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THE IT ENGINE ROOM

SMEs in Australia's IT&T industry

The IT Engine Room—SMEs in Australia's IT&T industry

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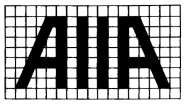

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FOREWORD

The continuing rapid growth of global IT&T industries presents both opportunities and challenges for Australian small to medium-sized enterprises.

Small to medium-sized companies have been the engine room of IT&T innovation, developing new products and creating new strategies. However, they face an uncertain path to success as they have to compete with much larger companies to be accepted in the wider IT&T market.

The Commonwealth Government remains committed to promoting and assisting Australia's information industries, as highlighted in the January 1999 policy statement *A Strategic Framework for the Information Economy—Identifying Priorities for Action*.

This report—*The IT Engine Room*—makes a number of useful observations about current perceptions of small and medium-sized companies and possible directions for the Australian IT&T industry. In particular, it sets out win/win strategies to strengthen linkages between stakeholders—industry associations, governments, multinationals, universities, the research community and companies themselves. I hope this report will lead to a better understanding of the dynamics at work and the level of interaction needed between the key players in Australia's IT&T industry.

Richard Alston
Minister for Communications, Information Technology and the Arts

CONTENTS

A vision for driving the success of small and medium enterprises (SMEs) in the Australian Information Technology & Telecommunications industry.

1. EXECUTIVE SUMMARY

This report addresses the particular issues, challenges and opportunities for the information technology and telecommunications (IT&T) industry to promote, establish, nurture and grow its small and medium enterprises (SMEs). In particular, this report examines how the relationship between SMEs and their key stakeholders can drive mutual success.

The audience for this report is the boardrooms of SMEs and their key stakeholders. This means not only corporate boardrooms, but the equivalent top management teams in IT&T multinationals, State and Federal Governments, universities, the CSIRO, cooperative research centres and industry associations.

IT&T SMEs are a significant source of innovation, job and wealth creation, as well as export revenue. However, not enough recognition has been given to the differences between SMEs in general and SMEs which operate in the IT&T industry.

SMEs and other stakeholders in the information industry say that real and sustainable wealth comes from investing in intellectual property (IP) that is the output of knowledge workers.

This has been realised by the United States, Israel, Ireland, Singapore, Taiwan and other countries. Smaller countries, with domestic markets similar in size to Australia, have introduced tax incentives and other support programs to ensure that every encouragement is given to local and multinational companies to build and retain intellectual capital.

This report is based on input from focus groups of SME executives, interviews with representatives of key stakeholders, the analysis of the responses to an SME survey and the extensive experience of the authors in working closely with SMEs over the past
10 years.

1.1 Findings and conclusions

- Over 200 companies responded to the SME survey. They represent over 7 000 employees and a combined revenue of over $1.2 billion per annum.
- More than 95 per cent of the SMEs addressed in this report have a revenue below $35 million per annum.
- IT&T SMEs are different from SMEs in general because of the rapid pace of the IT&T industry and their need to compete in a global market.
- Skilled IT&T staff are hard to find and keep.
- SMEs are very dependent on key customers, financiers and IT&T multinationals for their development. Other stakeholders, such as research and development organisations (RDOs), government and other SMEs also play an important role.
- In general, existing State and Federal Government programs are under-utilised by IT&T SMEs. State governments follow state-based strategies which vary in their emphasis. There are several important Federal Government programs which are beneficial to IT&T SMEs. However, the special nature of the IT&T industry requires specifically formulated programs.
- Cooperative research centres have assisted the engagement of research organisations with major corporations, however most IT&T SMEs are not aware of, or involved in, this process. The survey and focus groups indicate little recognition of the capability of Australia's research organisations among SMEs.
- IT&T SMEs require almost no capital to start, but once successful there must be an explosive injection of funding and management skills to take advantage of the brief market window. To ensure a sustainable domestic IT&T industry, its SMEs need better access to patient capital. The Australian venture capital market is gearing up to this requirement, but the shortage of key executives who have the skills to guide

SMEs during their commercialisation and growth phases needs to be addressed. Patient capital is difficult to obtain partly because there have been few examples of successful investment in IT&T SMEs in Australia and also because of the culture gap which exists between SMEs and financiers.

- Many successful SMEs will eventually migrate to economies where they are valued most. There should be no barriers placed in the way of this exodus, particularly if the founders and their capital gains remain in Australia to start another company. However, if the Government sponsors an environment where IT&T SMEs are properly valued there is a real opportunity to retain more of these companies and so generate sustainable export revenues and a significant impact on Australia's gross domestic product. IT&T is one of the few industry segments where Australia's distance from world markets is not a major impediment.
- Australia has some world-class Indigenous companies in the mining, pharmaceuticals, banking, retail and agriculture industries. The IT&T industry must engage the boardrooms of the leading companies in these industries with the new opportunities in IT&T, such as the Internet and electronic commerce. The IT&T SME can deliver the combination of innovation, technology awareness, competence and nimbleness needed to implement and get to market quickly. However, this requires the support of the local, regional and corporate offices of IT&T multinationals, RDOs, financiers and the many bodies which provide services to the SME.

1.2 Key recommendations

This report recommends the following key initiatives, set out in section 8:

- Take a more strategic approach to the existing regional headquarters program by encouraging multinationals to establish centres of excellence in Australia in conjunction with leading RDOs, customers and SMEs with appropriate skills (section 8.1.4).
- Appoint networking agents to work with Australia's major IT&T users to identify innovative business and technology solutions which give them competitive advantage, implemented by SMEs. The agents would work with investors to provide additional funding for the solution to be generalised for global markets. IT&T multinationals would be encouraged to take the solution to world markets (section 8.2.2).
- Establish an 'executive warehouse' website where IT&T executives with experience in assisting SMEs through their commercialisation and growth phases can make their services available and SMEs seeking specific skills can register their requirements (section 8.2.3).
- Create a systematic program that provides incentives for RDOs to partner with SMEs to commercialise research and development relevant to the IT&T industry, supported and driven by brokers to implement and act as catalysts for the incentive program (section 8.2.1).

1.3 Secondary recommendations

- Increase accessibility of research and development organisations by maintaining on their website details of their R&D focus and opportunities for cooperation with SMEs. RDOs should identify SMEs working in the same field, and seek opportunities for networking and mutual support (section 8.1.2).
- Increase the number and scope of incubator programs which provide support for SMEs in their formative stages. It is essential that incubators provide timely supporting services from accountants, lawyers and financiers and that SMEs gain better access to potential customers for their solutions (section 8.1.3).
- Source and seed-fund specific training programs for IT&T SMEs in the areas of marketing, and investment and alliance readiness (sections 8.1.8, 8.1.9 and 8.1.13).

- Government to sponsor a number of programs for information sharing and introductory services. These include an SME capability database, exporters network to encourage greater cooperation in offshore markets and an IT&T business angel network (sections 8.1.11, 8.1.15, 8.1.16 and 8.1.17).

- Develop the relationship between IT&T SMEs and the venture capital community through a series of seminars and workshops held by the relevant industry associations (section 8.2.4).

- Conduct an annual IT&T SME survey to gain a better understanding of the industry demographics and perceptions in response to changes in the world economy, global technology and government policy (section 8.2.5).

- Continue to support the broader objectives of this report to encourage networking among IT&T SMEs (section 8.2.6).

1.4 Existing government programs

There are a number of existing government programs which have been well received by IT&T SMEs and which should be continued or extended. Key programs that are of particular benefit for SMEs include Export Marketing Development Grants, Innovation Investment Fund, Software Engineering Australia, and Information Technology OnLine. In addition, the R&D Start Grants and tax deductibility for R&D have been particularly beneficial. However, in order to support a number of the key programs recommended in this report it is suggested that these two programs be extended to cover a number of commercialisation activities, particularly where the commercialisation investment will ensure that high risk R&D generates a productive benefit for Australia.

2. INTRODUCTION

2.1 What's different about IT&T SMEs?

At the heart of this report is an understanding that SMEs in the information industry sectors are deserving of special attention from government.

This is not special pleading—Governments around the world and within Australia have long recognised the importance of the information industry and the need to encourage growth in this sector. This is for a number of reasons:

- IT underpins the competitiveness of all industry sectors and access to the latest technology is critical for international competitiveness.
- The information industry is the fastest growing industry sector globally—in 1997 it was worth approximately $US1800 billion, about 6 per cent of global gross domestic product, and growing at about 7 per cent per annum (compared to global gross domestic product which is growing at about 5.5 per cent).[1]
- The information industry is the fastest growing sector in international trade—in 1995, trade amounted to $US600 billion, accounting for 12 per cent of world trade, up from four per cent in 1983.[2]
- The industry is characterised by high valued added and by high value jobs.

Governments' most important challenge is to provide an economic climate which facilitates wealth creation and employment for their citizens. The information industry is the key to meeting this challenge. Support for SMEs is critical to the overall performance of the information industry.

2.2 The role of the information industry in economic performance

With regard to the information industry in Australia:

- The information industry is growing at three times that of the economy; real gross domestic product in the communications industry trebled between 1990 and 1996, compared with a 15 per cent increase in manufacturing.
- Total revenues of Australian Information Industry Association (AIIA) member companies increased by more than 10 per cent in each of the last four years.

