



**BORN TO BE GLOBAL:
A closer look at the
international venturing of
Australian born global firms.**

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ABOUT THE AUSTRALIAN BUSINESS FOUNDATION

The Australian Business Foundation is an independent organisation undertaking evidence-based research to deliver fresh insights and practical intelligence to boost Australia's capabilities and global competitiveness.

The Foundation is an active and informed community of common interest, bringing together forward-looking business executives, policymakers, academics and opinion leaders to share knowledge, shape debate and incite practical action.

For the past decade, the Australian Business Foundation's research has focused on business innovation and sustainability, new models of competitiveness and opportunities arising from a knowledge-based economy.

The Foundation undertakes its research in partnership with expert scholars and practitioners both nationally and internationally.

This has established the Australian Business Foundation as a leader in bridging academic scholarship with the realities and challenges of everyday business experience.

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In 2005, Dr Steen completed his doctoral dissertation: 'Neomercantilist and Post Keynesian Approaches to State Intervention in Advanced-Capitalist Economies'. A central focus of his thesis was to challenge the traditional view that discrete national economies ought to be the primary focus for public policymaking.

Dr Steen is currently working on a book to be published by UK publisher Edward Elgar, under the title: 'The Fusion of Capital across Borders: Challenges for Policymaking'.

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All responsibility for opinions and errors rests solely with the authors.

EXECUTIVE SUMMARY

The Australian Business Foundation and the University of Queensland Business School have undertaken a research project on the additional international expansion of Australian 'born global' firms, entitled *Born to be Global*. Born global firms are those that have deliberately ventured overseas soon after their birth.

The aim of this research project was twofold:

- to chart the experiences of Australian born global enterprises as they extend their foreign activities beyond exporting; and
- to consider the various ways these enterprises' activities are contributing to the Australian economy, and how public policies might better capitalise on them.

For the purposes of this study, born global firms refer to those private enterprises that have established purposeful and ongoing foreign activities at a rate that is fast for their industry. Additionally, to qualify as Australian, the enterprises under scrutiny did not need to be majority Australian owned or even managed by Australian citizens. Rather, they needed only to have been based in the Australian economy or to have maintained a significant local presence. That said, only one of the case study firms originated overseas, and even here Australian citizens and institutions were instrumental to its genesis.

These concepts of 'born global firm' and 'Australian enterprise' are broader than those found in academic literature on international business and economics. They were adopted so as to capture interesting resident firms that would have been missed if formal definitions were adhered to. Moreover, it is shown in Chapter 4 that the national identity imputed to a company is not a reliable indicator of its contribution to the domestic economy.

The 'Born to be Global' research project involved detailed case studies of eighteen Australian born global enterprises, covering industries as diverse as pharmaceuticals, advanced engineering, agriculture, digital business services and entertainment. In addition, the project features six firms based in New South Wales and four firms based in each of the States of Queensland, Victoria and South Australia. Moreover, enterprises varied with respect to size and ownership structure.

The methodology centred on face-to-face interviews with senior managers of these firms. Both the selection of firms and the framing of questions were informed by a review of relevant literature, the expertise of the University of Queensland Business School researchers and the insights of an Expert Advisory Group brought together by the Australian Business Foundation. Furthermore, while a sample of eighteen firms is obviously not representative of Australia's born global population, it is sufficiently large and varied to offer instructive qualitative results.

The particular businesses studied were as follows:

Aconex Pty Ltd (VIC) – provider of an online document management and web collaboration system for construction, engineering and facilities management;

Agenix Ltd (QLD) – a publicly listed company in the market for cardiovascular diagnostic products;

BEELINE Technologies Inc (QLD) – pioneer of Global Positioning Systems (GPS) technology for hands-free Steering Assist™ in agricultural vehicles;

Biota Holdings Limited (VIC) – a publicly listed company involved in the discovery and development of antiviral drugs;

Cochlear Ltd (NSW) – a publicly listed company that designs and markets multi-channel cochlear implants for the hearing impaired;

CSL Ltd (VIC) – a publicly listed company that develops, manufactures and markets vaccines and medications of biological origin;

DSpace (SA) – pioneer of technology for commercial and defence satellite communications;

Ellex Medical Lasers Ltd (SA) – a publicly listed company that designs and manufactures laser systems for ophthalmologists to fight blindness;

Global Trust Centre (NSW) – an organisation that identifies needs and solutions to overcome security and trust problems in the digital world;

Indigo Technologies Ltd (QLD) – pioneer of technology that reduces potentially toxic, fine particles emitted from coal fired furnaces in power stations;

Infomedia Pty Ltd (NSW) – a publicly listed company that supplies electronic parts catalogues, primarily for the automotive industry;

Micronix Pty Ltd (SA) – a publicly listed company that commercialises biomedical technology which facilitates accurate, inexpensive and real-time placement of a variety of catheters for a range of clinical applications;

MYOB Ltd (VIC) – a publicly listed company that designs and supplies business management software, services and support for businesses and accounting practices;

NOJA Power Switchgear Pty Ltd (QLD) – designer and supplier of low and medium voltage switchgear products;

Rising Sun Pictures (SA) – provider of visual effects services for filmmakers, chiefly Hollywood studios;

Technico Pty Ltd (NSW) – an agri-biotech company that provides supply-chain solutions by using proprietary technology to deliver early generation seed-potato products;

tna Australia Pty Ltd (NSW) – provider of integrated turnkey solutions for food packaging and processing products; and

The Wiggles (NSW) – provider of children’s entertainment (music, merchandise and theme parks) that encourages the participation of parents and guardians.

In analysing the business case studies, certain patterns were discerned about the character and further development of born global firms. While these insights do not constitute a template for business success, they do provide an important set of lessons for enterprises that are export ready or seeking other ways to extend their international reach.

Key findings

The key findings of the ‘Born to be Global’ research project are as follows:

- The success of born global enterprises overwhelmingly rests on factors that are replicable by other firms; namely agility, persistence, hard-headedness, and adroit management of a range of business functions and risks. This is interesting because business commentators and academics tend to portray born global firms as exceptional and almost mystical. But the reality is that ever-more young enterprises are carving niches in world markets.
- Australian born global firms are 'learning organisations'. The founders of Australian born global enterprises have leveraged existing stocks of technological and industry knowledge – as well as their prior business experience – in order to expand rapidly in world markets. And in deepening their international venturing, these firms have demonstrated a willingness to experiment, an ability to absorb new knowledge quickly, imagination in overcoming obstacles, and a capacity to recover from mistakes and draw lessons from them.
- Australian born global firms are connecting to global webs of enterprise in a number of ways, whether by partnering with allies offshore, tapping into the distribution networks of larger overseas clients, springing from local clusters of leading-edge science and technology, or 'footslogging' in foreign locations on their own.
- Australian born global enterprises have built new markets, either by anticipating new wants or carving a niche within an existing industry. Critical to this has been their engagement with intended users and servicing of customers, both before and after sale.
- Mature foreign markets are often a more feasible first site of expansion for Australian born global enterprises, owing to the strength of demand for high-value added products in these regions, and the familiarity of their culture, institutions and business practices.
- Geographic distance can be turned from a barrier to entry into a competitive strength, courtesy of new business models that capitalise on information and communications technology (ICT) to deliver superior goods and services, and the ability of local firms to take advantage of Australia's time-zone and cultural diversity.
- There is some evidence of born global firms turning globalisation to their advantage by the use of surprising and bold business strategies that deepen their international operations significantly. This is contrary to the conventional view that Australian enterprises are disadvantaged by globalisation because of their relatively small company size and limited share of customers and markets.

In addition to elaborating on their additional foreign engagement, the participating firms responded to a series of questions about how their company adds value to the Australian economy. What is evident is that these enterprises are not just contributing substantially to national tax revenue and employment. They are also augmenting the nation's technological capacity, enhancing the skills of Australian managers and workers, sustaining industrial clusters and, in some cases, creating new global industries.

Critically, the employment and knowledge contributions of Australian born global enterprises are not captured on the balance of international payments. As economists like Robert Reich argue, standard national accounting ascribes nationality to income flows that are in reality transnational; it also treats foreign investment as a stock that adjusts passively to trade flows. In short, the balance of payments is an inadequate index of international competitiveness.

The implication for policymakers is that generic prescriptions for international competitiveness – such as increasing exports and improving the current account balance – are no longer sufficient. Rather, the challenge for governments is to facilitate the success of

more international Australian enterprises, including born global firms. Helpful government measures might include, but are not limited to:

- being a demanding purchaser and thus driving more ingenious solutions to customer problems and more imaginative and competitive business offerings;
- supporting the development of demonstration sites for new technologies and business solutions between Australian enterprises and potential customers;
- avoiding policies that discriminate between (or against) international firms on the basis of foreign ownership;
- ensuring that the tax system provides sufficient incentive for firms to invest in innovation.

Our eighteen case studies suggest that Australian born global firms are characterised by their ability to anticipate new global wants or to satisfy existing wants more adequately. They are uncommonly agile, persistent, and adept at managing a range of business functions and risks. Perhaps the approach of these firms is best encapsulated by the advice given by several interviewees to prospective born global firms: 'Know your industry; know who your competitors are in the world market; work out where you can add value and carve a niche; and do it'. Furthermore, as international competition demands greater collaboration and a more rapid absorption of new knowledge, governments must help resident firms to connect to global webs of enterprise.

CHAPTER 1: AIM, METHOD AND STRUCTURE

RATIONALE FOR THE PROJECT

In the early 1990s, McKinsey & Company and the Australian Manufacturing Council¹ identified a cadre of small, innovative firms in Australia that were internationalising early, soon after inception, and labelled them 'born globals'. This label is now used worldwide, as evidenced by the snapshot study of born global firms in Germany and the United Kingdom, undertaken and reported by Burgel *et al.*² The born global phenomenon now attracts increasing attention from governments, the business community and academe worldwide,³ with researchers seeking to determine what defines the ability of these firms to undertake early and rapid internationalisation.

Not yet reported on in the literature are the issues and experiences that these firms confront as they extend their internationalisation beyond the initial foreign market entry. In addition, little is known about the benefits such firms bring to the national economy. This research project was proposed to explore the attributes and experiences of born global firms, in particular their international business activities beyond exporting. Such knowledge is valuable in understanding how these firms can best realise their potential for development into world-class enterprises. It is also important to understand how they are contributing to the national economic interest. Since born global firms often face uncertainties and costs associated with limited resources and low market recognition, further international development can be problematic and demanding of capabilities different from those necessary for initial foreign market entry.

Once born global firms have become established and their prospects for continued international expansion are visible, they present as attractive acquisition opportunities for other firms. Such buyout activities, which are often viewed negatively by the Australian community, cannot always be forestalled; and the loss of these entrepreneurial firms at the early internationalisation phase can diminish the pool of indigenous firms potentially available for growth into larger, possibly world-class enterprises. Arguably, a cadre of home-grown world-class enterprises is in the national interest. Nevertheless, the early acquisition of these entrepreneurial firms by other interests, possibly from overseas, may not represent a net loss to the Australian economy, as value created through them may have been captured in various forms, such as through the capabilities of the entrepreneurs who have established them. The learning gleaned by these entrepreneurs may well be deployed in other ventures and in other ways that bring benefit to the national economy.

Our understanding of these issues of how born global firms contribute to the national interest is embryonic at best.

Therefore, the purpose of this study is to *investigate first the activities of born global firms as they extend their presence overseas for further and deepened internationalisation, and second, to understand more about how value is captured from these born global firms to benefit the Australian economy.*

THE CONTEMPORARY BUSINESS ENVIRONMENT

In 1995, the Federal Government's Taskforce on Leadership and Management Skills set out a vision, that by 2010 the following will be true of Australian enterprises and their managers:

- Knowledge, the ability to learn, to change and to innovate in this new marketplace, will be accepted as more relevant criteria for selecting managers than gender, ethnicity or even prior experience.
- The 'learning organisation' will be the standard philosophy for many Australian enterprises and a major way in which they cope with change and turbulence.
- Managers will create conditions conducive to learning for both individuals and the enterprise as a whole, within and between groups, across individual business units and between enterprises and their external environments. Employees will be more motivated and skilled.
- Quality will act as a guiding light within all organisations, with a 'customer first' mentality being all pervasive. This focus will help improve productivity and profitability in enterprises through a concerted commitment to continual improvement.
- Most Australian enterprises will earn higher rates of return on investment than in 1995 and successfully defend and expand their position in the global marketplace.
- Many Australian enterprises will be benchmarked as achieving world best practice in their operations, and some will be acknowledged as setting world best practice standards.⁴

Just over one decade later, this series of statements articulating the vision of the Taskforce on Leadership and Management Skills resembles the characteristics often attributed to born global firms.

The Australian Government is increasingly conscious of the role that small-to-medium enterprises (SMEs) play in the country's macroeconomy and broad international business activities. Tim Harcourt, Chief Economist of the Australian Trade Commission (Austrade) notes that there are currently 42,000 exporting businesses in Australia compared with only 25,000 at the beginning of the decade. Much of this growth has come from the SME sector, in which 14 percent of companies now export, compared to just under 4 percent ten years ago.⁵ Harcourt notes five key aspects of this growth, and its effect on the Australian economy:

- Exporting SMEs, on average, are more profitable, more innovative, and more productive than non-exporters.
- SMEs are pursuing aggressive growth strategies and as a result, many small exporters are becoming medium-sized players.
- As well as improving their bottom line, exporting SMEs also make better bosses as, on average, they pay higher wages and provide better conditions and more job security than non-exporting SMEs.
- SMEs are a more diverse group in terms of industry sectors. Many exporting SMEs are in manufacturing and services, as well as the traditional primary exporters – the so-called 'rocks and crops' sector – who are important in terms of export revenue.
- The geographic spread of this activity is now considerable. China and the other emerging economies have been attractive economic magnets for Australian exporters both large and small.

TRENDS PERPETUATING THE BORN GLOBAL ENTERPRISE

Knight and Cavusgil⁶ identify two key macro trends which they argue to have driven the born global phenomenon. The first of these trends is the emerging globalisation of markets. They argue that buyer preferences throughout the world are becoming increasingly homogeneous, at least in particular sectors. We prefer to suggest that while some sectors may experience some convergence of tastes and preferences, consumer preferences are becoming increasingly refined and consumers are becoming more demanding and are ever less content with standardised products, or even globally sold products that are slightly modified for local conditions. Specialised consumer niches are providing unprecedented opportunities for smart firms, while in addition, large firms are leaving interstices in some production chains which are being identified and filled by enterprising smaller firms. Combined with business models that emphasise international sourcing and production, as well as joint ventures and alliances with foreign partners, the forces of globalisation have created an environment conducive for born global enterprises to establish, and flourish. The second trend identified by Knight and Cavusgil is the technological advances that have made coordination of globally dispersed activities a more viable and cost effective option than was previously possible. This includes factors such as communications technologies, as well as production methods, transportation and international logistics.

McKinsey & Company, in their 1993 report, had noted these two trends emerging in Australia, and identified a further three trends that help to explain the emergence of born global firms. These are:

- Australia is developing a more international outlook and a growing export culture. The world is shifting to smaller, more flexible manufacturing.
- With outsourcing, smaller firms are an increasingly important part of international manufacturing networks, as well as of domestic manufacturing bases.
- Reductions in real travel costs and improvements in air and sea transport services allow firms to operate further afield with faster response times.

Another critical factor which needs mention is the relaxation of crossborder capital controls. This factor, which was catalysed by the ICT Revolution, has enabled the displacement of nationally based corporate structures by what Robert Reich has dubbed 'global webs of enterprise'.⁷

SCOPE AND METHOD

Clearly, born global enterprises are indicative of the new forms of transnational competition that have emerged during the latest stage of capitalist development. The University of Queensland Business School and the Australian Business Foundation have sought to enhance existing intelligence on this phenomenon, by pursuing a joint investigation of Australian born global firms.

As noted above, the chief aim of the Australian Business Foundation/UQ Business School 'Born to be Global' study was to discern the key drivers, challenges and opportunities facing Australian born globals, and how they are addressing the uncertainties and problems of their additional international ventures with new strategies and capabilities. A secondary consideration was the implications of this further foreign engagement for the Australian economy and government policy.

Phase 1: Determination of subject matter

The 'Born to be Global' research project grew out of an Australian Research Council Discovery Grant held within UQ Business School by Professor Peter Liesch, Dr Jay Weerawardena and others. The subject matter of this grant was the capabilities and resources that underpin the evolution of born global firms.

Professor Liesch approached the Australian Business Foundation with a proposal to examine the further development of small Australian born global firms beyond their initial market entry. He recommended in-depth case studies of 16 enterprises, informed by face-to-face interviews with senior managers. Professor Liesch also highlighted the national value of born global firms as an object of investigation, nominating the frequent buyout of Australian born global firms as a particular issue of concern.

The Australian Business Foundation saw value in this research project and agreed to collaborate with UQ Business School. This execution of the research project was done with the assistance and oversight of an Expert Reference Group convened by the Foundation (see Appendix 3). The first step was to refine the subject matter.

Phase 2: Refining of subject matter

The Australian Business Foundation recommended two substantial changes to the subject matter:

- Born global firms of all sizes – not just small or medium-sized – should be featured.
- The investigation should consider any born global enterprise resident in Australia, not merely those which are majority owned by Australian organisations or citizens.

These modifications were made in light of Foundation intelligence regarding the existence of large born global firms, as well as the employment and knowledge contributions of foreign-owned, resident firms.

Phase 3: Literature review

To inform this investigation further, leading business and academic literature was reviewed to elicit both theoretical and practical underpinnings of research in two key areas:

- the nature of the born global firm, particularly its characteristics and attributes; and
- the economic value of resident enterprises to their surrounding economy.

The main purpose of the literature review was to identify characteristics and attributes of born global firms, and their founders and managers. This was then combined with understandings derived from economic literature of the type of benefits that such organisations are likely to bring to a small open economy such as Australia's. The resultant issues were then framed into a Guide for Interviewers (Appendix 2) and this was then revised by the Australian Business Foundation, in order to ensure participation by industry and to ensure that useful insights would be forthcoming.

Phase 4: Identification and interviewing of case study firms

The decision was taken to investigate the central research questions through the conduct of detailed case studies of a number of Australian born global firms.⁸ In consultation with the Australian Business Foundation, it was decided that the selection of case studies should:

- include firms that are Australian, that is, having a significant presence in Australia in terms of either corporate headquarters or the locating of other key functions here;

- include firms that had internationalised early in their lifecycle or early relative to their industry norms;
- focus on firms that had demonstrably undertaken international activities on a deliberate and ongoing basis, irrespective of whether these activities had generated positive net revenue;
- include firms from a range of different industries and sectors;
- provide representation from New South Wales, Queensland, South Australia and Victoria; and
- potentially offer a set of novel and interesting circumstances for exploring the essential research themes;

It should be noted that the above criteria are less strict than the parameters usually specified for born global firms in the academic literature. It was judged that adherence to the prevailing academic criteria would screen out too many potentially interesting cases.⁹

Firms were identified both through the references and recommendations of the Australian Business Foundation and by the researchers' investigations. It was agreed that at least four case study firms should be drawn each of the four States of New South Wales, Queensland, South Australia and Victoria.

The final eighteen case firms were (home State listed in parentheses):

- | | |
|--------------------------------|-------------------------------|
| ▪ Aconex (VIC) | ▪ Indigo Technologies (QLD) |
| ▪ Agenix (QLD) | ▪ Infomedia (NSW) |
| ▪ BEELINE (QLD) | ▪ Micronix (SA) |
| ▪ Biota Holdings Limited (VIC) | ▪ MYOB (VIC) |
| ▪ Cochlear (NSW) | ▪ NOJA Power Switchgear (QLD) |
| ▪ CSL (VIC) | ▪ Rising Sun Pictures (SA) |
| ▪ DSpace (SA) | ▪ Technico (NSW)* |
| ▪ Ellex (SA) | ▪ tna Australia (NSW) |
| ▪ Global Trust Centre (NSW) | ▪ The Wiggles (NSW) |

* During the course of this investigation, Technico relocated its corporate headquarters from NSW to India.

The detailed case studies for each of these enterprises are included in Appendix 1 to this report.

Phase 5: Analysis of transcripts, informed by scholarly literature and expertise of Australian Business Foundation

The large volume of data was managed carefully to ensure that the process was not overwhelmed by the sheer volume of narrative. In particular, case transcripts were filed separately, and each was initially analysed using the Leximancer qualitative data analysis tool. This program utilises a mathematical algorithm to identify the highest ranking, and most closely related concepts within a body of text. This allowed for the quick and thorough identification of themes coming through the text of the interviews. The Leximancer analyses ensured that the overarching conceptual foundations emerging from the interviews were appropriately identified and assessed. The large sample of case firms then allowed for the

use of a comparative multiple-case logic¹⁰ in order to identify emerging themes and key learnings from the research.¹¹

Interview protocols to guide interviews with senior managers and founders were developed in collaboration with the Australian Business Foundation. Interviews were conducted on-site with senior managers and founders between January and May 2007. They were recorded with the approval of interviewees and were accurately transcribed. All interview transcripts were circulated to the interviewees for comment. These transcripts then provided the bulk of the information for compilation of case studies, and were complemented by data and information gathered from various company documents, reports and other publicly available data sources.

REPORT STRUCTURE

This report is structured as follows:

- Chapter 2 contains a summary of background issues and a review of the born global literature.
- The findings from the case studies regarding the extended presence of Australian born globals in international markets are summarised in Chapter 3.
- Chapter 4 outlines some issues and literature relevant to measuring national economic value, and presents the findings from the case studies regarding the benefits that born global firms provide to the Australian economy.
- The conclusions from the study are outlined in Chapter 5.

CHAPTER 2: LITERATURE REVIEW AND BACKGROUND ISSUES

THE BORN GLOBAL LITERATURE

The emerging scholarly literature presents born global firms as an entirely new phenomenon. Traditionally, international business scholars have argued that firms venturing abroad follow a set process of development, beginning at home, with clearly defined stages which unfold sequentially.¹² This conventional view was challenged by Oviatt and McDougall's seminal 1994 analysis,¹³ which argued that these firms commence their internationalisation at inception, because local competitive forces prevent them from beginning operations within their domestic economies. Additionally, focus Oviatt and McDougall maintained that internationalising firms focus on controlling resources rather than owning them. Traditional international business theory was also questioned by the 'innovation models' approach, which identifies managerial innovations within the firm as the driving force of international expansion.¹⁴

The observations made in the present investigation accord in part with both the established view of internationalisation and its critics, as the additional extension of born global firms beyond exporting is characterised by impersonal processes as well as entrepreneurship. What is evident, however, is that the firms examined here did not follow a linear path of expansion. Rather, the processes they went through often occurred simultaneously and in a compressed period of time.

Existing literature on born global firms lapses into hyperbole because it neglects the elements of continuity with traditional forms of international venturing. It may well be that because the notion of the born global is novel, and represents such a milestone in international business research, that scholars feel they have licence to be hyperbolic in their characterisation of the born global firm. These firms are made out to be simply extraordinary, with their ability to take on and conquer the world of international business early in their formation. The attributes of born global firms and their managers are popularly portrayed as astonishing when related to the realities of the cut-and-thrust of doing business in international markets. Some of the more frequently promoted attributes include:

- These firms are strikingly competitive against larger established players, and their competitiveness has increased significantly in the past two decades.
- Managers of these firms are orchestrating profitable, fast-growing business systems in a way that was impossible twenty or even ten years ago.
- These managers regard the world economy as their market from day one.
- The origins of these firms are international, demonstrated by manager's global focus and the associated commitment of particular resources to international activities.
- These firms are highly entrepreneurial in their international activities and not averse to risk-taking abroad.
- These firms target initial foreign expansion to numerous markets simultaneously, without passing through incremental stages, and often bypass the domestic market.

This list is not exhaustive, but it does give insight into the characteristics that born global firms are believed to possess. It also helps to identify some of the research directions that

have been pursued to date as we seek to learn more about this cadre of firms. In particular, there has been a concentration on the drivers of this early and rapid internationalisation of the firm. Hence, there exists a broad range of reported research that utilises different methods and theories to explain and provide explanations for this phenomenon.¹⁵

Initially identified by McKinsey & Company¹⁶ as an emerging presence in the Australian economy, it appears that knowing and understanding more about such firms has provided some insight into the recent development and growth of the Australian economy. Indeed, the McKinsey report asks the question: 'Who are Australia's emerging exporters?' It identifies two kinds of exporting firms, these being the born global and the domestic-based. The claim made by McKinsey then is that 20-25 per cent. of all firms in the emerging exporters' sector were born global. Evidently, it is important for researchers exploring the development and growth of the modern Australian economy to understand better the emergence of this cadre of business enterprise.

WHAT DO WE KNOW ABOUT BORN GLOBALS?

Born global firms are emerging on a worldwide scale; there is a universality to the phenomenon. This development has been facilitated by three major trends. First is the rise of electronic communications which has made it possible for geographically remote firms to tap into mainstream economies and markets in a timely manner. Second is the convergence of some tastes and preferences which provides a larger target buyer audience for the producers of goods and services. Third, is the desire and ability of firms to source intermediate products and services used in their own production process from locations away from their home country. Together, these forces have ensured that there exists technology-push and market-pull factors which have encouraged the rise of born global firms. That is, there is now the technology and means of transport to allow born global firms to push themselves into international markets, while at the same time there is the attraction of being able to gain access to very large segments of demand in other national economies.

The born global firms themselves have been characterised by a scarcity of financial resources in particular, but also organisational, human and intangible resources. They are said to be small firms at inception. They are defined in the literature as *business organizations that from inception, seek to derive significant competitive advantages from the use of resources and the sale of outputs in multiple countries*¹⁷ and by their 'innovative, proactive, and risk-seeking behaviour that crosses national borders'.¹⁸ This therefore provides a research puzzle. How do such firms involve themselves at an early stage in international markets given their characteristically low resource base, and how do they extend this internationalisation activity rapidly into additional markets?

Providing answers to the first part of this puzzle has invited researchers to explore a wide array of theory and understandings which they have incorporated into their investigations. Little, if anything, has been forthcoming on the latter part of the puzzle. Overall, some of the responses to the first part of the puzzle have included consideration of the experience and characteristics of the founder or the founding team;¹⁹ the knowledge acquisition and creation, and knowledge management processes inherent to the firm;²⁰ innovation within the firm,²¹ and the rapid learning that these firms undergo alongside the capabilities they build through this learning.²²

Perhaps the focus in the literature has been to profile the traits and characteristics of the founders and managers of these firms. From a practical perspective, these traits and characteristics are important because of the level and diversity of negotiations required to build a born global. For example, Oviatt and McDougall²³ attribute competitive advantage in the born global firm to the flexibility that these firms can employ in negotiations, with the founder or team of founders able to meet personally with potential clients and business partners. This direct approach enables strong representations. The managers are likely to

hold a wealth of international experience, and when they meet with potential clients and other business partners they are able to make rapid adjustments to common organisational positions with the intention of winning business.

Closely aligned researchers are identifying the personal characteristics and traits that are possessed by founders and managers of born global firms. Fillis²⁴ lists a global vision, insight, and the ability to recognise and capitalise on technological opportunities as some of the more typical characteristics of founders and managers in these firms. Yeoh²⁵ argues that the capacity of the born global firm to survive is strongly linked to the ability of top management to deal with the complexities and uncertainties inherent in doing business in international markets. However, others argue that the entrepreneurial mindset of founders and managers of born global firms are likely to be characterised by a geocentric mindset,²⁶ this is, a global mindset.²⁷

Knowledge creation and acquisition, and knowledge management, are also identified as factors leading to the rapid internationalisation of the firm. Yeoh²⁸ concluded that the ability of the born global firm to upgrade existing products and to design new products for foreign markets will impact on its ability to rapidly internationalise through accessing niche positions. Horizontal transfer of knowledge also allows the born global firm to develop effective networks that provide access to resources and information and this facilitates rapid penetration of foreign markets. Meanwhile, Zahra *et al.*²⁹ argue that international new ventures must be able to exploit the knowledge they have access to, in order to gain competitive advantage, and that they develop this knowledge across multiple bases in their manufacturing, R&D and marketing functions.

Earlier, Rennie³⁰ had also argued that innovative technology and product design are key features of the born global firm's ability to compete in international markets. Indeed, a key finding of Madsen and Servais³¹ suggests that new production process technology has allowed small-scale business operations to provide customisation, specialisation, and niche production on a viable scale for servicing a global market. This theme is also taken up by Knight and Cavusgil,³² who claim that innovation can be closely linked to the phenomenon of early adoption of internationalisation as a business strategy. Indeed, Weerawardena *et al.*³³ argue that innovation must be centrally located in any comprehensive attempt to model accelerated internationalisation regardless of the nature of the industry in which the firm competes.

Born global firms are also characterised as having significant networking capabilities. Because born globals look to expand into lead markets from an early stage, they are often required to find partners in these lead markets who are able to complement their own competencies.³⁴ These networks are useful in providing the firm with access to knowledge, and this knowledge astutely applied can lower the levels of risk and uncertainty inherent in international markets.³⁵ Finally, born global firms are also characterised with two further traits. It is argued that they have a strong marketing capability in that they often have a customised product that is targeted specifically at the needs of their customers.³⁶ In addition, as born global firms have been shown to be leaders in their product market or capability niche,³⁷ they often develop highly innovative products to create markets.

While the above brief review offers a snapshot of some of the issues that the literature has explored, it is clear that this field invites further investigation. The purpose of this study is to make an investigation into two of these areas, these being the initiatives undertaken by born global firms subsequent to their initial international market entry, and the value that born global firms generate for the Australian economy.

THE BORN GLOBAL FIRM AND EXTENDED INTERNATIONAL PRESENCE

While there has been some investigation into the capabilities demonstrated by born global firms, there has not yet been an understanding developed of the way in which these enterprises evolve, particularly in terms of their further involvement in international markets. Issues that emerge through the born global's extension into international markets have not yet been well isolated and researched. These issues must be identified before strong explanations are possible of the evolution of these firms beyond their initial internationalisation that defined their 'born globalness'. This gap in the literature provides an opportunity for the present inquiry. In particular, it is useful to consider what happens to born global firms after they have taken their first international step. Explanations have previously been advanced on the processes by which international firms deepen their foreign involvement. Of particular significance is the early Uppsala model,³⁸ which identified four sequential stages of international expansion: (1) no regular export activities; (2) export via independent representatives; (3) sales subsidiary; and then (4) production/manufacturing abroad.

It was argued in this early research, and in subsequent studies building on this one, that the internationalising firm evolves incrementally through each of these stages as it expands its foreign presence. However, the Uppsala approach does not allow for these steps to be undertaken with the rapidity which is characteristic of born global firms. Nor does this approach allow for circumvention of these steps, or their simultaneity. Indeed, Johanson and Wiedersheim-Paul³⁹ acknowledge that there will be time involved in establishing the firm's commitment at each level, be it through exporting, a sales subsidiary, or a wholly owned foreign enterprise. This is obviously not in keeping with our understanding of born global firms and their ability to rapidly become involved in international markets, and indeed the case studies conducted in this report detail very different approaches to foreign expansion.

For ease of reading, some additional analytic issues and literature, which are specific to conceiving and measuring the national economic interest, will be introduced later in Chapter 4.

CHAPTER 3: KEY INSIGHTS INTO DEEPENING AUSTRALIAN BORN GLOBAL FIRM ACTIVITY

INTRODUCTION

This chapter draws on the eighteen case studies prepared from this research study to present key insights and lessons for business people and commentators on the international expansion of Australian born global firms beyond their initial internationalisation activity. As noted in the previous chapter, the choice of case study firms was based on a broad, rather than scholastic, understanding of what constitutes a born global firm. The selection was also conducted with a sensitivity to both the diverse nature and structure of the industries covered and the firms' different levels of maturity. In addition, while some geographic diversity was sought by including at least four born global firms from each of the States of Queensland, New South Wales, Victoria and South Australia, the sample of firms obtained cannot be treated as representative. Firms were purposively selected for this qualitatively large sample because they are interesting rather than typical.

As mentioned in Chapter 2, much of the business commentary and scholarly literature on born global firms portrays them as incomparable, world-beating organisations. However, the current investigation suggests that these firms are more accurately described as uncommonly adaptive, knowledge-intensive and adroit at managing rapid growth across borders. Born global firms, in the present context, can be large or small, deal in tangible or intangible products and services, and they can take many years from the seeding of the idea before net revenue is generated. Yet uniting them is the capacity to take advantage of information and communications technologies to extend their presence from local corporate headquarters to carve niche global markets at a rate that is rapid for their industry and comparable industries.

Seven key insights have been identified from the investigation. These insights do not make up a template for success. Rather, they provide an important set of lessons for enterprises that are export ready or seeking other ways to extend their international reach.

These insights also serve to summarise the key findings from the *Born to be Global* research project about the character and patterns of expanded international venturing experiences of the case study firms. The key insights are as follows:

- 1) Business strategies that are not cavalier, but confident and cautious.
- 2) Born global firms are agile learning organisations.
- 3) Collaborating and connecting to 'global webs of enterprise'.
- 4) Building new markets by serving unmet needs or specialist niches.
- 5) Opportunities in traditional markets for untraditional enterprises.
- 6) Geographic distance can be an advantage.
- 7) Business strategies that take advantage of globalisation.

These insights are elaborated on in the following sections.

1. BUSINESS STRATEGIES THAT ARE NOT CAVALIER BUT CONFIDENT AND CAUTIOUS

Australian born global firms are confident but cautious. They don't necessarily have audacious strategies, but display confidence and resolve, a sound set of capabilities to find and satisfy new customers, and a calculated approach to managing and minimising the risks of their rapid international growth.

The broad strategies of the born global firms studied here are unexceptional in that similar strategies are being exercised by other international businesses. Yet there is comparatively little margin for error for born global firms as they must serve customers internationally while managing a rapid rate of firm growth and development.

Moreover, since born global firms often do not proceed from a strong domestic customer base or an already established local industry, the consequences of making erroneous decisions about international expansion are more severe than for enterprises whose foreign activities are contingent on or supplementary to their domestic operations. Of course, whether a particular failing turns out to be fatal or merely transient will depend on a host of specific factors, including the industry in which the firm operates, the degree of demand elasticity it faces, the assets it owns or controls (tangible and intangible), its reputation, and the particular circumstances in which the firm erred. But whatever the peculiar form of challenge, the bulk of born global firms interviewed in this study acknowledged that they confront a range of decisive uncertainties and risks, which, if not dealt with adequately, have the ultimate potential to destroy their enterprise.

Not surprisingly, therefore, while the strategies of the born global firms sampled here were confidently orchestrated by their managers, they were not supremely ambitious. Deepening foreign involvement for these firms was not about overt risk-taking, with none of the firms unduly risking all on their international expansion aspirations. Instead, they pursued a measured approach to the global opportunities which arose and which they sought out. These firms are managed confidently and cautiously, rather than in a cavalier fashion. Prime examples included Aconex, Infomedia, NOJA Power, Technico, **tna** and The Wiggles.

Confident not audacious strategies

These six cases especially make it clear that born global firms don't need to possess an audacious strategy or to take monumental risks in their formative international expansionary steps. Rather, the key may be a quiet confidence in the abilities of the business to find and satisfy new customers abroad, combined with a contingency specifically designed to handle the uncertainty and risks of such expansion.

Typical of the confidence demonstrated by our case firms in building an extended international presence came from the Chief Executive of Queensland-based electrical switchgear manufacturer NOJA Power, Neil O'Sullivan who said: '*[G]o to the countries and understand the market and demand, and if you can sell your product down the road, you can typically sell it internationally in today's globalised economy*'.

Gregg Mastroianni, Vice President of Sales and Marketing at Queensland-based biopharmaceutical, protein therapeutics research and development company Agenix, exuded even more confidence in his company's ability to position itself in the global arena:

Who cares if you're a big fish in a small sea? You have to be where the market is and if you're going to be where the market is you've got to learn to run with the bulls. You have to do complementary developmental projects for the guys who have the research groups that are in the thousands doing pure research. You can't expect to sit out on the sideline and have three people shaking a few test tubes and expect to generate the same type of new products as

these big firms. You have to be quick, fast in the marketplace . . . you have to be like a PT boat zipping around through the larger ships and you have to define the things that you're going to be good at and bring only those to the market.

An illustrative example is Infomedia, a producer of electronic parts catalogues that has come to be the second largest global player in its industry. Infomedia's initial internationalisation opportunity in part stems from the decision by the firm's CEO Gary Martin to bid for a tender to supply an electronic catalogue of parts to Ford Europe in seventeen different languages. To win the bid, the CEO flew a large proportion of the company's development team to Europe. This deprived Infomedia of resources in the Australian market for a period of time (which could have threatened local momentum), but it demonstrated a passion for success and an overall confidence in the company's knowledge and capabilities. Infomedia won the contract, and in 1997 it was successful at obtaining its first export sale. It has since expanded to cover almost every continent on the globe in less than a decade. It was Infomedia's confident approach towards winning the Ford Europe tender that proved career-defining for the CEO and set the firm on its path to international growth and development.

This confident but cautious mindset was typically accompanied by actions designed to minimise the risk of strategic misadventure. The expansion was considered, not casual, and was accompanied by warnings to other businesses to make sure that they adopted an approach that reduced risk as much as possible. The words of the founders of project management software manufacturer Aconex conveyed this caution when they advised would-be international firms to '*make the bets small and just get on with it. Don't put all your eggs in one basket, and watch your costs*'.

Similarly, CEO David McDonald of New South Wales seed potato agri-bio company Technico often returned in conversation to the issue of handling the uncertainty and risks of entering international markets. He claims that a key to being successful is to understand risks, and to be able to mitigate them by understanding how you '*make investments without losing your shirt*'.

Partnering as a risk management strategy

In particular, many of the case study firms sought to cope with uncertainty and minimise risk by partnering with globally recognised firms, as this strategy lessened one major component of risk – 'market risk' – and left another critical component – 'financial risk' – to be managed separately. This was a feature of the international expansion efforts of enterprises such as Infomedia, Biota Holdings, CSL, Ellex, Indigo Technologies, **tna** and Technico. These firms entered into significant agreements with major global players such as Ford, GlaxoSmithKline, Merck, Alcon, the Southern Power Company, Smith's Chips and PepsiCo (FritoLay) respectively. Often, contracts with such major companies provide the born global firm with the reputation benefits of association, as well as giving it the security and confidence to continue its overseas expansion.

Leading established international partners can provide a financial buffer to the born global firm as it sets out to position itself. This was particularly evident in the cases of **tna** and Technico, who entered into agreements with established global enterprises. Technico identified China as a significant future market for its unique seed potatoes, and aimed to establish a manufacturing plant in that country (as it was prevented from exporting product from Australia because of China Quarantine restrictions). However, it was only after Technico secured an agreement with a US transnational in which the latter accepted a multi year contract to purchase 70 per cent. of the output of Technico's future Chinese plant, that Technico felt confident enough to undertake the considerable and risky full-commitment mode of 100 per cent. foreign direct investment into a manufacturing plant. Through leveraged local finance and customer advances Technico focused on its core investment strategy of taking either market or finance risk – but not both.

In the case of **tna**, the decision by Smith's Crisps to take a large order of packaging equipment from **tna** for a new manufacturing plant in Adelaide was described by **tna**'s founder and CEO Alf Taylor, as a 'leap of faith' by Smith's Crisps. Unfortunately, it was a leap of faith which didn't work out initially for either business, with the technology failing upon installation. However, Smith's continued to support **tna**, and after two years of working on the technology, **tna** was able to supply Smith's with a superior packaging machine, as well as gain valuable insights that have since propelled the company towards worldwide leadership of the food packaging industry. This is a most impressive result, particularly as it has been achieved in an industry that has been dominated by firms based in the UK, Germany, Japan and the USA.

Finally, Global Trust Centre resolved to develop its product through a close association it had with Westpac. Global Trust Centre is a digital security solutions company that produces electronic certificates designed to facilitate trust between organisations working across large geographic distances and borders. The challenge was to source a solution to foster trust between organisations that had never before built a relationship together. In order to facilitate the development of such a product, Westpac sponsored the creation of a not-for-profit entity called the Global Trust Centre. This Centre was able to utilise the networks of Westpac in order to explore the globe looking for the product which would be most suited to providing these electronic licenses. In explaining his company's success, founder Peter Fritz emphasises the importance that Westpac played in the development of the Global Trust Centre organisation:

I just want to make one thing clear which is extremely important in my view. You need to work with champions. In Westpac we found a champion, one person. I'm not talking corporation, one person and we related to that person and that person believed in their need for this sort of thing and drove it from that angle. It is the same as Bill Gates succeeded. It was just one person in IBM who actually made it happen.

Risk management principles were also evidenced when these firms looked to develop distributor relationships. The suppliers of CSL's pharmaceutical products are carefully assessed as having to meet specific auditing and regulatory standards. Further to this, CSL's presence in the plasma products market has conferred the ability to be globally selective in its choice over suppliers and distributors. Suppliers are sourced throughout the world as many of CSL's products require very specialised inputs which are not readily available in local markets.

Patterns of persistence and calculated risk

The persistent and confident but cautious approach of born global enterprises was also manifest in the manner in which the case study firms sought to market their product overseas. The term 'footslogging' was often used in order to explain the time, effort and attention to detail which was required to break into these marketplaces.

