From Singapore to the world

manufacturing • services • innovation
“Singapore embodies all the attractive attributes a company can seek in a business partner: world class infrastructure, flexibility, excellent education system, technology mindset, pro-business environment, manpower capabilities and an excellent springboard into the region.”

Pasquale Pistorio
CEO and President
STMicroelectronics

As early as the 1980s, Mr Pistorio championed the setting up of the very first wafer fabrication plant in Singapore, paving the way for a vibrant semiconductor industry.
value of a ‘made in singapore’ brand

Singapore’s reputation in the global business arena is synonymous with quality, reliability and efficiency. We consistently rank amongst the top in regional and global surveys which appraise factors contributing to business.

Investors value Singapore’s reputation. Today, many international players use Singapore in the full value chain of manufacturing and services – from R&D to testbedding, design, production, supply chain management and regional headquarters services.

Companies can also capitalise on these unique manufacturing capabilities, confident in the knowledge that ‘Made in Singapore’ is an esteemed trustmark.

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<td>United States</td>
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<td>Singapore</td>
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Source: International Institute for Management Development, 2004

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<td>Hong Kong</td>
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Source: EIU Country Forecast, October 2003

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<th>Country</th>
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<td>Switzerland</td>
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<td>Singapore</td>
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our vision: singapore – a compelling global hub for business and investment.

our mission: create sustainable GDP growth for singapore with good jobs and business opportunities for its people.
about edb

“If there is any country on earth which understands what it takes to compete and win in the global economy today, it is Singapore.”

Carly Fiorina, Chairman & CEO, Hewlett-Packard

Hewlett-Packard (HP) picked Singapore to site its sole global hardware development and manufacturing centre for HP ProCurve Networking products. In Jan 2004, HP announced a US$1 billion investment in Singapore.

Growing global businesses from Singapore

For more than four decades, the Singapore Economic Development Board (EDB) has played a lead role in charting and driving Singapore’s economic growth. Today, Singapore is a strategic and compelling global hub for business and investment.

EDB officers work with companies to help them establish value-creating operations across both manufacturing and internationally traded services sectors.

To keep ahead in a knowledge-driven world, EDB acts as a catalyst and facilitator in growing new industries and technologies and creating a supportive environment for startups and innovation to flourish.

Our commitment continues to be ensuring a safe, reliable and conducive business environment which allows companies to optimise the returns on their investments, and to attract global talents.

All figures are in Singapore dollars unless otherwise stated. All information in this book is accurate as at the time of printout actual date.
“Despite restive international conditions, Singapore has continued to enjoy investor confidence and is valued as a safe and secure environment for business.”

Teo Ming Kian
Chairman
EDB
Dear Friends,

I am pleased to report that with the improving global environment, Singapore’s economy too has been turning around. Our economy is expected to grow between 8 per cent and 9 per cent this year and we now look forward to 2004 with greater confidence albeit with cautious optimism. SARS, which had almost stalled our economy, had been overcome. But the effects of the Iraq War still linger, with higher oil prices, heightened tension in the Middle East and the enlarged threat of global terrorism. Despite such restive international conditions, Singapore has continued to enjoy investor confidence and is valued as a safe and secure environment for business.

We are grateful to our partners, who have maintained Singapore as a preferred investment and business location against an increasingly competitive global landscape. Despite the uncertain global economic conditions, Singapore attracted $7.5 billion manufacturing investment commitments and $1.9 billion worth of annual total business spending from services projects last year.

A recent survey by International Institute for Management Development, a leading Swiss business school, not only rated us as the second most competitive nation after the United States but the best for the ease of doing business.

Within our unique enterprise ecosystem, manufacturing and services will continue to be the twin engines of our economic development, whilst we pursue greater diversification in both sectors. High value manufacturing will feature more in our increasingly knowledge driven economy. Coupled with our continued investment to enhance skills and talents of our workforce and our expanded connections and connectedness internationally, Singapore remains a compelling location for business, providing a comprehensive end-to-end package, which essentially encompasses the Singapore brand. “Made in Singapore” represents a unique stamp of value, quality and reliability, which is internationally recognised.

Looking forward, the challenge for Singapore is to steer a path of sustainable growth. We are well positioned within the high-growth Asia. Recent World Bank data predict that East Asia’s economic fortunes will be fuelled largely by China. But India is not far behind with its blistering growth of 10.4 per cent in the last quarter of 2003, not to mention the ASEAN tigers, which managed to record an impressive annualised growth rate of 5 per cent at the end of last year and a promising projected rate of 5.5 per cent to 5.9 per cent in 2004.
Singapore enjoys a special juxtaposition between Asia’s two fastest growing economies of China and India and the promising growth economies of ASEAN. We serve as a critical node with unique capabilities and access, meeting the demands of value manufacturing, services and international business alike. For instance, Chinese and Indian companies are taking advantage of our trusted hub status to set up new business ventures and Asia headquarters here.

To remain competitive, however, we have adopted new initiatives to make Singapore even more compelling for businesses. We continue to expand our network of Free Trade Agreements, particularly with key trading partners. We encourage the growth of entrepreneurship, attracting more investment in research and development, venture capital, startups and incubator set-ups. We will nourish our enterprise ecosystem, ensuring that companies, big or small, local or foreign will find their space for growth in Singapore to serve the regional and global markets.