[1] WITSA, *Digital Planet*, 1998
[2] Australian Research Council, *Information Technology: Sink or Swim?*, 1998

However, the greater economic contribution of the information industry is through application of the technologies across all sectors of the economy. Precise measures of the value of increased productivity and new capability have been difficult to obtain. But recent studies from the United States reveal:

- A gross marginal return from information technology usage of 86.5 per cent over 1988–92, compared with 8.5 per cent for capital and 1.2 per cent for labour.
- Gross marginal benefits of information technology usage among Fortune 500 companies of more than 60 per cent.
- One unit of computer capital contributes as much to the growth of output as 98 units of other forms of capital.
- Information systems (IS) labour expenditure generates several times as much output as expenditure on non-IS labour.[3]

Performance in Australia should be broadly comparable.

2.3 SMEs and the information industry

The information industry in Australia has over 13 000 firms, 12 000 of which have less than 10 employees; only 146 have more than 100 employees.[4] It is clear than that the performance of SMEs is central to the performance of the industry overall.

In the USA, the performance of the information industries SMEs has been outstanding. Cisco, Microsoft and Intel, now dominant players in their sectors, were start up firms in the 1970s and 1980s. Now their collective market capitalisation is more than the United States car industry, plus Boeing, Eastman Kodak, Sears Roebuck, Caterpillar and Kellog combined. More recently, new firms such as Yahoo, Netscape and others have emerged and within a year or two have generated billions of dollars in wealth for their founders.

Looking at employment, in the high technology sectors in the United States, small firms (fewer than 500 employees) provided 28 per cent of jobs in the sectors and generated revenues in excess of $170 billion. Ninety-four per cent of high technology firms had less than 500 employees; 73 per cent had less than 20 employees.[5] The information industry performed better in this regard than other high technology sectors: between 1996 and 1997, the computer and data processing sector had the fastest rate of job creation (13.1 per cent) and generated more jobs than any other sector (165 200).[6]

[3] AIIA, *Information Industry Manifesto, Background paper*, 1998.
[4] ABS, *Information Technology, 1995–96*, Catalogue No. 8126.0.
[5] US Small Business Administration, *The Facts about Small Business*, 1997.
[6] US Small Business Administration, *Small Business Economic Indicators*, 1997.

In Australia, the performance has not been quite as spectacular. The 1998 PriceWaterhouseCoopers *Economic Impact of Venture Capital Survey* clearly demonstrates the economic impact of venture capital in the Australian economy through the responses of 294 venture-backed small and medium enterprises that had received a total of $272 million. Among its findings: during the period from 1992–93 to 1996–97, the Australian venture-backed companies surveyed had an average 12.1 per cent annual growth in sales and 9.5 per cent annual growth in employment. While this is considerably ahead of the economy generally, it pales in comparison with the United States data from a similar survey which shows revenue growth of 38 per cent and jobs growth of 34 per cent per annum.[7]

SMEs in the information industry have particular needs which differentiate them from other SMEs. The data above clearly shows the their high growth potential in terms of revenue, employment and wealth. In order to unleash this potential, SMEs in the information industry require special financing, due to high seed and early-stage costs and the high risks and concentrated development period.[8] AIIA's submission to the Review of Business Taxation addresses these financing needs and makes recommendations on necessary tax reforms.[9] They also have special issues relating to management, access to technology and strategic relationships10[10] which are addressed in this report.

[7] PriceWaterhouseCoopers/ National Venture Capital Association, *The Economic Impact of Venture Capital*, 1997
[8] Bank of England, *The Financing of Technology-Based Small Firms*, October 1996
[9] See the AIIA website, www.aiia.com.au.
[10] See, for example, HM Treasury/Department of Trade and Industry, *Innovating for the Future: investing in R&D*, 1998.

3. ABOUT THIS REPORT

3.1 Intended purpose

This report seeks to recommend actions that can be taken in the short term, rather than address matters that will require legislative change such as taxation and structural issues. It is concerned with the external organisations which influence the SME. Internal issues such as the technical skills shortage are being considered in other forums.

The intended purpose of this report is to increase IT&T SME success by:

- Creating a common vocabulary and framework for discussion, debate and enhanced networking within and between IT&T SMEs and their stakeholders.
- Providing a series of recommendations for adoption by IT&T industry stakeholders which can be owned and measured.
- Articulating the business drivers for successful alliances and networks between SMEs and their stakeholders.
- Identifying the stakeholder and SME behaviour changes that are necessary for successful growth.

3.2 Timing—why now?

There are a number of local and global changes taking place which position the IT&T SME in a new context:

- Greater awareness in State and Federal Cabinets of the national strategic importance of the IT&T industries and of SMEs in general.
- Increased recognition that the IT&T industry is a source of wealth creation which is starting to attract new investment.
- The Year 2000 issue is causing large organisations to recognise the strategic nature of their IT&T investment.
- The trend to outsourcing is having an impact on the role of the SME.
- Increasing globalisation of the IT&T industry is forcing local organisations and multinationals to reconsider their roles and positioning.
- Mergers and acquisitions by overseas companies are changing the nature and ownership of local IT&T companies.
- The Internet is removing the tyranny of distance, allowing Australian companies with significant vision and innovation the opportunity to capture global market share. However, the Internet is also allowing overseas companies easy and rapid access to the local market.

3.3 Methodology

To gain the widest range of opinions from stakeholders and SMEs, both quantitative and qualitative methods were adopted.

- Interviews were held with representatives of each class of stakeholder, including banks, venture capitalists, IT&T multinationals, outsourcers, RDOs and customers.
- Seventy-five SME executives worked in eight focus groups in New South Wales, Victoria, Queensland, Western Australia and the Australia Capital Territory using the Australian Grouputer electronic meeting product. This enabled over 1 200 verbatim comments to be collected based on the grid structure in section 7.2. Input from these groups was used to develop the survey questionnaire.
- >From the 1 200 comments 99 were selected as the most representative and have been published as The Voice of the SME, initially to the network of 75 SME executives.
- A six page survey was developed and tested against a small sample of SMEs. It was then mailed to over 800 IT&T SMEs and received 233 responses. The replies were statistically analysed at Macquarie University.

3.4 Structure of the report

Section 4 sets out the characteristics of IT&T SMEs, based on input from the executive focus groups and the survey responses.

Section 5 describes the roles of each stakeholder class in relation to SMEs, based on interviews.

In Section 6 some mutual perceptions of SMEs and each stakeholder class are extracted from the interviews, survey and focus groups, with suggestions and examples of cooperation for mutual benefit, together with quantitative data about this interaction from the survey.

Section 7 considers the three phases of development of the SME (R&D, commercialisation and growth) and where each of the stakeholders have the greatest impact on SME success, based on the focus groups and interviews.

Section 8 considers existing programs to support SMEs at each phase of development and recommends where they could be extended, and proposes six new programs based on the win/win opportunities identified in section 5.

3.5 Acknowledgements

This report forms the basis of a networking program proposed by AIIA and funded by the Department of Communications, Information Technology and the Arts. The survey of SMEs was funded by Gilbert & Tobin and Macquarie Bank.

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4. CHARACTERISTICS OF IT&T SMEs

4.1 Background

4.1.1 The typical SME

The survey of 233 SMEs showed that the typical IT&T SME employs less than 10 staff, has been in business less than three years and has a revenue of less than $2 million per annum. Annual growth rates of 20 to 30 per cent are common for these firms, with
22 per cent of SMEs achieving growth rates above 50 per cent per annum.

4.1.1 SME life cycle

SMEs create value by developing products and services through three phases:

- **R&D**—where an innovative idea is converted to a deliverable which can be demonstrated, its features and relevance assessed, the target market identified and its value proposition defined in comparison to its competition.
- **Commercialisation**—where the deliverable undergoes pilot installations to give customer feedback and is completed to meet the defined market requirements, with marketing, pricing and support strategies in place, distribution strategy options evaluated and the future organisation structure defined.
- **Growth**—where the organisation grows to fill the sales and support structures, the deliverable is distributed in the market and enhanced to meet particular platforms, markets and competitors.

At each phase external organisations can add value to the SME. These stakeholders have resources such as intellectual property, skills, market knowledge, market and customer access, delivery channels and money.

As an SME becomes larger and supports multiple lines of business, it can work in all phases at the same time. In this report, SMEs are considered as having a single line of business in order to highlight their interactions with stakeholders.

4.1.3 IT&T industry SMEs are different

IT&T industry SMEs are different from other SMEs in that they function in a unique environment. Other high growth industry sectors have some of the following characteristics, but the IT&T sector has all of them:

- **Ease of entry**—it is relatively easy to create an IT&T SME. Very little seed or start-up capital is needed, so there are few barriers to entry. However, many new SMEs underestimate how much follow-on capital is needed to achieve the growth rate necessary to achieve market share, so that many do not realise their potential.
- **Speed to market**—the tempo of the IT&T industry is much faster than most other industries. If the SME is not very responsive and cannot manage very rapid growth, the market opportunity is lost. Market windows are often less than one year in the IT&T industry. This places a high demand on capital availability, which must be available with short lead time and in large amounts.
- **Global market**—the IT&T market is a global one, and so the SMEs in it must be ‘born global’. The domestic market is large enough to sustain a small company, but growth demands an export focus.
- **Risk**—there is a high technical and distribution risk, but large returns if the enterprise is successful. This risk can be successfully managed with experienced people.
- **Staff availability**—timely recruitment of skilled and experienced staff is critical to success. In a market where there is already a growing shortage of IT&T human resources, the SME must compete with larger organisations for staff.
- **Staff mobility**—IT&T people are increasingly mobile, looking globally for the best technical challenges and rewards. Staff retention is a key issue for IT&T SMEs. Employee share option plans are

not as common in Australia as in the United States, where they are a critical factor in attracting and retaining key employees.

