opportunities is the lack of presence in Australia of a prestigious, high level national mentoring group. This group would be considered as a 'flagship'. It could be championed by the Prime Minister and would comprise a dozen high profile entrepreneurial managers.

The establishment of such a group could have many benefits most important of which is the influence such a group would have on changing perceptions of entrepreneurial behavior and entrepreneurial managers. The benefits would be subtle and largely attributed to the signal given by the Commonwealth Government that it places a high value and encourages 'entrepreneurship'. The spin-off effects of this initiative could include:

- reinforcement of a positive image of the entrepreneur;
- promotion of entrepreneurship as an attractive career;
- a positive correlation between entrepreneurship and economic growth; and
- an environment that is conducive to risk taking.

Recommendation 3.

The Prime Minister champion a National Entrepreneurial Management Mentoring Group

8.1.4 Mobility

The PMSEIC report, *Commercialisation of Public Sector Research*, articulated the advantages to the commercialisation process of encouraging movement between public sector research organisations and start-up companies. The Working Group supports this concept as a method of achieving critical mass of entrepreneurial managers and considers that this arrangement should also extend to universities.

The Working Group considers that flexible arrangements to encouraging this transition need to be inherent in public sector research organisations and universities. Namely, structural barriers, such as tenure and the provision of superannuation etc, should be investigated with a view to allowing benefits to be maintained when moving between institution / start-up company.

One option could be to introduce a five-year reversibility window which would enable the return of the researcher to the public sector research organisation or academic institution. The security of knowing that a return is possible would make it more attractive to the researcher to have a go by reducing the perceived risk.

Recommendation 4.

Encourage mobility between public sector research organisations/academia and start-up companies

8.1.5 Improve Entrepreneurial Management System Dynamics

The Working Group has identified three major deficiencies that inhibit effective communication within the high growth sector. These are:

- data collection and analysis;
- information dissemination; and
- feedback.

There is no adequate, systematic approach to data collection, research and analysis, information dissemination and feedback available to this sector.

The Working Group identified a lack of data to measure activity in this sector. The information that is available tends to be fragmented and difficult to draw together to allow the system to identify and respond to deficiencies. The Working Group considers that data collection and analysis is vital to establishing and determining change and assessing the health of the system.

Similarly, the Working Group has questioned why networking was consistently identified as an area that could be leveraged to achieve a high impact solution. Investigations by the Working Group have identified a wealth of networking opportunities available across the country. Does this mean that entrepreneurs are having difficulties in connecting with opportunities? Are we failing in our promotion of these opportunities?

It is only when there is a system in place that can collect and assess information that we can determine whether the high growth environment is operating at a threshold level and if there are failings, what actions can be taken to rectify them. Data is also required to assess the success of the interventions recommended in this report.

The Working Group recommends that there should be a body which is responsible for:

- Collecting data;
- Undertaking research and analysis;
- Disseminating information;
- Facilitating communication between industry stakeholders and Commonwealth / State Government stakeholders.

This could be achieved by utilising existing structures, for example the mandate of the Australian Institute for Commercialisation (AIC) could be expanded to incorporate these requirements.

The AIC was originally established to identify specific gaps in the commercialisation pathway. Its operating philosophy, amongst other aims, is to:

- identify and respond to issues inhibiting commercialisation;
- establish information networks and forge linkages amongst commercialisation participants; and
- promote and facilitate cultural change.

The Working Group also notes that a number of overseas countries have established Chairs for Entrepreneurial Management. The Working Group considers that the creation of a Chair for Entrepreneurial Management in Australia would further enhance efforts in effectively delivering the metrics collected on the sector and monitoring the sector's overall performance.

Recommendation 5.

Collect, analyse and disseminate information on the high growth start-up sector to inform, measure and enhance the sector's overall performance and contribution to the economy.

Appendix 1 Working Group Membership

Professor Don Nicklin AO	Principal	Niche Consulting Services (and personal member of PMSEIC)
Ms Suzy Baxter	Director Science and Technology	Davidson Recruitment
Ms Gail Geronimos	Co-Founder	Achaeus Ltd
Dr Wolf Hanisch	CEO and Managing Director	CBio
Dr Mike Hirshorn	Chief Executive St George Innovation Fund	Nanyang Ventures
Mr John Read	Chairman	CSIRO - Commercial
Mr Rob Sauer	Partner	Dibbs Barker Gosling
Dr Phillip Wing	Partner	Technology Venture Partners

Appendix 2 Focus Group and Individual Expert Consultations

Mr Alex Hartman,	CEO	Mytek
Mr David Luchetti	Manager Venture Capital	AusIndustry
Ms Wanda MacKinnon	National Manager COMET	AusIndustry
Ms Moira Scollay	CEO	Australian National Training Authority
Professor Andrew Boynton	Director IMD Executive MBA program	Keenan-Flagler Business School University of North Carolina
Mr Andrew Green	Chief Executive	Australian Venture Capital Association Limited
Craig Estwick		investorReady
Dr Jurgen Michaelis	Director and CEO	Bio Innovation SA
Annemarie Rutledge		Tara Trading (International)
Paul Evans	CEO	Strategic Alliance Network Developments
Bruce Meadows	Manager	Rothschild Bioscience Managers Ltd
Alan Cullen	CEO	Cullen Capital
Malcolm McBratney	Partner	McCullough Robertson Lawyers
Ashley Gill	Director	Agile Forecasts
Reg Elliott	Independent Director	
Alan Lipman	Chairman	Fredon Industries
Stuart Wardman-Brown		CHAMP
Andrew McGinley		Tralee Software
Rodger Buckeridge	Executive Director	Allen and Buckeridge
John Dyson	Investment Principal	Starfish Ventures Ltd
Rose Tegg	Project Manager Innovation and Technology Unit	Department of State Development (Tasmania)