I remain optimistic of our prospects for 2004 and beyond. The unique Singapore brand continues to register quality and value for our customers, investors and manufacturers alike. Working with other agencies, EDB will continue to strive to ensure that Singapore sustains its position as a global entrepolis, providing an incomparable exchange and marketplace for entrepreneurs and enterprises all over the world to bring in innovation, business, capital and opportunity to interact and transact with each other.

My gratitude goes to our investors who have shown great commitment to Singapore and my appreciation to the staff of EDB who have worked especially hard last year to help us achieve our results during fairly tumultuous times. We too will remain committed to our many valued investors. Going forward, we will continue to work on more win-win partnerships so as to achieve greater business success and growth.

Jeong Eun-pyeong
Chairman
2003 performance

2003 Investment Commitment Indicators

<table>
<thead>
<tr>
<th>Indicator</th>
<th>2002</th>
<th>2003</th>
</tr>
</thead>
<tbody>
<tr>
<td>FAI from manufacturing projects ($ bil)</td>
<td>9.01</td>
<td>7.51</td>
</tr>
<tr>
<td>TBS from services projects ($ bil)</td>
<td>2.08</td>
<td>1.92</td>
</tr>
<tr>
<td>Total VA per annum generated from manufacturing and services projects ($ bil)</td>
<td>10.54</td>
<td>8.57</td>
</tr>
<tr>
<td>Total employment creation</td>
<td>20,900</td>
<td>16,900</td>
</tr>
<tr>
<td>Skill profile (percentage of professional and skilled jobs)</td>
<td>69%</td>
<td>76%</td>
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Indicators: 2003 vs. 2002

<table>
<thead>
<tr>
<th>Indicator</th>
<th>2002</th>
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Glossary:

Total Value-Added (VA) - The total VA is a direct component of the total gross domestic product (GDP) per year of Singapore contributed by committed projects when they are fully implemented.

Fixed Asset Investments (FAI) - FAI refers to capital investments in facilities, equipment and machinery.

Total Business Spending (TBS) - TBS refers to a company’s incremental annual operating expenditure when the project is fully implemented.

Total employment creation refers to the new jobs created when the project is fully implemented.

2003 Manufacturing FAI Commitments By Industry

<table>
<thead>
<tr>
<th>Industry</th>
<th>2003 FAI ($ bil)</th>
</tr>
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<tbody>
<tr>
<td>Transport Engineering</td>
<td>$0.21b</td>
</tr>
<tr>
<td>General Manufacturing</td>
<td>$0.23b</td>
</tr>
<tr>
<td>Precision Engineering</td>
<td>$0.42b</td>
</tr>
<tr>
<td>Biomedical Manufacturing</td>
<td>$0.85b</td>
</tr>
<tr>
<td>Chemicals</td>
<td>$1.57b</td>
</tr>
<tr>
<td>Electronics</td>
<td>$4.22b</td>
</tr>
<tr>
<td>Total:</td>
<td>$7.50b</td>
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2003 Services TBS Commitments By Industry

<table>
<thead>
<tr>
<th>Industry</th>
<th>2003 TBS ($ bil)</th>
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<tbody>
<tr>
<td>Biomedical Services</td>
<td>$0.056b</td>
</tr>
<tr>
<td>Education</td>
<td>$0.112b</td>
</tr>
<tr>
<td>Engineering &amp; Environmental Services</td>
<td>$0.168b</td>
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<tr>
<td>Logistics</td>
<td>$0.268b</td>
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<tr>
<td>InfoComms &amp; Media</td>
<td>$0.623b</td>
</tr>
<tr>
<td>HQ &amp; Professional Services</td>
<td>$0.696b</td>
</tr>
<tr>
<td>Total:</td>
<td>$1.92b</td>
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</table>
Our unique CORE advantages – why Singapore is a choice location for manufacturing, services and business headquarters.
connectivity

Extensive and sophisticated air, sea and IT links with the world and our wide network of free trade agreements work together to provide a seamless and efficient flow of goods and services to global markets.

“Singapore’s strategic location and connectivity within the region and the world makes it an ideal launchpad for us.”

Jay Kim
Chairman and President
Nexon Corporation

Singapore is Nexon’s Asian regional HQ. It publishes and develops Massively Multiplayer Online Games in the region.
Our FTA partners collectively account for 60% of the world’s GDP

2.8 billion people within a 7-hour flight radius

- Concluded
- Under negotiation

(information as at 8 June 2004)
openness

Open and cosmopolitan, welcoming talents and companies from all over the world, Singapore is a bridge between the East and West and the place for global business. This diversity of talents with a discerning international business mindset makes Singapore an ideal hub for global operations, creative work and R&D.

“Singapore has proven to be a tremendous base for our HQ, providing talented people, high quality infrastructure and a pro-business regulatory environment.”

Dawn L McCall
President
Discovery Networks International

Discovery Networks Asia recently celebrated its 10th year as entertainment leader in the region. Singapore is its regional headquarters.
7,000 MNCs of which at least 60% are regional headquarters

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**2nd MOST GLOBALISED NATION IN THE WORLD**

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<th>Country</th>
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<td>Ireland</td>
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<td>Singapore</td>
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*Source: 4th annual AT Kearney and Foreign Policy magazine globalisation index, 2004*

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**BEST QUALITY OF LIFE IN ASIA**

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<td>Singapore</td>
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<td>Taiwan</td>
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*Source: Political and Economic Risk Consultancy, Mar 2003*
Things work here – Singapore is stable, secure and a trusted hub. A proactive, transparent and responsive government ensures that policies and practices are consistent and pro-business, and physical and intellectual property are protected.