- **Risk capital**—the industry is not mature enough in Australia to have a history of successful investment, hence it is much more difficult to attract risk capital to IT&T compared with the mining, manufacturing or agriculture industries.
- **Management expertise**—there is not yet a large enough pool of experienced entrepreneurs and advisers who have created value from a succession of SMEs, compared to other industries.
- **Company valuation**—the valuation of IT&T companies in Australia is much lower than in the United States. Valuation in IT&T has more to do with perceived market potential rather than the more conventional cash flow and margins—hence the high valuation of some United States start-ups.

4.1.4 The high growth IT&T SME

Section 4.2.4 describes the predicted growth rates of IT&T SMEs. It highlights that the majority (68 per cent) of SMEs predict a growth rate below 30 per cent per annum. While this is rapid growth compared to SMEs in general, in an industry which is itself growing at 13.5 per cent per annum, this can be regarded as low to medium.

On the other hand the 32 per cent of SMEs which predict growth rates above 30 per cent per annum offer the founders and investors an opportunity to create a significant increase in capital value, provided that the company can be managed successfully during that growth.

Responses to the questionnaire from these high growth SMEs were cross tabulated with responses to the other survey questions to better understand their characteristics. Some significant observations about high growth IT&T SMEs are:

- They are younger.
- More consider that they understand how to be investment ready, recognising their need for capital to sustain growth rates.
- They are less reliant on funding from banks, but more dependant on business angels and venture capitalists.
- More have received R&D grants, demonstrating that they are willing to invest in high risk activities.
- More are interested in networking, recognising that key stakeholders, including other SMEs, can help drive success.
- More have received Export Market Development Grants to get a return on their high risk R&D investment.

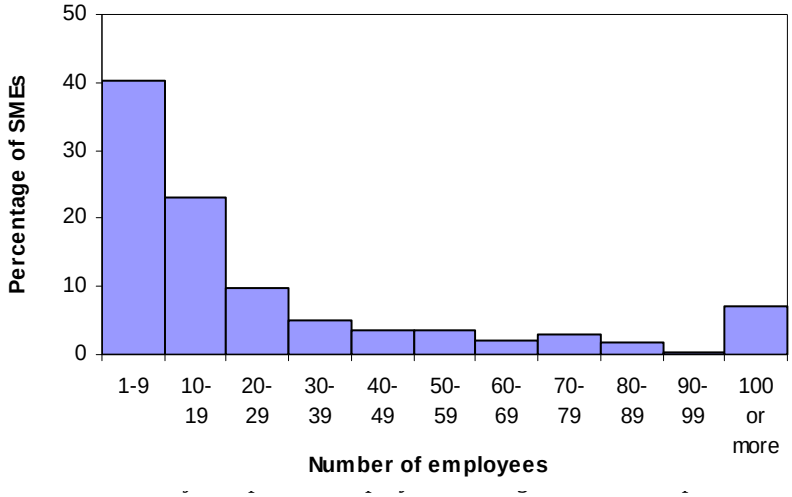
The challenge for the industry is how to create more high growth SMEs.

4.2 IT&T SME demographics

As a result of surveying 233 SMEs, key details associated with the characteristics of Australian SMEs are set out below. These include the number of employees, number of years in operation, turnover and forecasts for revenue growth.

4.2.1 Number of employees

Of the 233 SMEs surveyed, 224 reported the number of people they employed. The average number of employees per SME was 33.5, the median 13, and the mode 2.



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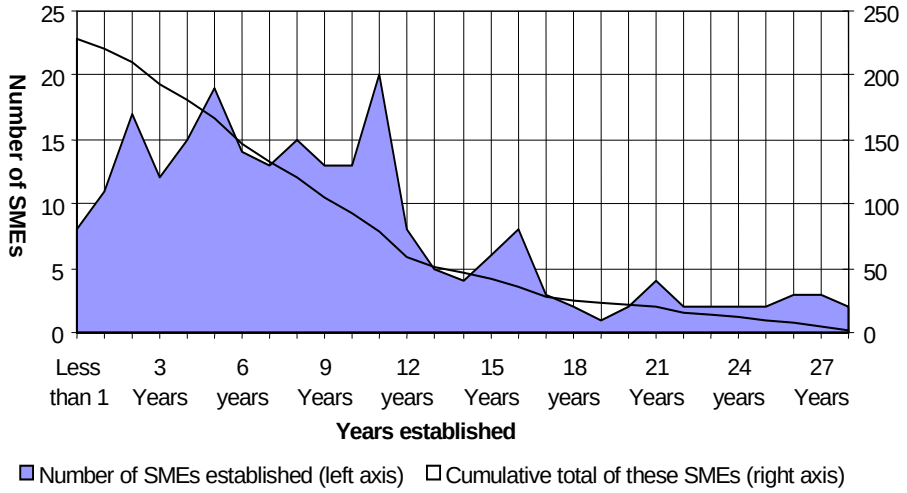
4.2.2 How many years has your company been established?

Of the 233 SMEs surveyed, 229 reported on the number of years established. The average number of years in business was 9.1, the median was 8.0 and the mode was 11.0.



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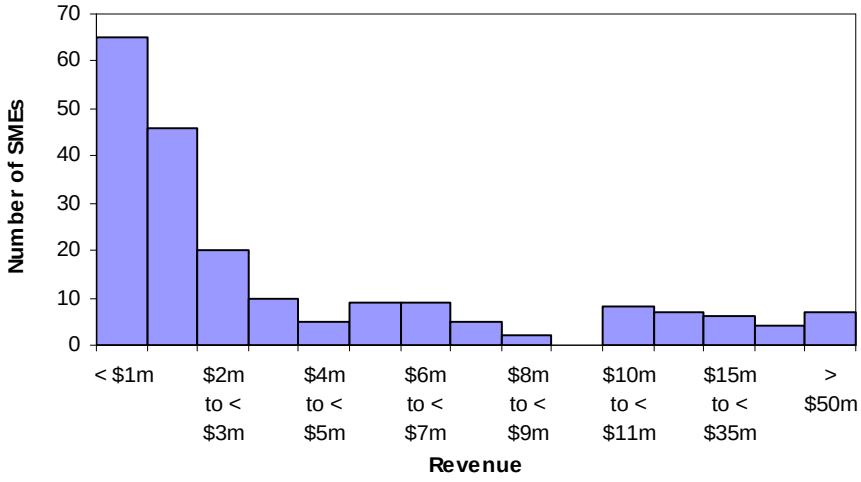
1. *The number of IT&T SMEs has grown rapidly in the last 12 years, resulting from the introduction of open industry standards and low-cost computing such as PCs in the mid-1980s.*
2. *Within 12 years companies may have failed, been sold or merged, or outgrown the SME category.*

4.2.3 What is your company's turnover?

Of the 233 SMEs surveyed 202 reported their revenue as being less than $35 million in 1996–97. Of this group, the average revenue was $6 million, the median was $1.5 million, and the mode was $1 million. Another 10 SMEs reported their revenue as being greater than $35 million.



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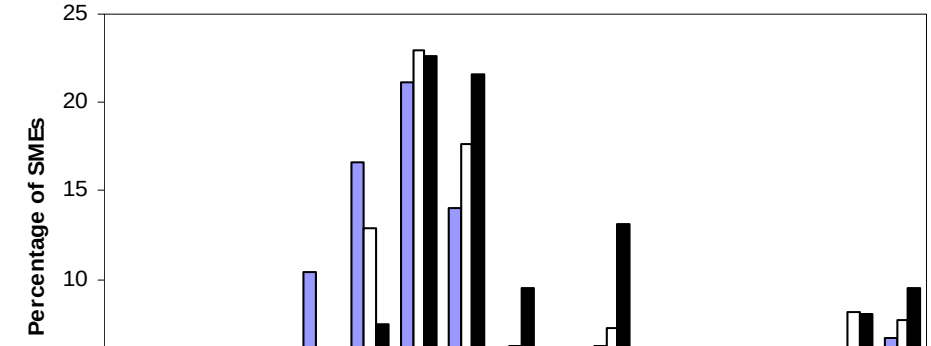
4.2.4 What percentage change in revenue did your company experience in 1996–97 and what does it expect in the following two financial years?

Of the 223 SMEs surveyed on these three questions, an average of 200 responded.



In the year 1996–97 the majority of companies surveyed experienced a positive growth rate of between 10 and 30 per cent. Most expected growth in the following two financial years but at a lower rate. Interestingly, of those who had experienced negative growth in 1996–97, most expected positive growth in the following two years.

Note: This survey was completed before the Asian financial crisis in early 1998.

5. STAKEHOLDERS

5.1 SME Depencies

Throughout their growth SMEs interact with stakeholders such as RDOs, customers, IT&T multinationals, financiers and other SMEs.

Such interaction is moderated by the policies and programs of Federal and State governments and is assisted by 'brokers' such as industry associations, and professional services companies such as accountants, lawyers and consultants.

The eventual success of an SME is dependant on the quality of the relationships it can sustain with these stakeholders.

5.2 The stakeholders and their roles

In this report the following stakeholders are recognised as having an ability to impact on the success of SMEs. Their roles are defined below.