This comment was advanced specifically by Alf Taylor of **tna**. His company's first international expansion was into the United Kingdom. In order to set up this new overseas presence, Mr Taylor travelled to the UK himself, and set up a small office in England in which the business employed just two people. He then spent the next six years in the UK trying to ensure that the European operation became a success. The process was long and hard, involving, in Alf Taylor's words:

Banging on doors . . . and it was just hard slogging, and we hired a van. We had no money and we hired a van, stuck a machine in the back of a van and drove it around and put it in people's factories and ran trials . . . You can sit there and philosophise and give them the laws of physics like there's no tomorrow, and they don't believe any of it. But as soon as you sit the gear in their factory and run their product on that machine and show them how efficient it is . . . it's doing double the speed of theirs . . . So if you managed to get them to let you go in with a machine at no cost to them, then you had a pretty good chance of getting in. So you would

just try those type of things and we went through, we went round every such firm . . . it was just snack food firms that we were targeting.

Considerable caution was also displayed by The Wiggles in the manner in which they sought to enhance the scope of their business. A particular feature of their business model at present is an initiative to establish The Wiggles' branded play centres for children. The first centre was deliberately situated in a low-key area of Sydney to test the model. This strategy accords with both The Wiggles' attitude towards cautious growth and, critically, the core of their business formula, which is not simply the amusement of children but the simultaneous and shared entertainment of children and their parents or guardians. The Wiggles are mindful that in undertaking additional international expansion, they need to be careful so as not to damage their brand and reputation, and to present a consistently 'wholesome' image. Pablo Munoz, the Risk and Quality Assurance Manager for the group stated that a key element to this objective would be to establish a real duty of care in the business and how it was run.

In short, it is possible to define the following key lesson from the overall approaches of born global firms in this study. The forging and consolidation of international markets requires firms to recognise the risks and uncertainties of international business and to implement business strategies in a calculated manner that is alert to these risks, and to uncertainties, calling for managerial judgment.

2. BORN GLOBAL FIRMS ARE AGILE LEARNING ORGANISATIONS

Australian born global firms are proving themselves highly proficient and adept as learning organisations. They learn fast and move quickly to fill gaps in their business capabilities, often by 'piggybacking' with international partners, and they recover from mistakes and oversights – all done in the face of rapidly changing circumstances. This requires the attributes of both leadership and management being displayed in equal measure.

Leveraging learning

Despite the label, 'born global', many of these firms (or their predecessors, often individuals) spend long periods of time developing and refining their product, and then launch these on to the global market rapidly and widely. Hence, there are global leaders such as CSL with its anti-cervical cancer vaccine Gardasil (developed in partnership with Professor Ian Frazer, University of Queensland, and Merck) and world hearing technology specialist Cochlear in our sample. These are products which have taken decades to develop and perfect, and indeed are still being developed and refined in order to meet the needs of an increasingly discerning and sophisticated market.

Some of the case firms have similarly spent long periods of time refining and honing their knowledge in their specific area of expertise, and often attribute this knowledge accumulation to its inception in a period before the firm was actually founded. This applies to firms such as NOJA Power, **tna**, The Wiggles, Micronix and DSpace. For example, NOJA Electrical Switchgear arose from the ashes of previous Australian electrical manufacturer Nulec. When Nulec was taken over by foreign interests, Neil O'Sullivan used the experience and expertise he had gained from his time within that firm to build his own enterprise.

Many of the case study firms were able to attribute much of their outstanding global involvement to the experience that founders or other persons in positions of responsibility had gained from previous roles. There seems little doubt that the musical sensibility developed by The Wiggles during their time in the band, The Cockroaches, served them well when they started to produce songs for children. Likewise, the packaging experience of Alf

Taylor, from **tna**, accumulated from experiential knowledge as a young packaging engineer with Arnott's has helped him to devise insights into the technology required for packaging machinery. Finally, the Managing Director and CEO of Adelaide-based bio-navigational device manufacturer Micronix, David MacInnes, has used experience gained from many previous positions in many firms within the high technology sector to undertake Micronix's first successful product launch. The founder of DSpace, Jonathan Whalley, had worked in the space industry in the UK, and was then involved in the development of remote sensing radar. When he emigrated to Australia, the skills he had accumulated in these positions enabled him to build the technological expertise to develop his own satellite communications company.

In the case of Aconex, the link between prior experience and the development of their product is more unusual. Co-founders Robert Philpot and Leigh Jasper were friends from secondary school who enjoyed a weekly game of squash in Melbourne. At the turn of the century, Mr Philpot was working for construction company Multiplex, while Mr Jasper was working for transnational strategic management consultancy McKinsey. Their combined experience suggested there was a need in the market for computer software which could assist in project management tasks particularly in the construction industry. Indeed, such was their conviction, that despite not having the skills themselves to put this software together, they assembled a group of technical experts to build a product from inception. This has formed the basis of the Aconex platform.

Balancing diverse business functions

The case firms displayed an aptitude for deepening their international market presence through employing a delicate balance of the full suite of core business functions from R&D to sales and marketing, while at the same time maintaining a fleet-footed approach to emerging opportunities. Sometimes this balancing act is difficult for start-up ventures when they have few resources with which to take on international markets.

A particular example of a firm which became recognisably successful through balancing its business functions was children's entertainment firm, The Wiggles. A major development for the firm was the employment of Business Manager Mike Conway in 2001 which led to better integration of the creative and the commercial sides of the business.

Prior to this, the business had been run in a relatively informal manner. Mike Conway, ensured that the band adopted a noticeably altered business orientation. For example, this involved implementing Board meetings where future plans were frequently discussed. Strategies were then implemented which had been initiated by the creative side of the business but which incorporated a commercial discipline. The creative content allowed the group to move into new areas such as CDs, DVDs, and videos and enabled them to progress toward developing television shows in markets such as South America, Europe and the USA. This ability to balance the creative content of the enterprise and to simultaneously explore commercial opportunities has seen The Wiggles become a market leader in the children's entertainment industry.

Similarly, Aconex is focused on balancing the functions of its business as it establishes more foreign subsidiaries. In particular, focus on the critical product servicing functions is maintained at the same time as expanding the business' marketing initiatives. Each of its international offices contains people employed in administration, sales and product support roles. This mix of skills is important to the Aconex model, as it allows the company to maintain tight control over the servicing of its product (a key differential in its battle against competitors), as well as continue to promote Aconex to other potential clients. In all, the company maintains approximately 280 staff, of which 40 are employed to directly maintain, build, and support the product itself, about 60 people are employed as direct sales people, and approximately 100 are client service and help-desk employees. The rest of the mix fulfils roles such as marketing, finance and human resources.

Another example of an organisation that has demonstrated an ability to balance a full suite of business functions is Global Trust Centre. Founder Peter Fritz claims that the organisation employs people across a range of activities including product sourcing, R&D, administration, sales and finance. This allows the organisation to maintain its focus as it seeks to deepen its international expansion. Even a large firm such as CSL which is involved in extensive R&D activity employs approximately 10 per cent. of its workforce in the area of pharmaceutical commercialisation – the sales and marketing side of the business. Despite the record revenues this firm is currently earning, there remains a strong focus on the commercial developmental side of the business.

In contrast, Queensland-based pollution control technology manufacturer Indigo admits that it has not found it easy to balance development of both the technological and the marketing sides of its business. Chief Executive Bob Gibson notes that a dilemma for his firm is the personnel they have are '*spread too thinly*', particularly in terms of meeting both their marketing and R&D objectives.

Balancing business functions has been evidenced in most of the case firms as they evolve rapidly from inception to fully sustainable enterprises, necessitating emphasis on particular business functional activities at particular phases in the firm's development, while not overlooking the other functions.

Recognising that it did not have people experienced in bringing commercial products to market, Adelaide-based biotech company Micronix hired a CEO who could bring this particular expertise to the firm, and hence he was hired with this key brief. CEO David MacInnes explains:

I came in here to expand the company globally. The early investors, well the PDF fund, knew that we needed more money. They knew they wouldn't get venture capital in unless we had the skill set that was compatible with global expansion etcetera, so I came in to bring in the skill set and to expand and get the international deals.

Most of these firms used strategic planning to plot a course for their foreign expansion which necessarily incorporates consideration of the full suite of business functions. For some it was a conscious choice, and for others it was facilitated (and required) through the use of a government agency such as Austrade. Austrade consultation was sometimes a precipitator for developing a formal strategic plan.

Piggybacking with partners

Interestingly, the case studies illustrate that the processes used by born global firms for foreign market entry and further expansion are quite similar to the international activities of traditional firms, except born global firms do it earlier and faster.

A common story is the firm commencing by negotiating licensing agreements with foreign firms for distribution, and when they had found this to be successful, they would look to progressively increase their presence in the market.

A prime example of a firm that developed significant overseas networks for the purposes of selling their technology was Ellex which built up its own extensive global independent distributor network, and further engaged in an original equipment manufacturer (OEM) agreement with Swiss-based transnational Alcon, the world's second largest manufacturer of medical lasers. This allowed their brand to be associated with a highly respected global firm, as well as providing Ellex with the opportunity to pursue their own growth opportunities independently. Infomedia has also invested much time in developing networks for distribution of its product. Initially this strategy was pursued with the assistance of a UK distributor, Clifford and Thames, but eventually Infomedia has evolved into a global player

(albeit not large in global firm size) that utilises its own people and foreign-owned offices to continue its expansion.

Such appears to be the importance of being associated with a well-recognised global organisation, that even those born global firms who have not developed such a linkage appear to be devoting much time and effort to ensuring that they are aligned with a significant partner to augment their business functions. An example is Adelaide-based biotechnology manufacturer Micronix. CEO David MacInnes claims that a key part of his role in running this firm is to establish a licensing deal which will enable it to break into the US market. Micronix is not in the situation where it would be able to afford to develop its own distribution networks, and hence it requires a partnership with an organisation with strongly established avenues to the market.

An associated observation emerging from the cases is that often these firms are able to progress through rapid cycles that are demonstrative of organisational learning.

A particular example is Brisbane-based Agenix, which in an earlier phase of its life cycle has developed skills in human diagnostics, animal diagnostics, imaging agents for deep vein thrombosis and PE detection, and most recently, anti-viral drugs. This rapidity of change in business focus has been driven by the company's ability to hire people at the forefront of technology in each of the technical areas close to the major markets in the USA, Europe and China. The staff of Agenix have also typically been involved with the large research institutions and clusters of universities that dominate in such markets, and thus Agenix has been able rapidly to assimilate knowledge skills within its organisational structure.

Leadership and management in equal measure

Leadership versus management is a debate which has occupied business writers for a long time. Leaders are expected to display qualities such as vision, passion, creativity, flexibility, inspiration, innovation, courage, imagination and experimentation. Managers are expected to display qualities such as rationality, consultation, persistence, problem-solving, an analytical mind and authority. When it came to this research project, it was presumed that the interviewees from our case firms would show more qualities of the leader than they would of the manager. This might be expected if indeed these firms are extraordinary, as our literatures, both business and scholarly, portray. To an extent this was true. Certainly there were many examples in which our interviewees demonstrated the characteristics that would be expected of a leader. However, there were also instances in which these people displayed the characteristics that would be expected of a manager, such as persistence, and tough-mindedness, in the sense of facing misfortunes in a realistic and determined manner arising from situations as can be expected with the very nature of taking young firms into world markets.

However, it is the mix of leadership and management attributes characterised in the case study firms that makes for the most valuable insights.

In terms of leadership, some of the characteristics which came through from the interviewees were vision, passion and courage. In terms of vision, the evidence was most revealing from the manner in which some of these firms had managed to achieve strong positions in their respective industries in very little time, including the cases of Aconex, Rising Sun Pictures, The Wiggles, Technico, CSL and Ellex.

For example, Aconex co-founders Leigh Jasper and Robert Philpot had assessed that there was a market need for computer software, which enabled firms involved in large construction activities to manage the vast, complex flow of information generated on projects. Their own technical skills did not provide sufficient expertise for developing such software, so they employed a team of technically relevant personnel to work on developing the software programs and systems for them. In the end, it was their vision and market insight that

propelled their nascent enterprise to its current position and now Aconex is repeatedly ranked in BRW's annual assessment of fastest growing Australian firms, and is carving out a significant market niche across the Middle East, South East Asia, the United Kingdom and Australia.

Courage and daring was also on display in the activities of case study firms, often going against advice in order to carve out their own market niche. This courage could be applied to firms such as Agenix, Technico, BEELINE, Rising Sun Pictures, CSL, The Wiggles and MYOB. For example, Rising Sun Pictures was prepared to buck the trend in pursuing commercial opportunities in the Hollywood film industry rather than concentrating on local advertising.

At the same time, it is important to note that while the leaders of our case firms demonstrated courage and confidence, at no time was there evidence of hubris from our interviewees. Rather, they had taken a very grounded approach to their achievements, being very much in tune with worldly realities and how they related to others, in particular their own workplaces. They appeared to recognise that they must continually strive in order to maintain the momentum that had been established and was needed to take their firms further with their internationalisation aspirations. This ability to strive continually for success was demonstrated by most firms in our sample, including Agenix, The Wiggles, Rising Sun Pictures, CSL, Cochlear and BEELINE.

For example, Agenix's Gregg Mastroianni notes that the one thing a small firm can't waste is time. He claims that a firm makes its own luck, thus inferring that it should continually be using its time productively to manage its way to success. The Wiggles is another organisation that claims that it is continually assessing different product portfolios and territories in order to stay at the forefront of its industry. These firms generally do not '*rest on their laurels*', nor do they '*bathe in the glory of their successes*'.

Leadership and managerial skills are both evidenced in the case of NOJA Power Switchgear's Neil O'Sullivan. Neil is a confident leader of his firm. There is little doubt this confidence can be attributed to the breadth of experience he had developed in the areas of electrical technology development and the marketing of technology in previous employment. Interestingly, his accumulated understanding of his field has motivated him to split the world into nine broad marketplaces that orient him in his marketing activities, and he has elected to manufacture his switchgear units in Australia so that the company can retain its IP and knowledge-intensive processes through confidence in Australia's intellectual property protection regime. Neil O'Sullivan's conversation could easily switch between the marketing side of the business and the technology side of the business. His capabilities come from an immense background experience, accumulated by undertaking business in 120 countries worldwide. He doesn't claim to understand all cultures, but he respects them, and this has proved a key factor in NOJA's increasing prominence in the global switchgear industry.

Other case studies similarly displayed strong managerial attributes, in particular depth of skill in marketing, operations, implementation of strong and distinctive business models and persistence in execution. These features were seen in cases such as Ellex, Technico, Indigo Technologies, CSL, **tna** and Biota Holdings.

In short, traits evidenced in both good leaders and in good managers are called for in the executives of born global firms, as the fast-paced international business environment demands vision and passion alongside persistence and prudence.

3. COLLABORATING AND CONNECTING TO GLOBAL WEBS OF ENTERPRISE

Australian born global firms are collaborating and connecting to global webs of enterprise in various ways, including participating in local industry clusters, partnering with allies offshore, tapping the distribution networks of larger overseas clients, or leveraging one-on-one business relationships.

US Economist Robert Reich⁴⁰ has put forward the concept of 'global webs of enterprise' to characterise the contemporary reality of international venturing and crossborder business enterprise and investment.

In an environment of extremely mobile capital, intense crossborder competition and advances in information technologies, companies have more opportunities to participate in distributed global production and value chains as virtual business units that span national borders. We see successful companies sourcing their inputs globally and satisfying niche world markets. Outsourcing and offshoring activities have increased. Specialist production activities can be located to best take advantage of cost structures, skills and other intangible factors.

In this environment, international venturing is not a solitary pursuit, but is characterised by collaboration, interdependencies and connections manifested in myriad ways.

Such connections in these global webs of enterprise were evidenced by case study firms – in local industry clusters, in mutually beneficial relationships with universities and science and technology institutes, as participants in offshore value chains and in personal business networks.

Industry Clustering

Clusters appear to be important to some born global firms, and in turn some activities appear to have a greater requirement for clustering activities. In particular, this appears to apply to the production of knowledge-intensive goods and services, which often require networks of high quality suppliers, and the interaction between entrepreneurial individuals. The importance of clusters came through in several case organisations, notably DSpace, Ellex, **tna**, and BEELINE.

Partnering with the University of South Australia was a very important initial step for, DSpace. This association has provided many of the clustering activities that seem fundamental to the born global firm. Not only did the university provide DSpace with technical expertise in the form of one of its Directors, but it also provided the project from which the organisation was able to gain its first revenue stream. The University had particular links with an important UK company, Inmarsat, and following the initial partnership with the University of South Australia, DSpace was able to undertake a leading role in further projects with Inmarsat. Local companies are used for hardware design, and local contractors and specialists are hired for specific jobs within the firm. Thus, a skill base is being developed in the South Australian economy.

Local clusters of suppliers are often vital for born globals as they seek rapidly to increase production to meet blossoming demand. Having won contracts or received expressions of interest from firms abroad, the born global firm is often required to engage in production levels that are significantly greater than was anticipated. In some cases however, there is not the supplementary local skill base to provide the born global with the inputs it needs for its product. Ellex is a case at hand. Having won an original equipment manufacturer (OEM) contract with Swiss transnational Alcon, Ellex had difficulty in sourcing the number and

quality of parts for its laser products within South Australia. Ultimately, they devised a novel interim solution by forging a partnership with CSIRO. Victor Previn, Chairman of Ellex, says:

There was insufficient capability in the Australian manufacturing circles to manufacture product of the quality that we required. We knew that CSIRO in New South Wales had an excellent optical workshop and somehow we managed to convince them to manufacture a hundred sets of parts for us. They did this because part of their charter is to support Australian industry. So they bent over backwards to support industry, but on the understanding that as they really weren't in the business of making commercial products they couldn't help us in the longer term. They helped us in a critical period which gave us the time to secure primary sources from the commercial world. .

tna has forged a supplier cluster of Australian manufacturers. The company directly employs fifty people in its Melbourne office, however founder Alf Taylor believes that there are up to another 300 people in Melbourne who are employed directly as a result of providing manufactured inputs for **tna** products.

Of course, it is not always the case that the supplier contracts are established with local Australian companies. Indeed, there are examples of born global firms which have scanned the globe in order to identify suppliers and have thus initiated an international cluster. An example is NOJA Power Switchgear, which has developed contracts for silicon compounds manufacture with a producer in Canada; it sources vacuum interrupt modules from the Ukraine and gathers stainless steel products from companies in Australia. In the end, clusters are vital to the born global enterprise, whether they are local clusters or international ones.

BEELINE operates as an example of a virtual cluster with its sourcing activities. Because the BEELINE product requires a highly technologically sophisticated set of inputs, the company eventually decided to shift its manufacturing operations from Australia to the USA. In particular, BEELINE has developed strong relationships with two US firms. One of these is the Walker Component Group, which undertakes the electronics assembly and sheet metal manufacture for BEELINE. The second company is Fluid Power, who is the manufacturer of hydraulics and electronics for BEELINE. BEELINE also sources its GPS technology from Canada, and manages other inputs from Finland. Paul Turner, General Manager Research and Development, explains the reason for moving manufacturing to the USA:

So there are a couple of reasons for moving to North America for our manufacturing. One was the cost of transport; secondly, the cost of components and manufacture itself. Given some of the economies of scale it was cheaper to do it in North America, but also that speed to market particularly for the US market. It was becoming quite a challenge to build the equipment here and get it over to the US in time for their selling season.

Further, at the time, there was not the expertise in the Australian market to provide inputs for BEELINE. However, the growth and success of BEELINE has served to spawn an industry with expertise in GPS technology. Indeed, Paul Turner is able to identify several local GPS manufacturers who now possess significant capabilities in the area. This demonstrates that born global firms do have the capacity to develop clusters around their own area of product expertise. Paul Turner suggests that the industry for hands-free steering assist tractors did not exist prior to BEELINE's genesis.

Networking and partnering

Throughout the interviews, network associations and partnering were identified as being critically important to the firm's internationalisation, and in particular, its expanded presence in international markets. It is expected that small, young firms with their scarce resources need to associate with other firms, governments and providers of advice and resources to accomplish the demands of business enterprise. But large firms equally participate in

extensive networking and partnering, as it makes good business sense to minimise the so-called transactional 'space' between themselves, their markets and other business associates. It was revealed that local networks provide an immediate extension of the firm beyond its own capabilities and capacities. In addition, as the firm extends its forays into foreign markets, associating with established foreign firms has provided a leg-up into otherwise remote possibilities.

Born global firms commencing from an idea or early stage business offering must form connections to build not only their internal capabilities, but the market knowledge and access vital to their research and innovation activities and their production and marketing functions. These firms must network to get to know their markets and to be known in these markets. Sometimes this network supplies technology and personal expertise, such as Agenix using its CEO's industry knowledge to find and recruit a Vice President of Sales, with extensive international experience in the pharmaceuticals industry.

In the case of a firm such as Ellex, the networks which were important were those that they developed through their association with a major player such as Alcon. While Ellex had initially developed its own network of global distributorships, its OEM agreement with Alcon provides it with the credibility to upgrade to a better class of distributor who would otherwise not consider Ellex as a serious supplier. NOJA Power is another of the born global firms in this study which has developed a network of international distributor agreements. It has built up an exclusive distributor network in 80 countries worldwide, and uses this structure as a key means of developing and supporting its business through accessing clients known to their alliance partners.

However, networks are not important to born global firms purely for the purpose of making sales. Indeed, there may be many other reasons that such networks are fundamental to the organisation of business, such as adding to the company's skill set. A ready example is Micronix, who hired David MacInnes as CEO particularly for his experience in taking a product through to commercialisation. In this instance, Mr MacInnes had the experience for the task, but he also realised that he needed quickly to create a network of operators around him who would be able to share the workload. With so few resources at Micronix able to provide assistance in this task, David MacInnes hired consultancy help to work on bringing the product to market. He often emphasised in discussion that a major task in this process was bringing 'credibility' to the company, by becoming involved in networks with major global players. Hence, for tax advice he relied on Ernst & Young as this provided access to a network able to be leveraged upon for establishing legitimacy for the tiny firm, Micronix.

For BEELINE, their partnering efforts resulted in access to international markets. BEELINE had been supplying products to one of the larger commercial farms in Australia called Auscott. This farm had a US parent farm called Boswell, located in California. Eventually word got back from Auscott to Boswell that BEELINE supplied a great product, and hence the product was taken up by Boswell. This encouraged BEELINE to set up a business in California and make sales through Boswell's channels. This has also had the effect of giving BEELINE access to further networks of expertise. In particular, they now have the ability to source materials from some of the world's most advanced GPS manufacturers.

Accessing networks of expertise has also been a key feature of expanding business for Rising Sun Pictures. Initially, the company worked on a film which was shot in Coober Pedy called *Red Planet*. During the making of this film, they met a Jeff Okun who introduced Rising Sun to a friend of his in the US called Greg McMurry. McMurry was soon to be filming a movie in Melbourne called *Queen of the Damned*, and he was happy to use Rising Sun Pictures based on Okun's recommendation. Impressed with the work the firm did for him, McMurry then used Rising Sun Pictures on his next film, *The Core*, which was shot in the USA. This provided Rising Sun with their entry into the Hollywood film industry. In turn, their capabilities were showcased to Hollywood visual effects professionals, and word spread among this close professional network. This allows Rising Sun to build a network of

relationships with visual effects supervisors from throughout the industry, enabling them to develop trust and loyalty with these people, thereby increasing the chances of attaining future work contracts.

The relationships which CSL have built with financiers have been vital in allowing this firm to complete a series of swift takeovers. As Chief Economist Sam Lovick says, *'so in a sense you have to be active participants in your networks and your surrounding networks, ones you call peripheral networks, in order to be successful.'* CSL has held a very important relationship with its bankers, retaining the same advisors since 1994. CSL's bankers have been helpful in providing much of the advice necessary to CSL in matters concerning their corporate acquisitions. Indeed, Sam Lovick believes that the consistency of this relationship has allowed CSL to undertake the many successful acquisitions that it has.

CSL has also been successful at developing research networks. Indeed, this is a feature of many of the pharmaceutical firms which were studied, and was also demonstrated in the case of Agenix. CSL has worked hard to develop relationships within networks of research partners in Australia. A particular example is the relationship it has developed with Professor Ian Frazer of The University of Queensland. Professor Frazer has invented the Gardasil vaccine, which is used to prevent certain types of cervical cancers in women. CSL's relationship with Professor Frazer has been in place for over fifteen years, and is now starting to present the organisation with very significant corporate returns. Sam Lovick says:

[Our] Australian network is incredibly important for our research and development side. We have similar networks. For example, we have a very good coagulation research and development group based in Germany and they also have extensive links to the clinical community, the science community, so it's not just confined to Australia. Those sorts of networks I think are very important on the innovation R&D side of the business.

A final illustration is the importance of building networks with customers and end users. Aconex is an example. The Aconex product itself actually facilitates the growth of networks between companies who use the product. Hence, when Aconex sells its product, it is actually facilitating its own sales networks. If it can sell to a major construction company, then this construction company will want all the other organisations in the project to also adopt Aconex software. Hence, the growth of the Aconex business is almost of itself a networking story. In short, the case firms in this study highlighted a variety of examples of collaborating and connecting into global webs of enterprise – ranging from personal networks, research partnering, financing arrangements and alliances for manufacturing, marketing and sales capabilities.

4. BUILDING NEW MARKETS BY SERVING UNMET NEEDS OR SPECIALIST NICHES

Australian born global firms have created opportunities for themselves by building new markets, either by anticipating and serving unmet market needs or providing specialist niche offerings in an existing industry. They distinguish themselves and create a competitive edge by closely engaging with and serving their customers exceptionally well.

Not all of the firms that were studied were able to succeed in international markets just on the utility of their products and services. Indeed, an important component of success for many of the firms has been a determination to engage with their potential customers, to understand market needs and demands and to educate the market on the distinctive and superior attributes of their offerings. In essence, these born globals are building new markets and opportunities. This applies to enterprises such as Agenix, Global Trust Centre, BEELINE, Indigo Technologies, and Aconex.

Agenix's Gregg Mastroianni makes this point when he says:

The concept of *build a better mouse trap and the world will beat a path to your door* just isn't true. You can build a great mouse trap but if you don't do a proper job of marketing it around the world, very creative competitors will build acceptable mouse traps to yours, and then out-sell you in the market. That's what happened to this organisation during the late 1990's.

Further, it was noted by Global Trust Centre's Peter Fritz that sales is the only result which will turn an embryonic organisation into a viable entity. He says, '*customers are what makes the business, not the investment that is made*'. He maintains that the most important person for the firm is its customer base. He says:

One should start with a customer and come through and satisfy this customer's need and every time I have stepped away from this principle – we have very few principles we are very flexible – but every time I stepped away from this principle, I paid heavily.

The same lesson is brought home by Paul Turner of Australian agri-business technology producer BEELINE. Mr Turner says:

I think certainly in the early days as I mentioned previously, the market didn't exist so there was tremendous pressure on actually getting the message out there. What are . . . the compelling reasons . . . to spend at that time but you know up to \$100,000 on a GPS system to put into a tractor? So there was a lot of marketing required; and I also mentioned the fact that as we had a sales and support team out in the field, there was a lot of overhead there as well.

In fact, BEELINE has been able to create not only its own market, but its own industry. This firm grew from a conversation between farmer Mike Mailer and his son Rob in 1994. At the time, Rob Mailer was a system control engineer, and he believed that there must be a way of turning his knowledge into a benefit for his father's property. So the two men sat down, and in the end they came up with the idea of placing Global Positioning System (GPS) technology into tractors so that the drivers would not have to steer. The real advantage of this product was that it provided major gains in efficiency, from decreased requirement for materials such as seeds, chemicals, and fertilizers, as well as maximising the area of the crop but without over-seeding. However, the difficulty with this product for BEELINE has been that in every new market into which it has ventured, it has effectively had to stimulate demand in what is a new industry.

The same problems were encountered by BEELINE in the USA. A particular issue for BEELINE therefore has been to find staff who both understand those involved in agriculture and farming and the problems of that industry and who are literate in electronics and able to fully appreciate and promote the applications of the BEELINE technology. BEELINE has been required to undertake significant skills development of its staff. In the end, BEELINE found that it was able to penetrate markets by targeting lead users in value intensive crop production areas. Because the outlay for a GPS tractor navigation system was less of a financial drain for these farmers, the company found that this provided a more readily accessible cadre of clients. These clients then served as good word-of-mouth promotion to other farmers who may not have been so inclined without the demonstration effect of the more visible leading edge farmers.

Some firms undertake their sales and marketing via different means. For instance, Queensland pollution technology manufacturer Indigo Technologies has established a demonstration site at its leading client in the USA. A collection of R&D experts is employed by the firm to monitor this site. From this investment, Indigo has been able to identify and utilise new technologies that enhance the firm's current suite of products. They are also able to use this plant, the John Watson power plant (Southern Power Company), as a sales tool for other potential US clients, thus demonstrating the product and service benefits that clients receive from adopting Indigo Technologies as their pollution control experts.

Project management software manufacturer Aconex has found that they need to educate the market about how the features and benefits of their product will better solve workplace problems for their construction industry users. This is especially the case when they seek to enter a new market in a country. Co-founder Leigh Jasper explains:

Now I mean we have a third of our staff in client service which is all about educating the market. It's a massive cost for us, but we see that as being, well, we see it as massive investment into our future success. That happens in new markets all the time. When you go into new market, say if it's India or Vietnam or China, you start work again and you educate the market.

Educating the market is essentially about born global firms substantiating how significant (and sometimes unrecognised) customer and community needs can be met more effectively by their distinctive business offerings. Their business offerings are distinctive either because they are providing a product or technology that is entirely 'new to the world' or 'new to the industry', or else they are providing an imaginative and demonstrably more effective new application of existing technologies.

This affects how born global firms go about educating the market, and this is often an ongoing process. It occurs in the approach to after sales servicing of their products, and in some instances, to their engagement with potential customers before sales.

Three ready examples are Indigo Technologies, Infomedia and Aconex. Indigo Technologies gives a high priority to servicing their pollution control technology and to building relationships especially with their key client. Indigo has set up a prototype installation of its product at the Southern Power Company in the US. This plant has won an environmental award in the US, and also an engineer's award in Australia. The company employs personnel to work full time at this facility, and this enables them to service the Southern Power Company, as well as work on further improvements to their technology. The plant also serves as a marketing tool for Indigo, in that it is able to show its working technology to other would-be clients.

Similarly, Infomedia prides itself on the services it provides with its electronic car parts catalogue. As CEO Gary Martin says, *'our people get up in the morning, and they don't even think about releasing anything unless it is in 25 different languages'*. The company runs a 24-hour support desk for its products from Sydney, and employs experts in each of these 25 different languages to ensure that it can give the best support possible to its myriad of clients worldwide.

Aconex has adopted a business model in which it uses its own staff and offices instead of expanding through the use of a distributor. Aconex has chosen to do so because they believe that their company has an exciting corporate culture, and outsiders are not as passionate about the product as their own people will be. Hence, Aconex provides training at corporate headquarters in Melbourne in order to instil within its staff the Aconex corporate culture. Company co-founder Robert Philpot is very clear about the role that customer service has played in the firm's attempts to cement a place for itself in the international market:

Most IT companies treat customer support as a profit centre so you pay for support, you pay for the licence and then support is extra on top of that. And because of that people only get the bare minimum amount of support so they don't use the product very well. And because they don't use it very well they don't come back. So we think that including unlimited training, unlimited support in the price in the flat fee is a cost, but it's cost of marketing really. It means that people come back and they like it and it's better and I mean we're actually quite surprised that most software companies don't do it this way. But it's just a mindset that's different. So I think from that point of view that's been a conscious decision from day one and it's actually really made a difference to us.

In effect, these born global firms are demonstrating the competitive advantage to be had from bundling services with their products, thus providing sustainable business solutions for their customers. Such product-servicing bundling serves as an important ingredient in allowing firms to build sound customer relationships, to refine and adapt their offerings and to cement their position in new international markets.

5. OPPORTUNITIES IN TRADITIONAL MARKETS FOR UNTRADITIONAL ENTERPRISES

Australian born global firms can find mature foreign markets a more feasible first site of expansion, rather than high growth emerging markets. This is because of the strength of demand in mature markets for high value-added products and the familiarity of their culture, institutions and business practices.

In many respects, born global firms are untraditional enterprises, a new and pervasive international business phenomenon. One surprising feature of the born global case studies therefore is their initial focus on traditional mature foreign markets.

While the business story of the early twenty-first century is the rise of China and India, very few of the case firms have actively sought to cultivate these emerging markets, at least not in the initial stages of their development. The emphasis from those interviewed was that firms seeking to expand into international markets should be guided by following a path of least resistance by targeting those markets with which they were most familiar. Alf Taylor of **tna** gives the advice to other firms that they should '*identify the market where you'd get the most success the quickest and easiest. Pick the easiest market first*'.

In their market selection decisions, the case firms seemed to be aware that there would be a need to build and educate the market, and therefore they sought the developed markets in the USA, Europe and sections of Asia with which they were more likely to be familiar, or in which the market demand was likely to be greatest. This applied to nearly all of the case firms, including Cochlear, Ellex, Micronix, **tna**, CSL, Biota Holdings, Agenix, BEELINE, Rising Sun Pictures, and Indigo Technologies.

For instance, BEELINE chose to expand to the USA not only because of the size of the market, but also to overcome issues of seasonality which it encountered from only being involved in Australia. A further example is Ellex, which has cultivated European and US markets for its products. Company Chairman Victor Previn explains their initial US foray, saying:

It would have been Dallas, Texas in 1988. We booked a hotel suite and we took our equipment along and set it up in the hotel suite. This was probably my second or third trip to the States and we invited medical personnel and industry people who we had got to know through previous forays into the USA and we invited them to come and attend a presentation on the product. And we gave them the pitch of what we had and why they should consider adding our laser to their product range.

Another firm which strongly targeted the US and European markets was the biopharmaceutical, protein therapeutics development organisation Agenix. In fact, such was the focus of the firm, that they even hired people in the USA and Europe to work for them. This was in recognition of the larger populations and learning opportunities presented in these markets, and was also a partial solution to the fact that supporting these areas with Australian workers was leading to a over-extended home country workforce that was required to spend long amounts of time overseas.

The expansion into US markets from the pharmaceutical firms is a fairly typical strategic response from Australian born global firms. Sam Lovick of CSL explains that this is because the US has basically unregulated prices for pharmaceuticals. Of CSL's sales, approximately 80 per cent. are from overseas markets, and approximately half of these international sales are from the USA. This demonstrates the size of the US market, but tends to overlook that there are five competitors for CSL in this unregulated price market. Hence, there is an opportunity for CSL and other pharmaceutical companies to earn good returns from an extremely large and wealthy market. That said, Micronix's David MacInnes makes the point that a lucrative market is not always an easy one to enter because *'everybody finds it attractive'*.

Even a firm such as MYOB, which has recently moved into China, had only done so following successful cultivation of the more familiar and 'psychically' close market in New Zealand, and then those of greater psychic distance, Singapore and Malaysia. The Chinese expansion is a new strategic move, and is in keeping with the firm's philosophy that it wants to secure first-mover advantages in its geographically close markets. Hence, the move can be seen as recognition that China will become a major global player, and that other competitors would try to appropriate MYOB's business opportunities if they hadn't moved in a timely manner. In discussing the firm's approach to cultivating foreign markets, the Managing Director Tim Reid still demonstrates a strong bias for markets that are culturally similar to Australia. He says:

I mean you can go to New Zealand fairly simply and it's fairly well understood. It can happen absolutely in the UK or the US but again you have an understanding. It's a better well-trodden road and those types of issues [cultural] are better understood and as Westerners we probably just do a better job at knowing what sort of questions to ask and we have a better starting point.

The pattern of development for **tna** is also noteworthy. This firm perhaps provides the clearest example from these case studies of an incremental approach to overseas expansion. Initially, Founder and CEO Alf Taylor worked on his product in the Australian market through a deal it had established with Smith's Chips. But it is after this that the firm's international expansion starts to take on a progression in which it experimented with one single geographic region at a time in order to facilitate and to substantiate its growth. In 1990, the company established **tna** Europe in the UK. This was a part of the company's philosophy of looking for the most familiar market in which to enter. The UK had greater similarities with the Australian market than did Europe, and Europe had greater similarities with the Australian market than they did with the US. The company followed a template whereby it first entered the United Kingdom, then Europe, followed by the USA. This allowed it to make design improvements and changes to its technology as it expanded overseas and it was therefore able to meet the demands of each particular market with their idiosyncrasies.

Overall, there were two cases which chose to initially expand into markets we would commonly consider to be less culturally familiar, more 'psychically distant', and displaying different business practices. These are Technico and Aconex, and in both instances these firms made major assaults into markets in which there was likely to be very high demand for their products.

The agri-bio business Technico demonstrated a strong desire to undertake business in China and India. Having won a contract to supply seed potatoes to a US transnational, Technico embarked on two different strategies for the Chinese and Indian markets. For China, the firm built a manufacturing plant in a relatively unfashionable province following extensive site investigations and deliberations with local Chinese authorities. This plant today manufactures a large component of Technico's global output. In India, the firm undertook a joint venture with a local organisation that had extensive distribution arrangements with many of the country's retail outlets. Technico is also seeking expansion into other emerging markets including the Middle East and Africa where it forecasts a growing demand for potato based snack products and a need for Technico's facilitating technology and supply chain

management systems. Nonetheless, while Technico initially entered an unfamiliar market, it quickly established facilities in Canada and export markets in the Middle East.

In discussing Technico's decision to operate a foreign manufacturing facility in China, CEO David McDonald highlights the demand-based aspect of the strategy:

It was market driven. It was market driven and quarantine border driven. If you looked at Australia for our business, our business would have been contained within a population of 19 million people and a 1.4 million tonne potato market, whereas we had a technology which had strong application in the emerging markets in need of new varieties and a compressed supply chain to meet the needs of the ever growing processed potato products. What we did was identify where the biggest markets were in the world where we had technology that could make a difference and give us a competitive edge. We identified China as a rapidly emerging market and given that penetration into agricultural markets even in Australia can take 4-5 years, we knew we had to get a start in China to capture the growth that was clearly evident in the potato market. If you wait until the market is prime for your entry then you are too late because you will enter with everyone else and you will be making your start up mistakes at the wrong time. Our decision in respect to China was easy . . . enter but mitigate the risk as much as possible.

Similarly, project management software manufacturer, Aconex, also followed a market route unfamiliar to many Australian firms, but once again this was based on the fundamental of meeting a strong market demand. Much of the firm's global expansion efforts have been directed towards large infrastructure projects in the Middle East. The co-founder and Managing Director of Aconex, Leigh Jasper, discusses the firm's expanding foreign involvement as revolving around demand:

When we identify what markets we go into, what we've done is we've taken a map of the world, and then we shrink or expand the area of each of the countries based on the construction [industry] size. So, for instance, Japan grows enormously because it's a big construction market, whereas Africa shrinks right away because it's got nothing. So you can kind of look at a map with a little bit less prejudice if you like, and then we categorise countries based on how much competition there is. Then you overlay on top of that whether they've got broadband Internet, because they're the three things we have to look at. How big is the market, is there competition, and have they got broadband Internet? So if we can win all three of those, then that's where we go.

In short, the born global case studies show that while they are cognisant of opportunities in emerging markets, they do not undervalue the opportunities that traditional markets provide for world-class products and services and the learning these markets provide.

6. GEOGRAPHIC DISTANCE CAN BE AN ADVANTAGE

Geographic distance can be turned from a barrier to entry into a competitive strength by some born global firms through the deft application of information and communications technologies and by taking advantage of world time zones.

One issue which almost all of our firms have had to confront has been the geographic distance from major markets in the USA, Asia and Europe. They have responded by establishment of an extended foreign presence through operational modes such as licensing, wholly owned foreign subsidiaries and joint ventures. However, an interesting outcome from the study was that not all firms viewed geographic distance as a dilemma, and some such as Rising Sun Pictures and Infomedia, for example, actually saw the separation as being in their best interests.

In the case of Rising Sun Pictures, the differences in geography have proved a bonus because the time difference between Australia and the US gives them an uninterrupted working day to address their client's design issues. This experience has shifted their mindset from one where they saw their geographic separation from Hollywood initially as isolating them from a key client, to a position where they now feel it is a significant advantage. Indeed, one of the firm's largest clients claims that the time difference ends up being very positive for his relationship with Rising Sun, in that he goes to work, wakes up, and Rising Sun have been at work on the other side of the world designing a solution for him while he is asleep. It is a situation which has worked out well for both the firm and its clients.

Interestingly, Infomedia finds that its geographic separation from most of its markets allows it to gain access to a greater range of employee skills locally and to concentrate these resources at the one facility. Having established a 24-hour customer service call centre in Sydney, the firm claims that it has found the coordination of client-servicing activities much easier from its Sydney home base than would otherwise have been the case had it based itself in its other many markets. Its Sydney location provides ready access to skilled people who speak a wide variety of languages. Such a range of multilingual people are not readily available in the other markets that Infomedia serves and where the English language is not the first language. Thus, the geographic distance of Sydney from Infomedia's international markets has proved not to be a hindrance, because it has provided the firm with the communication skills base that they require in dealing with their global client group. Further, Infomedia has mastered traversing the world's time zones with a seven day, 24-hour service, and with employee-friendly flexibility for its staff in its Sydney office.

