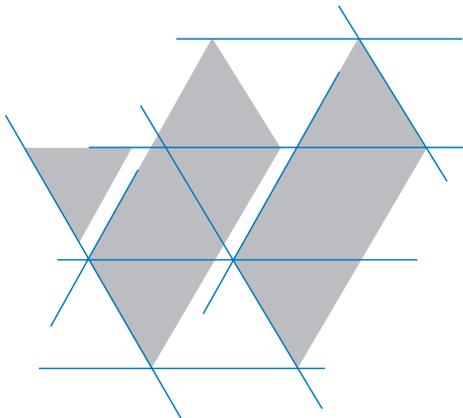
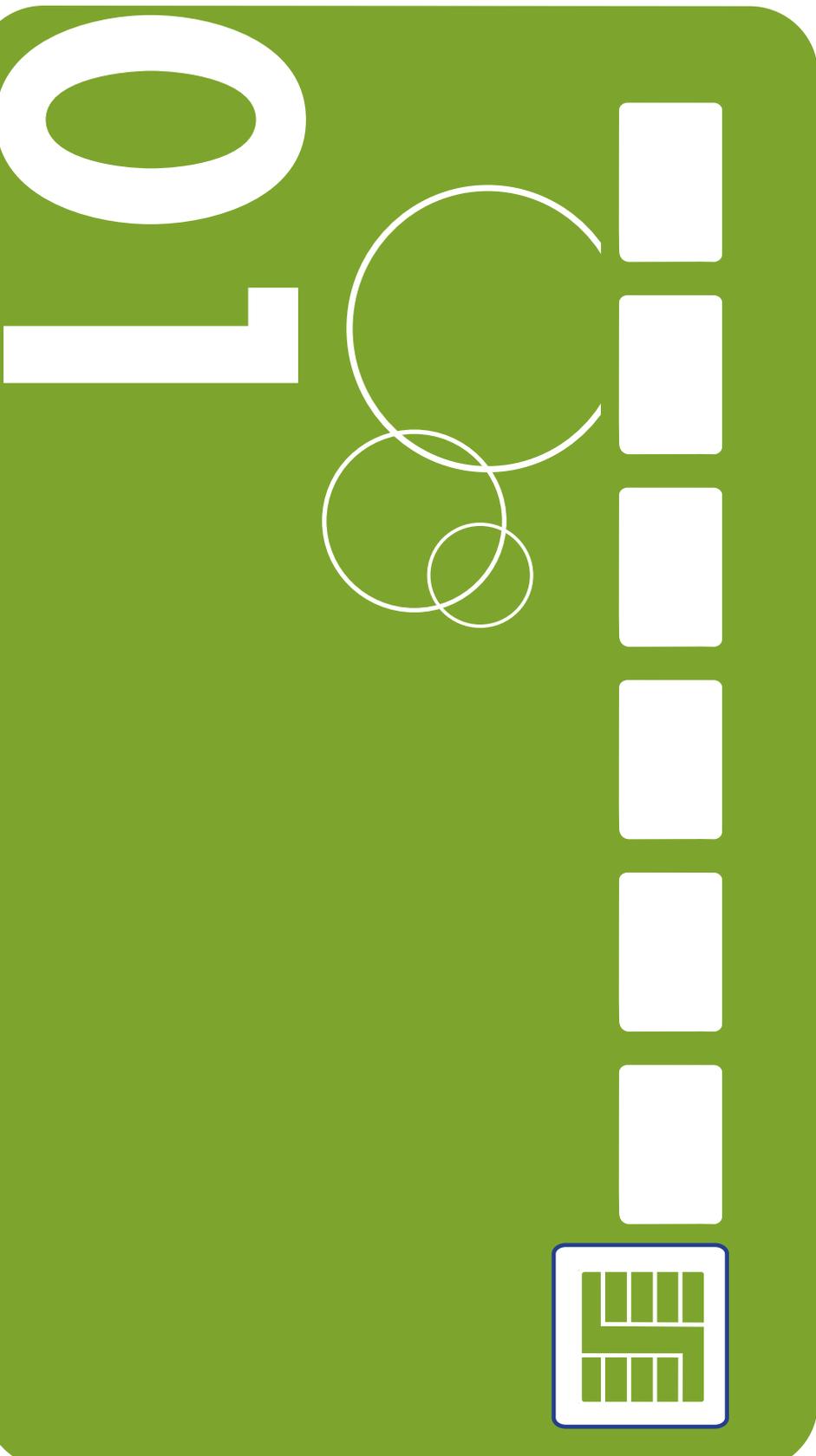