“Schering-Plough can confidently effect technology transfer and perform product development in its first R&D facility in Asia because Singapore has a comprehensive regime for the protection of intellectual property rights in place.”

Fred Hassan
Chairman and CEO
Schering-Plough Corporation

Schering-Plough of the US recently opened its Multi-Product Bulk Pharmaceutical Plant and its first R&D facility in Asia. Today, it is Singapore’s largest pharmaceutical investor and employer.
London-based global financial ratings agency Fitch gave Singapore ‘AAA’, its top credit rating, for its ability to cope with economic shocks and its success in containing the SARS outbreak (May 2003).

**LEAST CORRUPT COUNTRY IN ASIA**

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<td>Singapore</td>
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<td>Japan</td>
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*Source: Political and Economic Risk Consultancy, 2004*

**LOWEST INTELLECTUAL PROPERTY RIGHTS RISKS IN ASIA**

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<td>Japan</td>
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*Source: Political and Economic Risk Consultancy, October 2003*

**2ND IN PERSONAL SAFETY AMONG WORLD’S TOP 50 CITIES**

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<th>Country</th>
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<td>Luxembourg</td>
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<td>Singapore</td>
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*Source: Mercer Human Resource Consulting, 2003*
Companies constantly benefit from, and add to, the vibrancy of our enterprise ecosystem – the lively interactions among companies big and small, local and foreign from diverse industries. And driving the ecosystem is our enterprising workforce, listed the best in the world.

“…what really fascinates me is Singapore’s untiring energy and spirit that seeks out every single opportunity, niche or value proposition that has the potential to be the next big thing.”

Michael Zafirovski
President and Chief Operating Officer
Motorola Inc

Motorola Electronics recently celebrated its 30th anniversary in Singapore. The company employs more than 2,000 people in its R&D, manufacturing and headquarters operations.
A united nations of incubators

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<td>Switzerland</td>
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Concentration of International Enterprises

- 10,000 US, EU, Japan
- 1,500 India
- 1,200 China
- 2,500 Asia (others)
- 10,000 Singapore

20% of the 3,200 high-tech startups formed in 2003 were foreign
An enterprise ecosystem with a diverse mix of industries

- biomedical sciences
- chemicals
- electronics
- precision engineering
- transport engineering
- food
- engineering and environmental technology services
- headquarters and professional services
- infocommunications and media
- logistics
- education services
- healthcare services
- emerging industry areas
- technopreneurship, innovation, r&d
creating sustainable growth for Singapore and investors

What remains unchanged is Singapore’s ability to continuously re-invent itself so as to remain relevant to global businesses and to create value for them.

The external economic environment, needs and business models of companies are changing rapidly. What remains unchanged is Singapore’s ability to continuously re-invent itself so as to remain relevant and useful to global businesses and to create value for them.

We will strengthen our CORE attributes (Connectivity, Openness, Reliability and Enterprise), which are also our unique advantages. While we command premium advantages, we are conscious that Singapore has to remain cost competitive.

At the industry level, manufacturing and services will remain the twin engines of growth. Today, we have built up world class industry clusters in electronics, chemicals, pharmaceuticals, engineering, logistics, infocomms and media and regional headquarters operations. Moving forward, we will enhance our strengths in these clusters by pushing up the value chain into R&D, innovation, value manufacturing and supply chain management.

EDB is also actively developing emerging areas which can become future growth engines in our economy. These include biotechnology, advanced displays, photonics, international education and healthcare services and intellectual property management.

Our major foreign investors come traditionally from the US, EU and Japan. Companies in the Asia Pacific countries are now discovering that Singapore’s differentiated advantages is highly valuable in their international strategy.

While large companies will continue to play a vital role in our economic development, we are also relentlessly promoting entrepreneurship. We aim to make the environment here more conducive for indigenous entrepreneurs as well as attracting foreign entrepreneurs and new ventures to locate and grow in Singapore.

Collectively, these efforts will make Singapore’s enterprise ecosystem more attractive – there will be a diversity of industries from different countries, and at different growth stages. Such a vibrant enterprise ecosystem will be of tremendous value to all companies, established and new.

* All graphs and charts within this section are indicators (Fixed Asset Investment, Total Business Spending and Total Value-Added) when the projects committed in year 2003 are fully implemented.
The availability of ready-fitted laboratories to incubate startups, as well as shared R&D facilities and services, provide a conducive plug-and-play environment for innovation and R&D at Biopolis.
biomedical sciences

Investments in industrial, intellectual and human capital are bearing fruit for Singapore’s biomedical sciences (BMS) industry.

Manufacturing output expanded 15.9 per cent in 2003 over 2002, with pharmaceuticals contributing 84 per cent of total BMS production.

The substantial presence of key industry players in Singapore, including the world’s top six pharmaceutical companies, underscores our vision to be the Biopolis of Asia – an epicentre for BMS manufacturing, R&D, clinical development and headquarters activities.