5.2.1 Research & development organisations

RDOs include universities, the CSIRO and Cooperative Research Centres (CRCs). They undertake research, provide education and training programs and are a source of skilled employees. They are major repositories of knowledge and are gateways to worldwide academic and research networks. They have a deep understanding of technologies, their inter-relationships and architectures of successful systems developments.

There is a fundamental tension between the objectives of RDOs and SMEs. The academic is assessed on their ability to publish new discoveries, while the SME attempts to commercialise and protect new discoveries.

As part of their commercialisation process, employees and intellectual property can leave the RDO and 'spin-off' to form a new SME or join an existing SME.

5.2.2 IT&T multinationals

IT&T multinationals represent a source of industry and product knowledge, skills and resources and can be channels to world markets for SMEs. Typically they provide 'platform products' on which SMEs base their development.

Some multinationals are a source of investment funds. The Australian offices of multinationals are essentially sales and distribution centres offering pre and post-sales support for their corporate products and services.

In addition, some multinationals have established R&D centres which have a corporate mandate to develop intellectual property on behalf of the global organisation, or to modify global products for local and Asian markets.

Large multinationals have also entered the outsourcing business, taking over all or part of the IT&T functions of their customers.

Multinationals' relationships with SMEs takes many forms:

- Value-added distributors of their products and services.
- Solution partners, where they incorporate the SMEs' product or service into their solutions.
- Solution developers to create new products or services, either in conjunction with customers or to address new market opportunities.

5.2.3 IT&T customers

IT&T customers are organisations that implement IT&T solutions for greater efficiency and to gain competitive advantage. State and Federal Governments, as users of IT&T, fall into this category.

Customers are the most critical stakeholder for SMEs. They are the source of business innovation and opportunity. Customers generally have a specialised internal function which builds/buys and implements IT&T solutions. With the growing realisation of strategic advantage through better management of information and knowledge, the control of IT&T policy is moving to top management and the boardroom.

In addition, the trend to outsourcing non-core IT&T systems is having dramatic effects on industry relationships. Outsourcing can have a fundamental impact on the SME/customer alliance, breaking long-established relationships and causing the SME to access the customer through the outsourcer. This also represents a major opportunity for the SME if the outsourcer adopts the SMEs' products and services as part of their solutions. However, this is extremely difficult because the outsourcer seeks world-wide best in class solutions, and forms global alliances with other IT&T multinationals.

5.2.4 Financiers

Financiers include banks, business angels and venture capital providers. Generally they offer advice and assistance as well as funding. Banks provide debt-funding, where the security offered is usually the family home. Business angels are privately wealthy individuals who invest in start-up companies and who generally provide the earliest stage equity funding, business advice and networking. Venture capitalists take a later stage equity position. Funds are generally released to SMEs as they achieve pre-agreed milestones, with severe penalties if they fall behind.

5.2.5 Other SMEs

SMEs can assist each other in sharing experiences, complementary technology or access to markets.

Many SMEs offer solutions in vertical markets and regard themselves as being in that industry rather than part of the IT&T industry. As a result they seldom respond to IT&T surveys and so may not be included in statistics about this industry. Many are not aware of support programs or networking opportunities within the IT&T industry.

5.2.6 Governments

State and Federal Governments (including politicians and public servants) determine the business environment for SMEs. Governments create and manage programs and determine the industry development policy framework and objectives for multinationals and financiers.

For example, the Federal Government introduced the Partnerships for Development (PfD) program in 1987 which invited multinationals to undertake industry development targets over a period of seven years to gain access to Federal Government markets. This was later extended with the Fixed Term Arrangement (FTA) for multinationals, with lower targets over four years. Some 100 multinationals have joined these programs.

Government outsourcing agreements include industry development obligations which can involve SMEs.

5.3 'Metabolism'—a useful metaphor

A useful metaphor to understand the difference between an SME and a larger organisation is one based on metabolic rate. An understanding of relative 'metabolic rates' is critical to a successful SME alliance, with recognition by both sides of behaviour differences.

- Every organisation has its own 'metabolic rate', partly dependant on size, that determines the relative speed to make decisions, time between 'feeds' and the response time to external events.
- Among the stakeholders, academia has the slowest metabolism, followed by governments, the multinationals and financiers.

- An IT&T SME, because of the industry in which it operates, has an even faster tempo than non IT&T SMEs, and can burn out or starve quickly if not regularly and correctly resourced.
- SMEs regard their fast ‘metabolic rate’ as a sustainable advantage. However, many larger organisations are restructuring with the intent of increasing their ‘metabolic rate’, and will compete with SMEs for speed of response.

6. STAKEHOLDER AND SME NETWORKING

The executive focus groups provided a forum for open discussion of SMEs' perceptions of their interaction with each stakeholder class. The interviews with individual stakeholders provide insight into their relationships with SMEs. For each stakeholder, these views are summarised in the following pages, including their suggestions for opportunities to work together for mutual benefit, together with selected responses from the survey.

6.1 RDOs and SME networking opportunities

We researched RDOs' views on SMEs and SMEs' views of RDOs. These are summarised below together with opportunities for win/win programs.

R&D organisation's view of SMES	Opportunities for win/win programs	SMEs' view of R&D organisations
1. SMEs are tactical. They have no commitment to long term or deep R&D. 2. The level of research and quality are inconsistent with RDO standards. 3. RDOs would rather work with multinationals which have world class R&D culture, capital to invest and the capability to commercialise. 4. SMEs can't afford and don't value RDO services. 5. Why partner with a SME when you can spin one off to commercialise?	1. RDOs offer state of the art systems insight and breadth of skills. 2. SMEs and RDOs could cooperate to influence world standards. 3. RDOs could assist SMEs in assessing their position against best in class products. 4. Cluster SMEs with common technology interests around RDOs as 'virtual incubators'. If RDOs set up networks of SMEs working in related areas, that would assist in minimising re-invention and duplication among SMEs. 5. RDOs can licence their technologies to new SMEs (spin-offs) or to existing SMEs, which become commercialisation channels. 6. SMEs can assist RDOs to assess market needs and dynamics. 7. The business schools in universities can be a source of market research, management and marketing skills.	1. RDOs are not aware of SME research capabilities. 2. Research does not appear to be relevant. 3. There are no processes to support cooperation. 4. Subsidised competition in some markets. 5. They have too much red tape. 6. 'Public service' attitude, and are not commercially aware. 7. Business school external programs are aimed at large companies rather than SMEs.

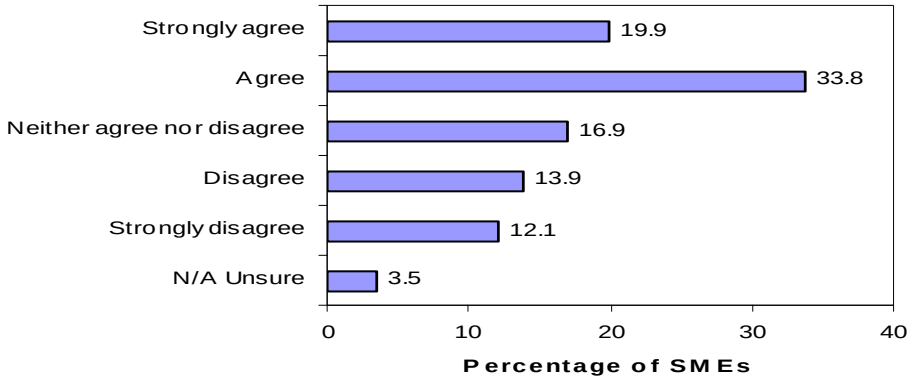
RDOs and SMEs are driven by different imperatives. Their respective goals, strategies and cultures are not in alignment. There is no effective process to ensure that SMEs and RDOs cooperate to identify and focus on growth markets. The survey revealed that 78 per cent of SMEs never visit RDOs. There are in fact significant opportunities to cooperate.

6.2 Multinational and SME networking opportunities

Our survey of 233 SMEs asked the following questions about their relationship with IT&T multinationals.

6.2.1 SME perceived benefit

My company benefits from the business relationships it has with companies from the IT&T industry.



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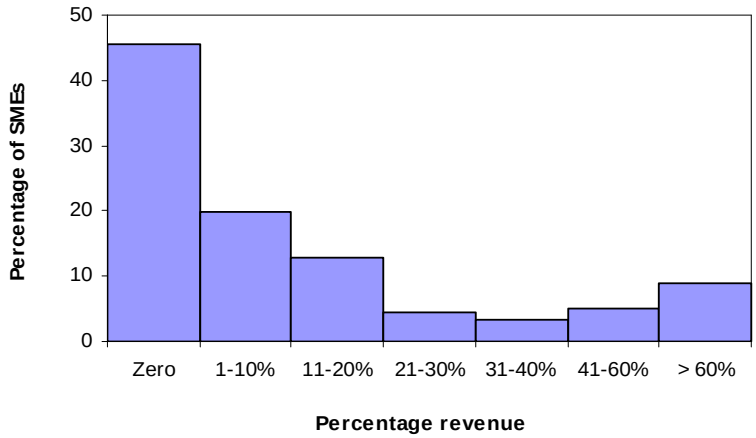
6.2.2 SME revenue from multinationals

What percentage of your company's revenue from last year was derived from doing business with multinationals who are in the IT&T industry (i.e. any relationship other than a simple customer/provider agreement)?