2010



THE WARREN CENTRE  
**INNOVATION**  
LECTURE

DELIVERED BY **PETER FOGARTY** CEO, ERG GROUP

**Proudly Sponsored by**

- The Industry Research and Development Board and AusIndustry
- Baldwin Shelston Waters
- Macquarie Bank
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The Warren Centre wishes to thank AusIndustry, Baldwin Shelston Waters, Macquarie Bank and PricewaterhouseCoopers for their generous support in presenting the 2001 Warren Centre Innovation Lecture at the Regent Hotel Sydney on Thursday 5 April 2001.

**AusIndustry** is a business unit within the **Commonwealth Department of Industry, Science and Resources**. It delivers a range of commercial incentives and information services designed to help Australian businesses become more innovative and internationally competitive.

AusIndustry is assisted in its delivery to business by a series of independent, expert Boards. The Cooperative Research Centres, Pooled Development Fund, and Industry Research and Development (IR&D) Boards provide advice to the Federal Government and make decisions on funding support within individual programs.

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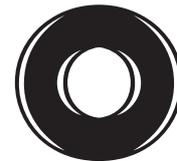
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**PricewaterhouseCoopers Australia** helps clients solve complex business problems, build value, manage risk and improve performance. We provide a full range of services to research organisations and technology companies, including business planning; access to venture capital; audit, accounting and tax advice; financial and technical due diligence; corporate value consulting; advice on joint ventures, M&A and public offerings; and legal services. We advise hundreds of companies in areas such as computer services, networking, software, telecommunications, e-business, biotechnology, bioinformatics, pharmaceuticals, and medical technology. Our clients include thousands of small, fast-growing firms as well as some of the world's largest corporations. We work with them at every stage of growth from research through development, commercialisation, to equity raising and eventual merger/acquisition or float.



**BALDWIN SHELSTON WATERS**

*Intellectual Property*



MACQUARIE  
BANK

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# prologue

*In the open economy of the 21st century new rules require new strategy if Australia is to be successful. Comparative advantages of natural resources and commodity industries offer less and less compared with those industries and sectors based on knowledge and skill. As MIT's Professor Lester Thurow has said,*

*"Show me a skilled individual, a skilled company, or a skilled country and I will show you an individual, a company or a country that has a chance to be successful. Show me an unskilled individual, company, or country and I will show you a failure in the 21st century."*

*A powerful indicator of Australia's potential is the number of its global companies which, using a definition from Scotland, would be those companies directed from Australia, above a minimum size for their sector, and which carry out a large part of their business across international boundaries through direct exports and licensing or franchising or locating operations or subsidiaries overseas. A relatively large or growing market share and strong competitive position over a long period underpin their sustainability.*

*But Australian focus has been almost entirely at the research commercialisation end of the innovation process, in knowledge generation rather than in knowledge translation – and far too little on business development and growth.*

*There is a resignation that if a potential global company emerges, it will become a take-over target and be lost to Australia. Some indeed will, this is the nature of the free market and international trade. But if a larger pool of emerging global companies were formed, then some will survive and grow and the country will gain the wealth, employment and, very importantly, the foreign revenues which will sustain the economy – providing the knowledge and finance to help future generations of companies to form and grow.*

*Just as Scotland, Ireland, Finland and other countries appreciate and facilitate the importance of global companies through targeted assistance programs, so we too in Australia should see them as our global, competitive heroes worthy of encouragement, assistance and support.*