DSPACE is another organisation that perceives a business opportunity in its distance from major global markets. Echoing the thoughts of Rising Sun Pictures and Infomedia, founder Jonathan Whalley sees a similar ability for his company to take advantage of differences in time zones and to organise its workplace for 24 hours-a-day servicing. However, there is another opportunity he sees in this geographic separation. In particular, he argues that the customer doesn't see or care that his organisation is *'not geographically local'*. Importantly, he believes this also provides DSPACE with a competitive advantage. He says: *'we are cost-base Adelaide rather than cost-base London. So we can be quite aggressive in our pricing'*.

Another aspect of this geographic location advantage is cited by CSL. CSL perceives a financial advantage to being based in Australia. This is because this firm is big enough to be well-recognised and well served by Australian financial services. According to Chief Economist Sam Lovick:

The Australian financial markets have always treated us very well. Even when we were at a low ebb they treated us very well. So for example when we went to the financial markets to get funding for the Aventis Behring acquisition they were accommodating, very accommodating.

7. BUSINESS STRATEGIES THAT TAKE ADVANTAGE OF GLOBALISATION

Some Australian born global firms have introduced surprising or unconventional business strategies which 'turn the tables' and capture advantages from globalisation, eg. buying out foreign partners.

While Australian companies are often considered to be disadvantaged by globalisation because of their relatively small company size and limited share of customers and markets, there is some evidence of born global firms turning globalisation to their advantage by the use of surprising and bold business strategies that deepen their international operations significantly.

The case study firms have demonstrated that it is not only Rupert Murdoch who can complete successful Australian takeovers of foreign firms. Acquisitions can bring benefits including expanded geographic coverage, access to new competitive capabilities, access to new technologies, and the ability to diversify. These benefits seem to be supported by this research, and indeed, acquisitions represented a particularly important strategic mechanism for several of the interviewed firms.

Several firms within the study were able to derive key organisational benefit such as synergies or control of vital intellectual property through the pursuit of an acquisition. These firms included CSL, MYOB and Global Trust Centre.

Of these, MYOB represents an interesting case, as they actually acquired the firm that created the initial intellectual property for the software. The US-based parent firm had initially licensed MYOB to distribute its product in Australia. However, while sales and revenue proved difficult in the USA, the Australian firm quickly developed its own domestic market niche, and became revenue positive from very early in its existence. When over half of the global sales of the software product came from Australia, the local licensing arm was strong enough to have greater ambitions. As a result, it bought out the US parent-firm, and turned its attention towards developing other markets on the back of the acquired intellectual property. This has since allowed it to develop a presence in the USA, New Zealand, China, Hong Kong, the Philippines, Malaysia and the United Kingdom.

CSL used acquisitions to become a significant player in the global pharmaceutical industry. It began using takeovers as a strategic move in 1996 when it initially purchased a US-based serum manufacturer called JRH. This was a relatively small deal, being in the vicinity of A\$25 million, but set the organisation on the way to two later firm-defining acquisitions. The first of these was the Swiss organisation ZRB which was a manufacturer of plasma fractionation products, and was owned by the Swiss Red Cross. Having a good reputation with the Australian Red Cross served CSL well in making this transaction. This was completed in 1999 and provided the firm with its first opportunity to sell to the US through its own commercial operation.

The second acquisition related to the firm Aventis Behring, a global plasma therapeutics business. With sales of US\$1 billion in 2002, Aventis Behring represented a significant target for CSL, but the firm proceeded because it believed that Aventis Behring offered a large range of complementary assets that would greatly enhance CSL's business. This has proved a dynamic move for CSL, which in 2006 posted sales of US\$2.6 billion worldwide. CSL seeks to undertake acquisitions in which it is able to bring world-class expertise to the product development and manufacturing process. By this means, CSL aims for the highest possible levels of efficiency. A key to CSL's ability to purchase these organisations has been to internally assemble expert teams from the core business units as and when needed to review potential targets, which has allowed the organisation to be fleet but sure-footed in making its international expansion decisions.

We now turn to examine the various national economic benefits of born global activities.

CHAPTER 4: NATIONAL ECONOMIC BENEFITS OF BORN GLOBAL ACTIVITIES

INTRODUCTION

The previous chapter examined the key lessons for business people that arose from the eighteen case studies of born global enterprises based in Australia. In this chapter, we consider the implications for policymakers. It is well known that the process of globalisation presents new challenges for governments. The liberalisation of crossborder capital flows has intensified international competition for real investment; and the living standards of a nation's residents hinge on the ability of their government to sustain high value-adding activities within its jurisdiction.⁴¹

To meet this challenge, some policymakers have continued the established practice of promoting 'national champions' in profitable transnational industries, such as oil refinery, pharmaceuticals and advanced electronics. Yet the phenomenon of born global enterprises confirms that businesses are becoming ever-less reliant on a national base. Consequently, governments will have to rethink old ideas of international competitiveness and national economic interest. And the first step in this process is to acknowledge the range of tangible and intangible national benefits that ensure from facilitating transnational businesses, including born global enterprises.⁴²

Both the classical concept of 'comparative advantage' and Michael Porter's notion of 'competitive advantage', trace national economic benefit to the productivity growth and income flows that ensue from local firms and industries. Foreign direct investment (FDI) is assumed away in the first theory and regarded as a potential threat in the second. However, what these established theories overlook or underestimate is:

- 1) the increasing disjuncture between where value is created and where it is realised; and
- 2) the intangible assets that are created for nations by transnational businesses, irrespective of their formal national identity.⁴³

The phenomenon of born global enterprises illustrates these points clearly, because they organise their activities in response to world demand and without first consolidating a domestic market position.

In contrast, Robert Reich's theory of 'global webs of enterprise' sheds more light on the policy implications of contemporary crossborder business enterprise. Reich notes that successful companies are taking advantage of information technology and freer capital flows to source their inputs globally and satisfy niche world markets. Moreover, he argues that since the 1980s, crossborder competition has eluded national characterisation. The traditional concepts of 'national economy' and 'national company', enshrined in the balance of international payments, are more distorting than revealing. What is meaningful, though, is the marginal value that nationally based agents can add to the global economy.⁴⁴

While Reich's argument is provocative, it does draw attention to the fact that conventional categories of international competition are unduly focused on net income flows and the net stock of money-bearing assets. These variables might be *evidence* of national productive power, but they are not indicators of the *drivers* of long-term (sustainable) productivity growth; notably the production of new or refined commodities, the adoption of new productive techniques and the innovative capacity of agents.

Therefore, an adequate assessment of the national benefits brought by resident crossborder enterprises must go beyond their impact on recorded net national income and the net national stock of financial wealth. Much more important are the contributions of transnational businesses to:

- the ability of resident firms to participate in global webs of enterprise and to generate or transfer economically relevant knowledge across borders;
- the formation or survival of 'clusters' of high value-adding activities within Australia;
- the creation of new global industries within the Australian economy;
- the stock of codifiable skills and tacit knowledge of domestic managers and workers; and
- the reputation of Australia as an attractive location for additional crossborder investment and a source of business success and ingenuity.

The bulk of this chapter will be devoted to discussing how our eighteen case study born global enterprises are contributing to the national economy in these various ways. The policy implications that flow from this will also be addressed. But before proceeding, some further clarification about the concept of national economic benefit is required.

ANALYSING NATIONAL ECONOMIC BENEFITS: SOME RELEVANT THEORETICAL ISSUES

In order to be meaningful, any evaluation of economic benefits must proceed from clear and consistent criteria. In the case of private enterprises, beneficial economic activities are measured directly by market indices such as prices, profit-earnings ratios, firm growth rates and share values. National economic benefits, conversely, are considerably more difficult to estimate. This is because national economies are not purposeful economic organisations, but politically constituted economic spaces, across which economic agents produce, consume, exchange and distribute.⁴⁵ Therefore, a national economic interest can only be measured indirectly, by adding and subtracting the value of all economic activities that are conducted within the jurisdiction of a nation, or otherwise relate to it. And this process of accounting naturally involves analytic decisions about which economic activities contribute to national wealth, and to what extent.

Conventionally, the national benefits of crossborder business activity are read off the balance of international payments. This represents the expenditure and income flows of one period (measured by the current account) as being financed by the accumulated capital stock of past periods (measured by the capital and financial account). A positive balance in one account necessitates a negative balance in the other.

The Australian economy persistently records current account deficits. These are due to continuous net outflows of domestic income, which are in turn a product of past net inflows of foreign capital. However, a positive balance of trade in goods and services helps reduce the current account deficit, and by definition the net stock of foreign capital required to fund it.

The implicit policy prescription is the encouragement of a 'favourable' trade balance by boosting the volume of domestic exports and increasing the terms-of-trade (i.e., the ratio of export to import prices). Indeed, national governments have traditionally sought a current account surplus through net export growth, on the grounds that it:

- allows a nation to 'export' its unemployment and, if exchange rates are flexible, any latent inflationary pressures as well;
- provides an incentive to additional real domestic investment;

- produces a stock of foreign currency reserves that may be used to steady the exchange rate in times of crisis; and
- permits domestic financiers to acquire foreign assets.⁴⁶

Nevertheless, the narrowness of this interpretation of national economic advantage is well documented. A seemingly unfavourable trade balance can mask the building-up of productive capacity through the import of real capital goods. Similarly, what appears on the capital and financial account as greater net indebtedness to foreigners, might be obscuring the generation of high value-adding activities in Australia by transnational enterprises. For all a net capital inflow means is that domestic residents are more indebted to foreigners than the latter are to them; it says nothing at all about the local knowledge and employment effects of domestic or foreign investment.⁴⁷

Michael Porter has directed attention to the *quality* of real investment that is captured within a national economy. He points out that 'Firms, not nations, compete in international markets'⁴⁸ and contends that:

We must abandon the whole notion of a 'competitive nation' as a term having much meaning for economic prosperity. The principal economic goal of a nation is to produce a high and rising standard of living for its citizens. The ability to do so depends not on the amorphous notion of 'competitiveness' but on the [real] productivity with which a nation's resources (labor and capital) are employed . . . [T]he home nation takes on growing significance because it is the source of skills and technology that underpin competitive advantage.⁴⁹

According to Porter, the wealth of a nation depends not on its endowments of inputs but on its 'environment for competition'.⁵⁰ It is the nation's environment (including its institutions and policies) that conditions the crossborder performance of its firms in particular industries and segments of industry, and hence the standard of living of its residents.

In Porter's view, it is vital that nations foster local concentrations – or 'clusters' – of high value-adding activities in specific fields. These clusters are characterised by the synthesis of robust competition and cooperation, strong connections between sophisticated customers and suppliers, greater and speedier access to inputs, lower costs of entry and experimentation, and the encouragement of new enterprises.⁵¹ The benefits that accrue to the 'home nation' consist of core technologies, the most skilled employment, the stimulation of industries related to the competitive activities, and positive net export flows of high value-added commodities.⁵²

Porter is more ambivalent about the impact of foreign ownership on national economic advantage. He declares that 'the nationality of shareholders is secondary' and that the economy of the home nation will benefit so long as foreign affiliates maintain 'creative and technical control'.⁵³ Yet Porter also advises the state to discriminate against any foreign-owned enterprise that is seeking to take advantage of cheap local labour, and generally to eschew high levels of foreign investment.⁵⁴ Similarly, Porter recommends that the state only support outward foreign investment that channels less productive activities abroad.⁵⁵

While Porter's theory advances the debate on deriving national benefits from crossborder private enterprise, it retains the limited view that national economic advantage is ultimately measured by the balance of international payments. Porter slightly modifies the traditional goal of a current account surplus to attaining a net export surplus in high value-added exports and a net national deficit in low value-adding investment.

Conversely, Robert Reich insists that Porter's assumption of a home base for corporations 'would have been correct as late as the 1970s, but more recent evidence suggests otherwise'.⁵⁶ Reich concurs with Porter that companies based in advanced-capitalist economies have generally shifted way from high-volume, standardised production towards

high-value, specialised production. But he parts company with Porter by affirming that these new 'webs of enterprise' elude national characterisation.⁵⁷

To support his case, Reich raises the following points:

- products are international composites, and legal definitions of domestic products are extremely difficult to maintain;
- most crossborder trade occurs between agents in the same webs of activity;
- governments are unsure how to tax crossborder enterprises, whose revenues and wages appear in all places;
- companies claim or deny a certain nationality for their own convenience;
- the nationality of a company's management has increasingly less to do with the location of its investments and workforces; and
- US-based companies are tending to conduct their research and development (R&D) outside the USA.⁵⁸

Consequently, governments cannot assume that public support for locally owned companies will enhance national income and employment. Rather, the challenge for national governments is to attract and retain high value-adding businesses within their borders, irrespective of the nationality of their directors or shareholders. For in a world of extremely mobile capital and intense crossborder competition, it is only knowledge-intensive occupations that can sustain high real incomes within a nation.⁵⁹

Reich proceeds to argue that selective government policies are vital to the participation of domestic agents in global webs of enterprise. In particular, he exhorts governments to provide their citizens with the education and training necessary to perform non-routine, high value-adding tasks. According to Reich, sustainable employment and high real wages depend upon the bulk of the workforce being 'symbolic analysts'; that is, people who can either identify problems or solve them, or else link 'problem identifiers' with 'problem solvers'. In contrast, the positions of 'routine producers' and 'in-person servers' are becoming ever more precarious.⁶⁰

Recent debates about international competitiveness – led by Porter and Reich – make it clear that the traditional preoccupation with nationally based exportation and national ownership is outmoded. What really matters for national economic advantage are the effects of crossborder enterprises on:

- the ability of resident firms to participate in global webs of enterprise and to generate or transfer economically relevant knowledge across borders;
- the formation or survival of clusters of high value-adding activities within the nation;
- the creation of new global industries within the national economy;
- the stock of codifiable skills and tacit knowledge of domestic managers and workers; and
- the reputation of the country as an attractive location for additional crossborder investment and a source of business success and ingenuity.

It is apparent from the eighteen enterprises that participated in the Australian Business Foundation/UQ Business School research project that born global enterprises are conferring

these national benefits. These enterprises were asked a series of questions about how their company adds value to the Australian economy. The results of this line of inquiry are presented below.

CONTRIBUTIONS TO EMPLOYMENT AND PUBLIC REVENUE

Whereas the contributions of resident born global enterprises to the nation's innovative capacity are the most critical to long-term aggregate growth, the general employment and financial benefits they impart are also worthy of note.

The number of people directly employed by the eighteen participating enterprises ranges from 7,500 (CSL) to two (Global Trust Centre). Taken together, the average number of employees that the firms hire to work in Australia is around 100. The majority of the case study businesses concentrate their labour force in Australia and favour Australians in their overseas deployments; yet at the same time, they hire foreign residents whenever it is deemed necessary or more advantageous.

Sam Lovick, Chief Economist for biopharmaceutical company CSL, commented on the national employment contribution of his company as follows:

[W]e did the analysis just from our domestic business, there's about 1,500 employees. I think the big multipliers that we've – the big things we've brought back are two fold. One is that as a consequence of our enhanced size, we are able to fund a much more robust research and development [program] and that's essentially based in Australia; it's not exclusively based in Australia – we have high performing R&D functions in Switzerland and Germany – but we believe that firms like us should place a significant element of their research and development activities close to their head office because it's one of our big important strategic tools . . . I think what that delivers is employment of a large number of very high qualified skilled people as scientists and the end-product of their work (I think) will be either partnerships like the one with Merck, which bring back substantial amounts of revenue, or in other areas, [such as] the actual manufacture of products in Australia which will then be sold overseas, of which flu vaccine is the best example.

Likewise, Ellex Chairman Victor Previn mentioned the employment and income benefits of his company's expenditure for other industries and the nation generally:

The tangible benefits [of Ellex's activities] clearly are employment., The creation of employment, not just within our company.but outsourced to other companies. I believe that it's probably a factor of at least three of four times the number of people that we directly employ to the indirect employment of sevice providers and sucontractors outside our firm.

Alf Taylor, the CEO of integrated turnkey company **tna**, declared in the same vein that:

Nadia and I at the moment are the only owners of the company, but the employment all of the subcontractors, of all that money that is kind of spent on salaries, wages and suppliers in Australia.

And David MacInnes, Managing Director and CEO of catheter biotechnology company Micronix, noted that:

[M]ost of our expenditure is not on hardware as such, it's on people and the outsourced services, manufacturing, quality assurance, everything else. Our spend rate is roughly \$150,000 a month and that goes straight into the local economy.

Gregg Mastroianni, Vice President Sales and Marketing of Brisbane based Agenix similarly remarked on his business' contribution to local employment:

Definitely employee salaries, raw materials, partially manufactured goods, virtually everything that we used to make our make our historic IVD products were Australian based. The labour

is Australian based so we've paid our corporate taxes, we've hired the personnel, we've employed university graduates, I think we've been a significant contributor to the local Brisbane community . . .

During many of the different life cycles of this organisation, the company was continually hiring and adding to the research group, adding to the manufacturing group, adding to the distribution organisation. There was a reliance on local labour in order to be able to resource the growth we were experiencing .

Everything that Agenix has ever made throughout the past 25 years, has been researched and developed right here by local talent.

Furthermore, Tim Reed, Managing Director of MYOB (a business management software and support company), pointed to the positive domestic employment effect of MYOB's foreign activities:

The tangible benefits would probably come back just to the fact that we are a large employer. We do create more jobs here than – you know, the fact that we have operations overseas does increase our employment here . . .

From an employment perspective, all of our global functions are run out of Australia, so there is a team quite separate from our Australian business team which creates employment here to . . . support [not only] the Australian entity but all of the other entities as well. As well . . . some of our functions are global in nature; for example, our product development team is global.

As well as increasing the rate of domestic employment, resident born global enterprises are also adding to the taxation revenue of Australian governments. Almost all of the case study enterprises are majority Australian owned and/or listed on the Australian Stock Exchange (ASX); and almost all indicated that they prefer to repatriate as much of their profits as possible.

Alf Taylor of **tna** expressed this preference with uncommon force:

We pay taxes everywhere, we have a policy on that and that is to pay our taxes everywhere; ethics is massive in my head. I have no interest in avoiding tax of any description. We will do our best to claim everything and minimise that, but whether it's here, whether it's in America we pay our taxes . . . [W]e endeavour to have most of the money here in Australia because there are real, real issues when we make money overseas trying to get the bloody stuff back here, because then the Australian Government taxes you again and we're not into that at all. So you try and structure things so that most of the money that the company makes is actually made in Australia so most of the tax is paid in Australia.

Additionally, Robert Philpot, Co-Managing Director of Aconex (a company that provides a document management and collaboration system for construction projects) observed:

Like any business we'll try and set up the business so we're not paying more tax than we need to, but at some point we want to bring dividends and returns for our investors back to Australia . . . [W]e haven't paid much income tax because we've been investing in growth . . . [Yet we have] paid a huge amount of payroll tax and other taxes . . . [such as] company tax . . .

Again, Neil O'Sullivan, the CEO of NOJA Power Switchgear (a manufacturer of low and medium-voltage switchgear products) said that:

Like any other businessman I'll tell you [the company pays] too much [tax], but I would also qualify that by saying that I don't think that we'd be the company we are today without the Australian Federal Government's support; so I think their policies are very wise in that regard, in that they recognise that if they invest in new Australian business that's going to give them a return on revenue in terms of tax in the future and I think we have to be satisfied to pay that to some extent, as long as it's at reasonable levels.

Moreover, Tim Reed of MYOB reported that:

[M]ost of our shareholders are in Australia and we're listed on the ASX, so we do repatriate profits such that we can pay dividends and share those out. To be honest with you I don't understand all of the international tax laws, [but] I'm sure that does have a benefit to the overall Australian economy from a tax perspective.

Table 4.1 below presents the revenue and taxation contributions of the participating born global enterprises that are listed on the ASX and whose financial details are therefore on public record. It can be seen that the taxes paid by these enterprises are substantial, both in absolute terms and relative to their net profits.

Table 4.1: Revenue and taxation contributions of publicly listed case study enterprises, 2005-07 (consolidated results, latest available)

Listed company	Total revenue (\$A m)		Net profit (\$A m)		Tax expense (\$A m)	
	FY 05-06	H1 FY 06-07	FY 05-06	H1 FY 06-07	FY 05-06	H1 FY 06-07
Agenix ⁶¹	17.9	-	-3.7	-	-	-
Biota ⁶²	13.9	20.4	-11.3	4.1	-	-
Cochlear ⁶³	452.3	276.1	78.2	48.8	30.6	23.7
CSL ⁶⁴	2904	1563.8	351	257.3	53.1	129.6
Ellex ⁶⁵	34.6	44.4	3.9	4.3	0.15	-1.5
Infomedica ⁶⁶	56.2	27.7	18.1	7.8	6.7	2.4
MYOB ⁶⁷	182.3 (CY 06)	-	17.3 (CY 06)	-	8.4 (CY 06)	-

PARTICIPATING IN GLOBAL WEBS AND FACILITATING ECONOMICALLY RELEVANT KNOWLEDGE

Given that all the born global enterprises interviewed undertake high value-adding activities, it was unsurprising to find them enmeshed in what Robert Reich refers to as 'global webs of enterprise'. As was emphasised above, such participation is vital to the ability of Australian-based agents to generate and absorb knowledge that enables them to sustain competitive firms and command high real wages.

Several of the interviewees emphasised that local firms cannot keep pace with the development of their industry, unless they are part of a global web. Greg Mastroianni summed up the imperative facing Agenix to become a genuinely transnational company, as opposed to a nationally based competitor in foreign markets:

Unfortunately, a Brisbane based perspective doesn't have the international impact it should have. One of the reasons Agenix experienced considerable turmoil during the early years of this decade is because it was too locally focused for too long. You can't compete in the international *in vitro* diagnostics market and be an Australian thinking company, let alone a Queensland company, let alone a Brisbane company. You have got to be actively focused on the international market where the pace of development is fast and continuous. The

international market is oriented towards different market drivers and if you are not tuned in properly you're lost, you're bowled over quick . . .

Our mind-set change was to become a strong international company that's located in Australia, not an Australian-dominated organisation that happens to market products outside its home turf.

And perhaps unexpectedly for a biotech company, Mastroianni judges crossborder alliances in distribution to be more important than those in manufacturing or research:

Our strongest historical alliance has not been in research, it's not been in manufacturing, it's been in distribution. As a modest sized Australian based company you cannot afford to enter Europe or the United States and succeed without having an '800 pound gorilla' as your distribution partner who can knock on the door for you and provide instant access and credibility.

Likewise, Victor Previn of Ellex observed that:

[Y]ou really can't survive in any space for too long without alliances. Alliances are critical either for the supply side or the distribution side or just for general business networking in order to move the company along.

The importance of participating in global webs was also noted by David McDonald, Managing Director and CEO of seed-potato producer Technico:

We supply global customers and we service them in multiple markets. Initiating these supply relationships in Australia we have built on this to become a global supply chain partner to their businesses. The benefits in having multiple production facilities and understanding of our global customer needs means that we can be flexible in our supply options and service their needs on a year round basis. We may not understand all of the cultural issues in dealing country by country but we understand their supply chain and we work our way into the cultural subtleties needed to localize the business to the specific conditions of each country.

Mr McDonald added that his transnational company is opening up opportunities for other Australian-based agricultural enterprises:

I think one of the areas that is not fully exploited is the fact that we are pioneering Australian agriculture into many new markets and we learn a lot from this that would benefit other Australian companies and help them avoid the mistakes that we have made and leverage the learnings and platforms that we have developed in these markets.

Similar sentiments were expressed by Sam Lovick of CSL:

So for us, having the right partners if we don't do it ourselves – [and] we don't do everything ourselves – then having the right partners is very important in commercialising the ideas that we generate . . . I think we have managed to take Australian expertise and catapult it into international markets . . .

Indeed, a recurring theme in the interviews was the transferring of new business knowledge and world industrial standards from global webs to local firms. Neil O'Sullivan of NOJA Power Switchgear stated that:

I think that every time we go overseas we learn something and we teach someone something and I think a lot of that is brought back in our business the way we run our business I think that then flows through to our suppliers and other people.

Robert Philpot of Aconex made the same observation:

[B]ecause we're international, we provide a better system to our clients in Australia, because we are not just comparing ourselves to one or two competitors in Australia, we're comparing

ourselves to 20 competitors internationally . . . We've had to lift our game to compete there and as a result, our Australian clients benefit from the improvement in the system.

Alf Taylor of **tna** recounted that:

[W]e have a bunch of people who now work very closely with us. There's some Japanese companies, British companies and you kind of grow . . . [D]id you know we truly came from the smallest company in the world in this industry and we are now this year we're the biggest company in the world?

And Tim Reed of MYOB said:

[T]here's absolutely things that we've learnt outside of Australia and then come back and feed the way in which we operate here.

Other interviewees remarked upon the emulation of their innovations by competitors:

[T]he way that we've done business [globally] has influenced the strategies of some of our competitors (Sam Lovick, Chief Economist, CSL).

Most certainly there are overseas firms that try to copy us, there are local firms that have tried to copy us, but there are a number of innovative features that we've designed into our products which others can't copy . . . (Victor Previn, Chairman, Ellex).

I don't want to sound egotistical, but there is another company that has set up in packaging in Australia . . . [and] I suspect watching us would have been helpful to them and I know that we have had a significant influence actually on our biggest overseas supplier, [which] is a Japanese company . . . (Alf Taylor, CEO, **tna**).

Table 4.2 below summarises each case study company's distinctive contribution to the national stock of economically relevant knowledge. Some of their particular innovations will be discussed in subsequent sections, but it is important to note that the valuable knowledge that these born global enterprises transfer to other Australian agents is not confined to advances in science or technology. As was highlighted in the previous chapter, a common characteristic of these enterprises is their knowledge-intensive business models. While some of the participating enterprises have undertaken radical technological innovation, others have simply employed or modified existing technology to anticipate new wants, or to meet unsatisfied wants in a remarkable way. This observation accords with the cumulative research intelligence of the Australian Business Foundation.⁶⁸

Table 4.2: Case study enterprises' distinctive contributions to the national stock of knowledge

Company	Main source of distinctive knowledge and competitive advantage
Aconex	Internet-based document management and collaboration system for construction projects.
Agenix	Development of DVT and PE detection and diagnostic products; its 3B6 antibody is recognised as the most specific available for the detection of prior <i>in vivo</i> blood clots.
BEELINE	World's first application of Global Positioning Systems technology for hands-free Steering Assist™ in agricultural vehicles.
Biota Holdings	Discovery and development of antiviral drugs; the anti-viral drug Relenza™ (for which GlaxoSmithKline has development and marketing rights) is one of only two antivirals that proved effective in combating the lethal H5N1 strain of bird flu'.
Cochlear	Design and marketing of revolutionary multi-channel cochlear implants for the hearing impaired.
CSL	Development of vaccines and medications of biological origin; CSL Bioplasma manufactured the world's first chromatography-based albumin product.
DSpace	Advanced 'satcomms' communications technology, with programs spanning the satellite and radio systems domain.
Ellex	Design and manufacture of laser systems for ophthalmologists to fight blindness.
Global Trust Centre	Identifying and solving security and trust problems in the digital world.
Indigo Technologies	Manufacture of technology that reduces potentially toxic, fine particles emitted from coal fired furnaces in power stations.
Infomedia	Supply of electronic parts catalogues in multiple languages, primarily for the automotive industry.
Micronix	Commercialisation of biomedical technology that facilitates accurate, inexpensive and real-time placement of a variety of catheters for a range of clinical applications.
MYOB	Innovative business management software, services and support for businesses and accounting practices.
NOJA Power Switchgear	Research, development, design and manufacture of low and medium voltage switchgear products, which make for more reliable and continuous flows of electricity.
Rising Sun Pictures	Visual effects services for filmmakers, predominantly Hollywood studios.
Technico	Supply-chain solutions that use proprietary technology to compress the supply chain offering high quality seed potatoes and a channel for the rapid introduction of new varieties.
tna	Integrated turnkey solutions for food packaging and processing products, with particular expertise in 'Vertical Form Fill and Seal Systems'.
The Wiggles	New business model of children's entertainment, which encourages the active participation of parents and guardians.

SUSTAINING LOCAL CLUSTERS OF HIGH VALUE-ADDING ACTIVITIES

Even though local clusters of innovation are no longer the preserve of nationally owned enterprises or nationally controlled industries, they have lost none of their national economic value. Several of the interviewees drew attention to the geographic concentrations of specialist activities that their born global enterprises have engendered or sustained.

Jonathan Whalley of DSpace noted that his company has generated new technology that has allowed it to establish a niche in the mobile satellite communications industry. Likewise, Paul Turner, General Manager Research and Development of BEELINE Technologies, remarked:

BEELINE has always generated interest given the nature of what we did, the fact that this was a technology pioneered here in Queensland and has remained here – yet has managed to grow globally. We've also had several projects that we've worked with Ausindustry on that have attracted a bit of interest . . .

Brisbane is now becoming quite a hub for machine control research and development. There are a number of international firms that have now based an R&D presence in Brisbane to target machine control and GPS related applications. That's not to say it was all because a result of BEELINE's presence here, but it certainly has had an impact.

Sam Lovick of CSL elaborated on his company's relationship with Australian-based researchers and the extent of its research and development spending in Australia:

I think one of the things that we value is our links to the basic research and the research environment in Australia. We think it serves us well. We think we serve it well too. It's a good relationship; it gives us insight on ideas that crop up; it gives us access to scientists working in the clinical and research environment; it can be very useful for a whole range of things and so yes that type of network – Australian network – is incredibly important for our research and development side. We have similar networks for example, we have a very good coagulation research and development group based in Germany and they also have extensive links to the clinical community, the science community – so it's not just confined to Australia. Those sorts of networks I think are very important on the innovation R&D side of the business. That's not to say they're unimportant elsewhere, but I think they're particularly important on that side . . .

[W]e're the biggest (I think) R&D spender in Australia outside the car industry, which even now I find a little surprising. So we spend a lot there. Now what we are doing in that is we are competing for ideas – that's projects that we are good at developing. We don't do the basic research that takes place in the universities and very few bio-pharmaceutical firms do, but we need access to their ideas to take forward; and in order to do that well you need to get early access to the ideas and you need to understand them.

Mr Lovick added, however, that other resident enterprises in the vaccine industry might be impelled to move offshore:

[W]e continue to be an international company based in Australia and that's an important part of our business strategy: that we deliberately have our R&D here; for example, our head office is here, but some other markets are very attractive markets for doing our sort of work in and so you could see examples of firms effectively picking up and moving offshore. So one of the perils of internationalisation is that you move offshore, but that's definitely not what we've done so I think – so in that sense I think we bring a lot back to Australia because we haven't (if you like) moved our corporate head office, our research and development facilities and so on and so forth into larger markets.

Other notable clusters of high-value adding activity are Cochlear's implant clinics. Cochlear has over 260 Nucleus Clinics in the Asia-Pacific region, over 260 in Europe and over 500 in the USA. CFO Neville Mitchell affirmed that while less than 3 per cent. of Cochlear's world sales are realised in Australia, their research and development remains centred in this

country. The latest innovation to stem from this activity is the Nucleus Freedom™ Cochlear Implant system, which was launched in 2005. In the company's words:

Cochlear's Freedom™ system . . . [contains] a number of breakthroughs in hearing technology and has since become the number one selling cochlear implant system worldwide . . .

These innovations include the first custom designed programmable DSP [digital signal processing] chip for an ear level speech processor; a splash proof membrane that enables the external electronics to withstand water; new sound pre-processing algorithms which improve hearing in previously challenging environments; and a unique modular design enabling the user to change in seconds the configuration of the device to wear behind the ear or on the body.⁶⁹

Similarly, Biota Holdings undertakes leading-edge research and development in the prevention and treatment of influenza, human rhinovirus, respiratory syncytial virus and Hepatitis C.⁷⁰ According to Vice President Business Development Leigh Farrell:

The spillovers from Biota's presence in the Australian research community have been considerable with knowledge transfer occurring through R&D collaborations . . . Biota has a rich history in collaborating with the Australian research community. The company has a number of long-standing relationships with universities, medical research institutes and the CSIRO. Spillovers from these collaborations occur through Biota staff transferring to the academic collaborator knowledge and skills in the drug development process that can be applied to their own research programs. For example, Biota has collaborations with organisations such as the St Vincent's Institute in Melbourne where Professor Michael Parker is head of Biota's Structural Biology Laboratory. This long standing collaboration has been extremely productive with numerous bidirectional spillovers occurring; these include upskilling of Biota's expertise in structural biology and the transfer of medicinal chemistry and clinical development skills from Biota. Biota has had collaborations with CSIRO and the Victorian College of Pharmacy, in relation to the discovery of zanamivir, the drug subsequently licensed to GlaxoSmithKline and marketed as Relenza. Both organisations receive substantial income from Biota from these collaborations . . .

In addition to formal collaborations, Biota also has an extensive informal networks with the Australian academic and biotechnology sectors that result in a two way spillover of knowledge sharing. Indirect spillovers that flow from public funding of R&D in Biota are the migration of former Biota staff to senior management positions in other companies. For example, former Biota staff have become CEOs, company directors, chairmen and R&D managers in the biotechnology sector. Biota staff are very active at seminars and conferences in discussing its research programs and best practice for project managing drug development programs.⁷¹

Table 4.3 presents levels of expenditure on research and development by those case study enterprises that are publicly listed. While formal research and development is not always necessary (and seldom sufficient) to sustain an innovative cluster, it is crucial to many of the born global enterprises in this research project.

Table 4.3: R&D expenditure by publicly listed case study enterprises, 2005-07 (consolidated results, latest available)

Listed company	R&D (\$A m)	
	FY 05-06	H1 FY 06-07
Agenix ⁷²	10.9	-
Biota ⁷³	16.1	8.6
Cochlear ⁷⁴	58.9	35.6
CSL ⁷⁵	161	84.7
Ellex ⁷⁶	3.33	3.75
Infomedica ⁷⁷	2.2	1.2
MYOB ⁷⁸	35.3 (CY 06)	-

CREATING NEW GLOBAL INDUSTRIES WITHIN THE AUSTRALIAN ECONOMY

Not only are resident born global enterprises connecting Australian firms to global webs and supporting local clusters, some are even creating new transnational industries within Australia. Perhaps the most famous example is Cochlear, whose Nucleus multi-channel cochlear implant has been acclaimed as the first major advance in the management of profoundly deaf children since the advent of sign language. Also renowned are The Wiggles, who crafted a new business model of family entertainment that has been adopted by emulators such as Hi-5 and the Hooley Dooleys.

Another celebrated case is BEELINE Technologies, which devised the world's first application of Global Positioning System (GPS) technology for hands-free Steering Assist™ in agricultural vehicles. Paul Turner commented that:

BEELINE's pioneering technology has revolutionised farming and farming practices around the world. Growers go about their day-to-day activities differently now to what they did ten years ago since their adoption of GPS hands-free steering . . .

The tangible benefits have been literally the creation of an entire industry across Australia and all of the dealers and suppliers generating revenue from it.

Moreover, Bob Gibson, CEO of Brisbane-based Indigo Technologies, emphasised that his business is developing technology with partners which might prove critical to improved public health and environmental sustainability:

We are a coal state. Our technology at the moment is focused totally at the moment on coal-fired power stations and industry. We believe it's in the interest of Queensland and Australia to foster clean coal and indeed they're endeavouring to do that. We aren't embraced in that to a great extent, but both State and Federal Government at the moment at the most senior level, be it premier and ministerial level federally, are aware of our company and have shown an interest, but that hasn't brought any tangible benefits yet . . .

The World Health Organisation say two million people a year are dying prematurely from fine particles because of the toxicity associated in the heavy metals in fine particles. We are the fine particle experts in the world. So that's significant. Our new technology we're developing

– now we're joint venturing and bringing other peoples' technology in, we'll provide a multi-pollutant solution to addressing all the pollutants from coal with the exception of CO₂.

It is obvious that the generation, within Australia, of global industries that solve universal problems (whether in farming or the burning of fossil fuels) present enormous opportunities for domestic governments and residents.

BUILDING UP THE SKILLS AND KNOWLEDGE OF AUSTRALIAN RESIDENTS

At the same time that Australian born global enterprises are transforming their businesses through further expansion, so too are they enhancing the innovative capacity of Australians. The bulk of interviewees emphasised that their global activities are enhancing the codifiable skills and tacit knowledge of domestic residents. As Gary Martin, CEO of Infomedia, succinctly put it: *'I think global skilling can't be overrated.'*

David McDonald of Technico remarked that rapid and deep expansion across borders requires certain skills, and that these are retained in the national economy even after a significant offshoring of labour:

If you look at Technico's growth in the initial years – probably the first six or seven years – at peak we would have been a regional player that in Australia was employing 30-40 people. You had to have that core team of people that understood the business, the vision and had the passion to pioneer. It is those hand selected people that implement the rapid international growth. I think that a very tangible benefit does exist for Australia because for those people who have transferred offshore with our business they are developing key skills that will be crucial to Australia's role in international markets in the future and for those who have left us they too have been part of a company with international strategies and some have moved to positions in Australia where those skills will be used to help other firms with global aspirations.

We continue to tap into Australian firms when we are offshore because these offer us a comfort and common understanding of how we do business. Our China manufacturing facilities was project managed by BHP engineering and the consultants deployed for design and site selection were from CSIRO and a private firm in Sydney for clean room facilities. Our legal and accounting service providers continue the same from day one so I am sure they have learnt skills from the multiple markets we have entered and they have been associated with.

Tim Reed of MYOB made a similar statement:

We are creating the opportunity for Australians who want to be part of a global organisation which is headquartered [in their home]. So . . . I look at myself; I spent 10 years in the States and then got recruited back to come and run this job here; and so for me it created an opportunity for me to come back to Australia . . .

[W]e are developing skills in Australians such that they are capable of running global organisations.

Moreover, Sam Lovick stated that enterprises like CSL are vital to plugging the 'brain drain' of bio-pharmaceutical scientists:

[W]e think it's quite valuable for some of our scientists to go and spend time overseas. We think they get a lot of value by working in the US bio-pharmaceutical environment, for example. Even if we don't employ them . . . a lot of them want to come back and so they do their basic education here, they get to a Ph.D. level; it's an expensive education in bio-pharmaceutical skill of which Australia has trained good graduates in these areas. They go overseas and they get experience and so on and so forth and the fact that there's an organisation like us that can bring them back is I think of extreme importance, very, very valuable to the economy. Otherwise if there isn't an environment in which they can come back to in Australia, they're probably not going to come back.

David MacInnes of Micronix highlighted his company's contribution to the entrepreneurial abilities of Australian residents:

The tangibles all come about by the staff and the outsourcing of work locally. The intangibles they don't necessarily get a wide exposure, but I think it's just the staff getting involved with new skills and maybe thinking about things in slightly different way, but you know as and when they get involved with other start ups, they're gluttons for punishment, they'll have a better skill base.

Thus, responses by the case study enterprises suggest that Australian-based born global enterprises are instilling crucial skills and knowledge in resident workers, managers and entrepreneurs. Additionally, it appears that these skills and knowledge are being absorbed domestically even in cases where the enterprise is deploying relatively more Australians overseas, or hiring relatively more foreign residents in its crossborder operations.

ENHANCING THE REPUTATION OF THE AUSTRALIAN ECONOMY AND AUSTRALIAN RESIDENTS

Several of the interviewees remarked that their born global activities have enhanced the reputation of Australia as a source of business success and ingenuity. This effect can be regarded as an intangible economic benefit to Australia, in that a country's reputation is an important determinant in the attraction of additional crossborder investment and the inclusion of its citizens in global webs of enterprise. In addition, the ongoing achievements of Australian-based born global enterprises can inspire other resident enterprises to initiate or extend crossborder activities.

Some of the case study enterprises have been recognised by esteemed international bodies in their industry. For instance, in 2004 Biota Holdings was awarded a US\$5.6 million National Institutes of Health award for its long-acting inhaled neuraminidase inhibitors (LANI) programs and in 2006 was awarded a further US\$8.5 million amount. Similarly, in 2006 Cochlear was awarded Gold for the Nucleus Freedom cochlear implant system at the prestigious international Medical Design Excellence Awards (MDEA) held in New York.

Other participants affirmed that their enterprise has increased the global visibility of Australians in a new field of business. Peter Fritz, founder of digital security solutions company Global Trust Centre (GTC), said the following with regard to a joint venture agreement between GTC and Swedish banks:

The Swedish Government sees this as a tremendous project for Sweden vis-à-vis Australia. There has never been anything like this, since Australia is Australia and Sweden is Sweden, so it is on many levels that this has brought countries together . . . In terms of placing Australia on the map, we were nowhere on the map before this.

In the same vein, Alf Taylor of **tna** opined that:

One of the things that I think we truly have done is, well look we have in a teeny weeny way, we have kind of boosted Australia's reputation as a sophisticated manufacturer or supplier of sophisticated products.

Furthermore, Didier Elzinga, CEO of visual effects services provider Rising Sun Pictures, commented on the positive reputation of Australians in the US film industry:

[I]n the film industry . . . there is quite a long tradition of – they like Australian crew and Australian film people because we're seen as being very pragmatic, so we know how to use budgets and get things done with not much money which is obviously a virtue of working in a much smaller market; but also we're very passionate about film, like we do film because that's what we love and I think one of the things that we've found from our clients is that in our major competitive market being the US, a lot more of the market is made up from people see it as a

job, were as Australians are perceived as seeing it as a calling (if you like) and that is seen as an advantage.