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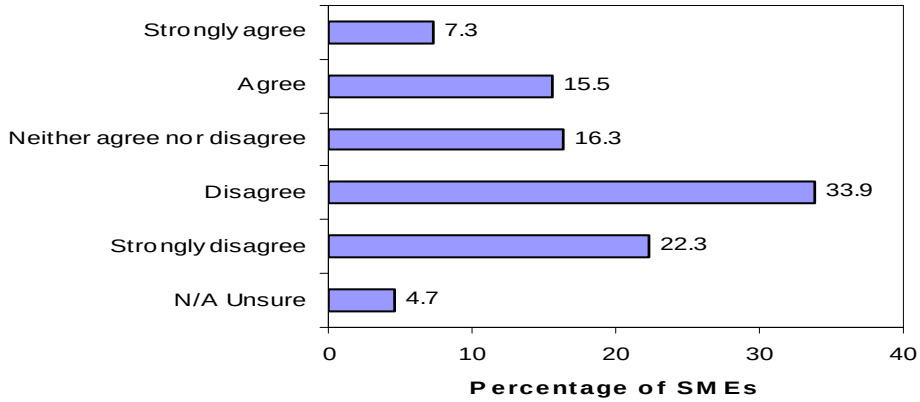
6.2.3 O

Federal and State Government outsourcing of its IT requirements will be a business opportunity for my company.



IT&T SMEs believe that there will be few winners and many losers as a result government outsourcing policies. The State and Federal Government outsourcing agenda is perceived to be inconsistent with the interests of IT&T SMEs. Government initiatives should respond to to this concern.

6.2.4 Partnering for outsourcing

Please indicate if your company has entered into any of the following strategic alliances with an outsourcing company, and if not, would be willing to do so?

	% Entered Into		% Willing to Enter	
Alliance type	**Yes**	**No**	**Yes**	**No**
IP licensing arrangements	9.6	90.4	77.7	22.3
Technology transfer	7.1	92.9	80.4	19.6
Joint development project	15.2	84.8	89.2	10.8
Provision of service	38.5	61.5	94.6	5.4
Distributorship	24.5	75.5	75.8	24.2

The majority of relationships with outsourcing providers relate to the provision of services. Other forms of strategic alliances are desired by SMEs but are seldom offered by outsourcing providers.

6.2.5 Multinational and SME networking opportunities

We researched multinationals' views on SMEs and SMEs' views of multinationals. These are summarised below together with opportunities for win/win programs.

Multinationals' view of SMEs	Opportunities for win/win programs	SMEs' view of multinationals
1. They have point specific solutions and do not see the big picture. 2. Good technology, but lack business skills. 3. Hand to mouth, reactive and can't keep commitments. 4. Poor quality. 5. High cost to manage well. 6. Can only afford a few committed relationships. 7. Little appreciation of corporate requirements or culture. 8. Unrealistic expectations. 9. Don't know how to partner. 10. 'Shoot from the hip'. 11. Need to demonstrate their commercial value.	1. PfD/ FTA has built some effective partnerships from which case studies could be developed. 2. Government policy on outsourcing should do more to encourage SME alliances. 3. Team with SME to solve a customer problem in a replicable manner. 4. Need for 'alliance ready' programs on both sides. 5. In a world of global uniform product sets, the SME can add local competitive differentiation and flexibility in the differentiation and flexibility in the Australian market. 6. SME is good for Australia-specific solutions (e.g. local government, health and mining). 7. SME can work with a multinational's customer to rapidly develop a 'proof of concept' solution.	1. Bureaucratic and slow moving. 2. Want customer control, to SME exclusion. 3. Stop gap relationship. They use product or service only until a new corporate sponsored solution is released. 4. Is difficult to get their senior executives to buy-in. 5. Lack of planned information sharing. 6. Fail to communicate changes in corporate direction. 7. Fickle loyalty—lack of corporate memory. 8. Overcommit SME to customers. 9. Drive SMEs to commodity end of product range. 10. Overuse SMEs in pre-sale. 11. Don't know how to partner. 12. Global alliances between multinationals are a major threat to SMEs. 13. Top management may commit to SME alliance program but sales team are focused on their own solutions. 14. Outsourcing breaks the relationship SMEs have with their customers.

Whilst there are significant cultural differences between multinationals and SMEs, the common focus on developing winning solutions for customers provides a common ground to work together.

6.3 Customers and SME networking opportunities

We researched customers' views on SMEs and equally SMEs' views of customers. These are summarised below together with opportunities for win/win programs.

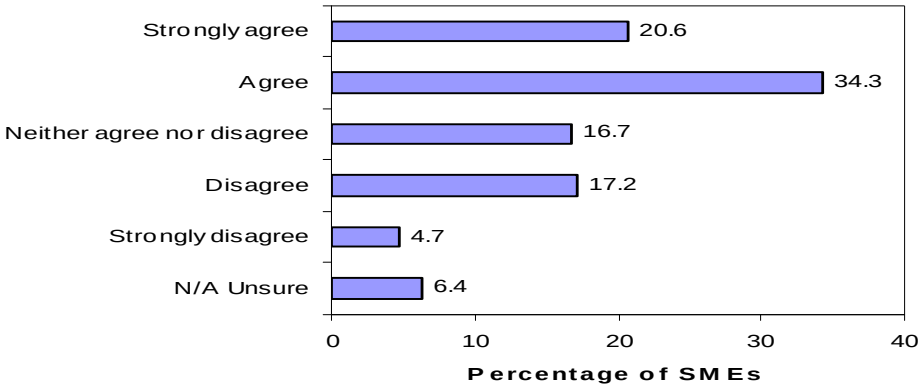
Customers' view of SMEs	Opportunities for win/win programs	SMEs' view of customers
1. SMEs are flexible and responsive. 2. Must be careful about relying on SMEs for business critical solutions. 3. Much more complicated to interface with an SME. It is better if the SME can partner with a multinational as well. 4. They often need to be paid, even if agreed work is incomplete, in order to sustain their business viability. 5. Are reluctant to commit resources to an SME for what may be a short-term relationship.	1. Customer IT&T management needs to recognise the value in the effort of finding or of finding SMEs which can provide innovative solutions. 2. Customer' need for competitive advantage is a unique opportunity to share ideas, and to undertake cooperative R&D or business innovation. 3. Business case planning for both parties is important to understand their different business drivers and to match expectations. 4. High levels of trust and openness are needed for success. 5. Case studies of successful customer/SME relationships would be valuable.	1. Essential to our success. 2. Always seem to ask for more than we can deliver. 3. Slow and costly decision making process means we bet our business on big deals. 4. Treat us more harshly than multinationals. 5. Once you get the business it takes forever to get customer acceptance and therefore payment.

Increased customer support is critical for SMEs. In particular, customers who consider themselves world leaders in their markets can play a major role and benefit significantly from the advantage of using SME leading edge technologies and services.

6.4 Financiers

6.4.1 SME's view of investment readiness

We surveyed 233 SMEs about the relationship between financiers and Australian SMEs.
I understand what my company must do to be 'investment ready'.



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6.4.2 The funding dilemma for IT&T SMEs

An IT&T SME can create a new business opportunity in a number of different ways. Interestingly the starting point may not be from within the IT&T industry.

- Distributing an imported product and recognising the opportunity to add value or to replace the product.
- Developing a solution for a customer (or for internal use) and recognising that it is applicable to a wider market and so is a new business opportunity.
- Realising that the IT&T services it is delivering to the market can be replicated or 'productised'.
- Recognising a new business opportunity resulting from a technology breakthrough or innovatively recombining existing technology.
- Noticing a gap in a major vendor's product line.
- Working with an RDO to commercialise an innovative technology.

If there is an existing revenue flow then the new venture can be funded internally, however, this places great strains on the company. The CEO must balance the resources needed to maintain the cash flow and getting the new product to market. When the pace of the IT&T industry was slower, this form of internal funding was difficult but manageable. However, it has a governing effect on the company's growth rate.

As the industry accelerates and the Internet gives overseas SMEs access to the Australian market, there is greater time pressure to meet a market window and get market share. That growth rate cannot easily be achieved through internal funding alone.

Once this is recognised, the top management of the SME has to spend a great deal of time and effort chasing external funding and managing the relationship with investors. The speed with which appropriate funding can be found will determine whether the market window can be met. Sometimes the CEO must accept that the window of opportunity is closing and consequently 'kill the child'.

6.4.3 Financiers and SME networking opportunities

We researched financiers' views on SMEs and equally SMEs' views on financiers. These are summarised below together with opportunities for win/win programs.

Financiers' view of SMEs	Opportunities for win/win programs	SMEs' view of financiers
1. 'Where are the companies we can invest in?' 2.We must focus on the high growth companies. 3. Most SMEs are not investment ready. 4. There are too few success models in Australia. 5. More a focus for business angels at this end of the IT&T market. 6. Lack of well articulated business plans and exit strategies. 7. Many SMEs cannot differentiate between investment and expenditure. 8. Most founders are unwilling to give up equity. 9. Many SMEs do not know their competitors.	1. SME CEOs need mentoring in the venture capital business drivers. 2. SMEs need to understand the wealth creation model—growing value as well as revenue and profit. 3. Need for forums to network SMEs and financiers for better reciprocal understanding. 4. Need for 'finance ready' programs for SMEs. 5. Need for programs to assist IT&T SMEs to find appropriate business angels	1. Difficult to interact with. They don't understand the issues in the IT&T industry. 2. Add little value in SME business decision making and growth. 3. Abuse their position. They are too focused on exit strategies rather than growing value. 4. Institutionalised processes. 5. Lack a sense of urgency.

Whilst SMEs and financiers need each other to survive, they do not understand each others business drivers.