Biopolis, Singapore’s dedicated BMS centre, aims to foster interaction between the public and private sectors. It is home to A*STAR’s five biomedical research institutes, and commercial R&D laboratories from pharmaceutical and biotech companies. This clustering also encourages inter-disciplinary research and collaborations.

The availability of ready-fitted laboratories to incubate startups, as well as shared R&D facilities and services, provide a conducive plug-and-play environment for innovation and R&D at Biopolis.

EDB and A*STAR will continue to work hand-in-hand to strengthen our manufacturing and scientific capabilities, as well as to provide a talent pool for the expanding BMS industry.

A*STAR, or Agency for Science, Technology and Research, is the government agency responsible for charting Singapore’s course in science and technology.

Singapore is a preferred manufacturing and R&D hub for biomedical companies. US-based Applied Biosystems, a leading supplier of life science tools worldwide, has a global manufacturing facility here to produce Polymerase Chain Reaction systems, Sequence Detection Systems, Gene Expression Arrays System and a range of research consumables. The 20-man R&D team here also carries out new product development and application software testing. The company will continue to invest in new manufacturing capabilities and expand its research presence in Singapore.

Singapore is the key Asia-Pacific manufacturing base for US pharmaceutical giants Merck & Co and Schering-Plough Corp. Leveraging on their manufacturing operations and Singapore’s business infrastructure, they have joined hands to develop, manufacture and market two new potential blockbuster medicines for cholesterol reduction and control, Zetia/Ezetrol and Vytorin. Both medicines will be launched from Singapore and the latter is expected to receive approval for worldwide use by end-2004. This collaboration illustrates Singapore’s attractiveness as a partnering and value manufacturing location.
Singapore’s cost-competitive location for highly-integrated oil and chemical companies has seen world-scale complexes operate on Jurong Island, Singapore’s dedicated and vertically integrated chemicals hub.
Singapore ranks amongst the world’s top three in the oil trade, and is one of Asia’s largest petrochemical manufacturing centres.

In 2003, our petrochemicals output soared by 38 per cent, and petroleum products, by 20 per cent, over 2002.

Singapore’s cost-competitive location for highly-integrated oil and chemical companies has seen world-scale complexes operate on Jurong Island, Singapore’s dedicated and vertically integrated chemicals hub. Linked by a common products and utilities corridor, companies can also outsource their non-core activities.

A new chemicals logistics park with integrated capabilities, the Banyan LogisPark is able to handle bulk liquids and solids, supported by a range of value-added services.

Underpinning Singapore’s strategic location and total business hub status, chemical companies have established headquarters, and moved their regional control towers to base here. They have also embarked on new projects and market-driven R&D and testing of new technologies.

To support the industry’s R&D, the Institute of Chemicals and Engineering Sciences was established on Jurong Island. To be staffed with 200 research scientists and engineers, it is a centre for industry innovation, technology and research partnership. Also on Jurong Island and representing a milestone in manpower development is the setting up of the Chemical and Process Technology Centre, the first dedicated live training plant in the world, to train technicians-of-the-future.

ExxonMobil Chemical continues to diversify its operations in Singapore. Capitalising on its strong manufacturing base of a petrochemical cracker and downstream plants here, it has implemented an advanced Global Enterprise Management System (GEMS), which optimises its supply chain processes, and improves its communication of business information. “Singapore was selected as a project and support centre in the region because of its proximity to ExxonMobil Chemical’s Asia Pacific chemical business management, as well as for its technical IT expertise,” says Mr Stan Tebbe, Manufacturing Director of ExxonMobil Asia Pacific Pte Ltd.

Headquartered in Denmark, Hempel Group, a global leader in marine coatings, has opened its Asia Pacific R&D centre in Singapore. The R&D centre is its first in Asia Pacific and complements the existing manufacturing plant and regional headquarters. The manufacturing plant will be responsible for the first commercial production of coatings developed by the R&D centre. The company’s decision enhances Singapore’s reputation as a total business base to reach out to the Asia-Pacific market.
Home to 12 wafer fabrication plants, many integrated circuit design centres and 18 IC assembly and test facilities, Singapore is the undisputed location for a variety of electronics activities.
electronics

The electronics industry is the main driver of Singapore’s manufacturing sector, and the largest contributor to total manufacturing FAI, at 56 per cent for 2003.

Home to over 12 wafer fabrication plants, many integrated circuit (IC) design centres and 18 IC assembly and test facilities, Singapore is the undisputed location for a variety of electronics activities. Singapore has a highly-qualified labour force including 800 IC design engineers and more than 10,000 engineering graduates join the workforce every year.

In the hard disk drive arena, Singapore has a leading share of the global output volumes at about 33 per cent. Global outsourcing has seen Singapore’s electronics manufacturing services (EMS) industry grow and move up the value chain. Today, the world’s top five EMS companies have significant presence in Singapore with operations ranging from design to high value-added manufacturing to management of regional activities.

Significant investments in the advanced display and semiconductor sectors, such as Toshiba/Matsushita’s $1.7 billion LCD plant, have enlarged Singapore’s manufacturing base, whilst the introduction of advanced technologies affirms Singapore’s high-value manufacturing strength. Semiconductors IC design and advanced displays are important growth areas in the coming year.

**OLEDs are a cost-effective replacement for liquid-crystal display screens in electronic products and the market for the flat panel display technology is expected to double to US$60 billion by 2006.