Conversely, some case study enterprises found an Australian identity to be a distinct competitive *disadvantage*, and therefore something to be overcome. For example, David MacInnes of biomedical company Micronix declared that: *'being Australian and having a kangaroo on your lapel, it works against you; but you don't recognise that.'*

Similarly, Damian Lismore of Biota Holdings argued that Australian-based pharmaceutical companies confront diseconomies of scale and scope, as well as less advantageous tax and pharmaceutical regulations. Consequently, Australian based pharmaceuticals find it difficult to replicate an initial commercial success.

Finally, some participants avowed that the success of their additional born global activities are a source of inspiration for other Australian businesses. Robert Philpot of Aconex reasoned:

If we can do this then anybody in Australia should be able to do it. If it gives an example to other people and those people will learn from what we have done, that it's not that hard to go overseas, just do it, then I think that's a great thing both for people that are part of the business, but also for people who are outside the business who are looking in.

Tim Reed of MYOB said:

[W]e won the Telstra Small Business of the Year 10 years ago and . . . we've sponsored every year since then one of the categories and there's no doubt when you've there with those businesses that have gone through a fairly rigorous process to be nominated, et cetera, that we form a source of inspiration for them, that they see where they can be in 10 years down the track if they're successful and things like that.

And Didier Elzinga of Rising Sun Pictures judged that his company constitutes a possible blueprint for Australian business success:

From an intangible point of view I would like to think, it's probably slightly egocentric, but I would like to think that as a company we are serving as a bit of a blueprint for the type of company that can and should work in Australia: it's knowledge based – there's obviously environmental impact around what we're doing with hardware and power consumption and those sorts of things but, –generally speaking it's all knowledge driven, it's not resource driven so it's a good hedge against resource requirements and it's . . . good money in terms of reasonable margins, good wages, that sort of work and the fact that it can be done, it doesn't require mass concentrations in one big city in Australia. You know you could have companies like us all over Australia in Melbourne, in Perth and in Sydney and they don't have to be big either, 50 people that can be a very vibrant and useful part of the economy and so yeah just proving you can do it I think is an intangible benefit.

These boosts to the reputation of Australian firms for innovation and world competitiveness are important; for they help to counter the widespread perception within Australia that domestic organisations are not adept at transforming novel ideas – or indeed routine practices – into new and effective business knowledge.⁷⁹ Moreover, in global industries where an Australian identity or location is regarded as detrimental or unhelpful, the outstanding achievements of certain Australian born global enterprises might be lessening the 'psychological' barrier to entry for other locally based competitors.

POLICY IMPLICATIONS

The emergence of new forms of crossborder competition – exemplified by born global enterprises – is posing unprecedented challenges and opportunities for governments.

Former CSIRO Chair Catherine Livingstone has stated that governments now face an open and complex global system, in which the old rigid practice of pulling selected policy levers is counterproductive, even disastrous. Instead, governments need to adopt more strategic policies, which enhance the scale and capabilities of resident businesses that have already carved a global niche. In Ms. Livingstone's words:

The public policy emphasis needs . . . to be on the creation of the environment in which the players can act. A complex system may not be rigid but this does not compromise its robustness . . . The focus on public policy in this context is to compensate for market success, ie for the success of the global market and its consequences for the local national market.⁸⁰

Furthermore,

Once businesses become global players, even in a niche capacity, increasingly their strategic decisions will be framed by their global performance parameters and not necessarily by what is in Australia's best interest. Public policy is now faced with the challenge of facilitating and optimising congruence in the face of this divergence of interest. This in turn requires a strategic approach to the knowledge economy and innovation policy.⁸¹

This view accords with the findings of the Australian Business Foundation/UQ Business School research project on Australian born global enterprises. It is evident from the foregoing that the eighteen case study enterprises are contributing to the material wealth and innovative capacity of resident agents. At the same time, these enterprises cannot reasonably be expected to maintain a presence in Australia if it ceases to be a congenial environment for their participation in global webs of enterprise.

Several participants remarked upon specific government institutions and policies. Austrade was frequently praised as helpful, especially in the early stages of crossborder expansion. The following quotations are indicative:

And I have to say in everything we did . . . we used them [Austrade] as kind of consultants generally as we got bigger, but then we kind of went through a period where we didn't have a lot of contact with them, but we still do have; they're good, they've been very good, they've been very helpful (Alf Taylor, CEO, **tna**).

Richard [Graham, now Chairman] approached Austrade to receive some funding and Austrade were part of the reason the company was able to keep going (Gary Martin, CEO, Infomedia).

David McDonald of Technico also mentioned the positive role played by the various Federal and State Government Departments:

Oh, Australian Government has been very supportive of Technico. We engage the Australian Trade offices in every location we first enter and in fact going into China we retained them for some of our liaison work. But not just Austrade; [the] New South Wales State Government through the [Department of] State and Regional Development and through the support of initial Research and Development Grants from the federal government we were fortunate to have been given a good base to start from. Don't underestimate the credibility and importance that can come from an introduction by the Austrade office to a potential partner in a foreign country.

Another aspect of government that attracted comment was the Federal Government Research and Development Tax Concession. Neville Mitchell of Cochlear declared that it was valuable to his company, as did Neil O'Sullivan of NOJA Power Switchgear:

Most business leaders you'll hear say: 'I won't pay too much tax and I do this and I do that', but the truth in my view is that [Australia is] really a wonderful country to start a technology company. We receive tremendous support with the export-market development grants, so every time we get on a plane it's very expensive, but we know the government is providing us

with 30 per cent. support there, up to 250,000 thousand a year. So that makes us feel more comfortable to invest in establishing the export markets.

The R&D tax concessions and R&D rebates associated with our investment in R&D is again a significant contributor to establishing companies like ours I think and when you consider – I mean it was very interesting from when we initially had this German development partner – Germany has none of that. Germany is this country that is very famous for its engineering, but there's none of that support for start up type ventures in Germany and as a result we've now ended up being a very successful I think we're successful; we've received a lot of awards in less than five years and we've now grown to a turnover of over 15 million dollars and we've created 40 odd jobs here and so on, I think we can consider ourselves successful. The German company that was involved in that original development, I think because of a lot of the government activity and support that they didn't get, they're not doing any of that. They're now are going on looking for something else to do actually and the parts suppliers that were involved in the development process from the Ukraine and other parts are selling us lots of parts, but the original German company nothing. So there's I think a lot of that can we can put down to the support we've received from particularly Federal Government.

In addition to the Federal Government R&D Tax Concession, Sam Lovick of CSL acknowledged the assistance of the Victorian Government:

[A]part from the fact that we have contracts with government . . . there's a whole set of government paraphernalia that's important to the way that we do business and affects what we do. So for example the treatment of tax of research and development expenditure that's hugely important for the way that we conduct our research and development. Government's very, very important; for example, the Victorian State Government has provided funding grant funding to help us expand our flu' facility which is important for our overseas sales of influenza vaccine. So I think there's that area of government; has government been helpful? Well it has been helpful and it would be nice to have more help. I think that's an issue.

Nonetheless, Mr Lovick affirmed that Australia's public support for research and development is biased against established companies undertaking risky development projects:

[I]n most innovation, the really risky and expensive bit comes later on; you know, in bio-pharmaceuticals it comes when you do your late stage clinicals and . . . in software development it's the same thing. It's when you actually get to the late stage of having a lot of people working on it and so on and that's when you have the high risk of commercial or technical failure and expense. But I think a lot of R&D support – for example in Australia – is targeted not at that end, but at creating small start-up companies . . .

Mr Lovick elaborated on the importance of government support for private pharmaceutical research, before offering a more general comment on government policy:

[I]f you look at a particular area . . . the US government has put in excess of a billion dollars into the development of a pandemic flu' vaccine. They pay large amounts of research and development funding for that and there's very good reasons for public health where they're likely to do that, but nonetheless that type of direct aid is very, very helpful for firms in our types of business. But broadening it, rather than taking specific examples, I wonder whether the way in which support by government for firms is structured whether . . . it maximises what I call the 'flow-back effects'. What the government is clearly interested in – should be interested in – is maximising the benefits of its expenditure . . . and I wonder whether they do maximise that.

Biota Holdings believes that the Federal Government R&D Tax Concession, could be enhanced to assist grow pharmaceutical and biotechnology companies:

At present, small loss-making companies (eligible for the tax offset) and large profitable companies (via the R&D tax concession) are able to [gain] access [to] real time tangible benefits from the R&D provision. In contrast, there are a group of companies such as Biota engaged in leading edge research and development, that are loss making and do not qualify for the tax offset due to the level of expenditure incurred in research and development being

greater than \$1 million. While such companies are able to claim the R&D tax concession and increase its losses, they are of relatively little value to the company, as it is often many years before such losses become available through the company becoming profitable . . .

If a company commits to the administrative process and meets the rules, there should be a benefit. The current rules incur the administrative cost but do not necessarily deliver a benefit.

This disparity in tax treatment has the potential to disadvantage those pre-profit organisations who are building critical mass in their research and development operations, the very type of enterprise the concession is targeted at . . .

When consolidation occurs, as the same business test is principally met, the tax losses of both the acquirer and acquired should be available to the combined entity. Losing the ability of the acquirer and acquired businesses to maintain tax losses serves to decrease the value of the business being acquired . . .⁸²

[T]he Productivity Commission should recognise the current difficulty of Australian companies in getting therapeutic products listed on the Pharmaceutical Benefits Scheme at prices that recognise the R&D expense associated in bringing the product to market. Unfortunately, the current arrangement forces Australian companies to enter high risk overseas markets in their initial launch phase to recover R&D costs.⁸³

Biota Holdings further highlights the complexity and administrative burden of the incremental 75 per cent. R&D Tax Concession, suggesting instead:

- the implementation of a 'standard 50% concession for all eligible R&D expenditure' and;
- a 'static base level of expenditure could be set for each company (applicable for each year), with additional expenditure above a predetermined level eligible for the 75% premium.'⁸⁴

It is interesting to compare the above statements of the case study enterprises on the R&D Tax Concession with the recent findings and recommendations of the Productivity Commission. The latter judges that the R&D Tax Concession stimulates little additional research and development, and that the base 125% Concession should be restricted to small firms.⁸⁵

Taxation regulation was also nominated as a critical issue by Didier Elzinga of Rising Sun Pictures:

Regulation actually drives the film industry to a huge level and by regulation I mean taxation regulation. Films move all over the world based on tax regimes; and you look at London and they have very sophisticated lease-back arrangements there; and [in the UK the] post-production industry (which is what we do) has gone from about four hundred million pounds to four-and-a-half billion pounds in six years and that's based on people just wanting to put the work there because of the financial structure. So other jurisdictions changing their tax regime has a huge impact on our business.

Robert Philpot of Aconex singled out payroll tax for criticism:

[I]f [there is] one . . . message you can give to the government [it] is to kill payroll tax. It's a stupid tax that . . . taxes you for putting on people and taxes [the] service industry where 60 to 70 per cent. of our costs are people-based, most of it here in Australia. So we do all of our R&D here, we do all of our marketing, all our head office expenses in Australia. So half our people are sitting here in Australia, as the business gets bigger there will be more and more of those head-office type jobs here, which are good high paying jobs, but we get taxed on them.

Mr Philpot went on to say that Aconex might decide to deploy more staff overseas, owing to such factors as the Federal Government's protection of the airline industry and, more critically, the poor quality of broadband in Australia vis-à-vis Asia:

[F]ortunately for Australia, in one way or another most of the people that are working in this company want to live in Australia; I mean that's what keeps people here. But I think there's still things like the protection of the airline industry [that] is a tax on export businesses . . . [T]he price you pay for a Qantas ticket to the US because they won't allow competition on the route, it taxes a business like ours. So rather than paying \$2,000 return we're paying \$3000, whatever it is whatever the numbers are. So any time we try and protect an industry every other industry suffers as a result of that protection. So the protection of the airline industry which I see is blatant protection of Qantas and others means that it costs us to travel.

The fact that the Internet in Australia is now falling behind other countries in Asia, it's a disgrace. I mean the thing that will mean that we move overseas is if broadband gets so far behind Asia that we're better off being in countries where the broadband's faster. So as long the government gets out of the way and lets companies get on with it, I don't see any risks to companies exporting and getting on with it. The more we can link into the world economy the better for everybody.

Other policy issues raised by participants included skilled immigration, privatisation and the measurement of new problems that demand innovative solutions.

Jonathan Whalley of DSpace said that the government should consider subsidising the immigration of foreign entrepreneurs to Australia. Sam Lovick of CSL averred that his company is an example of successful privatisation that could be instructive with regard to publicly owned utilities in electricity, water and telecommunications.

Bob Gibson of Indigo Technologies affirmed that public measures to prevent and redress environmental damage require effective methods of measurement, which private firms can assist in identifying:

[W]e must be overseas to make all the things happen. I mean if we find ourselves – because we're moving and talking to a lot of power stations and steel works and cement works – [if we find] we are collecting knowledge on what the problems are out there, one of our big issues is that people, the general public and governments, are still not aware of some of the real crucial issues there; and measurement's a big issue because governments can't legislate unless you can measure, because of issues associated with – you can't start fining people large sums of money if you don't have a very effective means of measuring what you're trying to address – and we are investigating a joint venture with a technology measuring people in the States, associated with laser technology which we're hoping – well we know it's a leader, we don't have the funds to progress that at the moment, but that's one of the outcomes of our capital regime.

Finally, some participating enterprises emphasised the need for a more strategic approach to public support for innovation. Peter Fritz of Global Trust Centre lamented the absence of a national industry policy:

I think my criticism of any shade of government is echoed by many people in Australia: that we have no industry policy; we need to have an industry policy; we need to align our supply capability to our national needs.

And Leigh Farrell of Biota Holdings is on record as saying:

An important consideration for our future growth will be government policy that recognises and supports innovation. Such policy will in part affect the timing, quantum and where this expenditure occurs. This expenditure will include advancement of our capital intensive clinical programs and commencement of new discovery programs. Given the high risk nature of drug development programs, in general, Australian companies do not have the capability (in particular, financial) to bring a drug to market without partnering with global pharmaceutical

companies. The Government has an obligation that its prevailing policy initiatives in place support or do not impede this commercial objective.⁸⁶

CONCLUSION

There are several insights relevant to policymakers that emerge from the Australian Business Foundation/UQ Business School research project on born global enterprises.

First, this research reinforces the case that the competitiveness and contribution of resident firms goes far beyond what is captured by standard national accounting. The latter treats the current account as the operative component of the balance of payments; and therefore directs the attention of commentators and governments towards the balance of trade in goods and services and away from the net stock of foreign investment. This might have been a reasonable assumption in the previous era of crossborder capital controls and nationally based industries, but recent evidence suggests that it is investment that drives trade, not vice versa.⁸⁷ Certainly, the phenomenon of born global enterprises adds weight to this point, with one participant stating explicitly that being a locally based exporter is an inadequate competitive strategy: success rather lies in undertaking direct investment in key foreign locations. So policymakers should exercise great care when interpreting accounts that model foreign investment as a stock which adjusts passively to trade and income flows.

Similarly, Australian born global enterprises add much more to the national economy than positive net income flows. While they do contribute to domestic taxation revenue and real wages, more substantial benefits include the generating and sourcing economically relevant knowledge through global webs of enterprise, *sustaining geographic clusters of high value-adding activity, creating new world industries and augmenting the skills and knowledge of local managers, workers and entrepreneurs*. Policymakers should redouble their efforts to measure these gains more adequately, especially as they are obscured in standard national accounts and economic indices.⁸⁸

A further national advantage of Australian born global successes is *the enhancement of the reputation of domestic businesses and residents for innovation and competitiveness*. There is reason to believe that this intangible benefit is opening up foreign opportunities for Australian-based agents and lessening the psychological barrier to their entry into global markets.

Traditionally, economists and policymakers have sought to enhance the international competitiveness of local firms through either unfettered trade liberalisation, or the discriminatory regulation of foreign trade and investment. However, such broad-brush approaches cannot be relied upon to foster globally competitive resident firms. To reiterate, *for advanced-capitalist economies, it is not national ownership or even control that matters, but the connection of local firms and people to high value-adding world industries*.⁸⁹ Public policies should therefore focus on creating an environment that facilitates competitive success; and this in turn requires government action that is strategic, selective and sensitive to industry differences.

In light of the foregoing analysis, governments should give greater consideration to the following sorts of measures:

- Being a demanding purchaser and thus driving more ingenious solutions to customer problems and more imaginative and competitive business offerings. Recall that two participants highlighted problems of environmental sustainability as significant competitive opportunities for resident firms. Obviously, the standards set by government purchasers are instrumental to business growth and development in this field.

- Supporting the development of demonstration sites for new technologies and business solutions between Australian enterprises and potential customers. Such a measure is already evident in the NSW Government's *Technology Demonstration Program* as part of the Australian Technology Showcase.
- Avoiding policies that discriminate between (or against) international firms on the basis of foreign ownership. Public measures that discriminate between crossborder activities on the basis of formal national identity (whether that is defined as business registration in Australia, a majority Australian ownership or a majority of Australian directors or staff) are likely to discourage 'foreign' transnational enterprises that further the national economic interest. Again, a preoccupation with local ownership is indicative of standard national accounting, which does not count the contributions of foreign enterprises to domestic employment or the stock of economically relevant knowledge.
- Ensuring that the tax system rewards investment in innovation made by companies. Keith Smith has emphasised that the fundamental uncertainty of innovation makes it a costly undertaking for firms, and that governments should devise tax regimes that encourage firms to invest in the physical and intangible assets that sustain knowledge-intensive activities.⁹⁰ As stressed previously, the latter are essential to carving niches in world markets.

These policy recommendations – which do not necessarily entail any net increases in public expenditure – would assist the creation, diffusion and absorption of economically relevant knowledge by resident organisations and individuals.⁹¹

But the overall policy lesson is that generic prescriptions for international competitiveness – such as increasing exports – are no longer adequate. Rather, judicious interventions, informed by a vision of Australia's position in the knowledge economy, are required so as better to align the transnational strategies of businesses with the national interest.

CHAPTER 5: CONCLUSIONS

The previous chapters have detailed the particular issues that arise from the international venturing of Australian born global firms beyond exporting. In concluding the Australian Business Foundation/UQ Business School study on born global enterprises, some thoughts are now offered about the wider import and logic of these issues.

Born global firms exhibit both extraordinary and normal business characteristics

It has been noted that scholars and journalists present born global firms as extraordinary entities, whose characteristics are markedly different from other businesses. However, the eighteen case studies examined here suggest that born global firms are not so mysterious as commentators portray them. Like other successful enterprises in the modern business world, born global firms create new markets or carve niches in existing ones, and they achieve this by mastering knowledge-intensive activities that satisfy demanding customers. The ability of born global firms to combine entrepreneurship with routine management is a competence common to most innovative businesses.

Yet what distinguishes born global enterprises is the speed and effectiveness at which they leverage their existing knowledge (whether its source is scientific research, technological expertise or previous business experience) and consolidate the new knowledge that is generated by their further international venturing. This in turn requires the courage to compete directly in unfamiliar places against incumbent firms, agility in seizing opportunities and managing problems, and the capacity to learn quickly as a firm, even when clients and staff are separated by differences in time, space and culture. Again, these traits are not unique to born global firms, but the degree to which they are present is remarkable.

Successful born global firms are underpinned by sophisticated – but replicable – business leadership

Just as born global firms can be explained in terms of existing concepts, so too can the activities of their founders and managers. Leaders of successful born global firms are adroit at anticipating new wants and/or finding ways of meeting existing wants more satisfactorily. They possess a thorough knowledge of their market position and of the substitutes offered by competitors. In addition, born global leaders take calculated risks when expanding into new markets, and exercise caution when disrupting business routines with new products or processes. Furthermore, the founders and managers of born global enterprises have the fortitude to forge new markets, as well as the capacity to assemble and inspire teams that can create and absorb new knowledge.

Clearly, born global leaders possess exceptional intelligence, imagination, confidence and vision. But equally important are more prosaic traits such as prudence, practicality, industriousness and perseverance. While qualities of vision are harder to emulate than those of efficiency, established born global firms do provide instructive examples of how to fuse these various aspects of business leadership. And it is this combination of leadership qualities that underpins distinctive and adaptable business models.

Born global firms show how Australian enterprises can be competitive in the world economy

It is well documented that firms competing in today's world economy face more extensive and intensive competition. Private business enterprise has spread to regions that were previously communist or undeveloped, restrictions on crossborder capital flows and exchange rates have been relaxed, and radical changes in information and communications technology have both encouraged world demand for specialised products, and facilitated the

global supply of them. Consequently, firms based in advanced economies can no longer compete on the basis of superior quality alone; they must continually refine their business offerings, providing economical bundles of goods and services that anticipate and better satisfy consumer wants.

The further international venturing of the eighteen case study enterprises demonstrate how Australian-based firms can compete sustainably in world markets. Whether their industry is agricultural or bio-medical, these born global firms are all 'learning organisations' that connect directly to global webs of enterprise. While other enterprises seek the closest markets, born global firms pursue the most lucrative ones. In other words, born global enterprises do not wait to consolidate their activities domestically before venturing abroad. Rather, they partner with allies offshore, tap into the distribution networks of larger overseas clients, spring from local clusters of leading-edge science and technology, or 'footslog' in foreign locations on their own.

Moreover, the effectiveness of these Australian born global firms challenges some popular perceptions about the international competitiveness of Australian businesses. Australian-based enterprises need not be large to succeed globally, nor do they need to undertake radical or technological innovation. Additionally, mature foreign markets are no less devoid of business opportunities than fashionable emerging markets. As for the 'tyranny of distance', it is evident that Australian businesses can take advantage of our time-zone and cultural diversity to render geographic remoteness a competitive strength.

Born global firms reveal the less obvious ways of capturing national economic benefits from transnational business activities

Not only does the present analysis of Australian born global enterprises show how local firms can secure a lasting competitive advantage; it also sheds light on the various national benefits of hosting transnational business activities. While economists tend to direct policymakers' attention to net exports and net national income flows, born global firms are enhancing Australia's productivity and prosperity in ways not indicated by the balance of payments.

As well as adding to domestic employment, income and tax revenue, Australian born global enterprises are increasing the productive capacity of resident firms and people. They are doing this by augmenting the technological capacity of local firms, improving the skills of Australian managers and workers, sustaining industrial clusters, creating new global industries (in some cases), and improving the international reputation of Australian businesses and bolstering their confidence to expand globally.

Furthermore, if governments wish to foster more resident born global firms, then single prescriptions – like programs to boost exports – are insufficient. Just as Australian born global firms are expanding beyond exporting to connect to global webs of enterprise, so too must Australian governments craft more imaginative policies of international competitiveness. Public measures should support and capitalise on the crossborder engagements of local firms, irrespective of whether they are majority Australian owned or staffed. The knowledge and employment effects of resident transnationals are much more important to national growth and development than who owns them or where the money ends up.

The additional expansion of born global firms exemplifies the challenges that globalisation poses for businesses and governments alike. The integration of national economies is undermining old notions like 'national industry', 'comparative advantage' and 'export-led growth'. Increasingly, firms and nations are competing for crossborder investment and labour. Their prosperity will depend ever more upon their ability to leverage local knowledge and make it valuable to global industries.

Appendix 1:

Case Studies

ACONEX PTY LTD

HEAD OFFICE

Melbourne, Victoria

INTERVIEWEE

Robert Philpot and Leigh Jasper, Founders and Managing Directors

COMPANY AND INDUSTRY OVERVIEW

Aconex was founded in the year 2000 by Leigh Jasper and Robert Philpot. At the time, they identified the construction industry as one of the few industries that still relied on paper exchange for the transfer of information. Aconex was devised as an online solution to overcome this problem. Today, the company services 30,000 clients across some 50 countries in Asia, the Middle East, Australia, New Zealand, Africa, Europe, and North America. It has won numerous awards and honours, including a ranking as one of the 15 fastest growing companies by *BRW* for three consecutive years,⁹² and Leigh Jasper and Robert Philpot were also named by Ernst and Young in 2006 as the Regional Young Entrepreneurs of the Year.

ELEMENTS OF COMPETITIVE ADVANTAGE

The Aconex website⁹³ describes the company's product as '*an online document management and collaboration system that uses the Internet to manage information for projects of all sizes in construction, engineering and facilities management*'. From a fledgling start-up firm, the company has developed into one of Australia's fastest growing companies. Its resume is impressive, with current participation in projects worth over \$200 billion worldwide. These include servicing the main section of a \$16 billion 1200 km toll road to be built across Algeria, Macau's \$2.6 billion Venetian Casino, a \$4.5 billion light rail project in Dubai, and the \$40 billion Yas Island development in Abu Dhabi. Today, the company employs 280 staff across 34 offices worldwide. With turnover of \$12 million in 2005, and \$27 million in 2006,⁹⁴ Aconex is proving to be among Australia's fast-growing firms.

EVOLUTION OF THE COMPANY

Aconex showcases the development of a technological software product, initiated by entrepreneurs who were not personally technologically savvy. Instead, they formulated the idea of software for project management tasks, and employed a team of technicians to implement the idea for them. Today it is fast becoming a dominant technology in the world of the construction industry.

Aconex was founded by Robert Philpot and Leigh Jasper. The men were friends from school, and would often play a game of squash. Mr Philpot acknowledges that a key principle of squash is to '*position yourself well and you win*⁹⁵', and it is a principle they've applied to the Aconex firm. In late 1999, Mr Philpot was dealing with information flow problems while working for the Australian construction company Multiplex. He teamed up with Mr Jasper, who was then working for McKinsey & Company, with the idea of using the Internet to solve such problems. In particular, they believed that the Internet could be used as a tool to

improve firms' management and storage of large amounts of information. Therefore, in January 2000 they registered the company, and set out to put together a business plan.

The market need that Messrs Philpot and Jasper identified was the old-fashioned systems for managing documents relating to projects. Each company they encountered would have its own way of managing documents in a document management system, and most of these systems required a lot of manual input and manual output. On combined projects, this input and output would then be sent to the partner firm, which then would be required to provide its own manual input and output to complete its own document management system. Aconex has created a common platform software so that there is no need for this duplication of effort. When information is sent from one company to another, the recipient's register is updated and creates an order trail, including all the tracking that goes along with the storage of the information. This builds a network between the firms. The biggest project in which Aconex has been involved has recorded six million documents and mail.

By July 2000, the co-founders had raised \$1.8 million in support of this idea. This allowed them to secure premises in Melbourne for their business, and they were then able to hire a team of skilled IT professionals. This team was particularly important, as neither of the men had the technical skills to develop the product, and there was therefore a requirement to build the product from basics. By March 2001, the product had been developed and the company was in the position to release its first software. The initial strategic focus was selling to the Australian market in the belief that Aconex needed to be successful locally before the product could be taken overseas. However, by May 2003, Messrs Philpot and Jasper were willing to test their product in the global marketplace, launching their product in the UK.

This first foray came after Aconex had sent one of their employees to Europe to scout about and see what the market was like. This investigation unearthed a company in the UK that was willing to buy their product. Aconex was encouraged to enter into an arrangement with this firm, mainly with the idea of seeing whether their product was able to compete globally. By this stage, the business in Australia was growing very strongly, and the company was finding itself in a dominant position in the local market.

Following expansion into the UK, the next locations for the Aconex business were Dubai and Hong Kong. Robert Philpot and Leigh Jasper believe that there is a mindset in Australian companies that software produced in Europe and the United States is better than that produced by Australian companies. Overcoming this mindset was a major factor in the Aconex growth story. Assisting them to throw off such beliefs was the feedback they were receiving from foreign businesses, which indicated to them that their product was indeed better than those of their US and European competitors. Once they were able to develop confidence in their ability to compete in global markets, they were then in a strong position to take the business further afield. Additionally, their product itself had the advantage of being able to be hosted from anywhere in the world. This therefore made it possible to build a global business and compete from Melbourne.

Strategically, the Aconex approach has been to choose a geographic region, and appoint a sales person to that location. The company has made a deliberate decision to employ its own sales force (as opposed to the less costly option of entering into arrangements with distributors) because Messrs Philpot and Jasper firmly believe such resellers will not have the passion for the product that its Aconex sales team has. Once sales commence, the salesperson can be provided with support people, and hence there is little need for a large organisation of infrastructure. The markets targeted for expansion by Aconex are selected carefully and deliberately. This approach is explained by Leigh Jasper as follows:

When we identify what markets we go into, what we've done is we've taken a map of the world, and then we shrink or expand the area of each of the countries based on the construction [industry] size. So, for instance, Japan grows enormously because it's a big

construction market, whereas Africa shrinks right away because it's got nothing. So you can kind of look at a map with a little bit less prejudice if you like, and then we categorise countries based on how much competition there is. Then you overlay on top of that whether they've got broadband Internet, because they're the three things we have to look at. How big is the market, is there competition, and have they got broadband Internet? So if we can win all three of those, then that's where we go.

This expansion philosophy has led to many projects in Asia and the Middle East. In particular, Dubai has a booming construction industry and has proved to be a lucrative market for the company. The process of becoming a legally established entity in Dubai was a complex process for the firm, and involved protracted negotiations with government. In the first instance, Leigh Jasper went over to the Middle East by himself, and took a look at the booming city skyline and declared that the company needed to establish a presence in the market. This led to a situation in which the firm took one of its existing sales people from its Brisbane office and sent them to Dubai to work on making Aconex a prominent player within the Dubai construction industry. The first task for this salesperson was to cold-call potential customers with the idea of introducing the software and the firm to this market. From these small beginnings, the firm has risen to an extent today where there are twelve people working in the Dubai office, and server infrastructure has been established. There is also a sales support and administration presence in the country, providing Aconex with strong capabilities in reaching the market.

A key component of Aconex's growth has been its belief that clients fundamentally require good, old-fashioned customer service. Robert Philpot and Leigh Jasper both grew up in country Victoria, and it is the customer service values they learned from such a tight community which remind them of how important it is to treat customers with respect and courtesy. As Mr Jasper says, *'we have invested heavily in customer support and have built Aconex on providing great customer service. We consider localised, unlimited training and 24/7 support essential to successful project collaboration'*.⁹⁶ The company did consider internationalising through the use of resellers, but have decided that this does not provide them with the same benefits as if they used their own people. Mr Philpot explains:

We did consider resellers, and we kind of dabbled with that a little bit in the UK. The problem is one of our, I think one of the reasons we've been so successful is the passion that our employees have, and if you get a reseller in to sell your product, at best it's one of the things they do. So they just don't support it as well, they don't sell it as well, it is not the number one priority. So while it costs more in the first instance, we think that having our own people on the ground is going to keep, it means that we, our culture is really important to us. So whenever we hire people, whenever we employ somebody new, we bring them back to Melbourne for two weeks for induction.

The company is structured so that the remote offices are organised to provide sales and support. The firm's corporate headquarters are located in Melbourne. Product development, HR, finance, and administration are all centralised in Melbourne, and the remote offices house a sales and support function, combined with an administrative capability. Hong Kong and Dubai are the company's largest overseas offices.

In order to finance the expansion and growth of the firm, the owners have had to bring in more partners and raise more capital. Overall, the company has undertaken three capital raisings. The first of these was performed in 2000, and then a further one was undertaken in 2002, after the company had completed its proof of concept, allowing it to start selling its software. The final capital raising was performed in 2005, after the company had expanded into Dubai and Hong Kong. At this point in time, the owners realised that they wanted to expand into many other markets around Asia and India, and so they raised a volume of money to specifically fund their international expansion. Aconex has raised a total of \$10.1 million in equity as the firm has evolved.

This international expansion has not always been a sure and easy process. For instance, legal and compliance issues in Dubai make it very difficult to establish a business presence there. The only way to establish a company in Dubai is with 51 per cent. or more owned by the local emirate. Hence, Aconex had to set up a company, and this process took 12 to 14 months. In particular, there was a strong requirement to deal with the local government agencies, and it was often difficult for Aconex to understand their obligations. The firm was often told many different stories, and time frames, and had to pay many separate fees. To overcome these problems, Aconex chose to deal with law firms in Dubai that had Western practitioners, because this helped them to feel more comfortable with negotiations and proceedings. Further problems were encountered with obtaining visas for people to work in Dubai and setting up bank accounts was also a difficult process.

However, overall Dubai was a market which presented a wealth of opportunity for Aconex, as Robert Philpot discusses:

Well the opportunities are the amount of construction work going on there. I suppose it's piggy backing off the back of the oil boom. These states have all this money to spend and what they are trying to do is set themselves up for life after oil. So they're investing enormous amounts of money in building infrastructure for financial districts and tourism . . . I think at one point Dubai had a third of the world's tower cranes in the city because there's so much work going on . . . It [expansion into Dubai] was a good opportunity to be first to market as well . . . So to then go to Dubai which is the most booming construction market in the world and there be very little competition, it's an amazing opportunity.

Some of the clients that Aconex had secured and built a strong relationship with through their Australian operations also paved the way for the firm's entry into the Dubai market. Multiplex and Grocon were two companies in particular with whom Aconex had developed solid partnerships in Australia, and who were also involved in significant developments in the Middle East. This ability to 'piggyback' on clients has proved to be a useful way of gaining entry to new markets, and Aconex believes this pattern will continue. Reflecting on their experience in Dubai, Messrs Philpot and Jasper believe that the difficulties they encountered there have prepared them well for entry into any other foreign market. This is borne out in the firm's current projects, with Aconex currently involved in the world's largest construction project in Algeria, another non-traditional market for Western firms.

The firm's growth and involvement in multiple foreign markets has created a complex structure for Aconex. Aconex currently has nineteen registered companies, each in a different jurisdiction from somewhere in the world. These different registered companies are legislative requirements placed by local governments on offshore organisations such as Aconex, which allow them to do business in foreign countries. Such obligations mean that Aconex has to invest significant time and resources at the start of each foreign operation in order to determine a number of issues such as the ownership structure, directorship, tax requirements, and superannuation and employee laws. This gives Aconex all of the complexity of a transnational, and the company must be vigilant to ensure it does not fall foul of any local regulations.

Technical support has been a particularly important component of the firm's strategic approach to business expansion. In particular, it does not seek to gain profit from its support function. Mr Philpot explains:

Most IT companies treat customer support as a profit centre. So you pay for support, you pay for the licence, and then support is extra on top of that. Because of that, people only get the bare minimum amount of support, so they don't use the product very well. Because they don't use the product very well, they don't come back. So we think that including unlimited training, unlimited support in the price in the flat fee is a cost, but it's a marketing cost really. It means that people come back and they like it, and it's better. I mean, we are actually quite surprised that most software companies don't do it this way, but it's just a mindset that's different. So I

think from that point of view that's been a conscious decision from day one, and it's really made a difference to us.

In terms of intellectual property protection, the coding involved in the firm's software is copyrighted, but Aconex does not seek to patent its IP. The firm believes that the software they build is not the only intellectual asset that it deploys. Fundamentally, they are of the belief that a key component is the service they provide with their software, and this is not something they can protect in a formal sense. From a legal perspective, however, Robert Philpot and Leigh Jasper have not gone to great lengths to protect their intellectual assets. Indeed, they have very little concern about the need to protect their assets, claiming that *'[pirates would have to take] ten servers out, then they've got to re-engineer it. And we just think it would be so hard for somebody to take our system and recreate what we've done. For us I'm way more worried about our system dying'*. The core of the Aconex system is explained by Mr Philpot as follows:

Yeah, a lot of potential investors always used to say, 'I could get a team of 50 engineers in China and give them 30 million dollars and say build it, and they'd build it in a year'. Well yeah, they'd build something, but even if they had our code sitting there they would not do exactly the same system because there's been an ongoing feedback loop with our clients that has developed the system to where it is, and in the year that they [pirates] take to develop it, we'll have had more feedback and evolved the system even further, so we're not worried . . .

The advice that Messrs Philpot and Jasper provide to other innovative, young Australian entrepreneurs is to think about going global from the outset. They believe that there is no need for other businesses to confine themselves to Australia. In particular, there are many Australians involved in international markets in the construction and resources sector, and so Robert Philpot and Leigh Jasper believe that businesses should take advantage of this network of expertise which is available to them. In some instances, the expatriate Australian network has even helped Aconex to attract business in foreign countries.

AGENIX LTD

HEAD OFFICE

Acacia Ridge, Queensland

INTERVIEWEE

Gregg Mastroianni, Vice President Sales and Marketing

COMPANY AND INDUSTRY OVERVIEW

Agenix today specialises in bio-pharmaceutical and protein therapeutics research and development (R&D). Founded in the late 1980s by a team of university researchers, the company has significant international linkages and high level experience with some of the world's largest pharmaceutical and biotechnology firms. Its primary Australian-based focus is on commercialization of the clot-detecting agent ThromboView®. This strategic shift in direction (away from the traditional human and animal diagnostic divisions of the business) represents a company transition characterised by the sale of the older diagnostic divisions. As a result, the company's share price has declined from 37 cents in August 2005 to 12.5 cents in June 2007.

ELEMENTS OF COMPETITIVE ADVANTAGE

Agenix was initially involved in human and animal *in vitro* diagnostics. It is now focused on commercialising ThromboView® and developing anti-viral drugs through Agenix-Shanghai. To move through this cycle of different strategic objectives, it has shown that it is able to grow through rapid cycles that are demonstrative of learning. It has been able to do this through its significant involvement in global networks, which have provided it with access to ready-made skilled workers with strong understanding of relevant markets.

EVOLUTION OF THE COMPANY

Agenix was until recently an IVD kit reagent manufacturer. A Queensland-based company, Agenix was typical of most biotechnology manufacturers in that it has been involved in international markets from its inception. Listed in October 1987 on the Australian Stock Exchange, Agenix currently has revenues of \$16 million from sales of its antibodies and kit products worldwide.⁹⁷ The Vice President of Marketing, Gregg Mastroianni, says '*we internationalised the company vision because it didn't make sense to dominate a market that was 20 million persons when a market of six billion persons was at your doorstep*'. Today the company's focus is to develop a suite of highly profitable businesses in molecular imaging, protein therapeutics and anti-viral drugs. Life began for Agenix 25 years ago as a pure research organisation that pioneered in monoclonal antibody growth, harvesting and product development. The initial company name was Mabco (which stood for Monoclonal antibody company) and the first laboratories were located within the Queensland University of Technology. Their first commercial success was an antibody named 3B6 directed against D-dimer and its continuous evolution has led to numerous assays in the *in vitro* diagnostic field, as well as the current ThromboView® project, which humanises the antibody to allow injection into patients suspected of experiencing VTE, life threatening conditions following internal clot formation. ThromboView® is currently in Phase II Clinical Trials in the USA and Canada. One could say Agenix has progressed full circle with 3B6 and D-dimer, from

helping diagnosticians in the laboratory (*in vitro*) report accurate, timely test results, to assisting physicians locate and treat life threatening clots *in vivo*.

Agenix's first stage of evolution was from one of pure research into commercial development. After numerous unique antibodies were characterised and patented, the company entered into a major growth phase with significant hiring of scientists to move research through development and into commercial success. Multiple formats were developed around the D-dimer assay including one using the ICT technique. That evolved further into an entire business unit using the format in the veterinary diagnostic field. Sales growth in the human and veterinary diagnostic markets was rapid and Agenix was named Queensland Export Company of the Year in 1993.

Over time, growth in the IVD markets slowed and the next transformation was to divest the veterinary business in 2006 and the human based diagnostic business in early 2007. According to Gregg Mastroianni:

Our goal was to generate cash to transform yet again and enter a higher growth market with the possibility of greater margins. We believe we have done that with our recent acquisition of a Chinese anti-viral bio-pharmaceutical company. As you may have noticed in recent releases to the ASX, in late May 2007 we closed the acquisition of Shanghai based SHRG and are now eagerly awaiting release of our first anti-viral drug to treat Hepatitis B patients in a nation of 1.3 billion persons where hepatitis is of near plaque proportions.

The consensus time line to market anticipates Chinese SFDA approval prior to the close of 2007.

The initial processes for Agenix to become active in overseas markets started in the 1990s, when the firm hired people to live in both Europe and the USA. Interest in these markets was sparked by the same macroeconomic factors that led most pharmaceutical companies to venture into foreign territory. First, the high population bases in North America and Europe represent a higher potential rate of return on investment. When accompanied by a more rapid rate of acceptance, it is a natural process for many pharmaceutical organisations to move towards these markets. Secondly, being involved in the US and Europe at the ground level also helped Agenix to develop a greater understanding of the regulatory issues, and this has since proved invaluable as they attempt to bring other new products to the market.

However, Agenix's initial foreign market foray placed great stress on the company's key resources. In particular, with management still based entirely in Australia, it was often the case that in the late 1990s, Agenix's people were required to spend two weeks in the USA, and two weeks in Europe per quarter. As Gregg Mastroianni says, this approach *'doesn't make for a very happy person, doesn't make for a very happy home life, and you don't really get to know the market by visiting it frequently'*. The company soon discovered that this approach was not conducive to sourcing the market intelligence it needed to become successful. In Mr Mastroianni's words, *'you can build a great mouse trap, and if you don't do a proper job of marketing it around the world, very creative competitors will build acceptable mouse traps to yours and that's what happened to this firm'*.