6.5 Networking with other SMEs

6.5.1 SMEs sharing activities with other SMEs

The view that SMEs have little interest in working together was tested with the following questions.

Please indicate if your company would be willing to share in any of the following activities with another SME:

Willing to share:	Yes %	No %	Unsure %
Technology information	73.3	8.6	18.1
Joint R&D	70.7	12.7	16.6
Management information	69.3	10.8	19.9
Market information	72.0	9.6	17.9
Export channels	77.6	4.4	18.0
Facilities and assets	64.3	13.9	21.7

The commonly held view that Australian SMEs are unwilling to cooperate is not reflected in these responses. There appears to be a willingness for SMEs to share a number of important activities with other SMEs, even joint R&D, which goes to the very heart of their core assets. In particular, activities which aggregate noncompetitive functions such as sharing export channels and real estate infrastructure are open to

partnering and clustering between SMEs. It suggests that IT&T SME executives are happy to share management information and their experiences to leverage each others' successes.

6.5.2 SME and SME networking opportunities

We researched SMEs' views of each other. These are summarised below together with opportunities for win/win programs.

SMES' negative view of SMEs	Opportunities for win/win programs	SMEs' positive view of SMEs
1. Lack of resources (people and funding) to develop products and markets. 2. Have difficulty in managing growth. 3. Critical dependency on finding and retaining key staff. 4. Some employees have been in the SME since it started and are 'part of the family' even if they no longer contribute value. 5. Difficult to get recognised by larger companies. 6. Unable to handle large opportunities. 7. Seldom do enough market research. 8. Try to do everything in-house. 9. Little time or resources to spend with other SMEs with similar problems.	1. SMEs would like to cooperate to address a market opportunity. 2. Share market research and experience. 3. Share scarce resources 4. Discuss common issues 5. Mentoring each other. 6. Source product from each other. 7. Share promotional programs in a common market niche, particularly overseas. 8. Cluster together around RDOs or IT&T multinationals.	1. Local expertise and industry knowledge. 2. Innovative. 3. Faster to market. 4. Exploit niches. 5. Flexible and responsive. 6. Less threatening to clients. 7. Customers can deal with the principal, rather than the branch office or distributor of a multinational. 8. Deliver cost-effective R&D. 9. Rapid adoption of new technologies and techniques.

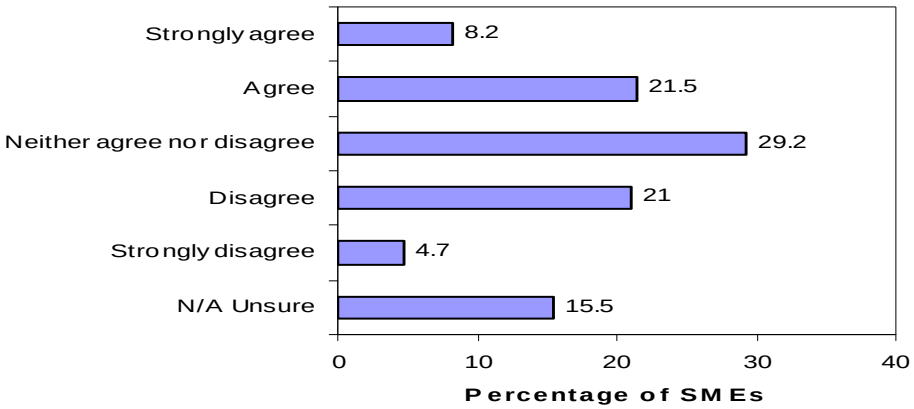
SMEs have both positive and negative views of other SMEs, and the positive views show real opportunities for significant win/win programs.

6.6 Perception of government programs

Our survey of 233 SMEs asked the following questions about their perception of Federal Government programs.

6.6.1 Perception of PfD/FTA

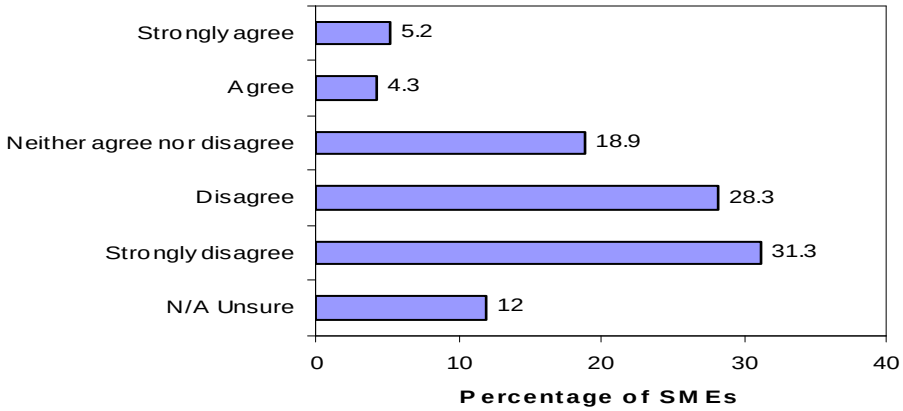
PfD/Fixed Term Arrangements are good for Australian IT&T industry



Th *25* *e Federal Government is to identify which aspects of the program are considered beneficial.*

6.6.2 Benefit of PfD/ FTA

My company has benefited from the PfD/Fixed Term Arrangements



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6.6.3 Summary of State Government programs

Each State Government has adopted a different strategy to support and promote SMEs in their State.

Queensland

- Relatively large budget to support SME programs.
- An effective 'Finance Information Technology & Communications Growth' (FIG) program with subsidy from AusIndustry.
- Well-established database of local companies, including those in regional cities.

New South Wales

- Focus on supporting high growth companies, not only in IT&T.
- Initiated Australian technology showcase for outstanding hi-technology companies.
- Successful regional headquarters program.

Victoria

- Focus on investment attraction and joint ventures between overseas and local companies for distribution.
- Investment ready programs for SMEs.

South Australia

- Established the Playford Centre to facilitate early stage funding, supported by three major IT&T multinationals.
- Attract multinational R&D centres.
- Support for individual SMEs which are considered high potential.

6.6.4 Perception of government programs

The 233 SMEs surveyed were asked 'which of the following government programs are you aware of and which has your company used or is intending to us?'.

Australian Enterprise Improvement

Program	Aware %	Have used %	Plan to use %
Total quality management program	57.0	9.4	4.3
Business planning advice and assistance	50.2	18.9	2.6
Business information, referral and advisory services	46.8	15.5	3.9
Other AusIndustry programs			
Business networking programs	42.1	14.2	3.0
BizLink	41.2	8.2	2.1
125 per cent tax concession for R&D	49.8	36.1	9.0
START R&D grants	51.1	8.6	13.7
START support for collaborative R&D	48.1	1.3	6.4
START concessional loans for technology innovation	45.5	2.1	5.6
Austrade Programs			
Export hot-line	46.8	14.6	2.1
Market research	45.1	21.9	3.9
Export Market Development Grants	49.8	30.9	11.2
Export loan facility	54.1	3.0	3.4
Investment promotion program/feasibility study	36.1	0.9	2.6
Asian Pacific Fellowship Program	33.0	0.4	0.4
Export Access	32.6	5.6	1.3
Export Finance and Insurance Corporation	48.9	3.9	3.4

State Governments			
Business licensing information service	30.5	2.6	0.9
Small business advisory services	52.4	11.6	0.0
Other			
Industrial Supplies Office	21.9	7.3	0.9
Telstra Product Development Fund	31.8	2.6	1.3

Although there is a significant awareness of these programs only a few are used by IT&T SMEs.

6.7 Government and SME networking opportunities

We researched government's views on SMEs and SMEs' views of government. These are summarised below together with opportunities for win/win programs.

Government view of SMEs	Opportunities for win/win programs	SMEs' view of Government
1. An important sector for creating jobs. 2. Potentially a significant enabler to other industry sectors. 3. Differences in scale makes SME 'hard to see'. 4. Many SMEs are not interested in talking to government. 5. Government should not try to pick winners.	1. Initiate and support brokering programs between IT&T SMEs and their stakeholders. 2. Identify successful SMEs and give them high profile with ministers. 3. Offer pilot sites in government for new concepts and make IP available for SME commercialisation. 4. Reward large commercial organisations which give positive IT&T SME support. 5. Invest more in programs that will cause IT&T SMEs to cluster. 6. Remove obstacles such as capital gains tax and other tax impediments to investment in SMEs.	1. RHQ programs take resources away from SMEs and generate little IP or export value. 2. 'The best thing government can do is give us work opportunities.' 3. Government does not understand SME culture and motivation. 4. Good support for overseas trade shows. 5. Little follow up from programs to measure their impact or success. 6. Some well designed programs, but they are poorly executed. 7. Some public servants seem to believe SME founders are 'making a fortune', when they are in fact 'starving'. 8. Government thinks using IT creates wealth for the IT industry. The United States Government knows you create more wealth for the nation by exporting IT to other countries rather than simply using it.

There are many opportunities for governments to refocus their SME programs to IT&T and to offer specific support through the recognition and utilisation of SMEs' products and services.

7. SME LIFE CYCLE

7.1 Critical success factors during the growth of an SME

Seventy-five SME executives, working in eight focus groups, described their critical success factors and how stakeholder behaviours can affect success at each stage of SME development.