Hitachi Global Storage Technologies (Hitachi GST), recognising Singapore’s strengths, has established its sole global manufacturing centre for server disk drives, and consolidated its key business functions. “Singapore was the obvious choice for our new corporate Global Centre because of the country’s highly-skilled workforce and developed IT and financial infrastructure. We need every advantage we can identify to effectively compete in the highly-competitive HDD industry, and this relationship with Singapore puts us in a winning position,” says Mr Jun Naruse, CEO of Hitachi GST.
Singapore has a strong base of competent mould makers and precision component players developed over 30 years.
The third largest contributor towards manufacturing FAI and the second largest in terms of job creation in 2003 at more than 2,400 jobs, the precision engineering industry is an important component of Singapore’s robust manufacturing economy.

The growing number of precision engineering companies in Singapore has been a natural magnet for other manufacturing companies with a ready supply of high quality machines, modules and components.

As manufacturing continues to grow in Asia, companies can tap on Singapore’s strong machine-building capabilities to improve product quality and productivity. The city-state plays host to leading industrial equipment makers like ASM, Electroglas and Kulicke & Soffa, as well as machine tools manufacturers such as Makino and Mazak.

Singapore also has a strong base of competent mould makers and precision component players developed over 30 years. These companies provide components and services in areas like plastic injection moulding, metal forming and surface finishing. They have grown together with the local electronics industry to become one of the best supporting industries in Asia. They now serve diverse industries such as automotive, biomedical and photonics. Several homegrown companies like Unisteel, Omni Mold and Seksun also gained international recognition when they were included in Forbes Global 2003 list of 200 Best Small Companies in the World.

Siemens Logistics & Assembly Systems, previously known as Siemens Dematic, chose Singapore to develop and produce its high-speed placement machines for the electronics manufacturing industry. One of the key factors they found attractive is the presence of a highly skilled workforce that could meet its requirements to assemble high precision, high performance machines. This will be the first time that such high-tech, high-end production machinery is being designed, developed and manufactured in Singapore.

Matsushita Refrigeration Industries (MARIS), a leading supplier of refrigeration compressors for the global market, is positioning its Singapore operations to become a “super manufacturing company” and an advanced R&D and manufacturing solutions hub. To do this, MARIS will increase its R&D capabilities to become a full-fledged R&D Centre and undertake manufacturing of new advanced inverter compressors here. The DG-X compressor, developed by the Singapore R&D team and launched in March 2003, was hailed as the most energy efficient compressor in the world.
In the marine industry, Singapore is the global leader in the construction of jack-up rigs. In aerospace, we have Asia’s largest Maintenance, Repair and Overhaul centre.
Asia’s largest Maintenance, Repair and Overhaul centre. Leveraging on our strong engineering and R&D capabilities, we continue to attract more high-level design, development and manufacturing activities.

The Civil Aviation Authority of Singapore signed a Bilateral Aviation Safety Agreement (BASA) with the US Federal Aviation Authority (FAA) on 24 February 2004. This allows Singapore companies involved in the design and manufacture of Technical Standard Order products, including standard aircraft avionics products, to have their products certified in Singapore by CAAS. Through the BASA, this certification will be recognised by the FAA, and helps reduce costs and time-to-market as these designed-in-Singapore products need not be sent to the US for certification.

Across the various transport engineering segments, we continue to encourage the growth of high-value manufacturing activities, and anchor more headquarters, development and distribution activities here.

Our transport engineering industry continues to attract high value-added manufacturing and services activities. One of our key success factors is Singapore’s strong mechanical engineering base, making us a leader in several industry segments.

In the marine industry, Singapore is the global leader in the construction of jack-up rigs. In aerospace, we are

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The global aviation industry is picking up and Singapore’s aerospace industry is poised to ride on the growth wave. The marine and offshore engineering industry is also seeing a healthy uptrend.

Singapore is the only manufacturing site of side impact sensors for Delphi, the world’s leading automotive component manufacturer. It manufactures other products here, including engine control modules and sensors for various applications. Delphi has sites around the world but looks to the “mother plant” in Singapore “to set the standard for discipline of manufacturing and the precise delivery to customer expectations,” says Mr Jeff Owens, President of Delphi Electronics and Safety. Singapore is home to some 140 Delphi research scientists and engineers.

SIA Engineering Company Limited, the aircraft maintenance subsidiary of Singapore Airlines is investing $120 million in two new hangars to expand its airframe maintenance capacity at Singapore Changi Airport. The hangars will be equipped to handle the latest jets, such as the A340-500 recently launched by Singapore Airlines, as well as the latest fittings, state-of-the-art workshop test equipment and the training of new engineers and technicians.

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**Transport Engineering**

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Asia, with its burgeoning middle-class populace, and a global source of produce, is well placed to play an increasing role in food demand and supply.

Singapore is located at the axis of this exciting development, and offers an attractive proposition for the food industry.

Currently, we are home to some 700 food companies including global giants like Nestle, Fuji-Oil and ADM Cocoa, as well as local and regional players like Asia Pacific Breweries, Tee Yih Jia, Prima and Bogasari. We will continue to promote companies to undertake the entire range of activities from manufacturing, to product & process development.