*This Warren Centre Innovation Lecture, the sixth, presents just such a global company which is a role model others can and should emulate. The Warren Centre is particularly pleased to showcase the success of a smart-card company, a participant in its 1995 Smart Card project and a member of the Warren Centre-created Asia Pacific Smart Card Forum.*

*Professor Trevor Cole  
Executive Director  
The Warren Centre for Advanced Engineering*

*Peter Fogarty has created wealth for many Australians.*

*Peter and his team have taken ERG Transit Systems from a small Automated Fare Collection supplier to one of the world's leaders.*

*Under Peter's direction the ERG Group has achieved a compound sales growth rate of over 40% for the past 10 years. The Company's turnover has increased from A\$600,000 in 1986 to A\$416 million in 2000 making it one of Australia's largest Information, Communication & Technology companies.*

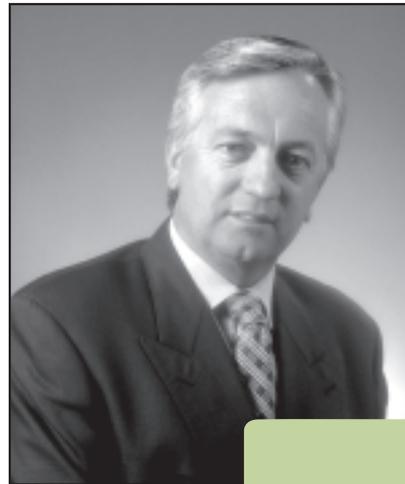
*From a background in taxation and commercial law Peter became Executive Chairman of ERG in 1986. Since 1987 he has been responsible for the overall management and strategy of the ERG Group, which ranks in the Australian Stock Exchange Top 50 Index.*

*As ERG's Chief Executive Officer, Peter has been involved in the establishment of strategic alliances with organisations including ANZ, Banksys, Deutsche Telekom, Downer, FirstGroup, Motorola, National Express, Nokia Telecommunications, Philips, Proton World, Sema Group, Stagecoach, Telstra, The Post Office in the UK, Unisys Corporation and Visa International.*

*Peter is a director of a number of companies in which ERG is a shareholder. He is also a member of the Advisory Board to The University of Western Australia Graduate School of Management, and was previously a member of the Federal Government's Information Industries Taskforce.*

*During 2000 some of the awards that Peter and his team at ERG won include:*

- "Best Use of Australian Technology in Asia" at the 2000 Business Asia Awards (May 2000).



 Peter Fogarty

- The major award for "Excellence in the Commercialisation of Technology" and the award for "Excellence in the Development of Electronic Commerce and Internet Technology" at the Australia Technology Awards ceremony (June 2000).
- "The Best E-Commerce Company" at the Australian Telecom Awards 2000 (October 2000).
- "Best Australian Hi-Tech Achievement in Europe" awarded by Europe Business Review (November 2000).

*Peter is a highly regarded, motivational public speaker who frequently presents at conferences around the world.*

*He has a strong interest and investments in the wine industry. In 2000 Peter acquired Lake's Folly Vineyard in the Hunter Valley and, with his family, has developed his own winery, known as Millbrook, in the Perth Hills region.*

*Peter has a keen interest in sport, particularly golf, yachting and hockey which he enjoys with his wife and three children.*

# BUILDING AN INNOVATIVE GLOBAL ENTERPRISE FROM AUSTRALIA

## Introduction

Distinguished guests, ladies and gentlemen.

Throughout Australia's brief, modern history, Australians have fundamentally believed in their ability to match or better almost any nation globally in terms of sporting capability and prowess. The outstanding performances of our swimmers, cricketers, rugby teams and others are not something that surprise us – they are almost expected.

When it comes to technology and innovation, and our ability to compete on the global stage, we seem to be lacking in confidence. The overwhelming view I hear is that Australians believe they produce good ideas but usually are unable to commercialise them. We almost accept defeat before we start. We question our ability to operate a global business from Australia and, worse still, often consider Australian technology inferior.

Over the last 20 years there has been only a small number of Australian organisations that have built a global enterprise based on innovative technology from Australia. I will not seek to justify or explore the Australian psyche in this presentation, but the attitude to technology and innovation is relevant to the challenge of building an innovative global enterprise from Australia.