R&D	Commercialisation	Growth
1. Finding customers who are risk takers i.e. early adopters with technical expertise. 2. Allying with multinationals which can provide critical support in benchmarking and mentoring R&D. 3. Investing in market research: • size and duration of the market; • competitors in the market; and • available channels to the market. 4. Defining sustainable competitive advantage. 5. Deciding on internal or external funding. 6. Deciding the business model and plan, including exit strategies for investors. 7. Selecting technology platforms and understanding their dependencies. 8. Identifying skills needed, where and when to find them and how to keep them. 9. Identifying the key stakeholders for success.	1. Continuing involvement of key customers is critical, however customers require an overall solution, so SMEs must enter alliances. 2. Managing effective alliances with stakeholders. 3. Working with customers who will drive multinationals to work with SMEs. 4. Making the transition from a technology-driven to a business-driven company. SME shared experience on this transformation is valuable. 5. Identifying the core business, deciding what can be outsourced. 6. Deciding the organisation structure to enable and support growth. 7. Selecting the pilot, demonstration and reference sites. 8. Managing the extent issue—deciding what won't be done. 9. Establishing competitive pricing and margin models.	1. Maintaining alliances with multinationals which can be the key to world markets (especially knowledge of overseas markets). 2. Networking with successful SMEs to share experiences. 3. Using the Export Market Development Grant Scheme—valuable assistance. 4. Selecting venture capitalists with overseas affiliates provide bridges to new markets. 5. Deciding the market entry strategy—the mixture of subsidiary sales offices and distributors. 6. Designing the distribution channel business models. 7. Deciding the growth strategies and finding the right people and funding to sustain the necessary growth rate.

7.2 Stakeholder networking opportunities

The matrix below sets out the potential of each stakeholder to contribute (ranging from low, medium to high) at each phase of the growth of an SME. Based on the input from the focus groups and stakeholder interviews, this matrix identifies which stakeholders should cooperate to maximise mutual benefits. Other stakeholders such as governments, industry associations and business brokers need to act as catalysts to facilitate this cooperation.

SME Phase

Stakeholder	R&D Potential benefit	Commercialisation Potential benefit	Growth Potential benefit
R&D organisations	Medium	Medium	Low
IT&T multinationals	Medium	Medium	High
Australian customers of IT&T	Medium	High	Medium
Finance institutions	Low	Medium	High
Other SMEs	Low	Medium	Medium

At each phase of growth each stakeholder can have a positive impact. This report recommends the development of programs to educate both stakeholders and SMEs on when and how to cooperate and to seek opportunities for multiple stakeholder cooperation to provide mutual benefit and leverage for SMEs.

8. REVIEW OF INDUSTRY PROGRAMS

8.1 Existing programs

The questionnaire asked SMEs to state their awareness and use of government programs, reported in section 6.7. Programs that have good acceptance by IT&T SMEs are reviewed in this section of the report. The 'comments on program' come from the SME focus groups and the survey. 'Recommended extension to program' sets out the recommendation of this report, based on a distillation of considerable industry input and interviews with SMEs and stakeholders.

Existing program	**8.1.1 R&D START Grant**
Stakeholders	Federal Government
Comments on program	Very valuable.
Recommended extensions to program	There should be more emphasis on applying some part of the R&D START Grant for collaborative commercialisation activities with specific customers.

Existing program	**8.1.2 Outreach programs for SMEs**
Stakeholders	RDOs
Comments on program	Over 70 per cent of SMEs have never visited an RDO.
Recommended extensions to program	RDOs working on technologies aligned to IT&T should extend outreach programs by adding to their websites areas of R&D focus and information about opportunities relevant to IT&T SMEs. They should identify SMEs working in the same field and establish relationships with them, creating 'virtual incubators'. RDOs active in standards bodies should communicate on key issues with cooperating SMEs. RDOs could assist SMEs with workshops to review product road-maps in terms of soundness of architecture, adherence to standards and positioning against best in class products. SMEs can assist RDOs with their knowledge of market requirements.

Existing program	**8.1.3 Incubators and technology parks**
Stakeholders	Governments
Comments on program	Potential to be an effective bridge between RDOs and SMEs. This is essential to provide SMEs access to ancillary services which assist a technology venture to translate to a growth business.
Recommended extensions to program	There are a number of successful incubators providing valuable environments for SMEs to participate and align themselves with each other and RDOs. A number of multinationals are actively participating in these incubators. All governments should seek to replicate best in class incubator models. It is strongly suggested that key IT&T customers actively participate in these incubators to provide SMEs with pilot sites and commercialisation opportunities. It is essential to provide infrastructure within incubators to support SMEs, with timely access to advisors (accountants, lawyers and financiers) who can assist with strategic business initiatives. By way of example, in the Silicon Valley, leading law firms such as Wilson Sonsini help create and shape the way that SMEs go to market. Another good model is the Israeli technology

	incubator program.

Existing program	**8.1.4 Regional headquarters**
Stakeholders	Governments and multinationals
Comments on program	This program has been successful in attracting some large RHQs to Australia. There is no apparent 'lost sale' reporting to focus on lost opportunities and why they were lost.
Recommended extensions to program	Existing regional headquarters programs have been most successful in attracting multinationals to establish regional headquarters in Australia for specific functions such as call centres. A more strategic approach would be to give incentives for centres of expertise which create new products or services and anchor the multinational to Australia. This should be a national priority. Multinationals should be encouraged to work closely with leading RDOs, key customers and SMEs with appropriate skills to establish regional centres of expertise. It would be particularly beneficial to focus on industries where Australia is a world leader e.g. banking and financial services, mining and retail. To increase the level of multinational investment in Australia, capital gains tax and stamp duty on intellectual property transfer (as introduced by the NSW Government) must be reviewed. The current tax environment does not support the development of intellectual property in Australia.

Existing program	**8.1.5 125 per cent R&D tax deduction**
Stakeholders	Government
Comments on program	Definition of R&D should be broadened.
Recommended extensions to program	Since the maximum benefit to the economy is derived when technologies are converted into business solutions (i.e. commercialisation), government should give consideration to extending the tax deduction to include some commercialisation functions.

Existing program	**8.1.6 Software Engineering Australia (SEA)**
Stakeholders	Government
Comments on program	Important infrastructure.
Recommended extensions to program	For IT&T SMEs to be world class they need to develop their software based on best-in-class foundations and tools. SEA will facilitate this critical success factor. As this program has only recently been implemented no recommendations are made, other than to suggest that the value being delivered under this program be reviewed, e.g. through focused SME workshops. These workshops could also ensure industry is aware of the value of services offered and the leadership role SEA could play. SEA should work with existing industry associations rather than duplicating their activities.

Existing program	**8.1.7 R&D commercialisation**

Stakeholders	RDOs
Comments on program	SMEs are not aware of the potential value of commercialising the research output of RDOs
Recommended extensions to program	Most RDOs have commercialisation programs which licence IP or permit new SMEs to spin-off. These SMEs experience typical start-up problems. An alternative model is to encourage existing SMEs to act as commercialisation arms for RDOs, perhaps through joint ventures. Our research suggests that, while Government invests significantly in high risk research and development, and while it has in place a number of programs to support the growth of SMEs, the commercialisation stage does not have effective programs. It is in the commercialisation phase that SMEs have a critical role to play. A model needs to be put in place to deal with intellectual property ownership issues.

Existing program	**8.1.8 Finance ready**
Stakeholders	Government
Comments on program	Excellent initiative.
Recommended extensions to program	Becoming 'finance ready' increases the efficiency of the interaction between SMEs and financiers. Government programs which provide education and training to facilitate SMEs becoming 'finance ready' should be rationalised and best-in-class programs offered Australia-wide. The Queensland Government Finance, IT & Communications Growth (FIG) program is one of the programs which should be considered. These programs should be targeted at IT&T SMEs which are (or have the potential to be) high growth companies.

Existing program	**8.1.9 Small business advisory service**
Stakeholders	Government
Comments on program	Very useful but not targeted at IT&T SMEs which have specific challenges (see section 4.1.3).
Recommended extensions to program	A specific set of advisory services should be developed focusing on the unique requirements of IT&T SMEs. Government should identify best-in-class commercial organisations offering management and marketing skills training and put in place a program to allow these expensive training services to be made available to groups of SMEs. By way of example, most SMEs are technology driven, not sales and marketing driven, and many SMEs have a strong need to develop sophisticated selling skills. Multinational IT companies invest heavily in sales and marketing training and best-in-class sales and marketing training courses should be made available to SMEs. This may require government support until it is self-funding.

Existing program	**8.1.10 Business networking**
Stakeholders	Government/DOCITA's Information Technology OnLine Program (ITOL)
Comments on program	Positive initiative but needs a more strategic approach.
Recommended extensions to program	This is part of a business networking initiative and is an attempt by government to be more strategic in networking opportunities for IT&T SMEs. It recommends that networking agents be appointed to sponsor relationships which meet an underlying strategic business case justification. A good example is networking in the area of e-commerce associated with value chain re-engineering (e.g. Pharmaceutical Electronic Commerce & Communications (PECC)). This should be particularly focused on when there is an ability to replicate the e-commerce solutions overseas, thereby creating valuable export earnings for Australia.

Existing program	**8.1.11 Export Marketing Development Grant**
Stakeholders	Government
Comments on program	Highly regarded by SMEs.
Recommended extensions to program	It is recommended that this program continue in its current form. In addition, government should put in place, perhaps through Austrade and industry associations, a website which describes what SMEs are doing in various export markets to allow other SMEs to identify opportunities for joint marketing initiatives. The ability to leverage relationships in offshore markets is critical and highly valued by SMEs.