Singapore is emerging as a preferred location for food R&D. Nine of the 10 key flavours and fragrances companies, including Givaudan, Firmenich, IFF and Takasago, have set up operations here.

Several global and local food companies are also developing new Asian foods, whilst food and feed companies are establishing additive application labs in Singapore. We are host to many food and food-related companies’ regional operations and headquarters, including Coca-Cola, Danone and Syngenta.

To further drive the food sector, we will enhance Singapore’s four anchors – trust, innovation, science and connectivity. The food industry will be broadened beyond processed food and ingredients to include agri- and aqua-cultural products.

February 2004 marked a significant landmark for Givaudan’s operations. The leading Swiss fragrances and flavours developer opened a $20-million facility, its largest in Asia Pacific, which will serve as its regional base for flavours, perfumery, IT and sensory training. The venture will also house the company’s Global Centre for Expertise in Ethnic Asian Flavours, and an additional 50 R&D scientists and technologists.
Singapore is on track to be a major player in the Engineering and Environmental Services (EES) arena, due to our connectivity, skilled manpower and the critical mass of EES firms located here.

Regional growth has led to increasing demand for engineering design services, controls products, and environmental solutions, provided by EES companies located in Singapore, right in the heart of Asia.

EES companies can conveniently use Singapore for their headquarters activities, fulfill their entire manufacturing value chain, or conduct testbedding and R&D activities. These factors have recently attracted key industry players like Siemens to set up the Asian Centre of Competence for Water Technologies, and Cuno Filtration to establish its regional headquarters in Singapore.

The launch of the EnnovaTe (Innovation in Environmental Technology) programme in 2003, which allows EES companies to use public infrastructure to trial their environmental technologies, will further boost industry capabilities and fuel innovative solutions.

Looking ahead, we will continue to place emphasis on technology development and building niche capabilities in environmental technology.

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**Regional growth has led to increasing demand for engineering design services, controls products, and environmental solutions.**

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**Singapore strengthened its position as the leading Process Controls hub for the Asia-Pacific region with Emerson Process Management being awarded the International Headquarters Awards in 2004. Its operation in Singapore serves as the Asia-Pacific headquarters as well as manufactures high-end products such as transmitters and valve instruments for worldwide markets. The state-of-the-art PlantWeb® Dynamic Performance Flow Loop in its Singapore facility has also allowed the company to enhance its capabilities here to better meet both local and regional demand.**

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**Total Business Spending**

<table>
<thead>
<tr>
<th></th>
<th>(US$ billion)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2002</td>
<td>0.232</td>
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<tr>
<td>2003</td>
<td>0.168</td>
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**Value-Added**

<table>
<thead>
<tr>
<th></th>
<th>(US$ billion)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2002</td>
<td>0.290</td>
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<tr>
<td>2003</td>
<td>0.193</td>
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</tbody>
</table>
Our conducive business environment is enhanced by new regional HQ incentives and a tax rate which is one of the most competitive in the world.
Singapore is the choice location for headquarters (HQ) and professional services, registering robust investment growth in these areas in 2003.

Singapore’s reputation for trustedness and good corporate governance are key advantages. Singapore’s multi-ethnic make-up and accessibility to a diverse hinterland comprising half the world’s population makes it an excellent hub to discern market trends.

Our global network, connectivity, market access and infrastructure make us the ideal command and control centre for companies. More than 60 per cent of the 7,000 multinational companies here have HQ operations in Singapore. In 2003, 27 companies set up significant HQ bases here.

This growing HQ base is supported by professional services firms which have regional centres of competence for the development of thought and practice leaderships here. EDB’s programme to develop Singapore as a premier hub for professional services, including audit, accounting, management consulting, market research, advertising, public relations, human resource consulting and legal services, is yielding results.

In 2003, leading management consulting firm Gallup Organization relocated its Asian HQ to Singapore to oversee operations in the region, and to spearhead the ‘Asianisation’ of its consulting offerings and training programmes. The Gallup University Asian Campus in Singapore is its first campus outside the US. It offers a platform for knowledge sharing, cross-fertilisation and training for regional professionals. Gallup also intends to work with Singapore-based institutes of higher learning to offer post-graduate and executive education programmes.

Helen Keller International (HKI), a non-profit international development organisation devoted to saving the sight and lives of the most vulnerable and disadvantaged, appreciates the advantages of operating in cost-effective Singapore. It provides technical, managerial and administrative support to its Country Offices. “Singapore is a highly secure and technologically-developed country, where staff can work in the same time zones as their field counterparts,” says Dr Martin Bloem, Regional Director, HKI Asia Pacific. “The presence of possible partners such as Johns Hopkins University and Singapore Eye Hospital, and Singapore’s status as a research hub, makes it suitable for HKI’s R&D in eye health and nutrition.”
Singapore’s bourgeoning media base - including a slate of 17 international broadcasters and a varied mix of creative TV, animation and games companies reinforces the city’s regional media hub status.
infocommunications & media

Media and shared services sectors have been growing in tandem with a strong communications infrastructure, and R&D. More companies are introducing new capabilities, enlarging their existing operations or entering into collaborations.

Singapore’s burgeoning media base - including a slate of 17 international broadcasters and a varied mix of creative TV, animation and games companies reinforce the city’s regional media hub status. Already, Japanese games companies such as Koei and Genki have announced plans to establish game development studios in Singapore.