In the case of both major political parties in this country, it has taken an IT&T deficit in 2000 of \$9 billion to capture their attention. Their policies fail to address the real importance of innovation for the economy, which is the implementation and use of innovation rather than just incentives (and inadequate ones at that) for the sector.

The level of investment in research and development (R&D) by Australian industry also remains too low and will only result in us slipping further behind the rest of the world if it remains at that level.

Given that government and industry have been reluctant to “invest” in innovation, it is probably not surprising that few Australian companies have made it on the global stage, let alone established a sustainable global enterprise.

Against that background I would like to provide a brief history of the ERG Group and then expand on the key areas that have assisted us in building our global enterprise. They are:

- our Board, management and employees;
- creating a vision and reinventing it;
- alliances and strategic acquisitions;
- R&D; and
- our customers.

 *It has taken an IT&T deficit in 2000 of \$9 billion to capture the attention of both major political parties.*

## ERG Background

ERG, as it is today, was created almost by accident in 1987. Prior to that the Company had been a mid-1980s technology float, with no real business and what proved to be questionable technology.

In 1986 I was recruited as Executive Chairman by the major investors and was given the unenviable task of cleaning up the mess of the past and developing a new business effectively from scratch.

My first task was to build a small management team around me which provided the core skills

I lacked. By mid-1987 we comprised about ten employees and had little revenue. In that year we acquired a small Perth-based business, Associated Electronic Services (AES), which manufactured fare collection products and was “playing with” smart card technology. We immediately identified that we could not sustain the business by manufacturing product and supplying it to the Australian market. There were too few customers and contracting was inconsistent. Internationally there were only a few competitors in the industry and, more importantly, we identified that the market was changing.

In 1987 the AES business had revenue of \$1 million and lost nearly \$2 million. ERG was capitalised at approximately \$10 million. By June 2000, ERG had grown to revenue of \$415.7 million, with net profit after tax of \$35.2 million and had over 1,000 employees. It was capitalised at \$2.8 billion. The Group invested \$58.4 million in R&D in 2000 alone, taking total R&D expenditure over the last ten years to \$256 million.

In September 2000, we sold our telecommunications and fare collection manufacturing businesses to focus on system solutions for fare collection and smart card technology (consisting of development, supply and operations).

In the space of 13 years we have metamorphosised from a small ticketing hardware manufacturer to a global business with:

- 18 offices in 12 countries across 4 continents;
- sales to more than 350 customers in 200 cities globally;
- 9.2 billion transactions per annum occurring on systems installed around the world;
- an increasing percentage of recurring or annuity type revenue;
- alliances with major organisations worldwide;
- the dominant position in providing integrated transit smart card solutions globally;
- an annual budget of over \$50 million for R&D;
- approximately 40% of revenue derived from outside Australia;
- a ten-year compound growth rate of over 40%; and
- over 28,000 shareholders worldwide.

 ... only a few competitors in the industry and, more importantly, we identified that the market was changing.

## The People

I have had the good fortune to be part of an enterprising and committed team that has always supported the bold vision, even if at times questioning the lunacy and demands of the visionary.

An innovative company needs strong leadership and a Board and management team that are not risk averse. Risk can be minimised but not removed entirely when the true potential of the business relies upon using and developing new technology and then pushing that technology to the limit – all too frequently in limited timeframes.

To reduce risk we have always sought to restrict our R&D to real projects, thereby avoiding conceptual R&D that might create a better mousetrap but not have any customers.

Moving from a manufacturing company to a systems solutions business has been a significant transformation. Not all of our employees or management have been able to make the adjustment. This has necessitated constant restructuring and reinventing of the Company as a whole and of our people. Many employees who are valuable to the organisation have changed their role and become better contributors. Above all else, employees must believe in the organisation, its leadership, vision and the contribution they can make. Our staff turnover has been relatively low and all employees feel they have contributed to and shared in the Group's success.