In considering the new international mindset of the firm, Mr Mastroianni declares:

To me if you're in life sciences and you are not in the international marketplace, you are not in marketing. The days of sticking your head in the sand and trying to dominate either a Brisbane, Queensland, or Australian market are over! They're gone. Who cares if you're a big fish in a small sea? You have to be where the market is, and if you're going to be where the market place is you've got to learn to run with the bulls. You have to do complementary things for the guys that have research groups in the thousands of staff doing pure research. You can't expect to be on the sideline with three people shaking a few test tubes and generate the same type of new products as these big firms. You have to be quick, fast in the

marketplace, you have to be like a PT boat zipping around the larger ships, and you have to define the things that you're going to be good at and bring those to market. And you're probably not going to be able to market those things because you can't compete with guys like JNJ, dexx and Abbott and the five hundred pound gorillas that are in the IVD business when you live in Brisbane in Australia. So if you want to market a test, you have to have strategic partnerships and distribution alliances that allow you to capitalize on their market strength and help pull your product/technology through to the consumer.

Gregg Mastroianni also outlines his firm's approach to the marketing of its products:

First of all, you must understand the customer base. Because we were in a very heavily regulated industry, you can't wait until Thanksgiving in order to develop a test that's going to be on the market by Christmas. It takes five, six, seven years to get these products defined, developed, regulatory approval, and ready for the market. As I said, if you build a better mouse trap the world will not beat a path to your door. That's a fallacy. You have to build a better mouse trap, you have to develop it, you have to promote it, and you have to clinically substantiate that it's a superior product. Then you've got to get out and catch a lot of aeroplanes and spend a whole lot of time with your feet pounding the ground to get those products in front of the consumer. If you do it in the right way, the customer says: 'Gee, what a coincidence, this company happens to have the test in the format at the time that I need it'. That's not luck, that's because seven years ago some international marketing manager was running around the globe doing market research and telling the home office what the market unmet needs were. That's marketing, and that's the international situation today. As I said, if you're not willing to play that game at that level at that pace, then work somewhere else because you're going to get run over in the crowd.

Part of Agenix's commitment to the international industry is the development of a wide network of suppliers. The company is intimately involved with the development of its end-user products through the relationship that it has developed with both its distribution partners and its suppliers. The company has also used its networks to build a fundamental understanding of the regulatory environments in which it works. As Mr Mastroianni says,

[T]he most precious thing we can't waste is time, because you can replace a watch, you can replace a golf club, you can replace an automobile, but you can't replace time. If you don't understand the regulatory environment in which you are going to introduce this new test, and you waste two, three, four years developing something . . . you can never make back that competitive edge. You either do it right the first time or you're a commercial failure. The regulatory people are paid to keep the pharmaceutical marketplace safe and effective.

Agenix has found that regulators are more than willing to work with business, but in return, business has to be more than willing to work with them. Hence, a key factor in Agenix's performance has been to build an understanding of the regulatory mindset.

In terms of financing, the greatest difficulty the company has faced has come from its status as a publicly listed firm. Mr Mastroianni believes there are strategic differences between what the stakeholders want, and what the firm needs to do in the long term. For instance, most Australian investors are interested in growth from quarter to quarter, and in a steady dividend stream. This means many Australian investors are more attuned to firms such as mining or power companies, which are likely to provide steady returns. However, the biotechnology industry is different, in that there is a very high failure rate among companies, and a long timeline to market-introduction of product; hence they are not attractive to the cautious investor.

Mr Mastroianni further outlines the firm's alliances. The company's strongest alliance has been in the area of distribution rather than manufacture or research. This is because it is not possible to enter the US or European markets without the assistance of a major player, who can give a small company like Agenix instant credibility. Today, investor-owned hospitals in the United States sign multi-product line distribution agreements with one or two distributors, and this enables them to source 90 per cent. of their goods. Mr Mastroianni argues that it is

vital for a company like Agenix to distribute its products through this method, and so a major strength of the firm is that it has built very strong distributor partnerships over the years. As Mr Mastroianni observes, *'We've listened to their needs, we've developed tests they've asked us for, and then we've helped them understand how to place it into the clinical setting and how to train their sales reps. It has been a very positive relationship'*.

In terms of the value that the company provides to the Australian economy, Gregg Mastroianni identifies many ways in which Agenix repatriates value to its Brisbane base. These include the fact that the raw materials and partially manufactured goods that Agenix use are all sourced from Australian-based firms. The labour is Australian based, which means that the company pays Australian corporate taxes and employs local university graduates. In light of all this, Mr Mastroianni concludes that Agenix has been a significant contributor to the local Brisbane community. The company has further produced the seeds of other Australian businesses. An example is a former employee called Mark Morrison, who started as a sales manager for Agenix in the USA and also worked in Germany for some time. He returned to Australia and is now the General Manager of Sydney-based company Universal Biosciences. Agenix has also spun out scientists such as Dennis Rylatt, who worked for the company during its early stages and has since taken his experience and skill-set to pursue other opportunities.

In terms of providing advice to Australian firms looking to enter the international market, Mr Mastroianni offers the following advice:

Run, don't walk to the airport, and get on the aeroplane with a very large suitcase, or better still pack your family and dog and move there. You have to get the local expertise. You have to force your company to understand the marketplace in which you want to compete. You've got to get some of your Australian people into the local market in order to understand the nuances of that market.

Gregg Mastroianni further argues that if the firm is not based in the USA, Europe, or on the border between India and China, then it is vital that the firm has people living in those areas. He believes that the market is very efficient at rewarding people who are intelligent and responsive, and it is quick to penalise those who aren't.

BEELINE

HEAD OFFICE

West End, Queensland

INTERVIEWEE

Paul Turner, General Manager Research and Development

COMPANY AND INDUSTRY OVERVIEW

BEELINE created its own industry, devising a new-to-the-world product that uses Global Positioning Systems technology to improve the steering accuracy of tractors. This leads to efficiency gains in the farming sector, through savings in the levels of seeds, chemicals, and fertilizers required to propagate crops. Formed in 1994, BEELINE has evolved into a firm which has employed up to 100 people, and which currently employs 30 people based in Australia. The company is privately owned and has attracted several rounds of venture capital, the most recent coming from GE Capital in 2003.

ELEMENTS OF COMPETITIVE ADVANTAGE

BEELINE is on the leading edge of the world's most advanced technology in the agricultural steering-assist field. It first established manufacturing facilities in its head office location in Brisbane. But with the signing of the 2002 supply agreement with Caterpillar, the company recognised that there were efficiencies to be gained by relocating its production operations to the USA. This move enabled BEELINE to have a speed-to-market advantage which would not have been possible from Australia.

EVOLUTION OF THE COMPANY

The Company was founded (under the name AgSystems) in 1994 by Robert and Emma Mailler. Mr Mailler grew up on his father's farm in Bogabilla, NSW, leaving the country life to study Control Systems Engineering at university. During one of his return visits to the farm, Rob Mailler's father Mike asked him if he knew of any engineering concepts or technology that could assist in the management of the farm. The two men sat down and discussed some options, and decided that using satellites and Global Positioning Systems (GPS) technology to steer tractors in a straight line would provide many advantages to the farming industry.

There are significant advantages which accrue to the farmer from implementing the BEELINE product. Because the tractor is able to drive along the exact same lines using this system, the reduction in overlap or underlap between tractor runs represents an efficiency gain of 10 to 15 per cent. The most accurate systems developed by BEELINE have an accuracy level of plus or minus 2 centimetres, making them an extremely precise way of cultivating fields. The farmer therefore enjoys efficiency gains in terms of fewer inputs of seed, fertilizer, fuel, time and machinery, and the lower consumption of these inputs over large farms of thousands of hectares yield substantial monetary savings. Other benefits of BEELINE's Steering Assist™ technology include: reduced driver fatigue; the ability to operate during periods of low visibility, and improved levels of soil moisture.

The original idea of Rob and Mike Mailler to incorporate GPS technology into agricultural machinery led in 1994 to the formation of a company, first called AgSystems, then after June 2001, BEELINE. The technology that Rob Mailler and his team developed used a combination of GPS and inertial measurement sensors to determine the location of the tractor and its attitude, so that it would drive in a straight line with an accuracy of plus or minus 2 centimetres on the ground.

The initial strategic objective of BEELINE was to educate the market of the benefits of its novel product. It was the first time that hands-free GPS technology had been incorporated into farming systems, and many farmers were unaware of how the product could benefit them. Previously, there had been no market for such technology, and there were sceptics who wondered why they would need an expensive computer system to drive tractors when they already employed competent operators. To dispel such doubts, the company targeted high-value crop farming, where the rate of return on investment was likely to be greater than in other farming practices. 1997 saw the company make its first commercial sale. The early adopters were very impressed with their experience, which resulted in positive word-of-mouth to other potential customers. This encouraged the company to enter the US market in late 1999. This move was facilitated by the fact that one of BEELINE's largest customers was owned by a very large farming operation in the USA, which in turn adopted the BEELINE technology.

Having secured a major customer in the USA, BEELINE established an office in California in late 1999, and quickly discovered that many of the challenges in the US market were the same as those the company had faced in Australia. Once again, BEELINE had to educate and develop a market in which the target audience had little understanding of the benefits the product could bring. However, employing a strategy which once again focused on high value crop producers, BEELINE was able to penetrate the US agricultural market. This success alerted tractor manufacturers to the benefits of the product, which resulted in BEELINE's original equipment manufacturer (OEM) supply agreement with Caterpillar's Challenger group, which later evolved into to a worldwide distribution agreement with AGCO Corp.

AGCO Corp is the worlds third largest tractor manufacturer, and today AGCO distributes BEELINE's technology to over 140 countries. These supply agreements have formed the basis of BEELINE's current strategic model, the company having evolved from dealing direct to customers and farmers, to national distribution, to the position in which it is now a supplier of machine control technology to major OEMs.

The evolution of the company in the USA is summarised by Paul Turner, General Manager Research and Development. He notes that the company initially undertook direct sales and employed some support staff. Then in 2002 it started to sign up local dealers, and instituted training with a full-time product trainer employed for the whole of North America. In 2002, the company's US office relocated to Denver, Colorado, and started to expand into the Mid-West and Southeast corner of the USA, as well as Canada. Particularly significant during this period were BEELINE's attempts at managing its supply chain. The move of the corporate office from California to Colorado was fortuitous, in that it enabled the firm to build relationships with two companies. The first of these took on much of BEELINE's electronics assembly, while the second was BEELINE's contract manufacturing partner for the hydraulics components. This contract manufacturing arrangement meant that product could be supplied directly to AGCO, who then exported to Germany, Brazil, Finland, the UK and France.

There were several main reasons that BEELINE moved to the USA. The first was the size of the US market was appealing, given that it was twenty times larger than Australia. The second was the product's demand is highly seasonal, and selling in the Northern Hemisphere balances the off season in Australia. The third reason was that the company would be closer to its technology-component suppliers based in the USA and Canada. Mr Turner points out that:

By the nature of these components, they're not small like consumer electronics. They're quite large components, particularly the steer-kits (or hydraulics), and shipping costs mount up. Further, speed to market is important. The nature of farmers is that they don't plan six months out and buy the GPS then, ready for next season. They'll place an order three or four weeks before they're about to start planting, because they're waiting to see what the rainfall's been like, what the prices are like, and then they'll place their order. So it's quite a challenge to have that mix of different makes and models all on hand ready to sell.

Finally, the economies of scale of manufacturing in the USA meant that BEELINE could supply product at greater speed to the larger US market. Today, the company retains its core business of research and software development in Brisbane, and has shifted manufacturing operations to AGCO, relieving BEELINE of the potentially distracting activities of warehousing, shipping and logistics.

The founders were successful in attracting venture capital investment, the first of these came onboard in the late 1990's, and the company has since added another three. Most recently GE Capital invested in BEELINE in 2003. Most of the early venture capital money was directed towards marketing activities, particularly as it was vital for BEELINE that they were able to educate the market of the merits of their product. This also required developing the skills of their North American employees, as it was difficult to find people who understood agriculture and also had the aptitude to be able to work on mechanical and electrical control systems. Being able to put the right people in the right places was therefore a significant challenge for BEELINE.

In terms of its tactics for finding customers and developing its own skills, BEELINE has made extensive use of building networks. The company has been involved with many local agricultural industry groups and universities, both in the USA and in Australia. Generally, however, BEELINE has found differences between its major markets. For instance, in Australia the market is fairly technologically savvy and driven to derive gains in efficiencies. In North America, the focus is centred on yield because it is a market which has less overall concerns about drought and rainfall issues in comparison to Australia. In Western Europe the farm sizes are smaller and geographically scattered, and GPS is only just starting to make its presence felt. The other factor is that regulations can vary significantly across countries. Hence, there have been some different challenges for BEELINE in serving its major markets.

In trying to define his company's business operations, Paul Turner makes the point that BEELINE is now a software producer:

Our production system these days is focused around software. So whilst we work with the GPS manufacturers and other component suppliers, our job is really that of a systems integrator. We take the latest versions of hardware and focus on what features our customers might be looking for and what we think may be of value to them, and then we integrate those requirements into that system. We test out on the field, and we then deliver over the web a piece of software to our OEM clients.

Mr Turner believes that a fundamental way in which the business has changed is through the way it develops its products. In 2001, the firm was focused on winning every sale opportunity, and it would develop a product feature for each individual customer. This was vital to BEELINE building a market for its products. However, as the market has evolved, the company has had to take a very structured approach to developing its product, because it is now placed in the machines of thousands of customers. Consequently, there is a strict requirement for BEELINE to standardise its product offerings.

In terms of assessing his company's contribution to the Australian economy, Paul Turner notes some major benefits. In particular, he believes that BEELINE has created a new world industry run out of Australia. Some of the other firms that now have a technology and R&D presence in this product area in Brisbane include Leica Geosystems, Topcon Positioning

Systems and AgGuide, as well as other GPS related companies. Mr Turner says: *'We've certainly seen local companies here in Brisbane and Queensland get started, or diversify as a result of BEELINE, and some in other states who provide support to our products'*. In addition, BEELINE has vastly improved the efficiency of farming and farming practices. Hands-free GPS steering has allowed growers to undertake their day-to-day activities very differently than was done ten years ago.

In examining the success of the company, Mr Turner attributes much of the growth of the firm to its people. The strong ability of the firm to come up with innovative ideas is a key strength, but its people also have the persistence to see such ideas through to a conclusion. Hence, the company has always made a concerted effort to build up the skills of its employees, and to continue to develop them for the future.

In terms of providing advice to other Australian firms looking to become involved in international markets, Paul Turner's advice is to devote a great deal of time to studying the demands of foreign markets, in order to determine their requirements. Specifically, it is essential that the firm ensures its products are aligned to what the market wants. A business that seeks to go global must be equipped to manage a full suite of business functions. Paul claims that BEELINE went through a number of years where there was a major focus on sales and accounting, but that they overlooked the systems necessary to manage inventory. In the end, the company invested in MRP technology, but this happened *'about five years too late'*. The advice from Paul Turner is to be set up for growth. The internationalising firm should also be prepared to be flexible in its strategy, particularly if this is what circumstances dictate. Holding on to one best way of doing things can be very limiting if circumstances change.

BIOTA HOLDINGS LIMITED

HEAD OFFICE

Notting Hill, Victoria

INTERVIEWEE

Damian Lismore, Chief Financial Officer.

COMPANY AND INDUSTRY OVERVIEW

Biota Holdings Limited is a leading antiviral drug discovery and development company. It was founded in 1985 to exploit some significant research discoveries around the influenza virus that were made by Australian scientists. Based in Melbourne, Biota is one of only a few profitable biotechnology companies in Australia.

The main area of research is antivirals and particular diseases that the company is currently addressing are: (a) influenza, (b) human rhinovirus; (c) respiratory syncytial virus and (d) Hepatitis C.

Biota licensed development and marketing rights for zanamivir to the Glaxo Group. GlaxoSmithKline subsequently launched Relenza™ which is approved in over 50 countries for the treatment of influenza, including in the USA, the EU, Japan and Australia. Biota receives royalty payments from GlaxoSmithKline on Relenza sales.

Biota was listed on the Australian Stock Exchange (ASX) in 1985 and admitted to the ASX 300 in 2006.

Biota is unusual in an Australian context in that it has five programs partnered with separate high profile international companies.

ELEMENTS OF COMPETITIVE ADVANTAGE

The pharmaceutical industry is principally concentrated in the USA, the EU and Japan, where the markets are most developed. Biota was early among Australian biotechnology companies to sign a licensing deal with a major player in the global pharmaceutical industry. According to CFO Damian Lismore, there are three reasons why Biota is able to compete successfully from Australia and against other Australian companies. First, Biota has developed an expertise and capability that is recognised globally in the area of antivirals. As a consequence, Biota can perform high-risk, front-end research on a cost-effective basis. Secondly, it can draw on a rich pool of talent and scientific capability – the best scientists are attracted to work with a company such as Biota. Thirdly, large pharmaceutical companies prefer to participate in drug development after the high-risk discovery phase has been completed. This leaves space for smaller firms to undertake early drug research, provided they remain cost-effective.

Biota Holdings Limited pursues a commercially balanced business model and develops products with a commercial focus in mind. Biota has two products in the market earning royalties, two products in development that are licensed to large pharmaceutical companies (and it is hoped the royalties of tomorrow) and two programs yet to be licensed. The early licensing of programs ensure that Biota shareholders no longer carry the financial risk

associated with these programs, yet have considerable financial upside should a program get to market.

Biota has instigated full project management of all programs, so there is full accountability for each project and delivery against key milestones. Mr Lismore sums up Biota's approach as: (a) knowing who is in the market for our products; (b) knowing what our competitors do; (c) knowing the competitive market position of Biota's drugs; and (d) knowing the appropriate commercial exit point and deal possibilities.

EVOLUTION OF THE COMPANY

In 1983, the three dimensional structure of influenza neuraminidase was published by Dr Peter Colman and colleagues in *Nature*. Two years later, Biota was incorporated and listed on the ASX. The float raised \$3 million, which was invested in R&D projects, including work focused on the discovery of influenza neuraminidase inhibitors. In 1989, the discovery of zanamivir, the world's first neuraminidase inhibitor, was announced, and Biota signed a license and development agreement with the Glaxo Group (UK) for zanamivir. Clinical trials were undertaken between 1993-97; and in 1999 the US Food and Drug Administration (FDA) approved the marketing of zanamivir under the trade name Relenza™. The drug was launched in most countries that year. (Biota subsequently initiated legal proceedings against GlaxoSmithKline for non-performance under the license agreement and particularly for the failure to use their best endeavours in the development and marketing of Relenza™. The case is due to go to trial in 2008.)

The development of zanamivir was Biota's initial success. Relenza™ (which is owned by GlaxoSmithKline) is used to treat influenza and is currently one of only two antivirals being stockpiled by various governments for defence against possible pandemic influenza outbreaks.

The market for Relenza™ is currently split into two: the pandemic stockpile market and the consumer market. It is believed that over the period 2006-2009, governments worldwide will spend over US\$6billion to fill their stockpiles. The replacement market for these drugs as their five year shelf life expiries (commencing in 2011) is expected to be US\$1 billion per annum. The consumer market, where patients gain a prescription for the drug which is then filled by a pharmacist, has also experienced significant growth and is estimated at US\$0.5bn per annum. Relenza sales are currently running at approximately 20 per cent of the pandemic stockpile market.

Biota has also achieved the following breakthroughs:

- A license and collaboration agreement with Boehringer Ingelheim to develop and commercialise Biota's novel nucleoside analogues, designed to treat hepatitis C virus (HCV) infections and potentially other diseases.
- A series of candidate drugs aimed at Respiratory Syncytial Virus (RSV) or bronchiolitis, subsequently licensed to MedImmune Inc. The lead candidate entered into Phase I clinical trials in Australia in July 2007.
- A key collaborative partnership with Daiichi-Sankyo for the development of second generation influenza antivirals (called LANI or long acting neuraminidase inhibitors). The lead candidate has completed Phase I clinical trials in Japan and is currently in Phase I clinical trials in the UK.
- The company was also awarded a US\$5.6 million and a US\$8.5 million National Institutes of Health award for its LANI program.

In 2007, Biota also completed a Phase I clinical trial of its human rhinovirus (HRV) drug for the prevention and treatment of one of the major causes of the common cold, which is also thought to be a major cause of exacerbations in patients with chronic obstructive pulmonary disease (COPD) and asthma. If successful, this antiviral treatment will be another first, as there is no comparable product currently available for these patients. This program is being funded by Biota, who have stated that they will fund a Phase IIa challenge study this financial year to prove efficacy, prior to partnering the program.

Whereas the Australian pharmaceutical industry tends to produce 'one-hit-wonders', Biota has sustained a strong market position and the consistent ability to attract large pharmaceutical partners for its programs.

Biota elaborated on the national benefits of its enterprise in its 2006 *Submission to the Productivity Commission's Study on Public Support for Science and Innovation*. Leigh Farrell, Vice President Business Development, noted that:

The spillovers from Biota's presence in the Australian research community have been considerable with knowledge transfer occurring through R&D collaborations . . . Biota has a rich history in collaborating with the Australian research community. The company has a number of long-standing relationships with universities, medical research institutes and the CSIRO. Spillovers from these collaborations occur through Biota staff transferring to the academic collaborator knowledge and skills in the drug development process that can be applied to their own research programs . . .

Biota also has an extensive informal networks with the Australian academic and biotechnology sectors that result in a two way spillover of knowledge sharing. Indirect spillovers that flow from public funding of R&D in Biota are the migration of former Biota staff to senior management positions in other companies . . .

Biota has also been the industry partner with a number of universities on numerous grants such as GIRD and ARC Linkage Grants. This has resulted in spillovers with Biota transferring project management and drug development skill to the university partner. The university provides expertise and capabilities not resident in Biota. This work would not have been funded absent of public support, providing good evidence of *additionality*.⁹⁸

According to CFO Damian Lismore, both the current Federal Government R&D Tax Concession and the Productivity Commission's recommendations, fail to appreciate that there is a long lead-time for product development in pharmaceuticals. This long lead-time is necessitated by:

- 1) the stringent and binding safety requirements for new drugs;
- 2) the time and effort needed to demonstrate the effectiveness of the product; and
- 3) the time and effort required to establish which segments of the human population are affected by the product, and to what extent.

Biota observes further that it is also hard for Australian pharmaceutical companies to commercialise drugs locally in the first instance.

First, the Pharmaceutical Benefits Scheme makes it difficult to get products listed at prices that recognise the R&D expense associated with bringing the product to market. In order to recover this expense, Australian companies are forced to enter high-risk overseas markets in their initial launch phase.⁹⁹

Secondly, whereas the Federal Government R&D Tax Concession directly benefits small loss-making companies and large profitable companies, it discriminates against pre-profit companies that are building critical mass in their R&D operations. Such companies are vital

to the success of the country yet while able to claim the R&D tax concession and increase their losses, it is often many years before such losses become accessible.¹⁰⁰

Thirdly, consolidation should be more common in the Australian biotechnology industry if it is to continue to compete globally, yet when consolidation occurs, the tax losses of both the acquirer and acquired company may be lost. This creates a real disincentive and decreases the value of the business being acquired.¹⁰¹

As for the primary lessons for other potential born global companies, CFO Damian Lismore sums them up as:

- recruit the right people;
- know your niche in the food chain;
- identify where your business can add value , and to whom;
- pick good partners; and
- be prepared to travel extensively to ensure your product gets to market.

COCHLEAR LTD

HEAD OFFICE

Lane Cove, New South Wales

INTERVIEWEES

Neville Mitchell, Chief Financial Officer & Company Secretary

Mark Phelps, Head of Corporate Development

COMPANY AND INDUSTRY OVERVIEW

Cochlear is a medical technology company that has gained worldwide recognition for the design and marketing of revolutionary Nucleus multi-channel cochlear implants (bionic ears), which provide speech understanding for profoundly deaf people. Its genesis lay in groundbreaking scientific work undertaken by Professor Graeme Clark in the late 1960s and early 1970s at the Universities of Sydney and Melbourne. Cochlear was nurtured by entrepreneur Paul Trainor, whose technology holding company Nucleus Ltd. commercialised its cochlear implant system in the early 1980s, in partnership with the University of Melbourne and the Federal Government. Today, Cochlear exports 97 per cent. of its product to over 90 countries, employs over 800 people in over 70 nations, and runs over 260 Nucleus Clinics in the Asia-Pacific, over 260 in the USA, and over 260 in Europe. Between 80-90 per cent. of profoundly deaf children in Australia receive Cochlear implants. Cochlear was listed on the Australian Stock Exchange (ASX) in 1995.

ELEMENTS OF COMPETITIVE ADVANTAGE

Cochlear introduced an innovation that was new to the world: the Nucleus multi-channel cochlear implant has been acclaimed as the first major advance in the management of profoundly deaf children since the advent of sign language, some 200 years earlier. Cochlear drew on Australia's world-class capability in audiology and hearing assessment (going back to public research into hearing-loss by service personnel in the two World Wars); it also benefited from far-sighted government support at an early stage. Additionally, the knowledge and experience of Paul Trainor and Nucleus (which had a pacemaker division) was fundamental to Cochlear's ability both to integrate biocompatibility and hermetic sealing technologies, and generate a financially sound business model.¹⁰² According to CFO Neville Mitchell, Cochlear planned to carve a global niche from the outset, and it continues to satisfy a huge unmet clinical need that is largely ignored by its nearest competitors. Furthermore, Cochlear has sustained its competitive advantage by selling high quality and reliable products, investing time into educating its markets, and complementing its core business with a pipeline of associated products and opportunities.

EVOLUTION OF THE COMPANY

The idea for a cochlear implant emerged in 1967 from the work of Professor Graeme Clark, who (inspired by a wish to communicate better with his deaf father) was researching into the possibility of an electronic, implantable hearing device. Through his basic research at the University of Sydney, Professor Clark discovered that a multi-channel (electrode) cochlear implant would be more effective for the management of profound hearing loss than a single-

channel device. The development of the cochlear implant continued as Professor Clark was appointed Professor and Chairman of the Department of Otolaryngology at the University of Melbourne in 1970.

Another factor in Cochlear's success was entrepreneur Paul Trainor. He acquired very early stage technology in pacemaker technology and founded Nucleus Ltd. in 1965. Cochlear developed its technology in the 1970s under the aegis of Nucleus, benefiting from its expertise in pacemaker technology, its funding capacity, and the business and government networks of Paul Trainor.¹⁰³

In 1977, Professor Clark received a research grant for 'The Development of a Hearing Prosthesis.' Eight years of research, combined with the assistance of engineers Jim Patrick and Ian Forster, saw Rob Saunders become the first recipient of a multi-channel cochlear implant at the Royal Victorian Eye and Ear Hospital in 1978. This was the first time a speech processing strategy assisted deaf individuals to understand running speech.

The development of the Nucleus multi-channel cochlear implant progressed with the assistance of the Federal Fraser Government. Recognising the enormous economic and social potential of the University of Melbourne's research, the Government offered Professor Clark a significant public interest grant of A\$4 million. The University contributed its intellectual property, and in 1979 Nucleus won the tender to develop and commercialise the Cochlear implant, with royalties on revenue generated to be paid to the Federal Government and the University of Melbourne. Again, Nucleus' investment in understanding the market potential for cochlear implants was crucial, since ear, nose and throat surgeons had to be persuaded that the implant could penetrate the inner ear without damaging its fragile structures.¹⁰⁴

In 1981, Cochlear Pty Ltd was established as a subsidiary of Nucleus, with its global headquarters located in Sydney. The following year, the first commercial Nucleus 22-Channel cochlear implant (the Nucleus CI-22) was implanted at the University of Melbourne.

Restricted by the small market for cochlear implants in Australia, the company embarked on its first international expansion in the USA. Cochlear started exporting its device and in 1984 established its first overseas office in Denver, Colorado. The same year witnessed the first Nucleus cochlear implant surgery in Europe. In 1985, Cochlear gained the approval of the US Food and Drug Administration (FDA) to implant the Nucleus CI-22 in profoundly deaf adults aged eighteen years and over. Meanwhile, the first Nucleus cochlear implant surgery took place in Japan.

The process of obtaining FDA approval for the Nucleus cochlear implant was difficult. Owing to the revolutionary nature of the product, the company had to invest considerable time and energy into establishing connections with doctors and medical professionals in order to enhance the credibility of their products. The same obstacle was encountered in Europe.

Cochlear's crossborder expansion continued through the 1980s, with Europe and Japan as the next locations. Penetration of these markets was achieved both directly and through distributorships. Mature capitalist economies were selected because their health care systems were comparable to Australia's and the size of their potential markets was substantial.

During the evolution of the company, a range of problems and challenges arose. For example, the process of gaining FDA approval for implanting Nucleus cochlear devices in children was more complicated than for adults; it was 1990 before the FDA gave approval for children aged 2-17. Some in the American community were concerned about putting electricity in children's ears. Others disapproved of the use of children for 'experimentation'.

Resistance to Cochlear was also encountered from certain deaf communities, who objected to the treatment of deafness as a defect requiring medical correction. They also worried about the potential loss of recognition and funding of specialist schools for the deaf. Such opposition was particularly strong in France.

Similarly, Japan proved to have a conservative medical culture that was slower to accept the Nucleus cochlear implant system. It was not until 1989 that a Cochlear clinic was opened in Japan and 1991 that approval to implant Japanese patients was granted. Moreover, in Japan, the implanting procedure takes 5 hours and the recipient will remain in hospital for three weeks. This contrasts sharply with Australia, where the procedure takes 1.5 hours and is considered day surgery.

Although the structure of ownership of Cochlear has changed over the last 25 years, many of the original parties are still involved. Since being listed on the Australian Stock Exchange in 1995, with Pacific Dunlop's desire for majority Australian ownership, the foreign ownership is still less than 30 per cent. To date, there have been no major changes in shareholders.

The company has continued to benefit from the support of the community and various Australian governments. Owing to the scientific basis of the company's business, ongoing research and development (R&D) is essential. The Federal Government R&D Tax Concession has assisted Cochlear in managing the costs associated with developing and installing its products. Interestingly, Cochlear continues to perform basically all the development part of R&D in-house, spending approximately 12 per cent. of sales revenue on the activity. In addition, all departments of the company, from R&D to management to operations to production, are housed at its global headquarters in Sydney. Furthermore, Cochlear's need to pursue R&D has spawned a number of R&D collaboration agreements with 80 different research organisations around the world. This increases the knowledge flows between industry and universities, and also enhances the reputation of Australian companies and scientists worldwide.

Cochlear and its employees are involved with the training of professionals from many different areas. The company provides significant employment and promotes a culture of engineering and innovation in Australia. For Cochlear, innovation and the diffusion of knowledge is an important part of its business. The company is happy to be approached by other businesses and individuals for advice about their businesses processes and products; and has assisted an array of resident enterprises. Cochlear promotes itself as an Australian company worldwide, and thereby enhances the reputation of Australian-based companies and demonstrates to other local firms that global success is possible.

Cochlear has a long history of educating their market. Businesses, governments, communities and individuals have needed to be educated and informed about the products and benefits associated with the company. The situation is no different today. A large array of stakeholder groups are welcomed by the company and informed about their products through tours that they operate through their premises in Sydney. Education is an integral part of Cochlear's activities and it has openly adopted this practice as a business strategy.

The company still continues to face a number of challenges. It is concerned with managing its growth and determining which rates of growth are feasible. Other issues of concern include the further development of products and customer relationships, as well as dealing with competitors.

CFO Neville Mitchell has two pieces of general advice to offer other Australian companies that are planning to initiate or extend a crossborder venture. First, he notes that there are huge opportunities for companies, especially Australian companies, in pursuing niche world markets. Cochlear exemplifies this potential, as it carved a global niche in the medical devices industry and has made a conscious and strategic decision to stay within this section

of the market. Mr Mitchell reasons that instead of diversifying, new businesses are better off acknowledging what they do and then doing it well.

Secondly, for many businesses, being 'born global' is a necessity rather than a choice. The limitations of the Australian market impelled Cochlear to undertake crossborder activities at an early stage of its business development. With less than 3 per cent. of the current sales coming from Australia, the company is well and truly entrenched in the global marketplace. If Cochlear had failed to export and invest overseas, then it simply would not have been able to grow. And in the current business climate of intensifying transnational competition, more and more Australian businesses will need to look to foreign markets to sustain and develop their businesses. This should not be feared, but rather embraced; and the efforts of local firms to expand overseas should be supported by Australian governments.

CSL LTD

HEAD OFFICE

Parkville, Victoria

INTERVIEWEE

Sam Lovick, Chief Economist

COMPANY AND INDUSTRY OVERVIEW

CSL was founded in 1916 as Commonwealth Serum Laboratories. It worked under a public ownership model, and was charged with stockpiling various drugs and health products in the interests of national security. In 1994, the company was privatised and floated on the Australian Stock Exchange. Since its privatisation, it has been successful in completing several major acquisitions, particularly the 1999 acquisition of ZLB and the 2004 purchase of Aventis Behring. Its research and development (R&D) focus has also been prominent, and in 2003 it obtained a US patent for a key component of Merck's Human Papilloma Virus vaccine, Gardasil, aimed at prevention of cervical cancer. Gardasil was developed in collaboration with the University of Queensland and is expected to generate substantial royalty revenues for CSL.

ELEMENTS OF COMPETITIVE ADVANTAGE

The former Commonwealth Serum Laboratories was privatised in 1994. Under private ownership CSL has been able to leverage its core competencies in plasma products to rapidly establish an international presence, involving several significant overseas acquisitions. CSL Bioplasma manufactured the world's first chromatography-based albumin product.

EVOLUTION OF THE COMPANY

CSL arose from the Commonwealth Serum Laboratories in the early 1990s, when it was privatised by the Federal Labor Government. The origins of the company were in the provision of vaccines and similar products during times of national emergency, particularly World War Two. However, the decision to privatise the firm meant that there was a requirement on CSL to adopt new business practices. The way it embarked on new strategies from that time is demonstrative of an organisation that has acted with some of the characteristics of a born global firm.

In 1994, CSL was largely a contract manufacturer of biological products. The company had a small amount of money invested in its R&D capabilities, and made products such as 'flu vaccine, anti-venoms and plasma products. The organisation's Chief Economist, Sam Lovick affirms that *'there was a deliberate intent from that point forward [privatisation] to embark on a program which would involve moving internationally, a program that would involve becoming what we might call a clever company, and therefore having the financial structure, dividend policy, and other characteristics that go with being a smart company'*.

The strategy which CSL adopted to achieve this meant that it managed its finances in such a way that it did not pay out a large proportion of its profits in dividends to shareholders. This

allowed it to embark on a program of international acquisitions (and some divestiture) to cement its position in the global market. Its first major step into overseas markets was its acquisition in 1996 of the US-based serum manufacturer JRH. In biotechnology terms, this was a relatively small firm in a sector where CSL was already active, having an arrangement with JRH's Australian subsidiary. The final purchase price was in the area of A\$25 million. However, the reasoning that lay behind this purchase was instructive for CSL. The key business for JRH was collecting calf serum from slaughter houses and processing the serum for sale to the biotechnology sector as a key component for the manufacture of biotechnology products such as EPO. CSL had experience in this area, and therefore saw the purchase of JRH as an opportunity to build on existing capabilities and to gain experience of offshore mergers and acquisitions. It is this desire to build on the firm's capabilities which has formed the rationale behind each of CSL's subsequent purchases.

This initial foray into the world of acquisitions has served as a template for CSL in more recent years. The company has evolved into a global presence in the plasma product through acquisition rather than through partnerships, minority holdings or joint ventures. Each of the acquisitions aimed to complement CSL's core strengths and capabilities. As Mr Lovick states: *'we do believe, and our record is good on this, that we are able to bring very good overall manufacturing logistical management [to an acquired company]'*. This is demonstrated by the fact that the JRH business was actually divested in less than ten years for a sum more than ten times greater than the acquisition cost. Clearly, CSL is able to add significant value to its acquisitions.

The second major acquisition which CSL completed was for ZLB of Switzerland in the late 1990s. ZLB was a Swiss organisation that was owned by the Swiss Red Cross. The company was fractionating plasma from the USA and from a number of other sources, and the final products were then sold into a number of markets. Most importantly from the perspective of CSL, the company was involved in the US market. The acquisition therefore provided CSL with its first opportunity to sell plasma fractionation products to the USA through its own commercial operations.

This transaction was not without difficulty. There were other organisations that were interested in the potential to acquire ZLB, and so CSL needed to be fleet-footed in order to complete the transaction. One factor that helped CSL was the fact that they had developed a good relationship with the Red Cross in Australia, and this was viewed favourably by ZLB's parent company. Another difficulty was that ZLB had a limited portfolio of products and had only one product, immunoglobulins, approved in the USA. At the time there was a world-wide shortage of immunoglobulins, and prices were attractive. This encouraged competitors to undertake substantial expansion activities to record production levels. This caused a surplus in the US market, which then resulted in substantial price declines. A further exogenous shock occurred when a technological change resulted in the market moving from what was called plasma derived Factor VIII coagulation products to recombinant Factor VIII. This further reduced the value of plasma products, and hence the profitability of that market deteriorated markedly.

CSL's transition through this difficult period was aided by its parsimonious approach to the plasma products market, which emphasised the importance of cost-efficient operations across its global operations. Some of CSL's competitors at the time, including Aventis Behring, experienced much greater problems. Indeed, as stand alone businesses they were verging on bankruptcy. CSL's share price at this time was down around the \$12 mark, well short of the \$100 it trades at in 2007. This unfavourable market situation provided the opportunity for CSL to make its second major acquisition in the sector – that of Aventis Behring.

CSL identified that Aventis Behring had a range of assets and markets that complemented its existing assets extremely well. That is, they were involved in areas in which CSL wasn't, and provided CSL with excellent means to improve its array of capabilities. CSL's ability to gain

access rapidly to these complementarities (through a highly effective integration process) was a function of its previous M&A experience and managerial focus. ZLB and Aventis Behring were effectively combined into integrated global operations, now named CSL Behring.

CSL Behring operates a 'centre of excellence' model based upon four sites: three manufacturing sites in the USA, Switzerland and Germany, and a plasma collection arm based in the USA. Close integration of these four business units, acquired through a targeted acquisition program, delivers the benefits of scale and specialisation fundamental to success in the global market. The company currently employs approximately 7,500 people, and has an extensive supplier network worldwide.

CSL makes approximately 80 per cent. of its sales overseas, half of which from the USA. These sales are achieved through commercial operations which span 50 national markets. This commercial network is a key asset in CSL's ongoing success, as it is very difficult to enter or serve pharmaceutical markets without a local commercial presence. CSL is driven by a need to establish what Sam Lovick describes as both 'a physical and relationships presence' in its markets. By establishing such relationships, the organisation believes that it is able to achieve a competitive advantage in what is an increasing competitive market segment.

This relationship model extends beyond markets. CSL has retained the same financial advisors since privatisation, who have worked on each of its acquisitions. R&D is another area in which the organisation has enjoyed the fruits of being able to drive innovative products through established linkages with creative partners.

The company has established a strong element of strategic planning within its organisational culture. The company has a very clear long-term plan, which looks at the shape of the organisation a decade forward. This is in recognition of the fact that it often takes fifteen years to develop a product within the pharmaceutical industry. That said, CSL's long-term view does not prevent it from taking advantage of clear and valuable opportunities that might arise from time to time.

Mr Lovick describes the benefits that the organisation brings to the Australian economy as follows:

The big things we've brought back [to the Australian economy] are twofold. One is that as a consequence of our enhanced size, we are able to fund a much more robust research and development program, a substantial component of which is based in Australia. It is not exclusively based in Australia, but we believe that firms like us should maintain significant research and development close to their head office, a reflection of its importance as a strategic tools. So we've been able to enhance our research and development expenditure, and so in broad numbers five years ago we might have had a research and development expenditure on innovation and new products of \$30 million, but now we're over \$100 million and it is going up. I think what that delivers is employment of a large number of very highly qualified, skilled people as scientists, and at the end product of their work, I think will be either partnerships like the one with Merck which brings back substantial amounts of revenue, or in other areas the actual manufacture of products in Australia which will then be sold overseas.

The opportunity to work overseas means that CSL is often a preferred employer for graduates from the biological sciences. The company also believes that the scientists it employs often benefit from time spent overseas. In particular, there is a strong understanding that there is much value to be gained from working in the US bio-pharmaceutical industry. However, the organisation also views itself as offering a stimulating environment for scientists who might seek to return to Australia after working offshore. This makes such workers particularly valuable both to CSL and the Australian pharmaceutical industry.

The size of the CSL organisation means that the company is continually looking at developing ways to share information between its various geographical arms. In particular, the organisation is finding it useful to implement global project groups for the management and execution of its global projects. Sam Lovick now believes that it is increasingly the case that the way the company does business in Australia is influenced or affected by what is going on in the company's overseas subsidiaries. The company runs executive leadership forums, in which executives from all over the world are brought together. The company sees this as important from a skills acquisition point of view, and also from a perspective of getting to know the different cultures in the organisation.

Mr Lovick argues that CSL will continue to evolve cautiously. The company is not trying to be revolutionary in its business development, but rather is attempting to build through either acquisitions or organic growth. The internal architecture of the firm will be adapted to suit this growth. Evidently, the success factors of CSL include the consistency of its relationships, the loyalty of its shareholders, adaptability, good timing, excellent execution, and a focus on core competencies.