There is a global trend for MNCs to centralise, or outsource corporate functions. Our diverse base of service providers, regional headquarters, and key vertical industries, make us a strategic location for Shared Services and Business Process Outsourcing (BPO) activities. The strong growth in global demand has also fuelled expansion by companies undertaking IT services, software development, disaster recovery and business continuity planning.

Looking ahead, EDB will focus on three areas:

(i) develop a broader slate of media projects in digital animation, electronic games and TV production

(ii) anchor more Shared Services and BPO activities

(iii) enhance engagements with telecommunications and IT industry players to expand their high value activities here.

**Southern Star Group**, Australia’s largest independent production company, established their first and only overseas digital animation studio in Singapore in January 2004. The 40-man studio is staffed mainly by Singaporean animators working on a 26-part animated TV series “Bottle Top Bill.” “Bottle Top Bill” will anchor the company’s Singapore expansion. The new infrastructure will give Southern Star the opportunity to enhance its volume of production in what is a developing and vibrant market” said Hugh Marks, CEO, Southern Star Entertainment.

The German business software solutions giant **SAP** chose Singapore as its hub for Shared Services. Singapore was the global launch market for its Shared Services Centre (SSC). “We have invested millions of dollars to set up the SSC here,” says Mr Colin Sampson, Chief Financial Officer for Asia Pacific, SAP. “The SSC will significantly enhance corporate governance and realise cost savings of up to 40 per cent of the annual operating cost.” Other SAP regions are also looking at the SSC concept in their markets, based on the best practices established here.
More than 3,000 international and local logistics companies are here today.
logistics

A strategic location, efficient 24/7 operations, reliable infrastructure, and excellent connectivity make Singapore a compelling global logistics hub and supply chain management nerve centre.

More than 3,000 international and local logistics companies are here today.

New industry initiatives will enhance our capabilities. These include developing specialised logistics infrastructure like the Airport Logistics Park of Singapore and the Banyan LogisPark for the chemicals industry, boosting supply chain e-readiness, and raising industry standards.

Expanding its role as regional distribution centre and control tower for companies, Singapore now hosts the supply chain operations of companies such as DaimlerChrysler, Volvo and Cardinal Health.

To better serve the trade and logistics community, $50 million will be spent over the next five years to build an IT system that will automate the creation and exchange of commercial and regulatory information.

In continuing to build competencies in logistics and SCM, The Logistics Institute-Asia Pacific, a partnership between Georgia Institute of Technology and National University of Singapore was set up to conduct postgraduate training and research.

The Airport Logistics Park of Singapore (ALPS) was officially opened in March 2003. This 26-ha dedicated infrastructure, strategically located within the airport free trade zone, leverages on the excellent connectivity and superior handling efficiency of Changi Airport to enable quick turnaround value-added logistics and regional distribution activities. Companies that have built new facilities in ALPS include Menlo, Exel and Expeditors, as well as a joint venture between AMB of US and Boustead of the UK which has developed a multi-tenant facility. The benefits of ALPS have attracted major regional distribution centres from Infineon, Maxtor, Seagate and Texas Instruments, among others.

Ezycargo, an Internet-based cargo portal, was launched in October 2003. Jointly developed and operated by Singapore-based Cargo Community Network Pte Ltd and Global Logistics System (HK) Co Ltd, Ezycargo improves efficiency and reduces costs to the air freight industry. Forwarders can make allotment and free sales bookings, track the progress of their shipment on multiple carriers, conduct airway bill stock management and e-payment facilities. Ezycargo represents a major milestone in the development of e-business capabilities in the air cargo community, and has the support of four leading Asia-Pacific airfreight carriers - Cathay Pacific Cargo, Japan Airlines Cargo, Qantas Freight and Singapore Airlines Cargo.
With Asia as the fastest growing source for international students, and 70 per cent of global demand for higher education coming from the region, Singapore is poised to be a Global Schoolhouse for international students.

Leading international institutions are choosing Singapore as their base, and local establishments are enhancing their educational offerings. These include Insead, MIT, Chicago, Shanghai Jiao Tong, Waseda and Stanford Universities.

Today, there are 60,000 international students here in brick-and-mortar campuses to e-learning environments, from pre-tertiary education through undergraduate and postgraduate courses.

The University of New South Wales has announced that it will set up a private university in Singapore. The Singapore campus will be a teaching and research university offering Bachelors to PhD programmes in a wide range of disciplines including a science and technology focus. The campus expects to attract 15,000 students, 70 per cent of whom will be foreign students.

EDB will continue to expand the scope of the education business, through developing private universities, private secondary and high schools, and corporate training. Accreditation and quality assurance for local private education organisations will strengthen the base for world-class education.

The pre-tertiary education business received a boost when two local independent schools – Anglo-Chinese School and Chinese High School – announced that they would set up private schools, ACS (International) and Hwa Chong International. They are the first private high school to enrol both local and international students.
With increasing competition from the region, local healthcare providers are leveraging on Singapore’s reputation for safety, trust and excellence.

Singapore’s healthcare industry is undergoing dynamic change, in tandem with the multi-agency initiative, SingaporeMedicine, launched in October 2003. EDB is working closely with the Singapore Tourism Board and International Enterprise Singapore, to develop Singapore as a destination for international patients.