I have always subscribed to the view that employees should be stakeholders, not just employees. To motivate our team we introduced a far-reaching employee share plan, despite minimal government support for such programs at the time. The shares have restrictions that tie the employee to the Company and through regular allocations extend their commitment period. I believe that the employee share plan has been fundamental to our success. Many of our employees have seen their shares increase in value significantly and in turn all shareholders have been rewarded. It is for this reason I believe the current Australian Stock Exchange restrictions on the percentage of shares which can be issued to employees are counter-productive and should be reviewed.

In 1990/91 we formed the opinion that our staff, including senior management and myself, lacked some of the skills (particularly languages) necessary to succeed as a global business. Part of our plan at that time was to acquire multilingual staff through acquisition and/or alliances so that we could pursue our global objectives with the right personnel. We also believed that an acquisition should ideally deliver an existing customer base.

The selection of Board members has also been an important part of our growth. Our business has been marketing driven and a more conservative board may have restricted our ability to expand. We sought to recruit Directors that had broad-based business skills, international business experience, understood compliance and reporting requirements, and, whilst not being reckless, were not risk averse. We also considered it important for some Directors to be based outside the head office in Western Australia to remove the risk of being localised and too narrow in our focus.

 *I have always subscribed to the view that employees should be stakeholders ...*



*Hong Kong Octopus contactless smartcard and processor.*

## Creating a Vision and Reinventing it

Simply making the decision to “go global” does not result in a successful innovative global enterprise.

In 1989 we had already made the decision to expand offshore. We had offices in Stockholm and Toronto and had won contracts in both locations. However, we were far from being a global enterprise. Our overseas offices were sales offices and we had no clear strategy to develop a truly global business. That situation changed in 1989/90.

We sought to raise additional capital and prospective investors wanted a well-defined business plan. We spent 6-9 months writing a business plan and strategy paper that became our “Magna Carta”. Although completed in 1991, it has continued to provide the base that has driven our growth. We set ourselves more than 25 key goals to achieve over the ensuing five years.

One of those goals was to be a \$50 million revenue company by 1995 – we achieved \$134.8 million. We set target growth rates and R&D spend levels, and identified how we could become the dominant company in our industry sector. This meant developing a coordinated global approach and expanding through acquisition and creation of strategic alliances. We also identified the importance of our customer base and the need to treat customers as partners. That approach has at times proved altruistic, but nevertheless our willingness to provide what the customer wants has been one of the key reasons for our success.

Since 1991 we have largely worked to the key principles in the business plan. However, it has become increasingly necessary to reinvent ourselves and our global strategy as customer needs changed, competitors emerged or disappeared and technology underwent fundamental changes. Some of the changes that occurred in the industry were driven by us as we identified new customer requirements. The trend to privatisation of public transport and outsourcing fundamentally changed the face of our business.

Many of our competitors remained focused on equipment supply only, whilst we moved more and more towards software and systems solutions. We identified the need to become a one-stop-shop for customers and found we could not rely on large multinationals to meet their subcontractor obligations. This led us to create our own software development capability and we now have over 400 software engineers across the Group.

 ... it has become

*increasingly necessary to reinvent ourselves and our global strategy as customer needs changed, competitors emerged or disappeared and technology underwent fundamental changes.*

As the Company grew it also became increasingly challenging to communicate our vision internally and operate as one global organisation. Consistency of branding, cultural hurdles, distance and coordination of development became new issues for an organisation that was run and operated from Perth, Western Australia – the most remote head office on earth. Fortunately we had created successful alliances with global enterprises such as Nokia which had been there and done it before us. The experience gained through such alliances is covered later in this presentation.

Communication of a company's vision is one of the most difficult issues in building a business. Certain aspects of vision and strategy cannot be communicated in order to protect IP and know-how and to avoid informing your competitors. Equally, full disclosure of a vision to analysts and the investment community is likely to result in being labelled a dreamer or fool (or possibly both). However, it is fundamental that the Board and senior management support the company's vision.

Over the past five years we found communication and knowledge management an increasingly challenging issue to the extent that we have recently employed a team to manage this activity across the Group. During that period we have continued to reinvent our objectives and strategies at varying frequencies.