DSPACE PTY LTD

HEAD OFFICE

Adelaide, South Australia

INTERVIEWEE

Jonathan Whalley, Founder and Program Director

COMPANY AND INDUSTRY OVERVIEW

Founded in 1995, DSpace produces advanced satellite communications technology. This includes: air interface designs, modulation and coding techniques, signal acquisition, protocol schemes, radio resource management, intellectual property over satellite, complex channel simulation, and satellite mobile design. This expertise is allowing the organisation to forge ahead in the defence communications field, as well as commuter aviation communications.¹⁰⁵

ELEMENTS OF COMPETITIVE ADVANTAGE

DSpace is an innovator in advanced 'satcomms' communications technology. It has been successful in developments for many of the leading satellite operators and equipment manufacturers around the world, and has a growing business presence in the global Defence and Intelligence communities. DSpace designs and packages technologies to assist its customers to address new and existing communications needs and market opportunities in wireless/satellite communications. The company takes new, often unproven techniques in the signal processing domain, and translates them to functioning real-time hardware/software systems. This involves intimate knowledge of the theoretical background, and practical experience in the rapid design construction and testing of complex, multiprocessor, Digital Signal Processing (DSP) based equipment with Radio Frequency (RF) interfaces. DSpace has extensive experience in the modelling and simulation of communications systems, from high level conceptual models to detailed implementation models.¹⁰⁶

EVOLUTION OF THE COMPANY

DSpace was established on 27 March 1995. It was founded by Jonathan Whalley, who had worked in the British space industry and who had developed relevant expertise in signal processing systems, particularly remote sensing radar. When Mr Whalley and his wife emigrated to Australia in 1995, he wanted to keep working in the space industry in signal processing, and so he founded DSpace.

Jonathan Whalley attracted several business partners, and one of these partners had links to the University of South Australia. This was important because the University of South Australia had several existing contacts in the satellite industry and was undertaking a number of projects in the area. This led to a situation in which DSpace, in partnership with the University of South Australia, started undertaking commercial jobs for the satellite operators. The first work overseas for the company was with a satellite operator in the UK called Inmarsat, with whom the University of South Australia had previously worked. The task for DSpace was to develop a proof of concept system for Inmarsat's next generation of satellite services, and they performed this role as a subcontractor for the University of South Australia.

In order to undertake the Inmarsat project, DSpace needed to consider the way that it would do business, and particularly the manner in which it would deal with a UK-based organisation. Perceiving that the distance between themselves and the client could be a problem, DSpace hired a satellite communications expert based in London to act as an intermediary between themselves and Inmarsat. This person was familiar to DSpace, because he had undertaken his Ph.D. through the University of South Australia and they were therefore familiar with his work. In order to facilitate this arrangement, DSpace set up a subsidiary in London. The UK client was therefore dealing with the London-based employee. DSpace also maintained regular email contact with the client to ensure that the relationship was managed smoothly.

Today, DSpace sources most of its customers from outside Australia. The company has about 30 employees, but only one of these is based overseas. This is a sales director, who operates in the UK. Most of the staff are engineers, but there are also some who are mathematicians or physicists. In completing its projects, DSpace has developed highly sophisticated project management skills. Local companies have been used for hardware design, although for the moment this is produced in-house. When a project is running, DSpace has hired locally based specialist contractors for three-month periods to deal with technical tasks.

The first project in which DSpace took the primary role was on a project for a spin-off from Inmarsat called ICO. In a reversal of roles from the Inmarsat project, DSpace became the lead agent and the University of South Australia its subcontractor. These early international projects were structured in such a way so as to play to the various strengths of both the University and DSpace. The company recognised that it was geared towards providing software engineering solutions, while the University's strength was in the area of research. Hence, the ICO job was considered to be more about software engineering, and thus it was more suitable for DSpace to take the lead role on the project.

By 2002, the organisation decided that it required venture capital. The view within the organisation was that in order to grow the business significantly, there would need to be a fundamental investment in the company's intellectual property and products. With the early projects at Inmarsat and ICO, DSpace had been required to hand over their intellectual property as part of the fee for their engineering services. The company recognised that it needed to own its IP in order to develop. As Mr Whalley explains:

[W]e had a start grant of \$2 million which allowed us to build up intellectual property, but it was secondary to the main act of staying alive. With the venture capital money . . . we avoided selling the IP as contracts and retained the IP in-house.

In terms of considering the benefits to the Australian economy of the involvement of DSpace in foreign markets, Jonathan Whalley believes that there is significant benefit for Australian companies in involvement in offshore projects. In particular, the organisation has had approximately half a dozen employees with doctoral degrees, who have been able to work on projects in Europe and the UK as a result of their talents in such a specialised field. These people, on returning to Australia, are able to gain employment at an organisation such as DSpace, whereas previously they may have had no such career opportunities. A further potential benefit identified by Mr Whalley is the opportunity for DSpace to stimulate an environment for other high technology companies to set up in South Australia. Finally, he sees a positive benefit for DSpace with regard to their overseas involvement in that the company is continually engaged with foreign customers and suppliers. This means that the organisation and its employees are continually learning.

Overall, Jonathan Whalley remains confident that the ability demonstrated by DSpace in competitive international markets will have a very positive impact on other Australian enterprises. He regards DSpace as one of a wave of companies that are building a sound reputation for Australian companies in the field of high technology products.

ELLEX MEDICAL LASERS LTD

HEAD OFFICE

Adelaide, South Australia

INTERVIEWEE

Victor Previn, Chairman

COMPANY AND INDUSTRY OVERVIEW

Founded in the early 1980s as a business that produced laser pointers for presentations and displays, Ellex has developed into a leading player in the medical laser industry. Co-founder and Chairman Victor Previn has seen the company acquired by venture capitalists, bought the company back from them when it appeared their strategies were not working, and then floated the company on the Australian Stock Exchange in 2001. Today, the company earns annual revenues exceeding \$50 million, and has established a major original equipment manufacturer (OEM) contract with the Swiss-US transnational Alcon.

ELEMENTS OF COMPETITIVE ADVANTAGE

Ellex Medical Lasers Limited designs, manufactures and markets a complete line of lasers used by ophthalmologists to preserve vision and fight blindness. With more than 12,000 systems installed worldwide, Ellex has evolved from its starting point as an OEM supplier of ophthalmic lasers 15 years ago, to direct marketing of its own branded products through subsidiaries in the USA and Japan and through a network of distributors in more than 50 other countries. Ellex maintains a strong emphasis on intellectual property and research into new and better treatments to manage and cure the leading causes of blindness.¹⁰⁷

EVOLUTION OF THE COMPANY

Chairman Victor Previn is central to the story of Ellex. A founding member of the company in the early 1980s, he oversaw the initial shift away from production of laser pointers towards lasers to be used for medical purposes. The company was acquired by a group of three venture capitalists who installed an unpopular management regime that did not understand technology and eventually bankrupted the company. With an unshakeable belief in the company, Victor Previn and colleague Guiseppe Canala bought out the venture capitalists, running Ellex as a private company before eventually listing on the Australian stock exchange.

Ellex has a history dating back to the early 1980s. At that time, the company was a subsidiary of another technology company called Quentron, primarily an importer of electro-optic equipment, with a division that custom-designed laser equipment for the scientific market defence research markets. Mr Previn, then a young engineering graduate involved with the development of laser pointers for visual presentations, learnt of the fledgling medical laser market and pursued the development of an endoscopic surgical laser followed by a laser for ophthalmic surgery. Funding for this pursuit largely came from an Australian Government research and development (R&D) grant awarded to the company in the mid-1980s. Now company Chairman, Victor Previn explains that at this time the organisation's core business stemmed from Quentron's strong knowledge of the overseas electro optic

equipment market principally sourced from the USA. This provided Ellex with the chance to become involved in developing medical equipment.

However, as this strategy was being articulated the ownership of Ellex changed hands, being taken over by a group of venture capitalists and then publicly listed in the late-1980s. Victor Previn describes this as a *'fairly traumatic period for the company'*, because the installed managers had no appreciation of technology or of the medical market. While the company's attractive technology package allowed capital to be raised quickly, the venture proved to be a failure and Ellex went into liquidation. In the end, Mr Previn and some of his colleagues undertook a management buyout, purchasing the assets back from the liquidator and restoring Ellex as a private company. It remained so for approximately a decade, before the company listed again, but this time with technology savvy company owners in control.

In the late 1980s, Ellex's involvement in medical lasers led it to develop a product that was suitable for taking to market. This resulted in the company's first serious attempt to export its product. In 1988, Victor Previn went to an ophthalmic industry trade show in Dallas, Texas. Ellex booked a hotel room at this function, and set up their medical equipment in a hotel suite so that they could demonstrate their product to a select audience. Medical consultants and industry people with whom Ellex had previously become acquainted were invited to attend a presentation of their product. The intent was that Ellex would secure an Original Equipment Manufacturer (OEM) order to manufacture lasers for an established ophthalmic company. Ellex identified the top five companies in this market and worked on a pitch to interest these potential clients. In the end, three of these companies came to Australia to undertake due diligence with respect to Ellex. Nonetheless, it took a further two years to cement a deal.

In the meantime, Ellex embarked on a strategy to appoint distributors from geographic regions outside the Unit. The medical laser industry is characterised by six dominant players who have global distribution networks, large revenue streams, and employ thousands of people. For example, the largest industry player is NYSE listed Alcon Labs, which has revenue of about \$US5 billion. Beneath this stratum are mid-size companies that operate on a regional basis. Because Ellex was at first unable to reach an agreement with one of the big players, they decided instead to secure independent distribution from a network of a small regional player. This included a distributor called Keeler, a UK company that had a very good network covering Europe and the Middle East. Ellex struck a deal with Keeler, and through them secured some early sales in European and Middle Eastern markets.

The arrangement with Keeler was followed by distribution arrangements with the smaller regional distributors throughout Europe. However, the big breakthrough for Ellex occurred when the company was finally able to negotiate a distribution arrangement with Alcon. This gave Ellex had an underwritten sustainable volume order to plan production around. This also meant that Ellex now had two means of reaching their markets. The first was through Alcon and their group of distributors, while the second was through the independent arrangements that Ellex had secured prior to Alcon. Today, the Alcon relationship represents approximately 5 per cent. of Ellex revenues, while the independent distribution relationships and direct sales comprise 95 per cent. of the business. Initially, Alcon had asked that they be given the exclusive licence to the Ellex products. However, Ellex responded that they would find this arrangement unsuitable on the basis that Alcon had initially been offered the product and was not interested at the time. So Alcon reluctantly accepted a limited distribution arrangement.

Ellex went through some teething problems in trying to service such a broad international market. The electro-optic equipment that Ellex designs is quite complex and not easy to manufacture. When the first distributor agreements were signed in the late 1980s, the company was manufacturing 100 units per year. Today, that number has increased to more than 100 units per month. This meant that Ellex was required to scale up their factory significantly and employ more skilled people.

One issue with which Ellex had to grapple early in its development was that by increasing their production so substantially in a short period, they stretched the capabilities of Australian specialist manufacturers, particularly by their demand for precision optical components. The suppliers that Ellex had used for prototype quantities were unable to deliver production quantities to the required quality levels. Eventually, Ellex sought and received help from CSIRO Division of Applied Physics in New South Wales to manufacture over 100 sets of optical components, which supported the first 18 months of increased production. This was critical for Ellex, as it bought time for the company to secure commercial supply sources of components for their medical lasers. Today, Ellex manufactures approximately 1,000 units per annum, and this is dispersed across five product lines. Materials for this manufacturing activity are sourced from throughout the world, including the USA, Japan, China and Russia.

Victor Previn believes that the lifecycle of the company can be summed up in stages punctuated by its involvement with Alcon. In the beginning, the organisation was selling to a small global distributor network, but the OEM agreement with Alcon lifted the credibility of Ellex, so that it rapidly became a very visible player in the global marketplace. However, the initial reliance on the relationship with Alcon also had a downside for Ellex, in that over a decade of continuous supply, demand by Alcon and more recently by second OEM partner Lumenis has fluctuated. In some consecutive years OEM demand has fluctuated by as much as 50 per cent. This served as an important stimulus to focus increasing effort on growing an independent business that is unaffected by OEM demand so that Ellex had independent distribution of their own product in the marketplace.

Today, Ellex employs approximately 140 people. Many of these employees have a strong background in science and engineering. This is complemented by people in the management team with expertise in economics, accounting and marketing. The understanding that these employees have is that the ultimate customer for their products is the ophthalmic surgeon.

By considering the ophthalmic surgeon as the end user, there are certain priorities which are immediately recognised by the organisation. In particular, feedback is sought from ophthalmic surgeons, so that the product can continually be refined and improved. At the same time, the distributor network also plays an important role in that it acts as a conduit of information from the clients back to Ellex. In some ways Ellex is in the position of having to educate the market about its product. Because the Ellex product is technologically sophisticated, it is sometimes beyond the experience of the doctors in various countries. This means that Ellex needs globally to educate the customer base about both its products and the techniques of using them.

Ellex typically manufactures the same product for its worldwide market. However, a challenge in this market place is that regulatory barriers are country specific and pre-sale approval must be sought separately in the different regions in which Ellex distributes. This often translates into different regulatory requirements for each individual country within those regions. Approval and entry therefore needs to be undertaken on a country-by-country basis, and Ellex has built significant expertise in working out the best way to attain approval for sales.

Victor Previn further describes the financial challenge that has accompanied the building of Ellex:

Financing any growing business is always a challenge. Our company is profitable, has been profitable for a more than a decade. We have had periods where we have chosen to invest all of our company profits into R&D in order to give us a leg up in our next phase of development, but this company has been pretty much profitable since we took over management in 1990. However, we have had banks as our partners in order to grow the business. The equity that was raised in the IPO was in fact just used to buy out some of our initial partners who didn't want to come for the rest of the journey. Recently we raised \$5 million from our public investors to pay down some debt that we we had accumulated from two recent acquisitions.

This capital come from sophisticated investors, who used it as a way to secure some equity in Ellex because they believe we have a strong future.

In terms of providing benefits to the Australian economy, Ellex brings many tangible and intangible benefits. These include employment of 140 skilled workers in their Adelaide factory. The company's annual turnover is in the vicinity of \$45 million, and in the last two decades the organisation has generated exports for Australia worth over \$300 million. The company's share price is currently double that of what it was at its initial public offering (IPO), and currently sells at approximately 90 cents per share. The company aims to increase the size of the business into the future, and believes that if it is able to achieve this strategy, then it will be able to bring even greater benefits to the Australian economy. Ellex has also built a globally recognised supply chain and brand in its area of expertise, and also repatriates its foreign incomes in Australia.

Victor Previn remains convinced that organisations such as Ellex are very important to the Australian national interest:

From my perspective, one could mount an argument that companies like ours, or other companies in the national interest shouldn't necessarily be owned or sold outside Australia. [They] should be owned by Australian investors. I personally believe that if there is going to be manufacturing in Australia post the next decade, then it's going to be companies like ours that are likely to succeed. Unfortunately the big players that we currently have in the manufacturing environment such as the motor vehicle and white goods manufacturers will be like dinosaurs. It's tragic, but that's the path they are on.

GLOBAL TRUST CENTRE

HEAD OFFICE

Sydney, New South Wales

INTERVIEWEE

Peter Fritz, Managing Director

COMPANY AND INDUSTRY OVERVIEW

Founded in 2003, Global Trust Centre has evolved from an idea to a domestic not-for-profit company and to a full-profit global entity. Global Trust Centre acts to link government, the private sector and civil society in the development of an orderly user-centric framework for the digital world.¹⁰⁸ Spawned by a conference hosted by Global Access Partners (GAP) on security and risk, Global Trust Centre first took the form of a think tank, supported by Westpac, to explore solutions surrounding authentication, user-perspective and trust in the digital world. Run by TCG Group, Global Trust Centre has since concluded an international cooperation agreement with Swedish company Finansiell ID-Teknik on BankID. BankID is a joint bank IT-infrastructure for electronic identification and electronic signature over the Internet that is based on the PKI (Public Key Infrastructure) technical standard. Global Trust Centre now enjoys global marketing rights to BankID and Managing Director Peter Fritz expects to float the company in 2011.

ELEMENTS OF COMPETITIVE ADVANTAGE

Global Trust Centre has identified an unmet market need for specifying a policy framework, operational mechanism and practical tool to allow for the establishment of trust in the digital world, and to enable seamless transition both ways between non-digital and digital space.¹⁰⁹ There is a strong demand for safe electronic identities, and Global Trust Centre believes BankID to be a thorough, reliable and fully operational concept with many users in Sweden and great potential as an international business offering.¹¹⁰

EVOLUTION OF THE COMPANY

Global Trust Centre emerged from the *Virtual Opportunity Congress III*, which was held at the NSW State Parliament on 16 and 17 December 2003. The congress, which brought together selected Federal and State politicians as well as international businesses and security experts, dealt with issues ranging from the need for internationally coordinated regulation to the challenges and opportunities of internet security. One of the speakers was Dr Thomas Andersson, President of the Swedish International Organisation for the Knowledge Economy & Enterprise Development (IKED).

Dr Andersson's address pointed to the extreme pace of change in the 'information age', which has seen the unprecedented codification and availability of data drive down the costs of diffusing information, gaining access to it and using it. He highlighted the potential for misuse of IT, including: criminality in e-commerce; problems of data confidentiality, availability and integrity; difficulties of consumer and merchant authentication; and non-repudiation and liability in cases of fraud. Dr Andersson noted that these issues boil down to a need to ensure security, privacy and trust. He also outlined preparations in Scandinavia for the

establishment of a new clearing house and Trust Centre to serve as a forum for the examination and diffusion of solutions, and invited enhanced international collaboration on tackling the problems.¹¹¹

Stimulated by this discussion, TCG Group set up Global Trust Centre. This entity began life as a not-for-profit think tank aimed at achieving wider recognition and use of well-authenticated identities and transactions, including the use of digital identities and digitally signed documents.¹¹² Global Trust Centre first received financial and intellectual support from Westpac Banking Corporation. Of this relationship Mr Fritz remarks:

I just want to make one point which is extremely important in my view. You need to work with champions. In Westpac, we found a champion. One person. I'm not talking a corporation; we relate to that person. That person believed that Westpac needed this service and drove it from that angle.

Former Australian Privacy Commissioner Malcolm Crompton then went on a global search on behalf of Global Trust Centre, to look at the technologies that existed in the area of identity management. He subsequently reported that the best system had been implemented by Swedish banks. As Peter Fritz observes:

[W]hat transpired was the Swedish banks some years before have come together and they funded a centre to develop this sort of [digital trust and security] technology. And what was different from anybody else is that rather than develop their own technology, they became integrators of other people's technologies and that actually gave them an advantage over other firms that tried and still try to develop their own IP [intellectual property]. That leapfrogged them, constantly being at the tip of technology advance . . . They also invested heavily on an infrastructure so they spent 90 million dollars so when Malcolm went and talked to them they already had a system that was being used by 300,000 people.

The Swedish Banks had in addition formed a company called BankID. BankID encompasses a joint bank IT-infrastructure for electronic identification and electronic signature over the Internet that is based on the PKI (Public Key Infrastructure) technical standard. The BankID network includes Svenska Handelsbanken, FöreningsSparbanken, SkandiaBanken, Danske Bank, Ikanobanken, Sparbanken Finn, Sparbanken Gripen, Länsförsäkringar Bank, Nordea and SEB. BankID is available to any bank that has a customer identification process that guarantees the customer's identity, and a BankID-approved Internet security solution. Using BankID, members of the public can identify themselves to government authorities, companies and organizations and even electronically sign documents. Government authorities, companies and organisations can check the identification and electronic signature using certified software.¹¹³

Owing to the domestic market focus of the Swedish banks and their reluctance to finance the international diffusion of BankID, Global Trust Centre was able to negotiate not just the Australian rights to market BankID, but the global rights. As Peter Fritz explains:

What is difficult in technology type things is to get the customers and that is what cost money. An idea is a liability and new technology is a liability; your life goes on it, you wife goes with it, your children go and your house, the house is the least. So as far as the Swedish banks were concerned, they invested money and were running at loss and they realised that they were going to run at a loss practically forever because they didn't have access to the world market [as a potential customer].

So we arrived at the right time. It took us about a year-and-a-half of discussion and they realised that they are unable to be global, their business is not that way structured, they are banks, their market is primarily Sweden. For this sort of thing, they are not going to set up a company that's going to market this thing globally, so we arrived in time to pick up the global distribution rights.

In 2005, Global Trust Centre concluded an international cooperation agreement with Swedish company Finansiell ID-Teknik on BankID. It then ceased to be a not-for-profit think tank and became a commercial technology integrator in the manner of the Swedish banks. Nevertheless, Global Trust Centre remains staffed by only two people, who ensure coordination between the resources that are put into the enterprise by other organisations. For example, Global Trust Centre is currently negotiating with both IBM and Microsoft. The idea is that IBM will provide Global Trust Centre with infrastructure in other countries, and that Microsoft software will become an enabler of Global Trust Centre's technology solutions.

Having been born as a not-for-profit think tank in Australia and grown into a commercial business in Sweden, Global Trust Centre is now seeking to expand its profit-making activities in Australia and through Europe to Asia. Mr Fritz declares that:

[T]hrough this company called Global Trust Centre we are at the stage now where the Australian banks are looking at implementing this type of technology in Australia. At the same time, we are negotiating with the Swedish banks to extend the scope of the current agreement, and we are talking through an incorporated subsidiary of ours in Sweden to the UK through HSBC, UBS (that's Union Bank in Switzerland) in Switzerland and to G-gven in Turkey. So in other words, here we have a reverse exercise where the head office will be in Australia, off an initiative which has come into being through \$90 million investment in Sweden and we are taking that technology into Australia at the same time we are taking ownership of the rest of the world.

Peter Fritz

intends to float the business in 2011, by which time he expects the company will be worth several hundreds of millions of dollars. Nevertheless, he is also exploring an option to form a spin-off not-for-profit company with Swedish financial institutions.

Mr Fritz attributes the success of Global Trust Centre to the correct identification of an unmet need. He states that:

We went to Sweden with one thing in mind, and that was to get the distribution agreement from Sweden for Australia, an exclusive agreement. We walked out of the door with an agreement including the rest of the world. The reason that this was possible is because they had a different need to the need that we came to address. Our need was to secure the Australian agency; their need was a much, much broader one to build up volume and they were not going to go overseas themselves.

The customer focus of Global Trust Centre is in line with Peter Fritz's own philosophy of business:

I have a very strong view, and it's based on having set up dozens and dozens of companies, those people who are looking for money for investment into startup or small companies from venture capitalists are barking up the wrong tree. Customers are what make the business, not the investment that is made. The reason for that is simple, the investment money will end one day if there is no cash flow coming through the door. So rather than start with a bad habit, which is saying: 'All right, I've got enough cash so that I'm going to spend money on creating a product', one should start with a customer. This comes through time and time again, to satisfy the customer's need. Every time I have stepped away from this principle, I paid heavily.

Furthermore, Mr Fritz insists that:

There is no such thing as 'making the market'. The market or the need is there and you respond to that need. We don't have so much money that we can drive something from the supply end. The capitalist system is based on demand, not on supply.

Peter Fritz adds that innovation is a collaborative exercise, undertaken gradually, which ultimately coheres different communities and serves social needs:

You can make things happen, and you make it happen in cooperation with other people. But it really comes down to that very simple thing that in small steps you climb up a mountain . . . [I]t's just simply doing things together. I'm trying to avoid the word fun because it is more than fun, it is nothing frivolous. It is . . . participating in that change to make the world more compatible, so again there is a need, that need we call 'customer demand', but in reality that need is a community need.

INDIGO TECHNOLOGIES LTD

HEAD OFFICE

Milton, Queensland

INTERVIEWEE

Bob Gibson, CEO

FIRM AND INDUSTRY OVERVIEW

Indigo Technologies is a privately owned 'clean coal' company with particular expertise in the treatment and removal of pollutants from coal-fired furnace emissions. This technology is associated with power plants and smelters and can be used to capture the fine particles of pollution which would normally escape into the atmosphere. Indigo has demonstrated its technological product successfully in twelve installations, notably in the Mississippi Jack Watson power plant of major US utility The Southern Company. Installations of the technology have also been demonstrated in Australia and a plant is soon to be commissioned in China.

ELEMENTS OF COMPETITIVE ADVANTAGE

Indigo's pollution-control technology is timely. Businesses in both developed and developing economies are likely to have a high and increasing demand for such technology over the coming decades. Nonetheless, Indigo Technologies has not yet secured significant sales for its product, and judges that the company's future growth will depend on developing a sales and marketing capability that is as strong as its technological expertise.

EVOLUTION OF THE FIRM

Indigo Technologies is a Brisbane-based firm with expertise in the area of pollution-control technology. It emerged as a firm in 1999, when it undertook research and development (R&D) of a particle emissions technology. However, its genesis can be traced to extensive research undertaken in the area by its founder Rodney Truce over a twenty-year period. Indigo Technologies' first pollution-control research as a firm took place over a three-year period. Towards the end of this period, Indigo's research was facilitated by the installation of a prototype into a commercial installation owned by a firm called Delta Electric, which was based at Vales Point in New South Wales.

Indigo's prototype technology followed a long line of attempts by various groups worldwide to develop pollution-control products that would satisfy the requirements of the US *Clean Air Act* of 1970. Indigo Technologies calls the apparatus devised by Rod Truce the 'Indigo Agglomerator'. Mr Truce had been working on emission-control technology for many years, and had built a strong reputation in the international pollution-research community through his presentation at international conferences and presentation of technical papers. Mr Truce's passion for the technology is shared by those around him at Indigo. This is exemplified by CEO Bob Gibson's description of the firm's future prospects:

The World Health Organisation says that globally over two million people a year are dying prematurely from fine particles because of the toxicity associated in the heavy metals in fine

particles. We are the fine particle experts in the world. We are now developing new [anti] air-pollution products by partnering with other parties. By bringing other people's technology in to the company, we believe we can more rapidly provide a multi-pollutant solution to addressing all the pollutants from coal.

The firm's first foray into global markets happened when US executives were invited to Australia to look at the prototype at Vales Point. This led to Indigo Technologies winning a contract to produce a commercial installation of the technology at The Southern Company's Jack Watson power plant in Mississippi. The installation at The Southern Company was significant, because it is one of the most respected utility companies in the USA. In terms of image, this contract provided Indigo Technologies with a great deal of positive publicity. At the same time, Indigo Technologies needed to entrench this association with a major US company, and so it established a solid physical presence in the USA by opening an office in Pittsburgh.

Bob Gibson further explains the reasons why Indigo established a physical presence in the USA:

We sought advice on this, and there was a general opinion that, because of the conservatism in the targeted power industry, that if we didn't have a presence in America, that we would be treated less seriously and indeed it would affect our image, and we probably needed an American to present the product in the market place.

Moreover, the location of Pittsburgh was chosen because Indigo wanted to employ Dr Bob Crynack, who was based there and who worked for Indigo from his own home for the first 12-18 months of his employment. A highly respected consultant in the US air-pollution industry, Dr Crynack had previously led a market study in the USA for Indigo, and he brought with him an excellent understanding of the industry and a series of important personal networks. Additionally, Dr Crynack's technical competence and standing in the industry provided the company with further credibility. Furthermore, Indigo Technologies had no strategic reason for choosing another location.

The firm has since added a sales manager to the Pittsburgh office, and is currently looking for a new executive to manage it. Bob Gibson believes that Dr Crynack's presence provided an important opportunity for positioning the company internationally.

Mr Gibson also affirms that it was never the aim of Indigo Technologies to licence its agglomerator technology, and hence the US presence was required to provide a sales function. The decision to avoid a licensing approach was made because the special knowledge required to sell and install the product would make business very difficult for licencees. Conversely, Indigo's strategy of taking the product overseas itself has allowed the company to keep in touch with the needs of its customers and the development of its market. Indeed, Indigo's foreign presence remains significantly different to that which they have built up locally. While Indigo's Australian operation has focused on research and development, engineering and project management services to support overseas offices, the intention behind the US office is essentially to provide a marketing and sales function.

One of the great opportunities that arose for Indigo Technologies from their US presence was some further unanticipated technological discoveries made during the testing of the Jack Watson power plant. These discoveries came about as a direct result of the firm's deliberate classification of all of their installations as demonstration sites. That is, Indigo has a conscious and strong desire to achieve total customer satisfaction, and therefore provides a continual service presence to their customers by having staff working regularly at the site. CEO Bob Gibson says: *'so we have been very strong at supporting customers, ask us to jump, we jump on a plane and get over there. That's why you've seen this [Brisbane] office fairly vacant at times'*.

Indigo Technologies is heavily driven by its formal business planning function. In particular, it has created the US office as a licensed subsidiary and uses this agreement to create some discipline around the relationship between the Australian and US operations. The business model is also required to be a very clear document for a range of taxation, legal, and intellectual property issues that the business encounters. Further demands are placed on the business in terms of pricing policy and practices which are heavily regulated by the US tax officer (Internal Revenue Service). Indigo Technologies has also had difficulty with delays in US customs as well as issues with state and withholding taxes. The strength in Indigo's formal business plan is that it helps them to plan for such issues.

On reflection, Mr Gibson sees the move into US markets as being about attaining technical credibility. In his words: *'we weren't going to sell anything if we didn't develop our technical credentials'*. Yet while Indigo possesses strong technical and networking skills, its expertise in the area of sales and marketing has been more limited. The intention therefore is to find a new sales and marketing president in the USA, who has the capability to drive Indigo's product from a marketing point of view.

The major impediment Indigo Technologies' international focus has come from potential shareholder groups. Bob Gibson says that this has sometimes made operations difficult:

In seeking additional capital and looking at the Australian market we were told, and we've found it so, that investors here don't value international operations the way Europeans and Asians do. Overseas people tend to see that as a real strength; Australians don't seem to be able to take that on board to the same extent for some reason.

Mr Gibson attributes the different mindset of Australian investors to Australia's geographic distance from foreign markets. Because of this distance, investors believe that investments must be significant in order to be successful. The result is that companies struggle to raise the capital to market their products on the international stage. Since the costs of R&D are so large, by the time that the process is finished, Australian small-to-medium sized enterprises rarely have funds left to market their product properly. In Indigo's case, a significant obstacle to competing in international markets is that the firm does not yet have a steady stream of recurring foreign income. According to Bob Gibson, financial management is a key challenge in extending overseas activities:

It takes money to expand globally. It is money that is the limiting source often and it's been a balancing act to fund our R&D and maintain the optimum expenditure in marketing activities. In addition, it is a further challenge to balance the funds we can expend on marketing in a target market against expanding into new geographic markets. When you're short of funds, it is really difficult and requires having very clear strategies. But if you do not have fuel in the engine to drive the car then, what it means is you need to find the best 'trade offs' on a regular basis! What is the right thing to be doing to minimise the risk of a financial crisis is the challenge.

While Australian investors are reluctant to finance incremental international expansion, Bob Gibson declares that Indigo would have gone broke had it not pursued foreign markets.

While Indigo Technologies maintains a heavy emphasis on the US market, it has also now started to develop a strong focus on China. CEO Bob Gibson endeavours to visit the USA three times a year, but sometimes this may only happen annually. In contrast, Indigo's strategic focus on the Chinese market and on China's manufacturing capability has impelled Mr Gibson to travel there three times a year to work on developing that market for Indigo's pollution-control technology. These competing demands for Mr Gibson's time are heightened by the Indigo's need to raise capital, something which fully occupies Mr Gibson when he is in Australia. Further, Indigo is continually looking at ways that it can transfer its culture across the workers in each of its geographic regions. For instance, the firm's Chinese workers are brought out to Australia for a three-month period for training.

Indigo Technologies has drawn particular lessons from each of its foreign markets. A striking example is the difference in doing business in countries such as the USA and China. Whereas the USA has a mature pollution-control industry, China's is young. The legislation and knowledge required to compete in each of these markets is therefore vastly different. The same applies for Indigo's other major target market in Europe. Thus, Indigo is required continually to keep up to date and adapt to whatever is happening in its various foreign marketplaces, especially with respect to legislation on emission controls. Bob Gibson refers to the case of Poland, which had to meet certain deadlines regarding pollution control in order to meet European Union requirements. However, upon joining the EU, the Polish Government was able to negotiate and extend this deadline.

With respect to contributing to the Australian economy from their overseas presence, Bob Gibson points to the Danish model. Denmark generates a high level of new companies, many of whom go global. These businesses eventually become bigger and are often acquired by foreign investors. When this happens, there are funds and other non-monetary benefits which flow back into the Danish economy. In terms of his own business and its contribution to the Australian economy, Mr Gibson cites three main advantages. First, Indigo Technologies employs people in Australia. Secondly, through its use of Australian suppliers, Indigo contributes to the development of a local industry cluster in air-pollution control. Thirdly, Indigo is able to generate new knowledge and enterprise from its international venturing. Other businesses have been seeded from associations with Indigo, which in turn yield further benefits for Australia.

Bob Gibson believes that Indigo Technologies has been built on the contributions of its people. The people recruited early in the life of the business have been dedicated and highly successful in developing technical and business knowledge and forming an effective team. This has allowed Indigo to produce a core product that has appeal in the marketplace. Today, the firm employs fifteen people worldwide, all of whom still have much to offer the firm as it seeks to move forward.

Finally, Mr Gibson offers the following advice to Australian businesses seeking to move into the international arena:

Number one, make sure your home base is ready to allow you to commit to going overseas. In my previous firm, if we hadn't gone overseas the firm would not have survived. It was a big issue at board level. Have your house in order, develop all the relationships and networks you can to help you go overseas, be it the Business Council, be it Austrade, be it State Government offices, whatever. Know your market, spend some money on research and the development of the marketing plan. Go visit the market a number of times before you enter into it and then formulate a detailed market-entry strategy. You shouldn't be going without some basic strategy and use a local consultant. We do have a nine step program of going into a new market and one of the early things is to identify a lead consultant in the industry who we can lean on for information.

INFOMEDIA PTY LTD

HEAD OFFICE

Frenchs Forest, New South Wales

INTERVIEWEE

Gary Martin, CEO

COMPANY AND INDUSTRY OVERVIEW

Established in 1990, Infomedia is the world's second largest supplier of Electronic Parts Catalogues (EPCs) for the car industry. With an impressive list of clients including Ford Europe, Ford USA, Toyota and General Motors, the company has established a strong global presence, with over 53,000 users in more than 160 countries. Infomedia is headquartered in Sydney and has support centres in Melbourne, Europe, Japan, Latin America and North America. Infomedia's flagship product, the Microcat[®] electronic parts catalogue, is also available in 28 languages. Revenues in 2006 were \$56.5 million, and the company is listed on the Australian Securities Exchange with an end-of-June 2007 share price of 65 cents per share.

ELEMENTS OF COMPETITIVE ADVANTAGE

Infomedia has secured a leading position in the Electronic Parts Catalogue industry by transforming a traditional product through effective use of information technology and close attention to customer needs. The company initially developed and marketed its EPC innovation through an affiliation with Ford, before leveraging this relationship to build networks with other major transnational car companies. Infomedia differentiates itself from larger competitors by offering superior software packages on more flexible terms and in multiple languages. Indeed, with offices around the world, the company is effectively servicing customers 24 hours a day, facilitated by a multilingual help desk based in Sydney, which supports the company's European customers.

EVOLUTION OF THE COMPANY

Infomedia was founded in January 1990 by Richard Graham (now Chairman), who emigrated from the USA with experience in technology and computer hardware sales. Mr Graham initially distributed other parties' software under the name of Infomagic; yet he subsequently decided to transform his business into a software development company. This decision was made in order to build a sustainable business model. For if Infomedia kept successfully distributing other companies' software, then the latter would eventually perceive the Australian marketplace as lucrative and then enter it on their own behalf.

The seed of Infomedia was Mr Graham's purchase of the intellectual property for Apple software that enabled the conversion of automotive microfiche and books into user-friendly, digitised catalogues for electronic parts. The inventor of this software, Wayne Sinclair, joined Infomedia as its lead Program Engineer.

To turn this vision into reality, Infomedia had to develop linkages with clients in the car industry. The firm first met with the Australian arm of Ford Motor Company. It was a

successful introduction and in December 1990 Infomedia developed a product for Ford called Microcat® (which remains one of Infomedia's top products). This first generation product was an Electronic Parts Catalogue that ran on an Apple Macintosh platform. While others in the market were selling hardware and software packages on five-year contracts, Infomedia offered monthly subscriptions to use rather than own its software, and with no obligation to continue purchasing. (Previously, clients would subscribe to the electronic parts catalogue and receive updates via CD ROM. Today, the service is still sold on a subscription basis, but updates can be provided online.) Subsequent Australian clients were acquired through Nissan and Daihatsu. Infomedia had established itself as an EPC producer.

It soon became clear that Australia's relatively small car market was insufficient to sustain Infomedia's growth aspirations. Infomedia's first export opportunity arose in 1996, when Ford invited the company to attend a meeting with Ford Europe, who invited organisations to tender for an Electronic Parts Catalogue in 17 languages. The challenge for Infomedia was to produce this catalogue quickly and to beat large competitors Hewlett Packard and IBM. Mr Graham decided to show Ford Europe what Infomedia could do, so he flew part of his team to Europe, where working from different countries they pulled the product together and made their first export sale in September 1997.

Infomedia's first international success was critical in several respects. First, it marked the beginning of the company's profitability. Secondly, it vindicated the generous and crucial assistance that Infomedia had been receiving from Austrade. Thirdly, it initiated the company's partnering with distributors (Clifford Thames in Europe and the USA, DHL in Europe), which was necessary because Infomedia did not have enough Australian staff to complete the European project. Fourthly, the company's relationship with Ford propelled it in succeeding years into Japan, Canada, the USA, and then all of Ford's emerging markets.

Infomedia's rapid international expansion meant that it went from having a distribution of 19 markets, mainly in Europe, to over 100 worldwide. Additionally, the listing of Infomedia on the Australian Securities Exchange in 2000 allowed it to buy out a major domestic competitor, Datateck. This gave Infomedia a presence in Melbourne, as well as access to opportunities in other complex parts and service-dependent industries, which Datateck formerly undertook.

In 2002, Infomedia completed its first foreign acquisition when it bought the PartsImager EPC from US services technology company, EDS. The PartsImager purchase meant that Infomedia now had an extremely effective relationship with the rest of the EDS group. EDS had its own force of sales people and ground staff, so there was no longer any need for the distribution arrangement with Clifford Thames to continue in the USA. In addition, the acquisition gave Infomedia a license to serve General Motors, which it combined with its previously obtained license to serve Toyota.

By 2004, Infomedia's growth and development was prompting it to shift away from its original business model of third-party distribution, towards direct dealings with original equipment manufacturers (OEMs). Infomedia was increasingly finding that car manufacturers wanted to talk to them directly and that its external distributors were not representing Infomedia's product as well as they could. (Indeed, the company initiated legal action against one distributor who actually helped to create a competitor for Infomedia in Europe.)

In July 2004, Infomedia established a new entity in Europe to manage directly its in-country relationships with the OEMs. In September 2005, the company also established an entity in North America to do the same. Customer support is provided in each country through client managers, but each country is also serviced from Australia. The company runs two shiftwork periods from a call centre in Australia, so that they are able to operate during local time zones throughout the world. The European market is overseen by a local office, which has administrative staff to support the client managers in the field.

An important facet of Infomedia's European market is the company's relationship with Sony, who is able to replicate the catalogue on to disc from its manufacturing headquarters in Salzburg, Austria. This has proved a significant learning experience for Infomedia, who have had to impart their own culture to Sony in order to ensure that its products are manufactured on time. With Sony's products, such as PlayStation, there are no strict requirements for their product to reach someone's desk on a specific day. In contrast, Infomedia's product is driven by deadlines, so they have had to teach Sony how to approach their work so that the Infomedia product is available on scheduled dates. In CEO Gary Martin's words: 'Distributor education is always a big one'.

Mr Martin attributes the key determinants of Infomedia's international success as its superior technology, its agile production and its Australian foundation.

While competitors always relied on IBM-compatible PCs, Infomedia originally made use of Apple Macintoshes. These allowed for better catalogue design and search capacity, as well as language switching without rebooting. Infomedia was then able to move its superior software over to the PC system, thus enjoying a strategic advantage over the PC products that existed at the time. In these early days, Infomedia was up against bigger companies, whose standard turnaround time from the supply of data to the disc being published and on the dealership's desk was 45 days. Infomedia worked out how to undertake this same process in 16 days. Mr Martin affirms that no competitor has yet matched this turnaround time.

Furthermore, Infomedia has taken advantage of its Australian origin. On the one hand, Infomedia can draw on Australian businesses' reputation of being somewhat rough but highly effective. On the other hand, being based in Australia's timezone and in cosmopolitan Sydney enables Infomedia to employ a multilingual workforce that operates globally tomorrow, today.

This ability to work across such a large geographic area has also opened up opportunities with other organisations for Infomedia. In particular, the company has contracts with Daihatsu, Hyundai and Kia Motors. The contracts operate on a worldwide basis, with the exception that these companies produce their own catalogue internally for their own host domestic operations in either Japan or Korea. This level of global operation means that Chairman Richard Graham and CEO Gary Martin spend up to six months of each year outside of Australia working on maintaining close relationships with each of the automobile makers. Mr Martin believes that the primary reason Infomedia embarked on an international strategy was that the company's customers have dragged it into the global market.

At present, Infomedia consists of 215 people, including approximately 110 people in Sydney and 41 in Melbourne. There are a further 11 people in Europe and 22 based in Detroit. There is one distributor in Japan and another one in Latin America. There is also a representative in Mexico and a help desk in Bolivia. All of the product development in terms of the catalogues is undertaken in Australia. The master disc that is produced is replicated and distributed in several ways each month. The product is available on either CD or DVD and delivered to the client via FedEx or DHL, depending on location.