In 2003, despite the SARS outbreak, the number of international patients seeking healthcare services in Singapore rose by 8.6 per cent from the previous year to 229,800.

Despite increasing competition from the region, local healthcare providers are leveraging on Singapore’s reputation for safety, trust and excellence. A growing number of specialist doctors are also coming together to form practice groups to achieve critical mass and strengthen their operational effectiveness.

Raffles Medical Group, has evolved from two clinics to become one of the leading integrated private healthcare providers in Singapore and the region today. With its flagship Raffles Hospital, a network of more than 60 clinics across Singapore and four clinics in Hong Kong, Raffles Medical Group offers a comprehensive range of healthcare services that includes inpatient services, outpatient general and specialist services, and health screening. In line with the SingaporeMedicine initiative, Raffles Hospital has been attracting international patients. It has started a Japanese clinic to cater to the Japanese community in Singapore. It has also set its sights on new markets in the region.
To ensure relevance and the future growth of our industries, EDB is constantly looking for new opportunities in technologies and business services.
As a solutions hub for **embedded systems** and exploiting digital convergence and open source technology, The T-Engine Application Development Centre, a joint collaboration between Renasas Systems Solutions Asia, Singapore’s Nanyang Technology University and T-Engine Forum of Japan, was opened to develop open source embedded software and power next-generation products for consumer electronics, automotive and industrial controls. A homegrown example is Innvo Systems, a solutions provider of MMS Client, Mobile Browser and Java solutions for mobile communications suppliers.

**Nanotechnology**, the miniaturisation and scaling down of existing technologies, is an enabler that has significant impact on industries such as electronics, semiconductors and chemicals. In 2003, French-Italian semiconductor giant STMicroelectronics announced plans to site some of its research into applying carbon nanotube for memory and sensor devices here.

Our efforts in **photonics** resulted in a new cluster in Organic LEDs (OLED) manufacturing; this is widely regarded as the next generation display for mobile devices. Two OLED manufacturers, NESS Display Co Ltd of Korea and Innoled, a local company, are setting up manufacturing plants here.

A Optical Network Focused Interest Group, has been formed by A*STAR and EDB to bring in industrial partners to drive optical networking research, especially in the area of next generation broadband system called passive optical networks.

**Intellectual property** (IP) management and exploitation. Honeywell chose Singapore as their Asian IP licensing and acquisition unit to manage their 13,000 patent portfolios. Eivio, a local startup, has also secured an agreement with Caterpillar to commercialise their IP in Asia. The IP ecosystem was strengthened with the set up of the IP Academy, a dedicated IP court, and a US-Singapore FTA IP agreement.

**NanoFrontier**, a company and laboratory established by Nanyang Technological University, commercialises nanotechnology research by developing new products and processes for nano applications. NanoFrontier also provides centralised lab facilities, expertise and a technology base for companies to tap into.
Singapore has comprehensive support for the promotion of innovative and technopreneurial activities including dedicated facilities like Phase Z.Ro and HOTSpots, attractive tax breaks, equity financing schemes like SEEDS, and the presence of more than 150 venture capital firms managing $16 billion worth of funds.

<table>
<thead>
<tr>
<th>Amount of VC Funds Managed Out of Singapore ($ bil)</th>
<th>Number of Venture Capital-Backed Companies</th>
<th>Number of Innovation-Driven Startups Supported by SEEDS</th>
<th>Total Number of High-Tech Businesses and Companies Formed in 2003</th>
</tr>
</thead>
<tbody>
<tr>
<td>as at end-2002</td>
<td>as at end-2003</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15.2</td>
<td>703</td>
<td>62</td>
<td>3,578</td>
</tr>
<tr>
<td>15.8</td>
<td>802</td>
<td>103</td>
<td>3,640</td>
</tr>
</tbody>
</table>
Singapore has comprehensive support for the promotion of innovative and technopreneurial activities including dedicated facilities like Phase Z.Ro and HOTSpots, attractive tax breaks, equity financing schemes like SEEDS, and the presence of more than 150 venture capital firms managing $16 billion worth of funds.

Enriching the diversity of our enterprise ecosystem is the increasing number of companies from the Asia-Pacific. In 2003, some 90 new Australian enterprises, 130 Chinese enterprises and 260 Indian enterprises were set up in Singapore.

Singapore’s attractiveness has also anchored research institutes, universities, and close to 100 incubators and accelerators here. In 2003, Temasek Life Science Lab, the China Torch Centre and the US Technology Centre were officially launched here.

In 2003, EDB promoted some 160 R&D projects with a total R&D investments of $900 million.

EDB’s efforts in building an environment conducive for enterprise development and R&D have borne fruit. This has strengthened our competitiveness in manufacturing and services.
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Chairman, International Advisory Council
Deputy Prime Minister and Co-ordinating Minister for Security and Defence

Ms Ho Ching
Deputy Chairman, International Advisory Council
Executive Director and Chief Executive Officer
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Sir John Rose
Chief Executive
Rolls-Royce plc

Mr Gerard Kleisterlee
President and Chief Executive Officer
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Seagate Technology

(Information accurate as at 30 June 2004)
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Co-Chairman
Economic Development Board

Mr Paul Martino
Managing Director
Merck Sharp & Dohme (S) Ltd

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BAX Global Pte Ltd

(Information accurate as at 30 June 2004)
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