The concept of sticking rigidly to a five-year plan is unworkable in running a global enterprise today. A five-year plan can operate as a guide but must not be used as an excuse not to change strategy. If an organisation is to succeed globally it must be marketing driven and the market is never constant, particularly where technology is concerned.

I am a great believer in the value of the customer and it is very often the customer that can best influence and shape a company's strategy. If you don't address their requirements you don't have a business. Change of ownership and new strategies by competitors are also relevant.

 **Communication**

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## Alliances and Strategic Acquisitions

ERG Group prides itself on the number and quality of alliances it has established with major multinational companies. The first two alliances established were with global giants Philips and Nokia in 1991 and 1992 respectively.

Since then we have established alliances with over 18 companies, including American Express, ANZ, Banksys (comprising all the Belgian banks), Cable & Wireless Optus, FirstGroup, Fujitsu, Interpay (the Dutch banks), Mayne Nickless, Motorola, National Express Group, Sema Group, Stagecoach, Sun Microsystems, Telstra, Unisys and Visa International. Each alliance has added value to ERG and helped us achieve our goals.

Some, such as the Nokia alliance, had a profound effect on the Group's development. Nokia was an excellent role model as well as providing us with the experience necessary to build a world-class manufacturing facility. Additionally, as Nokia is based in Finland, it had many of the same issues to confront as we did, such as a small population, limited home market and a shortage of skilled employees.

When we first met Nokia in 1990 it had revenue in its telecommunications division of A\$660 million. Today, only 11 years later, Nokia's revenue is over A\$53 billion. I sincerely hope that ERG, or one of Australia's other innovative companies, can be as successful.

The fundamental benefit of all our alliances is that they have allowed a relatively small company, as ERG is in global terms, to gain more rapid acceptance and market penetration than we otherwise would have.

A number of alliances have served their purpose and we have moved on. Others are only just beginning and several more are currently being negotiated. The alliances have worked best where there is a win-win for both parties. However, achieving that position is easier said than done.

As mentioned earlier, acquisitions have played an important role in building our global enterprise. The acquisition of the Prodata fare collection business in Belgium in 1992 provided us with multilingual staff, skills in technology ERG did not have and a broad existing customer base. It also provided a beachhead in Europe. This acquisition followed an alliance where we worked together on the Sydney State Transit Authority fare collection project in 1991.

However, the acquisitions the Group has made to date have been relatively small and most of our growth has been organic and through alliances.

 *The fundamental benefit of all our alliances is that they have allowed ... more rapid acceptance and market penetration ...*

## The Importance of Research and Development

ERG's investment in R&D has been significant, running as high as 23% of revenue. By dollar spend ERG has ranked in the Top 10 in Australia for the past three years. That statistic is more of a criticism of Australian industry than it is praise for ERG.

In our 1991 business plan we committed to allocate 8-15% of revenue to R&D. That level has been maintained as a minimum for the last ten years. Our major investment in R&D has been the development of the Company's multi-application smart card processing technology which is only just beginning to provide returns.

ERG's commitment to R&D was reinforced when we carefully studied successful global companies, particularly in the technology field. Companies such as Nokia invested 15% or more in R&D. Nokia also took a significant risk when it committed all its investment to GSM technology. However, the vision for the technology, the quality of Nokia's products and its innovative marketing strategy saw the company become the global leader in wireless technology in a ten-year timeframe.

If you look at the innovative Australian companies that have succeeded globally, there is a consistently high level of investment in R&D. We remain committed to spending 8% of revenue or more on R&D as it shows strong returns, maintains our lead over our competitors and ensures that we maintain the skills base we have developed.

 *We remain*

*committed to spending  
8% of revenue or more  
on R&D as it shows  
strong returns ...*

## Our Global Customers

A successful global enterprise must have a strong global customer base. The role of our customers has been critical to the development of ERG.