Existing program	**8.1.12 Partnerships for Development, Fixed Term Arrangements and outsourcing**
Stakeholders	Government
Comments on program	Mixed industry views.
Recommended extensions to program	Industry development programs which involve multinationals should be re-skewed towards SME participation at the R&D phase. Incubator and commercialisation activity should focus on cooperation between key customers and SMEs, particularly where intellectual property will remain in Australia. In addition multinationals should continue to be encouraged to establish Australian 'global mandates' in centres of expertise, providing leadership roles in key market segments. In outsourcing, greater emphasis should be placed on providing channels to overseas markets rather than providing local content.

Existing program	**8.1.13 Alliance programs**
Stakeholders	Government
Comments on program	Needs further focus and investment.

Recommended extensions to program	It is recommended that an alliance education program be put in place to allow a better understanding, by both multinationals and SMEs, of their business issues and how to structure win/win relationships. Case studies of successful alliances could be developed as part of this program.

Existing program	**8.1.14 Innovation Investment Fund (IIF)**
Stakeholders	Government
Comments on program	Positive idea, unsure about execution.
Recommended extensions to program	Government should continue this program. It should promote its success by publishing quarterly the level of investment made by the IIF companies in IT&T SMEs. Venture capital companies with a focus on providing business development skills and access to experienced executives that can assist SME growth into global markets make ideal IIF candidates.

Existing program	**8.1.15 Market research**
Stakeholders	Austrade
Comments on program	Useful resource.
Recommended extensions to program	It would appear that market research offered by Austrade is valuable and this service should continue. An opportunity may exist to establish an IT&T SME website which provides a range of information for IT&T SMEs seeking to establish their business offshore. This could extend to successful Australian IT&T SMEs being used as a point of reference to support other SMEs moving offshore.

Existing program	**8.1.16 Business angels**
Stakeholders	Various commercial organisations e.g. Australian Business Chamber, VECCI etc.
Comments on program	Not well known or regarded by IT&T SMEs.
Recommended extensions to program	The current business angel introduction services are aimed at the general SME market. IT&T SMEs report that the participants are not sufficiently aware of the dynamics of the IT&T world. An effort should be made to establish a service specifically for the IT&T industry within the requirements of the Corporations Law.

Existing program	**8.1.17 Capability database**
Stakeholders	Governments
Comments on program	Valuable but fragmented.
Recommended extensions to program	Each State and Federal Government and the industry associations have established databases which include SMEs, their products and services. A common format should be adopted so that capabilities and R&D focus are recorded and are available to be searched. This would enable SMEs working in aligned areas to be identified and linked into virtual

cooperating networks. These databases should be set up so that users see a single database, even if it is physically distributed. Maintenance of this data and responsibility for its accuracy must lie with the individual companies in the database.

Existing program

8.1.18 Year 2000

Stakeholders

Governments

Comments on program

One benefit of the Year 2000 crisis is that there is now a much greater awareness of the dependency of organisations on the success of their operational computer systems.

Recommended extensions to program

The government should leverage the focus and momentum of the Year 2000 program to promote the positive aspects of IT&T into the boardrooms of Australia.

This message should include:

- Competitive advantage is to be gained from business innovation.
- Technology-based solutions are the most effective way of capturing, replicating and maintaining innovation.
- Australia really is a 'clever country' and SMEs are effectively one manifestation of this capability.

Australia's future growth is dependent on a sound domestic IT&T industry.

8.2 Recommended new programs

Feedback from the Feedback from the focus groups and interviews with stakeholders, summarised in section 4, led to the following recommended new programs.

Program name

8.2.1 Research commercialisation programs

Stakeholders

RDOs (supported by government funding)

Program objective

- To develop and leverage RDO initiated technologies that are relevant to the IT&T industry.
- To realise the potential for effective commercialisation of R&D.
- To gain additional funding support and commercialisation outcomes for these programs.
- To adopt best-in-class business management tools for commercialisation purposes.
- To allow government, the IT&T industry and technology customers collaboratively assess how government investment in RDOs is leveraging opportunities for the Australian IT&T industry.

Program scope

- The RDO identifies several three to four year focused research programs that have the potential of generating a steady stream of commercially valuable IP.

	• The RDO commits to assigning/building a team of world class researchers and software engineers to these programs. • The RDO offers non-exclusive rights to commercialise the technology in return for royalties, some portion of which are paid up front. • SME participation is encouraged through R&D start grants which enable the SME to pay a share of these upcollaboratively front royalties. The grant is awarded on the SME's R&D participation and commercialisation plan. The SME retains IP ownership of the enhancements it makes • Conduct research expositions where researchers present these programs to IT&T stakeholders • Facilitate the commercialisation process by appointing brokers to drive this activity
Anticipated Program Benefits	• R&D is aligned with business benefit outcomes. • Major beneficiaries of the R&D are active earlier in the value chain. • Technology/business solutions are brought to market earlier. • The quality of the commercialisation process in RDOs is improved and thus adopted by the industry as best in class.

Program name	**8.2.2 Key customer/industry programs**
Stakeholders	Government
Program objective	• To create strategic business solutions through the application of leading edge technology. • To have key customers providing the business justification for technology innovations which translate into business innovations. • To get senior executive buy-in for active involvement of SMEs at commercialisation and • application stages of new technologies. • To foster an environment where SME IT&T companies will secure venture capital • funding for global markets. • To focus SME IT&T companies on global solutions based on specific customer solutions.

	• To attract multinationals to work with SME IT&Ts in bringing products and services to global markets
Program scope	• Appoint networking agents to work with leading edge Australian technology users and senior executives to identify new opportunities in conjunction with SMEs. Define the scope of the new development, focusing on technology and business innovation.
	• Work with venture capital companies and SMEs to secure the additional funding necessary to build a global solution instead of a specific customer solution.
	• Develop best-in-class case studies. For example, when Coles Myer embraced EFTPOS, which revolutionised the retail industry in Australia, it also assisted the development of Intellect, which is now a world player in EFT solutions.
	• Obtain endorsement of a multinational and customer references which are important in marketing the product or service.
	• Work with multinationals to take the solution to global markets.
Anticipated Program Benefits	• Australian industry gains significant strategic advantage.
	• Key customers are involved in IT&T development decisions.
	• There is an early take-up rate of the new product or service.
	• The involvement of customers in IT&T developments draws in multinationals, as they are keen to participate with their major customers on the development of business driven solutions utilising leading edge technologies.
	• SMEs' flexibility, skills and intimacy with both technology and understanding of business drivers for key customers are fully utilised.
	• Product or service is quickly global-ready.
	• The joint involvement of venture capitalists and multinationals reduces the risk for both parties.

Program name	**8.2.3 Executive warehouse**
Stakeholders	Government
Program objective	• To provide easier access to, and greater awareness of, the skills and experience of executives who can assist SME IT&Ts.
	• To have executives available to take SMEs through the

	commercialisation and growth phases quickly, thus maximising value for all stakeholders
Program scope	Establish a website where: • Individuals and organisations (from Australia and overseas) with the appropriate commercialisation skills and experience can make their services known. • SMEs seeking specific skills can register their requirements.
Anticipated Program Benefits	IT&T SME executives who are helped by people with commercialisation skills become benefits experienced themselves, thus adding to the overall pool. The success of the industry then becomes self sustaining. One of the key factors of the United States IT&T industry is the availability of experienced executives who have taken SMEs through the commercialisation and growth phases.

Program name	**8.2.4 Venture capital access programs**
Stakeholders	Australian Venture Capital Association (AVCAL) and Australian Information Industry Association (AIIA)
Program objective	• To increase the understanding in venture capitalists and IT&T SMEs of each other's issues. • To achieve better access to venture capital financing. • Support VCs in increasing the depth and range of value-added services to SMEs.
Program scope	Joint sponsoring of a series of seminars by AVCAL and AIIA to: • Develop in SMEs a much better understanding of when venture capital is available, how to cost effectively assess it and the terms and downstream implications of assessing VC funding. • Develop in VCs a deeper appreciation of the challenges of IT&T SMEs.
Anticipated Program Benefits	• Both industries qualify the potential of relationships, streamline the process and time for accessing capital and assist in managing expectation gaps throughout the period of an SMEs relationship with a VC. • High numbers of SMEs are properly qualified when applying for capital. • There is a healthier and more effective relationship between IT&T SMEs and the VC community.

Program name	**8.2.5 IT&T SME survey**
Stakeholders	AIIA and the government

Program objective	• To provide ongoing information about IT&T SMEs and their interaction with stakeholders. • Give a quantitative basis for industry policy development.
Program scope	• Seek funding to conduct a survey. • Based on the experience from the first survey and in compiling this report, construct a new survey form. • Conduct the survey in February each year.
Anticipated Program Benefits	• Provide quantitative information to assess the effectiveness of SME policy and programs. • Assess the health of this sector of the economy.

Program name	**8.2.6 IT&T SME networking**
Stakeholders	AIIA and the government
Program objective	• To provide a forum for the exchange of ideas and issues. • To resolve issues and provide input to AIIA and governments
Program scope	• Set up a newsgroup open to all Australian SMEs. • Encourage individuals to take 'ownership' of specific ideas and issues and to make recommendations from the network.
Anticipated Program Benefits	• Harness the collective experience of Australian IT&T SMEs. • Provide a 'voice' for SMEs. • Make the AIIA and governments quickly aware of the emerging issues. • Provide recommendations for policy development. • Monitor the effect of policy changes.