In terms of recovering the profits from the European and US operations, Infomedia employs different strategies. In Europe, an intermediary is used to collect all of Infomedia's funds. This is because transactions are carried out in euros and a further six currencies. This money is then transferred to Infomedia's UK office and repatriated to Australia. In the USA, Infomedia collects all of its monies itself.

MICRONIX PTY LTD

HEAD OFFICE

Parkside, South Australia

INTERVIEWEE

David MacInnes, Managing Director and CEO

COMPANY AND INDUSTRY OVERVIEW

Micronix is a medical device company that was formed to commercialise biomedical technology which facilitates accurate, inexpensive and real-time placement of a variety of catheters for a range of clinical applications.¹¹⁴ Micronix's technology addresses the clinical problems that accompany the 'blind' placement of catheters through the mouth, nose or skin. The practice of blind placement reduces the efficiency of patient management, is time-consuming, costly, unpleasant for patients, and in some cases can lead to death or serious injury. X-ray confirmation of placements is currently the 'gold standard', but this practice is expensive, time-consuming and can disrupt patient comfort and the recovery process. Micronix's technology can offer a solution for catheter placements made anywhere in the body, where the placement site has a recognised relationship to specific anatomical landmarks.¹¹⁵

Micronix's patented technology has already been shown to be commercially viable through the successful US launch of the company's first product in early 2005. The commercial viability has been confirmed through sales of the product into the UK, and with sales activity initiated in Israel and the Netherlands. The second application of Micronix's technology has undergone successful clinical trials in Australia.¹¹⁶

ELEMENTS OF COMPETITIVE ADVANTAGE

Micronix's Cathlocator™ draws on technology that has been used for missile tracking and locating of underwater shipwrecks. An electromagnetic field (EMF) transmitted from the catheter tip is measured by a receiver unit placed on the patient in relation to a set of surface anatomical landmarks. The EMF signal is rendered as a graphic display that can be printed out for storage with the patient's record. Instead of radiographic landmarks, the Cathlocator™ uses surface anatomical landmarks as the reference for an operator to determine whether correct placement has occurred.¹¹⁷

A key point of difference with the Micronix technology is that the 'transmitter' is placed in the catheter tip and the 'receiver' is outside of the body. Competing technologies in this market have taken the opposite approach, with the 'transmitter' outside of the body and the 'receiver' in the catheter tip. The major advantage of the Micronix approach is that the potential for interference with surrounding devices is almost immeasurably low. There is also very low susceptibility to magnetic fields produced by other devices.¹¹⁸

EVOLUTION OF THE COMPANY

Micronix is a medical device company based in Adelaide that was founded in the early 1990s. The founders initially developed a medical device that allowed for the placement of feeding tubes into the small bowel. They then turned their attention to cardiac catheters.

A significant clinical problem with catheters is that many drift into the wrong place after surgery. According to Managing Director and CEO David MacInnes, as many as 30 per cent. of catheters can become displaced. X-rays can be used *ex post facto* to confirm the catheter's position, but this results in patients being exposed to higher levels of radiation, greater costs and time required for treatment. Additionally, seriously ill patients may not be able to be moved to take confirmatory X-rays.¹¹⁹

Conversely, Micronix's technology makes use of inductive sensing. The Receiver Unit is placed in a set position (relative to the patient's surface anatomy), and it measures the electromagnetic field (EMF) or signal transmitted by the Guiding Insert within the tip of the catheter. This EMF signal is then translated into a graphic display on the screen of the Main Unit of the catheter's position relative to the RU, appearing as a real-time graphic recording of the catheter's movement path, that can also be printed out for storage with the patient's medical record. Instead of using the radiographic landmarks that are used when reading X-rays, Micronix's technology uses surface anatomical landmarks as references for the operator placing the catheter. The result is a display of multiple views of the catheter's trajectory at the bedside, which overcomes the problems associated with blind placement. This enables medical professionals to make real-time adjustments during the procedure and to achieve safe, first time, reliable placement of catheters.¹²⁰

The only comparable technology in terms of accurate, real-time monitoring capability is fluoroscopy, which is costly and involves potentially hazardous radiation exposure to both patients and medical staff.¹²¹

The portable, battery-powered Cathlocator™ system is suitable for emergency use by mobile medical teams, and can be used in a wide range of other medical applications, including:

- Naso-gastric feeding tubes for delivery of feeding products to a patient's stomach when food cannot be taken by mouth.
- Gastric decompression tubes used to remove fluid or air (certain procedures require inflation of the stomach with air and subsequent decompression).
- Thoracic cavity drainage tubes used for removal of fluids from the thoracic cavity, which is achieved by placing draining tubes beneath the lungs.
- Endotracheal tubes the Technology will enable correct placement of endotracheal tubes, to improve patient safety and the rapid deployment of breathing apparatus.
- Peritoneal dialysis catheters used for patients undergoing treatment for kidney disease, where placement of a peritoneal dialysis catheter is required to deliver of clean dialysis fluid and to remove waste fluids.
- Schwann-Ganz catheters used by patients undergoing open-heart surgery and placement of a Schwann-Ganz catheter to the heart.¹²²

The founders of Micronix were motivated by very different interests. One was a radiographer who was alive to the importance of developing catheter technology. The other founder had a personal hobby of finding shipwrecks. David MacInnes explains that these areas of interest are far closer than might be expected. Indeed, the principles of finding iron that is 200 metres beneath the sea, and finding a catheter in someone's chest, are remarkably similar.

Hence, the founders of Micronix figured that there was great potential in using shipwreck technology to improve radically the placement of catheters.

Mr MacInnes observes that finance is a major obstacle for technological innovators, as typically costs and risks are high, while cash flow is negligible. The founders of Micronix began by collecting funds from friends, family and other individual investors, before securing the support of a sophisticated investor: US company Viasys Healthcare. Micronix negotiated an exclusive 20-year license with Viasys for distribution of Cathlocator™ Technology for applications for the alimentary system. Micronix also supplies hardware equipment through third-party original equipment manufacturers (OEMs) to Viasys. Furthermore, Viasys manufactures the disposables transmitters that are sold with catheter kits, for which Micronix receives a royalty.¹²³

David MacInnes was hired by Micronix to expand the company globally by enhancing its skill set, attracting venture capital and securing international deals. Mr MacInnes has extensive experience in starting technology firms, and judges that building global credibility is critical to their survival. Indeed, he emphasises that Micronix wouldn't exist had it not expanded internationally. Whereas Micronix needs to sell about 150 units of a new device in its first year of production, total hospital demand in Australia would only be about six units *per annum*.

Mr MacInnes adds that foreign markets are attractive, but intensely competitive:

Now the attractive market isn't necessarily an easy market; that's a mistake I've found a lot of people make. Europe's attractive, the United States is attractive, but everybody finds it attractive, so the competition there is fierce and you need every bit of help you can get to be successful in these markets. Very often it's totally underestimated because it's attractive . . .

It's extremely difficult getting established in Europe and the United States, there's no doubt about it. My experience is it is very, very difficult, and I've seen companies where they make their first foray there, but it doesn't deliver anything for them, and they'll say: 'Oh, it's a useless market'. But it's because they totally underestimated how difficult that market is, and what's required to deal with people who have that level of international experience.

Moreover, companies in the biotechnology field have to deal with the US Food and Drug Administration (FDA), which requires '*a huge amount of effort*' to set up '*the whole infrastructure necessary to get the appropriate FDA approvals and the like that give you credibility in an international stage*'.

David MacInnes also remarks that start-up firms have to adopt an emerging strategy and be flexible in responding to unforeseen problems that inevitably emerge.

In assessing Micronix's contribution to the Australian economy, Mr MacInnes identifies first the company's expenditure, which goes mostly to '*people and outsourced services, manufacturing, quality assurance, everything else.*' Micronix's spend rate is about \$150,000 per month, and 95 per cent. of this expenditure '*goes straight into the local [Adelaide] economy.*' Additionally, Micronix employs seven engineers-cum-scientists, and the monies that it receives as royalties from overseas partners are repatriated to Australia.

Mr MacInnes further reports that:

The tangibles all come about by the staff and the outsourcing of work locally. The intangibles don't necessarily get a wide exposure, but I think it's just the staff getting involved with new skills and maybe thinking about things in slightly different way . . . and when they get involved with other start-ups (they're gluttons for punishment), they'll have a better skill base.

According to Mr MacInnes, Micronix would only have a negative effect on the Australian economy if it relocated overseas.

David MacInnes traces the longevity of Micronix to *'the tenacity of the founders'*. He also highlights *'listening as the most vital attribute necessary for dealing with different cultures'*. Mr MacInnes further insists that senior managers ought to acquire a detailed knowledge of their company's operations and to be prepared to learn continually:

I worked with the Japanese more than two years on a daily basis, both in Japan and in the UK, and the thing that really surprised me was no matter how senior you went in the Japanese company, they knew at a detailed level what was going on, the details of the technology etc., etc. And there's this concept held by British managers that when you're a manager you don't get involved in the detail. That to my mind is very, very weak management and I [on the contrary] . . . am prepared to and willing to tunnel in to the absolute detail; and if you're doing that you're always learning. I have no time for managers who delegate everything and don't want to understand the detail, I really don't. You will never find a Japanese manager who will behave in that way.

Mr MacInnes stresses the importance of establishing business credibility at home before expanding internationally: *'[T]he big thing is credibility . . . You know you get more success overseas if you can point to success in your own backyard'*. He also advises businesses to employ renowned accountancy firms.

David MacInnes reiterates the challenge of going global when he states: *'Go for it, but don't underestimate the amount of work involved.'* At the same time, he makes the optimistic observation that:

[T]he whole motivational side of [going global from] a country like Australia could be a fascinating area of study, because Australia's remote. There's no doubt about it, it's a small market and it's very remote; and yet you've got all these ideas coming through that can and will be a success for the global market.

MYOB LTD

HEAD OFFICE

Burwood, Victoria

INTERVIEWEE

Tim Reed, Managing Director Australia

COMPANY AND INDUSTRY OVERVIEW

Co-founded by Craig Winkler and Brad Shofer in 1991, MYOB (Mind Your Own Business) develops and supplies small-to-medium sized enterprises (SMEs) with customised business management systems. In 1996, MYOB acquired all intellectual property related to the MYOB name around the world, expanding its operations to include North America and Europe. In 1997, the company extended its business to include specific solutions for accounting practices. MYOB listed successfully on the Australian Stock Exchange in 1999 and merged with accountants' system provider Solution 6 in 2004. Despite significant foreign competition, MYOB has secured first-mover advantages in many of the markets in which it competes, and currently operates in several countries, including: Australia, New Zealand, the UK, the USA, the Republic of Ireland, China, Malaysia and Singapore.¹²⁴

ELEMENTS OF COMPETITIVE ADVANTAGE

MYOB develops and delivers business management software, services and support for more than 500,000 businesses and over 10,000 accounting practices worldwide.¹²⁵ It has secured a commanding position in the Australian market through a sound product, strong relationships with accountants and word-of-mouth marketing.¹²⁶

EVOLUTION OF THE COMPANY

The genesis of MYOB was a partnership formed in 1987 between Craig Winkler and Brad Shofer. Mr Winkler observed that small businesses were only using their personal computers as typewriters. Together with Mr Shofer, Craig Winkler started to specify some software that might help small businesses make better use of computer technology, while investigating what was already available worldwide.¹²⁷

Craig Winkler and Brad Shofer found a software program called MYOB, which had just been released in the USA. Its developer, Chris Lee, was uninterested in the Australian market, and by 1991 Messrs Winkler and Shofer had persuaded him to let them build a local version of the MYOB software.¹²⁸ MYOB Australia grew rapidly in the 1990s, and since the US parent company was competing in a more aggressive marketplace, over half of MYOB's global sales came to be realized by the Australian distributor.

By 1996, MYOB Australia was able to purchase the intellectual property rights to MYOB, as well as the worldwide rights and the US operation. Tim Reed, Managing Director of MYOB Australia, affirms that this development demonstrates that the company started out with a global mindset: *'Right from day one, we were looking at products that were being used in multiple regions around the world.'*

Today, the company's clients encompass a range of organisations, from small businesses with one employee, through to large businesses of 200 employees. Most of these businesses don't go overseas themselves, but they do require an effective business management system which will help them to keep a clear, up-to-date picture of their company's performance.

MYOB's global strategy was not confined to the USA and Australia. Through arrangements with distributors, the company entered New Zealand and South-East Asia. One of these distributors was based in Kuala Lumpur, and this organisation also covered Singapore. Another distributor was based in Hong Kong. Eventually, MYOB acquired all these distributors, in order to control its further international expansion and to maintain the quality of its product.

In addition to a direct organisational presence in Australia, New Zealand, Singapore, Hong Kong and Malaysia, MYOB proceeded to conclude distribution arrangements in the Philippines, Indonesia and the UK. Subsequently, MYOB acquired another company which had a presence in these countries, as well as the Republic of Ireland. Furthermore, MYOB has expanded its business into Mainland China. The international expansion of MYOB has therefore consisted of distribution arrangements followed by foreign acquisitions.

MYOB's core business is to simplify the compliance requirements that governments place on the business community. Accordingly, MYOB has preferred to operate directly in foreign countries because it allows them to develop a nuanced understanding of the particular legislative requirements of each jurisdiction. This may be something as simple as requirements for the appearance of a pay slip, or the way in which superannuation has to be paid. Other legislative requirements are more complicated. As Tim Reed explains:

Well there are regulations that really challenge us . . . you know there are regulations around privacy issues, around if we want to sell services that start to look like financial services the list of regulations that you've got to run through are massive, so we're actually a licensed financial institution to try and deal with some of those things. But those sort of regulations are huge and they differ from every single country. So if you decide to do it in Australia then you've got to apply for another banking licence in New Zealand or the UK and so on and that becomes quite challenging and lifts the overall costs of our business. So those regulations impact our ability to do what we would like to be doing for our clients. There are other regulations that are placed on our clients that we can help alleviate and obviously that adds to our value proposition although honestly we'd rather that not be the case, we'd rather the requirements go away, so that we could actually spend time helping our clients grow their business rather than just helping them spend time managing and administer their business.

Moreover, the challenge of attaining an adequate knowledge of the compliance demands of foreign governments is higher for emerging and non-English-speaking economies. Mr Reed discusses the company's venture into the Chinese market:

Well you don't know what the problems will be, but you know that they'll happen. In China we were working to get our product released for about six months and everything was on track. We had three different certificates from different government departments, but worked out a week before we were to release that we needed a fourth [certificate for another government department]. We had paid a lot of money to professional advisors who had counselled us on how to go into China. We hired a local Chinese team; we actually went in as a joint venture where we owned 95 per cent. and the partner owns 5 per cent., and they had an existing software business in 17 provinces. We did everything that you could imagine and ended up delaying our release by about three months because of this fourth government department.

Like other born global firms, MYOB's international expansion is guided by a conscious strategy. According to Mr Reed, the company first considers the compliance regime of a particular country and whether MYOB can make a difference. Secondly, it examines the competitive landscape to determine whether there are established players with domestic

brand presence. This is an especially important factor for MYOB because its clients are not global customers.

Tim Reed also states that first-mover advantage is critical to competitive success in the business management system industry:

Well our industry is one where once somebody has taken a leadership position there isn't a case where they've then lost it . . . [A] lot of what we do involves educating a whole industry of people around using our products, and if you're a small business owner in Australia today unless there was a specific reason that a competitor's product had something very compelling that ours didn't (and I don't believe they exist anymore because the products are that mature) you'd be crazy not to go with us because two thirds of the book-keeping industry in Australia are trained using MYOB product and most of them don't know another one . . . So even if you could find a reason and you said: 'Well I like the competitor's product more or it's 20% cheaper' or whatever, you'd still be crazy to make that decision because the cost of buying our product is a tiny proportion of the cost of you keeping your accounts for the next 10 years.

The importance of being the first-mover underpinned MYOB's decision to enter the Chinese market. But while the company has been approached by potential distributors in South Africa, it has yet to be convinced that the enterprise would be worth the expense of educating the local distributor. As Mr Reed declares:

We believe a lot of our brand is tied to the way in which we interact with our clients, and the fact that we're very close to our clients, and there's a big consistency around that and the way in which we do things globally. So we're not prepared to have another firm go and use our brand perhaps with a different set of company values or perhaps with a different approach to their clients.

In order to facilitate the growth of their corporate culture worldwide, MYOB has now established a system of international transfers for its employees from all of their different offices. For example, the office in Kuala Lumpur employs staff who have previously worked in the Australian and New Zealand offices. Similarly, the Australian office has staff who have previously worked in Malaysia. The firm also trains local people in each of its host countries, and these people are able to gain the skills and values required by MYOB. They then have the potential to move between MYOB offices. Tim Reed notes that these international transfers benefit the Australian economy because *'we are developing skills in Australians such that they are capable of running global organisations.'*

Finally, Mr Reed affirms that while MYOB has won many awards for product innovation and the quality of its business, accolades from clients are of greatest significance:

I think we are a company who tries to keep our feet fairly firmly on the ground, so we don't allow the short-term ego boost that can happen from some things to blind us to the challenges of tomorrow, or to the fact that we do know that every single day we've got to earn the client's respect.

NOJA POWER SWITCHGEAR PTY LTD

HEAD OFFICE

Murrarrie, Queensland

INTERVIEWEE

Neil O'Sullivan, Founder and CEO

COMPANY AND INDUSTRY OVERVIEW

NOJA Power Switchgear specialises in the research and development, manufacture, marketing, sales and service of low and medium-voltage switchgear products. A knowledge-intensive business, NOJA has been able to create switchgear that is able to rectify breaks in electricity supply, isolate the source of any power failure, and notify relevant technicians of this break in transmission. A privately owned firm, NOJA is represented in over 80 countries worldwide, servicing its customer base from its Brisbane headquarters. Today, the company has over 3 per cent. of world market share, and has achieved this result in a little over five years of operation.

ELEMENTS OF COMPETITIVE ADVANTAGE

NOJA is one of only five companies that produces switchgear equipment which maintains the reliability and continual flow of electricity. Its product ensures that occurrences such as lightning strikes do not incapacitate supply systems. NOJA has a market wherever there are overhead powerlines in use. A significant element of NOJA's success is founder Neil O'Sullivan, who possesses approximately 20 years of expertise in the electricity industry, which has provided him with unique insights into both the technology and marketing of switchgear products. Additionally, NOJA's staff have over 100 years of combined experience in researching and developing, manufacturing, selling and servicing medium-voltage pole mounted switchgear and the related microprocessor based controllers and technologies.¹²⁹

EVOLUTION OF THE COMPANY

NOJA perceives the world as its natural market. Indeed, its first contract was international in scope and the first revenue it earned was from overseas markets. By using an exclusive distributor model, NOJA is able to reach many countries, and currently has exclusive distributor arrangements in more than 80 countries, although it has products and services in 40 of these, once again through the use of exclusive distributors.

NOJA has established a business model that allows it to undertake business in three different ways. Under the first model, NOJA tenders directly to its major customers, which are electrical utilities. These utilities contract with NOJA for the supply of its product. In the second model, NOJA sells its products to its distributors, who then resell to the end user. In the third model, NOJA identifies a country in which it does not want to enter into a distribution arrangement, and so they reserve the right to do business in that country by themselves.

In order to follow these strategies, NOJA's CEO Neil O'Sullivan splits the world into nine regions. These consist of the NAFTA region, Latin America, South America, Europe, the UK and the Republic of Ireland, Australasia, China, South East Asia and Eastern Europe. NOJA

considers each of these regions separately from a business planning perspective. Distributors, often multiple, are then appointed to each region to make sure the market is fully serviced. In the future, Mr O'Sullivan believes that the business will evolve so that it establishes its own entity in some of its larger markets.

All of NOJA's products are manufactured in Australia. NOJA has performed a cost-benefit analysis of manufacturing its product in China, but concluded that low labour costs are insufficient to make China an attractive option. First, the focus for the company is on building leading-edge technology and owning the intellectual property (IP) for making high voltage switchgear. Given the IP problems that regularly arise in China, the company does not want to risk compromising its property rights. Secondly, the labour content in the product is quite low, as it is the knowledge that goes into each product that is important. Conversely, the competitive advantage that Mr O'Sullivan believes firms gain from manufacturing in China arises through the low cost of labour, rather than the skills and knowledge that Chinese workers can apply. Finally, NOJA also requires an extremely high level of reliability in its product, and hence any overseas manufacturing would need to be supported by the relocation of an Australian expatriate, a solution which would also cost a significant amount of money. On balance, therefore, NOJA judges that it would be too costly to relocate its manufacturing to an emerging economy such as China, and Neil O'Sullivan therefore remains a proud supporter of Australian manufacturing.

NOJA has adapted its ownership structure during its operational lifespan. Initially, the company was set up as a joint venture between themselves and a German company. The aim was to develop a range of medium-voltage switchgear, which was to benefit from international collaboration during the period of the research. This operation was 30 per cent. Australian owned, and for the first year the focus was on designing the product and developing channels to market. During this time, the revenue base for the organisation was low, but the ground work meant that NOJA had designed the product, started to develop channels to market, and had marketed some product literature. This early success in terms of establishing the business allowed NOJA to renegotiate with the German company so that the firm became wholly Australian owned. Today both firms still have parts agreements with each other, and their original relationship has been a key factor in the success of both organisations.

Neil O'Sullivan believes that the greatest barrier for Australian companies trying to establish themselves in foreign markets is their geographic remoteness. Thus, NOJA has established a foreign distribution channel to provide a local presence abroad. At the same time, modern telecommunications allow NOJA to provide better support than many clients would expect from a local provider. In general, Mr O'Sullivan believes that *Australia is 'a tremendous country to start this type of business in . . . it's really a wonderful country to start such a technology company.'*

Mr O'Sullivan affirms that NOJA has benefited greatly from the Federal Government's export development grants and research and development (R&D) tax concessions. The company's original German partner received no such assistance from the German government, as it sought to make its way in the international business environment. Today, NOJA has received many awards, has a turnover of \$15 million, and has created 40 Australian jobs. However, in comparison to NOJA the German company has achieved relatively little, and Mr O'Sullivan attributes the variation largely to the different levels of government assistance that each company has received.

In building his business, Mr O'Sullivan has learned that a key component is being able to develop a good relationship with distributors in each country. In order to communicate effectively, NOJA has sought to develop significant multilingual skills within the organisation. The business attempts to hire people with the ability to speak a second language, and Mr O'Sullivan maintains that this is a considerable advantage in trying to penetrate foreign markets. He describes the organisation's distributors as *'your eyes and your ears in that*

country, so being able to communicate with them is paramount to business success. Accordingly, NOJA Power documentation is rendered into English, Spanish, and Chinese, languages which cover 90 per cent. of the market. This assists with the task of having distributors to communicate any feedback they may have to NOJA. Nonetheless, Mr O'Sullivan does not believe that you need fully to understand other cultures to be successful in building business relationships. What really matters is respect for cultural differences:

I've done business in over 120 countries in the world, and personally been there and negotiated contracts. I think you have to respect all cultures, but you don't have to understand them and you don't have to master them; and in fact you're less successful if you pretend to. An Australian turning up in China trying to be culturally Chinese is never going to happen. But [if you] respect the other culture and be very clear that you're there to do business [then] you'll do business.

The electricity industry is highly regulated worldwide, and this means that it can present a variety of obstacles for firms such as NOJA. Typically, an American standard labelled NCC3760 applies to many products worldwide, and so NOJA manufactures their goods to ensure that it meets this standard. The company therefore designs and tests its product to that standard, and liaises with a laboratory in the Netherlands called Kema to ensure that NOJA equipment can be certified. At the time of interview, NOJA spent almost a quarter of a million dollars to ensure that Kema tested their equipment to the desired safety standards.

The certificate provided by Kema for the successful testing of these products and equipment has been very useful for NOJA. The certificates are often presented to locals in new markets as NOJA seeks to gain approval for operating in these countries. Neil O'Sullivan emphasises that unless a firm is prepared to undergo such processes, then it shouldn't attempt international business. Mr O'Sullivan estimates that a significant proportion of NOJA's work involves sorting through the bureaucracy of regulation, but he adds that that if his firm wants to do business, then there is no point in complaining; they just need to get on and do it.

NOJA is working to a five-year plan, which was developed with the helps of its bankers at the end of 2005. It rests on a financial model that has proven quite accurate in predicting the company's performance. The plan has also enabled NOJA to identify new target countries, as well as research and development opportunities which will allow the company to launch products in those countries. The goal of the five-year plan is to grow the company to a value of \$50 million at the end of the period.

Neil O'Sullivan declares that it is natural for NOJA to seek international markets:

We're five years old, we're in our sixth year now, and have our products and services in 40 countries, [and] most people find that mind-boggling. For me, I think that's normal. I mean if you want to sell your products you can sell your products to whoever you decide to sell your products to. Some people get in their Commodore and drive down the road with their brochure to sell their product, [but] to me there's no difference getting on a 747 to do the same thing.

Particularly important to NOJA's competitiveness is the way in which the company absorbs knowledge. Mr O'Sullivan states that every time one of the company's employees goes overseas, he or she learns something and is able to bring that back into the business. This learning can flow through to the rest of the firm's workers, as well as through to its suppliers. Technological knowledge is also central to developing a sustainable advantage for the organisation. The company is often required to research technical solutions, and in many cases it has to do this in conjunction with local engineers from the countries in which it operates. NOJA recognises that it needs qualified and trained people in order to continue to be at the cutting edge of its industry, and so it sponsors its employees through relevant university degrees.

In terms of developing foreign markets, Neil O'Sullivan has found Austrade to be extremely helpful. He offers the example of Sri Lanka, where the company is currently trying to break into the market. NOJA made a technically complying offer with the lowest bid for a contract that was being awarded in that country, but was since made aware that someone was being paid to block NOJA's legitimate bid. When the problem arose, Mr O'Sullivan turned to Austrade, which prompted intercession by the Australian High Commissioner to Sri Lanka. Mr O'Sullivan adds that contrary to popular belief, the role of Austrade is not to develop businesses, but to provide very targeted and useful support in cases like the one outlined above.

The tangible benefits to Australia from NOJA's foreign operations include export revenue, local salaries and wages, sales of parts that the company source locally, and the tax revenue that is generated in Australia. A less tangible benefit is the enhancing Australian businesses' reputation overseas. Neil O'Sullivan suspects that the NOJA team has visited over 120 countries, with most of these being visited multiple times. He believes that this develops a cultural awareness between Australia and these other cultures, and that the trips promote Australia in general.

RISING SUN PICTURES

HEAD OFFICE

Adelaide, South Australia

INTERVIEWEE

Didier Elzinga, CEO

COMPANY AND INDUSTRY OVERVIEW

Rising Sun Pictures is a privately owned feature film visual effects specialist. Producing visual effects mainly for the Hollywood film industry, Rising Sun Pictures has contributed to many notable movies such as *Charlotte's Web*, *Superman Returns*, *Harry Potter and the Goblet of Fire*, *Batman Begins*, and *The Lord of the Rings: Return of the King*. Employing in excess of 100 staff across its Adelaide and Sydney offices, Rising Sun Pictures is the only Australian-based visual effects specialist for feature films. Its larger competitors are located much closer to Hollywood.

ELEMENTS OF COMPETITIVE ADVANTAGE

Building on prior experience as an exporter of sophisticated motion control and support for films and commercials (mainly to South-East Asia), the founders of Rising Sun Pictures have carved a niche in the global film industry. They have leveraged significant relationships built with visual effects supervisors on major movie projects to deliver cost-effective and acclaimed services from a long distance. Geographically remote from the politics of the US film industry, Rising Sun Pictures offers Hollywood what CEO Didier Elzinga describes as Australian pragmatism and forthrightness in business.

EVOLUTION OF THE COMPANY

Rising Sun Pictures is an Adelaide-based company that provides visual effects services to storytellers. When you think of some of your favourite movies, there is every chance that Rising Sun has played its part in bringing you the finished product. From the spider in *Charlotte's Web*, to the creature Gollum in *The Lord of the Rings*, to many of the character actions in *Babe 2*, Rising Sun Pictures has brought to life many of today's favourite motion picture characters. CEO Didier Elzinga explains the product:

The very boring version of what we produce is rendered images, so a series of images for a film. The much more romantic version is that we create figments of dreams. I mean essentially we are creating a portion of a film for a director, we are helping them, and because it's visual effects it's the stuff that is created in a computer to produce an image. And so it's usually the stuff you can't catch on camera. It's not real, so whether it's Gollum [the creature in *Lord of the Rings*] or a dragon or a thunderstorm, it tends to be the more illustrative stuff, it's not the core of the film, it's all the other stuff that they need to make it work. So at the end of the day, what we produce is a series of images of two thousand pixels by fifteen fifty six pixels. And they get put on film, and that's what you [the moviegoer] see.

Rising Sun Pictures was founded in 1995 by a cinematographer, an architect and an animator, with the aim of providing digital effects and 3D animation to the Australian film, television and multimedia industry.¹³⁰ The founders had previously worked in a company

called Digital Arts, which was a leading company in the area of motion control and support for films and commercials. However, the company was not profitable, and so Rising Sun Pictures rose from the ashes of Digital Arts. After nine months of operations, the founders employed current CEO Didier Elzinga. Now a part-owner of Rising Sun Pictures, Mr Elzinga is acknowledged to be a vital addition to the team, and indeed often serves as the public face of the company.

Rising Sun Pictures initially struggled to survive and worked on items such as CD-Roms and websites in order to meet its financial imperatives. Its first overseas expansion consisted of commercial clients in Asia, particularly in Malaysia and Hong Kong. A typical example is that Rising Sun Pictures became involved in a commercial for Sony Malaysia. Mr Elzinga explains that Sony Malaysia would employ a Malaysian advertising agency, who would use a Malaysian production company, and that this production company would use Rising Sun Pictures to complete a portion of the work. This business in South East Asia came via a person with whom Rising Sun Pictures had worked before, who had very strong business connections with people overseas. The company continued to work on such projects for a period of about five or six years.

During this time, Rising Sun Pictures started to attract work from the Australian film industry. In particular, they were given the opportunity to work on a US film called *Red Planet*, which was being shot in Australia at Coober Pedy. It made sense for the makers of this film to employ an Australian company, because taxation laws in Australia mean it is more cost effective to use Australian firms in movies that are filmed in Australia. Through its participation in this venture, Rising Sun Pictures was then introduced to a US Director by the name of Greg McMurry, who was shooting his next film in Melbourne called *Queen of the Damned*. McMurry continued his association with the company, employing it for his next film titled *The Core*, which was shot entirely in the USA. This was a major breakthrough for Rising Sun Pictures, as it was the first time that the firm had been employed solely for its expertise rather than for the taxation benefits they provided American producers as an Australian company. In this sense, it marks the time of Rising Sun Pictures being 'born global'.

Didier Elzinga looks back on the decision for Rising Sun to become involved in the Hollywood film industry with a sense of relief that everything worked out:

At times we've made brilliant strategic moves. We look back, and think we were incredibly naïve, looking like betting the whole company on going to Hollywood. You look back and think it was suicide. We managed to pull it off, but it probably wasn't the most well thought through plan. The growth of the company wouldn't be in an MBA text book on how you go and plan and find a market and get into the market, and part of that is the nature of the film business as well . . . Like I said, often what we were doing was against the prevailing wisdom, part of it was naïvety, part of it was that we figured we had a different way of doing it, and part of it was coming off a small base, so give it a go and see if it works. And then when it works you build on it. I mean, that said, I think I probably read almost every strategy book that I can get my hands on to try and better approach this stuff we are doing.

The success that Rising Sun Pictures has generated through their involvement with the global film industry has allowed them to make a strategic shift away from their work on commercials. This means that for the last five years the organisation has only undertaken work on motion pictures. Mr Elzinga describes the organisation's role as providing fee-for-service work to global clients in Hollywood. The decision to move away from the advertising industry was based on the judgment that servicing Hollywood movies provided a better fit with the firm's culture. According to Didier Elzinga:

[W]e sat down and looked at our clients, and in a strange way we decided that we were too daggy for TV. Too daggy in the sense that a lot of television is built around image, and the look and the feel of the place. So when clients use you they want to come in and sit in a very nice room, in a very nice place, and we sort of always without knowing it were more suited to

the film world where the director walks in, points to the couch and says: 'Why isn't that money on the screen?' They want to sit on milk cartons as long as it looks great on screen. And so it was a better cultural fit for us and the owners and the whole way the company was set up.

In the end, the decision to work on films played to the company's technical strength. The money involved in the projects was also far larger than the money involved in working on commercials, and this meant that one contract could provide the company with a full year's work. In other words, Rising Sun Pictures followed the money.

Additionally, Rising Sun Pictures observed that the global film industry is not nearly as competitive as the global advertising industry. Indeed, whereas there are only approximately 60 firms worldwide who compete in the global film industry, there are probably 60 firms competing just in the Australian advertising industry, with countless more competitors on the international level.

As mentioned above, CEO Didier Elzinga has described his company's entry into the international film industry as naïve. Nonetheless, he believes that this naïveté provided the company with a great opportunity. The assumption Rising Sun Pictures took when they made bids for early work was that the industry would demand extremely high standards from their suppliers. Rising Sun Pictures therefore put everything on the line when they worked on their projects, and made sure that their own standards were the highest possible. This earned compliments from major industry players, who found that Rising Sun Pictures was well ahead of their competition. The other factor that assisted Rising Sun Pictures was that their status as an Australian firm proved to be of valuable support. People in the film industry had a long tradition of liking Australian crews and film people. Australians also had a reputation for being able to make solid achievements with very little expenditure, a factor which was obviously highly appealing to film studios.

Initially, the step into the film industry was financially challenging for Rising Sun Pictures. The decision to stake a claim in the global film industry coincided with the September 11 terrorist attacks, which had induced downturn in many US industries including the film industry. Moreover, the Hollywood Screen Actors Guild instigated a strike in 2000, and this caused a delay in production of major Hollywood films for a full six-month period. The combination of these factors presented Rising Sun Pictures with a major financial struggle. At the time, the organisation was employing 20 to 30 people in Sydney and Adelaide, and management was in the position that it had to tell these staff that the company's very survival was at risk. Ultimately, the company's survival was ensured when it won the rights to work on *The Lord of the Rings* movie. This movie provided the impetus for Rising Sun Pictures to grow and grow, to the point where the organisation has since employed up to 140 people.

A key decision by Rising Sun Pictures was to remain headquartered in Adelaide, with a further base in Sydney, rather than open an office in Los Angeles. Didier Elzinga explains:

We talked a lot about whether or not we needed to open an office in LA to have a presence there, and within a couple of years the clients that we were working with were saying: 'You don't need an office here; you know as much about what's going on as anybody else does.'

The company has also established a software company to leverage its expertise. Mr Elzinga remarks that it is a central requirement for Rising Sun Pictures to be able to see the material it is creating on film. The distance between Australia and Hollywood meant that it was a cumbersome and time-consuming process for Rising Sun Pictures to be able to see how its digital creations were appearing on film. It would take a one-week turnaround to send the animation over to the USA and then to see how the animation would actually appear on film. This caused problems for Rising Sun Pictures, as they often needed to be able to see their creations in a shorter period of time. They therefore decided to create software which would allow them to view their own creations, and they have been able to set this up as a separate profit-earning business.

The movie animation arm of Rising Sun Pictures currently employs slightly fewer than 100 people. Approximately two-thirds of these people are artists who create the images, and the other one-third are employed to support the creative function. This means that the organisation has a technology team, a finance team, and a project management team. Didier Elzinga describes the company as being close in structure to that of a professional service firm, like an accounting or legal firm. The fluctuating nature of the business means that the organisation has a somewhat fluid workforce. Freelancers are particularly useful in instances when Rising Sun wins a large contract and needs greater stocks of resources. However, the company aims to have two-thirds of its maximum capacity on permanent or long-term contracts, while one-third of the workforce is often made up of casual short-term workers. The workers are also trained to be generalists with multiple skills and the ability to contribute to projects in many different ways. The emphasis is therefore on the versatility of the worker.

In order to compete successfully in the feature film market, Rising Sun Pictures consciously distinguished itself from its competitors. The first thing that Rising Sun did was to define its staff as craft workers rather than artists. That is, the company promises to execute their client's vision and in an amazing way, rather than offering to sell an idea to their clients. A second and related stratagem involves how Rising Sun Pictures identifies their clients. Mr Elzinga explains that there are two types of films:

There are films that have a visual effects supervisor attached. So this person is being paid for the film. They work for the director and their job is to manage the process of creating visual effects for the film. Then there are films that don't have a visual effects supervisor, and so then the producer or the director tends to work either directly with a [visual effects] firm, or with a couple of individuals to create that work.

At the time that Rising Sun Pictures started seriously to target the motion picture industry, its fellow competitors were tending towards bidding for the second type of films. This is because in those films, the film's animation budget is not shared with a visual effects supervisor and higher revenues can be obtained. However, Rising Sun saw an opportunity instead to try to build loyalty with visual effects supervisors by working primarily on the first type of films. The logic behind this strategy is that producers on the second type of film may have a budget of 10 per cent. to secure visual effects for their film, but the next film they create may not have such a significant budget for visual effects. Hence, it is difficult for producers to return loyalty to movie animation companies. However visual effects supervisors are in a different position. Because they are only employed to work on a film's visual effects, it means that when a company such as Rising Sun Pictures performs a good job for them they are in a better position to offer repeat business. This was therefore a very successful model for the business as it sought to establish itself within the industry.

Rising Sun Pictures partially attributes its success to the support they have received from many people at a local level. The Government of South Australia in particular was able to offer many different programmes to the company when it was a still a fledgling organisation. Even the initial break for the company in working on the *Red Planet* movie came about as a result of a company contact inviting them into an alliance. Today, Rising Sun Pictures is alive to the importance that relationships play in its business, and therefore travels abroad regularly to maintain them.

This focus on relationship building has also been effective for the organisation as it has sought to build up its expertise. Half of the organisation's employees are from overseas, and these people are often encouraged by Rising Sun Pictures' association with A-list Hollywood films. For people living in Sydney and Adelaide, the chance to work at the very top level from Australia is an outstanding opportunity. In Mr Elzinga's words: *'We're considered to be a global, world class company, and you can do it without leaving, which is considered to be valuable'*.

In addition to its employees, Rising Sun Pictures benefits the Australian economy. It is a \$15 million company that pays taxes in Australia, and employs a workforce that consistently ranges between 100-140 employees. Training is performed internally, with the company working on a model designed to keep employees on a long-term basis. Some employees also take the opportunity to work overseas, but they often come back to Australia to work with Rising Sun Pictures again, and hence the organisation is able to tap into new types of expertise and skill. A typical example is that the company recently hired a creative person who won an Academy Award for his work as a 'skin shader' on Gollum in the *Lord of the Rings* trilogy. His ex-boss rang Didier Elzinga and said: *'Congratulations on hiring him, he's one of the five smartest people on the planet!'* These are the types of people that Rising Sun Pictures has been able to attract to the Australian economy.

Furthermore, Mr Elzinga believes that the organisation is serving as a blueprint for the type of company that could and should work in Australia. As a knowledge-based organisation, Rising Sun Pictures employs people that it believes are a vibrant and useful part of the company, and its business does not entail a large consumption of resources.

TECHNICO PTY LTD

HEAD OFFICE

Chandigarh, India

INTERVIEWEE

David McDonald, Managing Director and CEO

COMPANY AND INDUSTRY OVERVIEW

Technico uses innovative systems and technologies to deliver quality, affordable, early generation seed potatoes. An agri-biotech company, Technico has operating companies in Australia, Canada, China and India, with a Regional Business Development office located in Jordan. Technico has relocated its corporate activities from Moss Vale, New South Wales to Chandigarh in India, although the management team is highly mobile and describes itself as operating a 'virtual corporate office' using modern communication technologies to keep the management team in contact with each other. An active born global firm, Technico currently has direct operations in two of the world's fastest-growing markets for potato consumption – China and India – and has established key export markets in the Middle East and Africa.

ELEMENTS OF COMPETITIVE ADVANTAGE:

Technico has leveraged its relationship with major transnationals and key agribusiness enterprises in its target markets to derive a strong and growing operation in the agribusiness sector. Founded by Australian investors and supported by strong government initiatives during the early 1990s, Technico has provided innovation in the traditional industry of potato production. Fuelled by the vision and commitment of CEO David McDonald, the company has launched on a seemingly bold commitment overseas which has involved full manufacturing facilities in China, India and Canada. Privately owned, Technico shapes up as an Australian born global with accrued advantages from key intellectual property and a built up knowledge of its global customer needs, which should sustain superior performance for many years to come.

EVOLUTION OF THE COMPANY:

Technico operates with its headquarters in Chandigarh, India, having moved from its original headquarters of Moss Vale, New South Wales in 2007. It has operating subsidiaries in China, India, Australia, and Canada from which it sources its production. The company is in the business of producing small, seed potatoes in controlled environments. From these subsidiaries, Technico takes its products to countries such as Sri Lanka, Pakistan, Turkey, Egypt, Iran, Saudi Arabia, Algeria and South Africa. The company employs 300 full-time employees, and this grows to approximately 1200 during the peak planting seasons.