Regrettably with some contracts the pressures of project management and timeframes have tested the relationship to the limit. Rather than operate as a partnership the customer-supplier model took over and we became confrontational rather than cooperative with each other. However, in the majority of cases we have established strong relationships with our customers. Our first major contract was in Sydney in 1991 and that customer and its site became one of our strongest references.

In 1993/94 we won major contracts in Melbourne and Hong Kong. In both cases the projects were introducing totally new technology and were extremely complex. Both struck difficulties but the customer management was vastly different.

Hong Kong became our most important reference site and still is to this day. We have won considerable extra business as a result, and the customer has showcased the system to the world. Our customer became our partner and the Hong Kong System has been more effective for us than any of our own sales force. Prospective customers and consultants from around the world visit the site and then adopt it as the model for their own systems.

A major reference site, or customer of international recognition, is, in my view, fundamental to an Australian company being accepted and achieving global status.

ERG now has 350 customers in approximately 200 cities (33 countries) around the world.

Ongoing management and support of the customer base is challenging and our new knowledge management system incorporates our customers as part of the Group for communication purposes.

 ... customer

*of international recognition, is ... fundamental to an Australian company being accepted and achieving global status.*



*ERG Group's smartcard technology gives a ticket to ride in Hong Kong.*

## Conclusion

The team of committed, enterprising and frequently travelled people at ERG has demonstrated that a global enterprise at the forefront of its industry can be built and managed from Australia. A commitment to innovation and self-belief has been fundamental to that achievement, as has unflinching focus.

In 1993 some people in Australia thought our vision was unrealistic or unattainable. At times we have been called underachievers. We had to weather a storm in Melbourne for 3-4 years which was highly publicised (and adverse to ERG). We stuck to our belief in our vision and ourselves just as a strong sporting team does. When many wanted to write us off we bounced back with a flurry of new contracts and alliances. We are now better positioned than we have ever been.

Our vision and commitment have always been long-term. I have no time for the “quick-buck” merchants who add no value long-term and simply seize a market trend and personally capitalise on it. ERG on the other hand has created significant employment in this country and abroad. It has also generated wealth for its employees and shareholders and has helped to raise awareness around the world of the talent which can be found in Australia. We believe ERG has also provided its customers with better business solutions. ERG has trained subcontractor organisations in quality and management and helped make them better organisations which can hopefully grow as we have.

We have fast tracked our own knowledge and capability through alliances with some great international companies.

The Company has built a good relationship with AusIndustry and the Department of Industry, Science and Resources which have supported us where possible.

ERG has not completed its journey. The Company has made it to the global stage but must now go on and deliver long-term, sustainable earnings and continue to keep ahead of its competitors through innovation and reinvention. As Catherine Livingstone said in her Warren Centre lecture presentation last year: “This continuous striving to be better is the root of innovation”.

I strongly urge Australians and the major political parties to recognise, more so than they do now, the importance of innovation and that Australia can and must develop innovative global enterprises.

 **We have shown**

*that a global enterprise  
at the forefront of its  
industry can be built  
and managed from  
Australia.*

## The Warren Centre for Advanced Engineering

The Warren Centre for Advanced Engineering is an independent, industry-linked institute committed to fostering excellence and innovation in advanced engineering throughout Australia.

It is a self-funding non-profit body operating within the Engineering Faculty of The University of Sydney, controlled by representatives from industry.

The Warren Centre objectives are to:

- Stimulate innovation in the advanced engineering technologies to accelerate Australia's industrial development;
- Encourage the effective deployment and use of new engineering technologies;
- Promote the integration of technology, management, design and enterprise among Australian businesses;
- Provide independent advice and comment on these issues and their impact on development, national policies and enterprise.

Since opening in 1983, The Warren Centre has gained wide recognition for its unique approach and its achievements in diverse fields of engineering technology and industry development.

The Centre's core services include investigation of major technical issues; keeping people informed through lectures, seminars and round tables; and bringing emerging industry groups together to enable cooperation and faster creation of competitive advantage.

The Warren Centre Innovation Lecture is an activity of The Warren Centre's Events Committee, aiming to promote understanding of new technologies and innovation and to encourage their use among Australian businesses.

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