Technico was incorporated in 1994 to commercialise a research and development project that had been initiated by private individuals and supported by the Federal and State governments through various initiatives. Initially supported through industry funding from the Horticultural Research and Development Corporation, Technico set about identifying markets where its technology had most application. The company are leaders in introducing compressed-seed supply chains globally using their proprietary technology as the key

differentiation for quality seed production and rapid introduction of new varieties. This is a capability that is attractive to many large markets, and particularly global potato processing companies who are looking to fast-track their entry into emerging markets. Technico commenced its offshore expansion through an international agreement with a major international potato processor in the crisping sector. Very quickly Technico realised that in order to be successful in its global plans, the company would need to maintain control over its technology. It therefore moved away from a licensing strategy to one of direct investment.

Technico's second overseas venture occurred in 1997, when the company negotiated and built a wholly owned foreign subsidiary in China. This was a market-driven decision, based on an understanding that Australia's then population of 19 million people was not large enough to sustain the company in the long term, and wasn't the market in most need of a technology which gave the advantages of a compressed-seed supply chain. Technico identified where the biggest emerging markets were and set about developing long-term strategies for growth underpinned by market support from its key customer base. The key focus for Technico was to get into the market, get established, learn the lessons and then be ready for the expansion when it took place. China was a classic example of this. Managing Director and CEO David McDonald explains how the initial experience with the licensing strategy to a leading transnational led Technico to see the importance of controlling its own technology:

We had a massive company in urgent need for our technology to make improvements to their supply chain. We jumped at this, but we weren't ready for this commercialisation step. Recognising that if we didn't take back some control of how the technology was implemented, we would be in danger of the technology being implemented in a less than optimal manner. So within one year of making the first licensing deal we were back in trying to offer commercialisation alternatives to our licensee – this is where the Technico China direct investment emerged from.

In order to embark on this level of foreign ownership, Technico had to negotiate a course of raising venture capital (VC). The company was able to raise about \$6 million, and secured a second round of investment from a Japanese company called Nomura. David McDonald was also able to negotiate a six-year supply contract with its major customer to underwrite its market entry strategy to China. Approaching investors with a new technology and an idea is a much harder sell than approaching an investor with a technology, a business plan and a multi-year supply contract to a blue chip transnational. In the second case, the credibility factor is immediately enhanced.

Negotiations with the Chinese government then took a further 12 months to iron out, owing to outstanding issues such as how the factory would be built, approvals, staff training and development and of course customary new market challenges. Chinese staff were recruited and brought to Australia for training, while Technico's Australian staff were deployed overseas to initiate the project. Setting up the facility in China required a lot of work on the ground.

David McDonald initially started in Hong Kong and then Beijing to meet with the company's accounting firm, Ernst & Young and Australian trade officials. Lawyers were appointed in Beijing and consulting support was enlisted from an Australian woman who had previously served in China with Deloitte, Touche and Tomatsu. This created an important bridge for Technico management to be able to work with an Australian representative who was fluent in Mandarin and familiar with Chinese business cultures and approval processes. This person became the development consultant for the company.

The next step was to find a location for the factory. A suitable location was found and negotiations with the Chinese Government were opened until permission was granted to Technico to use the site. The Australian miner BHP was used as the consulting engineers to manage the building of the facility at an eventual cost of approx \$4 million. Technico was

keen to use Australian contractors because they did not want to lose proprietary control of some of the technology that was being incorporated into the construction. A key to the company's success was its decision to spend considerable time setting the criteria for where it would operate. The common practice of foreign firms at that time was to locate in the major cities of Shanghai and Beijing. Technico chose neither and settled instead for Kunming in South-West China. This was judged to be the best location for environmental reasons, and it also received solid support from the Yunnan Government, which encouraged Technico's development of a poorer region.

As soon as the construction was complete for the Chinese factory, David McDonald began to consider where else he would be able to build. India was the next big business market that he identified as being key to global operations, and it was not possible for Technico to enter the Indian market using the Chinese factory because quarantine orders meant that TECHNITUBER® seed produced outside of India was restricted on quarantine grounds. This meant that the company had to repeat the same process in entering the Indian market. Austrade was contacted and the connections of its staff used to facilitate the process of building the plant. The fact that the Indian facility was rolled out so soon after the Chinese facility was based on Mr McDonald's appreciation that venture capital investment is finite and relatively short term in its investment horizon. So unless it is possible to prove to venture capitalists that the company has global application, they are unlikely to continue their support.

The Chinese factory was only the first of Technico's foreign excursions. Today, the company is also the number one producer of seed potatoes in India. Indeed, the company has 500 contract farmers associated with this venture. Overall, Technico has 25 field agronomists and 10 marketing staff in the Indian market. Australian management seconded to India has trained the agronomy team and this has been useful in demonstrating to the farmers that Technico has significant expertise in the potato industry. The agronomist therefore develops very strong relationships between the organisation and the farmers.

When asked to discuss the significant knowledge-intensive advantages that his company has over competitors, David McDonald believes that the company's process technology remains a distinguishing characteristic and an important part of its business strategy. At the same time, other crucial know-how has been developed by the business. Mr McDonald declares: *'I actually think that the intellectual property we have built up in terms of handling regulations and export protocols and internal licence issues and quarantine and certification requirements is just as valuable as our actual process technology today'*. The company is now skilled at breaking down quarantine barriers imposed by different countries and this is very useful for an exporter. For example, Technico

is the only company allowed to export potato products to South Africa. It achieves these concessions over trading barriers by negotiating directly with the relevant governments.

Regarding the company's staff, David McDonald recognises that while the company's future lies in developing its offshore market potential, it is difficult to find Australian staff who are willing or able to meet the personal demands entailed by forging new foreign markets. In his words:

What happens here is that as you start to expand your activity offshore you realise that, my gosh, this is where the bounty is, this is where we have to concentrate our involvement. The demands on the Australian staff become unbelievable, to the point of excess where retention is difficult. It is a certain individual that can live a life of pioneering new markets – it is certainly not for everyone. People are under pressure to be putting in long times and periods offshore, that either means absences to families and for those with young families that's a problem. So there's a real divide between the ones that see it as what a fantastic adventure and opportunity and the ones that say: 'Well, I can't do this.'

David McDonald describes Technico as cautious when it comes to financing additional international ventures. He affirms that the majority of new activities are financed by existing cash flows, and that should the firm be required to invest additional funds, then it will endeavour to maintain prudent debt-to-equity ratios and complement such borrowing with good partner support (either through partner financing or long terms customer supply contracts – these are bankable documents). It is this partner support that is also opening new avenues of business to Technico. In particular, Technico frequently finds itself dealing with major transnationals. As Technico expands, these transnationals are able to embark on new ventures with Technico on a global basis. David McDonald observes that:

Global relationships have become an important part of Techico's expansion strategies. In terms of a business environment the global palyers become good market access points for Technico as it expands globally.

Citing the example of Turkey, Mr McDonland explains that in this market, Technico has opened up an export supply of TECHNITUBER® seeds to one of its global customers. The company has then has used that contract arrangement to team up with a local agribusiness enterprise in Turkey in a joint venture in field production to supply the processing factory. Technico is therefore involved both in the export of its TECHNITUBER® seed product and (through the Turkish joint venture) the subsequesnt supply of that final product to Technico's global customer in Turkey. According to Mr McDonald:

This all comes about because we are able to enter a market based on references and referrals from a global customer's head office and they will also give us leads where their business may be in need of our products and services. Once entering the market, Technico wiill build its prodcut supply to the broader indsutry, but at least it has the comfort of some underwritten supply on commencement . . . [T]his is an important part of Technico's market-entry risk-mitigation strategy.

TNA PTY LTD

CORPORATE SUPPORT

Sydney Olympic Park, New South Wales

INTERVIEWEE

Alf Taylor, Founder and CEO

COMPANY AND INDUSTRY OVERVIEW

tna provides innovative production solutions for the global food processing and packaging industry. Having recently celebrated its 25th birthday, **tna** has grown from a small Australian company into a large organisation with operations across the world. With offices in Sydney, Melbourne, Dallas, Birmingham, Auckland and Dubai, the reach of the organisation ensures that it is a major player in most developed markets. The firm maintains a manufacturing base in Melbourne, believing that this allows them to develop and produce a quality product. With a major emphasis on providing strong support for their products, **tna** has been successful in staying at the forefront of the packaging industry.

ELEMENTS OF COMPETITIVE ADVANTAGE

This company has pursued technological innovation in a traditional manufacturing sector (packaging engineering) and launched a strategy of incremental internationalisation that has seen it become the biggest player in its industry worldwide. **tna** created the prototype 'ROBAG®' Vertical Form Fill and Seal System in 1983. This incorporated a unique stripping action using rotary continuous motion jaws, to generate an output of bags more than double the industry average. While technical ingenuity has obviously been key to **tna**'s success, it could not have competed with larger rivals in foreign locations without a definite plan of international expansion or the determination to see it through.

EVOLUTION OF THE COMPANY

tna was co-founded by Alf Taylor in 1982. The company was the brainchild of Alf Taylor's Egyptian wife Nadia Taylor. In 1983, the company took on a business partner by the name of John North. Mr North was known to Mr Taylor through his work in the Head Office of Arnott's snack foods. However, this partnership did not endure and broke up on 22 February 1988. Mr Taylor bought out Mr North's share of the company, and subsequently installed a strategic management structure that covers marketing, research and development, manufacturing, finance and human resources. This structure has facilitated the growth of the company.

The first overseas activity of **tna** was with Walkers in the United Kingdom, a company which is now part of the PepsiCo Group. The company started by consulting to this organisation, and spent much of the 1980s installing machines for the Australian potato crisp manufacturer Smith's Chips. However, in 1989 the company entered the UK market, and started to earn its first overseas revenue.

tna is based on the development of revolutionary packaging equipment. Co-founder and Managing Director Alf Taylor was an engineer who had direct experience in working in the

snack food industry. Specifically, Mr Taylor used to work for Arnott's Biscuits, and this imbued him with detailed knowledge of the food packaging business. He worked on developing packaging machines that incorporated a unique stripping action using rotary continuous motion jaws, to generate an output of bags more than double the industry average. According to Alf Taylor, the decision to go global arose at the same time the innovation was conceived. He recalls that those involved in these decisions believed at the time that undertaking a global business model would be straightforward.

Unfortunately, the process of developing the packaging machine proved much more difficult than expected. The machine had design faults, and in the end Alf Taylor and his colleagues simply worked toward developing a single prototype machine. The big break for **tna** came when Smith's Chips took what Mr Taylor calls 'a leap of faith' and provided the organisation with a very large order for the machines. The company ordered these machines in 1986 and they were then installed in 1987. However, this installation caused major problems for both **tna** and Smith's Chips. As Alf Taylor explains:

The paintwork was good, nothing else was good. The software was corrupting every five minutes, the electronics would fizzle out, machines would go on fire, but the paintwork was really quite good. There were all these problems, and it took us two years from 1987 to 1989 to work our way through and resolve all of these issues.

The prototype packaging machines had already been installed in brand new facilities that Smith's Chips had developed in South Australia. This meant that Smith's needed **tna** as much as **tna** needed Smith's. The latter therefore continued to fund **tna** for the two years required to fix outstanding problems with the machines. By 1989 the machines were rendered fully functional, and **tna** had evolved into a two million-dollar company with 12 employees.

While celebrating their achievement, the **tna** team realised that Australia had only 20 million people, and hence there was a limit to the amount of snack foods that such a small population could eat. The company therefore approached Austrade, and was provided with a small export development grant. This sum of money allowed **tna** to set up **tna Europe**. Alf Taylor went to the UK himself in 1991, and established a small office in England in which the company employed two people. He then spent the next six years in the UK trying to ensure that the European operation became a success. The UK office was involved in sales, support, logistics, and administration. It is a model that **tna** has continued to implement as it expands globally.

The reason for choosing Europe was that the technical specifications of **tna**'s product were more suited to this region than others. In particular, the British market offered the fewest hurdles for **tna**. It was similar to Australia in terms of organisational culture and consumer preferences for snack foods. And since Alf Taylor hails from Scotland, Britain was an environment that he understood thoroughly. Continental Europe presented more challenges for **tna**, yet the company successfully launched into Spain, Germany and the Netherlands.

Conversely, **tna**'s expansion into the USA in 1995 was much more difficult, owing to the lack of technical compatibility between **tna**'s system and those prevailing in the US snack food packaging industry. Additionally, Mr Taylor found the US staff at that time to be less industrious and committed than workers elsewhere. The terrorist attacks of September 11, 2001 also induced a dramatic decrease in the supply of financial capital. Furthermore, **tna** had made a change of management that proved to be a disaster for the organisation. In the space of 12 months, the company's total sales in the USA dropped from \$US 18million to \$US 6million. Fortunately for **tna**, the US market started to pick up some 12 to 18 months after the terrorist attacks.

Prompted by difficulties in the USA, **tna** extended south to establish operations in Mexico, setting up an office in 2001. In the same year, offices were also founded in South Africa and China.

In Australia, **tna** runs offices in Sydney and Melbourne. Melbourne is the office at which the product is manufactured and distributed. Sydney is the Corporate Support Office, which houses all of the administrative functions required to run a global business. Research and development (R&D) is carried out in Sydney, as is marketing, corporate finance and human resources. This structure ensures that the international offices run as smoothly as possible, with the majority of control exercised in Melbourne and Sydney. Of the functions carried out in Australia, R&D remains a key function of the Corporate Support Office. The majority of the staff involved in R&D are employed in Sydney, although there are one or two R&D staff in the USA and the UK. The R&D team receives feedback from the global offices, particularly regarding opportunities that may have arisen in the Middle East or the USA, and they are then able to incorporate this into their product design.

The company has approximately 100 staff overseas. It also sources most of the parts for its machines from offshore. Japan provides most of the parts in dollar terms, and the UK is the second largest supplier. The Uruguay General Agreement on Tariffs and Trade (GATT) was particularly beneficial to **tna**. In particular, the Agreement extended the life of patents from 16 to 20 years. **tna** has approximately 30 patents overall, but this extends to several hundred patents in the patent family worldwide.

Alf Taylor believes that having a strategic mindset was a key factor in **tna**'s ability to move into the world marketplace. In the packaging industry, there are probably only about 20 competitors worldwide, and the industry has a size of approximately \$1billion. This makes it a relatively small industry in Mr Taylor's view. What **tna** sought to do was to gain an advantage over their competitors by employing strategies that were suited to its industry's particular environment. Importantly, the company analysed all of its competitors, and determined that the competition collectively suffered from a lack of vision and an overestimation of their geographic limitations. This gave **tna** the confidence to pursue a grand vision that would give the company a decisive edge over its competitors.

In particular, **tna** realised that all of their competitors were extremely parochial. The US companies performed most of their business in the USA, the Germans operated solely in Germany, and so on. **tna** concluded that this parochialism made little business sense: it didn't matter where in the world a product was being packaged, the packaging requirements were no different. **tna** then looked at the packaging products that were being used, and it turned out that these were almost identical worldwide, except in terms of colour. There was extremely little technical difference. **tna** knew that it possessed a serious technical advantage over its competitors, and determined that the best way for them to succeed was to go global with this technological innovation. Today, 95 per cent. of **tna**'s revenue is derived from offshore business.

Alf Taylor remarks that, in retrospect, the organisation had relatively little difficulty in taking its product worldwide. Some of the greater difficulties arose when competitors tried to copy **tna** machines, and the company was therefore forced to initiate patent litigation. Additionally, some competitors would try to undermine the credibility that **tna** had built over many years by casting aspersions about the young company from Australia. They would tell potential **tna** clients that it was impossible for the machines to work as quickly as **tna** claimed. Thus, **tna** discovered there were many potential clients who were unwilling to step outside of their comfort zones and entertain a new product manufacturer.

To overcome this obstacle, **tna** decided to structure its fees around the performance of its products. Clients would therefore pay a certain amount of money if the machines could bag 100 products per minute, but if it was only 70 bags per minute then they would pay a lesser amount. The company also sought out potential clients who were less conservative and

more open to fresh business ideas. Such clients were sourced by Alf Taylor himself, through the networks that he had built, often by painstaking and unglamorous means. Mr Taylor tells an instructive story about this:

Banging on doors . . . just hard slogging, and we hired a van. We had no money and we hired a van, stuck a machine in the back of a van and drove it round and put it in people's factories and ran trials. Because that's great, you know, like you can sit there and philosophise and give them the laws of physics like there's no tomorrow, and they don't believe any of it. But as soon as you sit the gear in their factory and run their product on that machine and show them how efficient that is, it's doing double the speed . . . So if you managed to get them to let you go in with a machine at kind of no cost to them, then you had a pretty good chance of getting in.

Alf Taylor compares **tna**'s early situation to 'David fighting Goliath'. This situation existed until the mid-1990s, with competitors doing all they could to make sure that **tna** did not enter their marketplace. However, **tna** rapidly became the biggest global player in its industry, earning the respect of competitors. There are still highly competitive organisations trying to displace **tna** in the marketplace, but there are also organisations who are very keen to work closely with **tna**. Mr Taylor explains this in a very down-to-earth fashion: *'It's just amazing how people who wouldn't talk to you or just wanted to kick sand in your face, all of a sudden it's like: "Do you want to go for a beer, I'll buy you dinner!"'*

It was vital that **tna** pursued the path of least resistance when expanding internationally. This is because each overseas venture has financed the next one. Alf Taylor believes that the greatest hurdle he has had to face is in the area of finding money to fund growth. The two sources of funding which **tna** has been able to secure have been retained profits, and relationships built with various large banks such as Barclay's, ANZ and the Bank of America. Mr Taylor quickly grasped the notion that while human capital is an organisation's primary asset, banks prefer to loan money for fixed capital such as buildings and property. This therefore led to a strategy whereby **tna** would purchase buildings in key operational centres, and source money from the banks to pay for this. The organisation could then go about populating these buildings with its key asset: its people.

Austrade provided Alf Taylor with some useful knowledge when he applied for his first export development grant in 1989. Initially, he approached Austrade with his business ideas, and sought to discover ways that Austrade could help **tna**. Austrade said that the grant could only be provided if **tna** had a business plan. At the time, no such plan existed in the business, and hence Mr Taylor had to develop one in order to secure the grant. A part of this learning process was that Austrade showed him how to write a business plan, and since then he has used business planning as an integral component of the **tna** organisation. The current business plan extends to ten years and is referenced on a daily basis. Nonetheless, the plan is not rigid and is designed to evolve with the organisation. Mr Taylor acknowledges that it is impossible to get all the products, sales, human resources, turnover, and profitability right, but he believes that this doesn't matter. What is important is that the business plan sends out a command signal to indicate where the company is going. The plan is manipulated and modified on a regular basis to ensure that it reflects the reality of the organisation as much as possible. However, Alf Taylor believes that overall, 80 per cent. of the plan stays the same.

In terms of generating value to the Australian economy, **tna** is set up to pay its taxes in the particular countries in which it operates. Mr Taylor affirms that he has no interest in avoiding tax of any description, that it is in fact far better to double check to make sure that all taxes are being paid. The company does try to ensure that most of its money circulates in Australia and therefore is taxed by Australian governments. With respect to overseas earnings, **tna** is required to pay tax in the local currency, and when that money is repatriated to Australia it is subject to further taxation.

Other national benefits of **tna**'s activities include the employment of 100 staff in Australia, which is equal to the size of the combined overseas workforce. **tna** also outsources the materials for its machines to local Melbourne organisations, thus providing employment for many other Australians. Finally, Alf Taylor notes that **tna** boosts Australia's reputation as a sophisticated manufacturer and supplier of first-rate packaging equipment. In the early days, **tna** were disadvantaged by the fact that potential overseas clients did not know anything about the capabilities of Australian firms, particularly in this sector. Today, when client firms are looking at purchasing from Australia, they are likely to think of **tna** as a renowned Australian advanced engineering company.

THE WIGGLES

HEAD OFFICE

Baulkham Hills, New South Wales

INTERVIEWEE

Pablo Munoz, Risk and Quality Assurance Manager

COMPANY AND INDUSTRY OVERVIEW

While still often perceived as just a music group, The Wiggles is an international business that provides family entertainment through concerts, CDs, DVDs, television, toys, play centres, theme parks and online communities. The Wiggles began their international activity by touring with the support of business partners; and today they also export merchandise, conduct foreign direct investment in the USA, and are active in NZ, the UK, the Republic of Ireland, Canada and Taiwan. The Wiggles have made plans to enter South America, and are considering additional markets in Asia. For this born global firm, foreign expansion – notably into the USA – was part of a conscious strategy to sustain the business. Indeed, 75 to 80 per cent. of The Wiggles' total revenue now comes from overseas markets.

ELEMENTS OF COMPETITIVE ADVANTAGE

Ignoring discouraging criticism from many in the childhood entertainment industry, The Wiggles pursued a novel business model, in which children's entertainment was made accessible to adults. To inform their undertaking, individual Wiggles obtained tertiary qualifications in early childhood development. A decade and a half later, The Wiggles are recognised as Australia's highest-earning entertainers. They have conquered much of the English-speaking world and are now turning their attention to markets which speak other languages. Despite emerging competition from other children's groups such as Hi-5 and the Hooley Dooleys, The Wiggles have proved winners in developing and promoting a strong brand name on a global basis.

EVOLUTION OF THE COMPANY:

The Wiggles were formed in 1991 by two members of the Sydney rock band The Cockroaches. Initially, The Wiggles played at children's birthday parties and shopping centres as a support act for Dorothy the Dinosaur. Yet they soon discovered that both children and adults were highly receptive to their performance in its own right.

A fundamental component of The Wiggles' success is that they offer an innovative approach to children's entertainment. The fact that the music is derived from rock 'n' roll means that it appeals not only to children, but also to their parents and guardians.

By 2000, The Wiggles were touring English-speaking countries, where their commodity could be sold with little modification. And in 2001, they gained exposure to about 65 million Americans by participating in Macy's Thanksgiving Day Parade in New York City. Owing to the recent terrorist attacks, many people were reluctant to fly, so The Wiggles were embraced by US viewers as a foreign act that had taken the risk to travel and entertain them on US soil.

2001 was also significant because it marked the arrival of Mike Conway as General Manager for Business Affairs. Previously, The Wiggles had operated informally, in accordance with the founding members' background in rock 'n' roll and focus on playing gigs. However, the founding members recognised that further growth and development of The Wiggles required formal business management. They also judged The Wiggles to be a brand that could continue even if they all left. The correctness of this judgment has been confirmed by the effective use of substitute Wiggles in Australia and abroad, as well as the successful replacement of Greg the Yellow Wiggle, after his retirement.

Mike Conway initiated strategic board meetings and prompted the founding Wiggles to think of ways of leveraging their creative content. This resulted in The Wiggles producing CDs and DVDs, developing TV episodes and merchandise, and exploring different channels such as retail environments, the community and websites.

For example, the Wiggles have set up play centres in Seven Hills, NSW and Dallas, Texas. These low key locations accord both with The Wiggles' cautious, experimental approach and with their business model of family participation. The Seven Hills venue in particular was chosen because it is close to suburban family housing and away from other entertainment centres. This means that parents and guardians are more likely to join their children at the play centre rather than drop them off and do other things. At the same time, The Wiggles have opened up two sections of Dream World, and contracted to open sections in numerous theme parks in the USA over the next five years. Previously, The Wiggles have also leveraged their brand in a sponsorship agreement with Australian apple farmers to help them sell apples.

Of all the merchandise that is associated with The Wiggles, none of it is manufactured by the organisation itself. Some of it is produced in The Wiggles' offices, but none of it is manufactured there. For instance, music is produced at The Wiggles' headquarters, but the manufacture of products such as DVDs and CDs is licensed out in Australia to Village Roadshow. The company has approximately 30 licensees in the USA, and a similar number in Australia and New Zealand. The licensees are chosen carefully by looking to their core strengths. The licensing partner must have particular strengths in a key market to prove useful to The Wiggles. A particularly interesting partner in the operation is the Entertainment Store. This company manages the character shows for The Wiggles. They therefore look after central Wiggles' characters such as Dorothy the Dinosaur, Wags the Dog, Captain Feathersword and Henry. This allows these characters to tour either together with The Wiggles, or separately.

Another business activity is The Wiggles' online message boards for parents. The online message boards have played an important role in building the brand of The Wiggles. A fan club which was launched in early 2007 has already gained 46,000 members in just two months.

Today, The Wiggles receive approximately 75 to 80 per cent. revenue from overseas markets, and the US market contributes a sizeable component of this income. But The Wiggles have also sought to tailor their product toward audiences for whom English is not a first language. For instance, there is a Taiwanese version of The Wiggles, who have been performing for four years. The Taiwanese Wiggles have been set up under a licensing agreement with another company, and they are managed by a separate entity.

In addition, South American Wiggles have now been cast, although they haven't been launched as yet. While the band in Australia started with a focus on doing small gigs and then growing into something bigger, the focus in South America will be on television broadcasting. This will allow the organisation to get a feel for how The Wiggles might be accepted by the television audience, before following up with touring and merchandise sales such as DVDs. The approach The Wiggles adopt in international expansion is to test the markets first. This allows them to work out the best way of modifying their business model in

each relevant market. At present, the company is considering expanding into Europe, other parts of Asia, and China.

However, there are difficulties in entering foreign markets. The South American model should have been launched in 2006, but has been held up by problems with translations. This demonstrates that the development of content for foreign arms of the business model is something which must be handled sensitively. The company tries to overcome this issue by taking a personal approach to establishing its foreign presence. In the case of Taiwan, the organisation hired local talent in Taiwan, brought them to Australia and taught them everything that the original band knew – particularly with respect to choreography. This process took two months of extensive collaboration.

At present, the organisation employs around 20 full-time staff members. It is a strong cultural belief that the business should employ and promote young people, and that these employees are taught the nature of the business from the ground up. The business has the four original Wiggles as directors. Beneath them sit two general managers: Mike Conway, who is the General Manager for Business Affairs, and Paul Field, who is the General Manager for Productions and Communication. The business is split into two halves; one half concentrates on developing content, while the other half looks to develop the brand and the business.

In terms of the benefits that the organisation returns to the Australian economy, the group's Risk & Quality Assurance Manager, Pablo Munoz, makes the following comment:

The guys are out there promoting Australia, so there's that benefit, and it's a massive benefit. You've got employment benefits, intangible again, as you are building communities and helping families kind of explore and share their experiences... it was always about developing family values... and bridging that gap between the child and the parent.

The Wiggles are a striking example of an Australian enterprise whose international expansion has gone far beyond exporting. According to Mr Munoz, the secrets of The Wiggles' success can be summarised as 'persistence, ethics and innovation'.

APPENDIX 2: GUIDE FOR INTERVIEWERS

INTRODUCTORY PROFILING ('BORN GLOBALNESS')

In this section, we would like to know the background to your firm being born global.

- When was your firm established, what does it do and what was the product / service that you first took to an overseas market?
- Who founded your firm, how was it funded, and who was your first customer overseas?
- Why did your firm go to its first overseas market?

BEYOND THE FIRST PRESENCE IN AN OVERSEAS MARKET

In this section, we would like to explore your firm's deepened international expansion after its initial entry into an overseas market. This presence may have been for activities such as, for example, capital raising, access to distribution channels, joint venture formation, participation in transnational value chains, or possibly to begin production overseas.

- What type of international activity did your firm undertake after its very first international venture from Australia?
- When (years/months after the very first venture overseas) and where was this expanded presence undertaken?
- Why did you choose to establish this expanded presence overseas?
- What alternative paths did you consider for this expansion?
- Is this overseas activity different in nature and scope from what you do at home in Australia?
- What problems did you encounter in establishing this expanded presence overseas?
- Why did these problems happen?
- How did you handle these problems?
- What opportunities were encountered in establishing this expanded presence overseas?
- How did you respond to these opportunities?
- What have you learned from this first expanded presence overseas?
- Has this learning changed the way you do things in your firm?
- What has happened to your firm that you can directly attribute to this first expanded presence overseas?

- What advice would you give to other Australian firms that are considering their very first activity overseas?
- What advice would give to Australian firms that have made their first move overseas, but have yet to take an expanded international presence.
- Has your firm experienced any changes of ownership since it first established an expanded presence overseas? If so, what motivated the change in ownership and when did it occur (years after very first activity in an overseas market)?

NATIONAL BENEFITS

In this section, we would like to know about the benefits that have been appropriated by your firm in the course of its expansion overseas and how these benefits may have contributed to the Australian economy.

- What benefits can you identify that have flowed back to the Australian economy as a result of your firm's expanded international activity? (tax revenue/employment/skills and training/technological and organisational knowledge/ knowledge otherwise hard to obtain/access to overseas investors/etc)
- Have any persons associated with the original founding firm gone on to seed other firms? Can you discuss these other firms or their activities?
- Do you know if your firm's success influenced the strategies or practices of other firms in this industry or in other industries?
- Are there any local-foreign cooperative arrangements that have been spawned by your firm's presence overseas?
- Are you able to indicate the extent to which your profits are repatriated to Australia or realised by foreign business units?
- Do you employ Australian staff? Do you usually pay the wages and salaries of staff in Australian dollars and/or via Australian financial institutions?
- Do your directors tend to be Australian or foreign, or a mixture of both?
- Are you able to say what currency or currencies you normally use for investment and exchange?
- Does your firm make use of derivatives such as currency or interest-rate swaps?

SUBSIDIARY QUESTIONS

- What would your firm look like if you had not established the expanded presence overseas?
- If you have had activity in several locations overseas, did your experience in any of these other locations differ from what you experienced with your first expansion overseas?
- What have I not asked you, and should have, because I was unaware that it was important?

APPENDIX 3: COMPOSITION OF THE EXPERT REFERENCE GROUP

In order to inform and refine the 'Born to be Global' research project, the Australian Business Foundation set up an Expert Reference Group. It convened formally on several occasions throughout the investigation with UQ Business School and the Foundation, assisting in the work up of the project, helping to identify prospective case study firms, and commenting on emerging findings and draft reports. In addition, individual members of the Expert Reference Group frequently made contributions on an informal basis.

The Expert Reference Group was composed of individuals with extensive experience and expertise in business development and international expansion. Their names and positions are as follows:

Dr Mark Bradley – then CEO of Australian Technology Park Innovations.

Dr Bob Frater – Vice President Innovation, ResMed Ltd.

Ms Chris Gibbs Stewart – General Manager, Australian Business International Trade Services.

Dr Ian Pollard – Managing Director, Haystone Services Pty Ltd

Ms Janine Ricketts – Executive Director of Small Business Development in the NSW Department of State and Regional Development.

Dr Merylyn Sleigh – CEO, EvoGenix Ltd.

Dr Katherine Woodthorpe – Principal, People and Innovation Corporate Advisers Pty Ltd

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NOTES

¹ McKinsey & Co. and the Australian Manufacturing Council (1993).

² Burgel *et al.* (2000).

³ See, for example, Autio *et al.* (2000), Zahra *et al.* (2000), Jones and Coviello (2005) and Liesch *et al.* (2007).

⁴ Industry Taskforce on Leadership and Management Skills (1995).

⁵ Harcourt (2007).

⁶ Knight and Cavusgil (2004).

⁷ Reich (1993).

⁸ Yin (1994) advocates that a decision to use a case study as the means of research should be based on the form of the research question, with 'how' and 'why' research questions being most suited to a form of case investigation. Given that the central research question is exploratory, possibly expository, the research is suited to a case study methodology.

Eisenhardt (1989) argues that while there is no ideal number of cases, between 4 and 10 cases is appropriate and advisable. With fewer cases it is often difficult to generate theory with sufficient rigour and complexity, while more cases can offer an extremely large volume of data which can be difficult to manage. This report examined 18 case studies, demonstrating a very large qualitative sample of Australian born global firms.

⁹ Born globals are variously classified in the academic literature as: (a) having entered international markets within three years of inception (sometimes the weaker criterion of five years is considered, sometimes six); and (b) receiving over 25 per cent. of total revenues from these markets within this same timeframe. It was the belief of the Australian Business Foundation and its Expert Reference Group that such criteria would prevent the study from exploring other interesting types of organisations that bore a strong resemblance to those we would normally typify as born globals. For instance, CSL only had the ability to become a global player once its regulatory shackles were removed by its privatisation in 1994, but from that point it demonstrated all the hallmarks of a company which rapidly internationalised. MYOB was another example of an organisation which did not immediately enter international markets. Rather, it was the licensed distributor of software from a US parent-company, and only became a global player when it had built up the sales volume to buy-out the parent company and all of its associated intellectual property.

¹⁰ Eisenhardt (1992).

¹¹ Developed by the University of Queensland, Leximancer is a software analysis tool which automatically identifies key themes, concepts and ideas from a volume of unstructured text. The program produces a concept map which can then be used to explore relationships between leading concepts in a body of textual data. Leximancer analysis was performed on each of the interview transcripts, and this was then used to identify emergent themes and issues relating to the two main areas of interest.

¹² See, for example, Johanson and Vahlne (1977, 1990) and Johanson and Wiedersheim-Paul (1975).

¹³ Oviatt and McDougall (1994). Autio (2005) declares that Oviatt and McDougall's 1994 piece constitutes a milestone in international business research.

¹⁴ Bilkey and Tesar (1977), Cavusgil (1980), Reid (1981, 1984), Czinkota (1982) and Andersen (1993).

¹⁵ See, for example, Autio *et al.* (2000), Knight and Cavusgil (2004), Knight *et al.* (2004), and Liesch *et al.* (2007).

¹⁶ McKinsey & Co. (1993)

¹⁷ Oviatt and McDougall (1994, p.49)

¹⁸ McDougall and Oviatt (2000, p.903).

¹⁹ For example, Oviatt and McDougall (1997)

²⁰ For example Zahra *et al.* (2000)

²¹ For example Rennie (1993).

²² For example, Weerawardena *et al.* (2007).

²³ Oviatt and McDougall (1997).

²⁴ Fillis (2001).

²⁵ Yeoh (2004).

²⁶ Burpitt and Rondinilli (1998).

²⁷ Knight and Cavusgil (2004).

²⁸ Yeoh (2004).

²⁹ Zahra *et al.* (2000)

³⁰ Rennie (1993).

³¹ Madsen and Servais (1997).

³² Knight and Cavusgil (2004)

³³ Weerawardena *et al.* (2007)

³⁴ Oviatt and McDougall (1994).

³⁵ Weerawardena *et al.* (2007).

³⁶ Cavusgil and Zou (1994).

³⁷ Madsen and Servais (1997), Zahra *et al.* (2000).

³⁸ For example, Johanson & Wiedersheim-Paul (1975).

³⁹ Johanson & Wiedersheim-Paul (1975).

⁴⁰ Reich. (1993).

⁴¹ See, for example, UNCTAD (2003, 2005).

⁴² To avoid confusion, the term 'international' will be used in this chapter strictly to describe relations between national units (public or private), while 'transnational' will signify non-national relations across countries. More generally, the adjective 'crossborder' will be used to denote any type of interaction

that extends beyond the borders of a single nation-state. For the analytic utility of these distinctions, consult Steen (2005, 26f).

⁴³ Steen (2005, 34f, 79-86).

⁴⁴ Reich (1993, Introduction).

⁴⁵ This point is drawn out thoughtfully by Bryan and Rafferty (1999, Chapter 2).

⁴⁶ See Steen (2005, 94f).

⁴⁷ Cf. Schumpeter (1954, 353) and Steen (2005, 31f).

⁴⁸ Porter (1998, 33), quoted in Steen (2005, 79).

⁴⁹ Porter (1998, 6, 19), quoted in Steen (2005, 79, 81).

⁵⁰ Porter (1998, xxi), quoted in Steen (2005, 80).

⁵¹ Porter (1998, xxii-xxiii, 3fff), cited in Steen (2005, 21).

⁵² Porter (1998, 19). Porter prefers the term 'high-productivity' to 'high value-added' commodities because 'value-added *per se* is only indirectly related to labour and capital productivity' (Porter 1998, 773-74n). However, Porter does not indicate how the productivity of heterogeneous capital goods can be compared in terms other than exchange value (Steen 2005, 83n).

⁵³ Porter (1998, 19), quoted in Steen (2005, 82).

⁵⁴ Porter (1998, 671, 679f), cited in Steen (2005, 83).

⁵⁵ Porter (1998, 7), cited in Steen (2005, 83). For a more detailed discussion of Porter's implicit neomercantilism, consult Steen (2005, 82-86).

⁵⁶ Reich (1993, 123n), quoted in Steen (2005, 80n).

⁵⁷ Reich (1993, 82, 96f), cited in Steen (2005, 80n).

⁵⁸ Reich (1993, Chapters 10 and 11), cited in Steen (2005, 80n). Data presented by UNCTAD (2005) reveal that it is not only US-based companies that are 'internationalising' their research and development.

⁵⁹ Reich (1993, Chapters 1-3, 7-11), cited in Australian Business Foundation (2006a, 11).

⁶⁰ Reich (1993, Chapter 20), cited in Australian Business Foundation (2006a, 11).

⁶¹ Agenix Ltd (2006, 2, 28f, 90).

⁶² Biota Holdings Limited (2006a, 41; 2007a, 1).

⁶³ Cochlear Ltd (2006a; 2007, 10).

⁶⁴ CSL Ltd (2006, 60f; 2007, 6).

⁶⁵ Ellex Medical Lasers Pty Ltd (2006, 28).

⁶⁶ Infomedia Pty Ltd (2006, 3; 2007, 6).

⁶⁷ MYOB Ltd (2007, 36).

- ⁶⁸ Consult Smith (2004, 2005) and the Australian Business Foundation (2006a).
- ⁶⁹ Cochlear (2006b).
- ⁷⁰ See Biota Holdings Limited (2007b) for details.
- ⁷¹ Biota Holdings Limited (2006b, 1f).
- ⁷² Agenix Ltd (2006, 30).
- ⁷³ Biota Holdings Limited (2006a, 28; 2007a, 1).
- ⁷⁴ Cochlear Ltd (2006a; 2007, 6).
- ⁷⁵ CSL Ltd (2006, 60; 2007, 6).
- ⁷⁶ Ellex Medical Lasers Pty Ltd (2006, 40).
- ⁷⁷ Infomedia Pty Ltd (2006, 3; 2007, 11).
- ⁷⁸ MYOB Ltd (2007, 36).
- ⁷⁹ This popular perception is challenged – on the basis of sound empirics – by Smith (2004; 2005).
- ⁸⁰ Livingstone (2006, 1).
- ⁸¹ Livingstone (2006, 1).
- ⁸² Biota Holdings Limited (2006b, 5).
- ⁸³ Biota Holdings Limited (2006b, 7).
- ⁸⁴ Biota Holdings Limited (2006b, 7).
- ⁸⁵ Productivity Commission (2007, 381-412).
- ⁸⁶ Biota Holdings Limited (2006b, 4).
- ⁸⁷ Consult Bryan and Rafferty (1999, Chapter 8).
- ⁸⁸ See Australian Business Foundation (2006a, 6fff).
- ⁸⁹ Cf. UNCTAD (2003, especially Chapter 4).
- ⁹⁰ Smith (2004, 23-27; 2005, 23).
- ⁹¹ Similar arguments are elaborated in Smith (2004; 2005), Roos *et al.* (2005), the Australian Business Foundation (2006a, 2006b), Cutler (2006) and Livingstone (2006).
- ⁹² *BRW* (October 2006).
- ⁹³ Agenix (2007).
- ⁹⁴ *The Age* (2006).
- ⁹⁵ Karena (2006).
- ⁹⁶ Karena (2006).

- ⁹⁷ Agenix (2007).
- ⁹⁸ Biota Holdings Limited (2006b, 1f).
- ⁹⁹ Biota Holdings Limited (2006b, 7).
- ¹⁰⁰ Biota Holdings Limited (2006b, 5).
- ¹⁰¹ Biota Holdings Limited (2006b, 5).
- ¹⁰² Livingstone (2006, 3).
- ¹⁰³ Livingstone (2006, 3).
- ¹⁰⁴ Livingstone (2006, 3).
- ¹⁰⁵ DSpace Pty Ltd (2007).
- ¹⁰⁶ DSpace Pty Ltd (2007).
- ¹⁰⁷ Ellex Medical Lasers Pty Ltd (2007).
- ¹⁰⁸ Global Trust Centre (2007b).
- ¹⁰⁹ Global Trust Centre (2007a).
- ¹¹⁰ TCG Group and BankID (2005).
- ¹¹¹ Global Access Partners (2004, 24f).
- ¹¹² TCG Group and BankID (2005).
- ¹¹³ TCG Group and BankID (2005).
- ¹¹⁴ Micronix Pty Ltd (2007a).
- ¹¹⁵ Micronix Pty Ltd (2007b).
- ¹¹⁶ Micronix Pty Ltd (2007a).
- ¹¹⁷ Micronix Pty Ltd (2007c).
- ¹¹⁸ Micronix Pty Ltd (2007c).
- ¹¹⁹ Micronix Pty Ltd (2007b).
- ¹²⁰ Micronix Pty Ltd (2007b).
- ¹²¹ Micronix Pty Ltd (2007b).
- ¹²² Micronix Pty Ltd (2007c).
- ¹²³ Micronix Pty Ltd (2007d).
- ¹²⁴ MYOB Ltd (2007b).
- ¹²⁵ MYOB Ltd (2007b).

¹²⁶ Invest SMART (2007).

¹²⁷ ABC (2003).

¹²⁸ ABC (2003).

¹²⁹ NOJA Power Switchgear Pty Ltd (2007).

¹³⁰ Rising Sun Pictures (2007).



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