# EXECUTIVE SUMMARY

A new complementarity is emerging between Australia and East Asia in the information and communication technology, ICT, industry. Australia is a competitive producer and exporter of specialised, high value ICT equipment, tailored software and ICT services while developed and developing East Asia specialises in mass produced, labour intensive ICT equipment production. East Asia's ICT services and software demand now are relatively small, but are growing strongly as ICT investment surges. In the next few years East Asia's accelerating ICT take up should generate significant opportunities for Australia's ICT industry, which relatively small but world class ICT services firms dominate.

## ICT AND E-COMMERCE SUPPORT GROWTH

Particularly since the early 1990s, the rapid increase in ICT adoption and e-commerce has transformed business processes and markets, creating what many call the new economy. The term 'new economy' describes the strong gains in performance many developed economies are achieving from mutually reinforcing advances in ICTs, business practices and economic policies. Major gains from the new economy include rapid productivity growth, rising incomes, low unemployment and moderate inflation.

During the 1990s and early 2000s, Australia enjoyed considerable benefits from ICT take up and improved economic and structural policies; in most years, Australia's productivity growth exceeded even the United States'. This demonstrates rapid ICT adoption, not just ICT equipment production, can help generate strong economic growth.

By increasing ICT and e-commerce use, East Asian governments can accelerate their productivity and economic growth. However, to reap the full benefits of the ICT revolution, regional economies need policies, regulations and infrastructure supporting business sector innovation and more rapid ICT adoption. Key policies include strong economic and social fundamentals, effective ICT education and training systems, competitive markets, open international trade and investment, robust financial systems including venture capital markets, credible legal systems and efficient ICT and e-commerce regulatory environments and flexible labour markets. They also require favourable environments for innovation, including effective public investment in innovation and strong interaction between innovation system players.

## AUSTRALIA STRONG IN SPECIALISED ICT GOODS AND SERVICES

Australia's ICT industry is growing rapidly, in 2000/01 contributing A$31 billion, or 4.6 per cent, of gross domestic product, GDP. In 2000/01, over 50 per cent of ICT value added was in telecommunications services, 24 per cent in computing services, 19 per cent in ICT wholesale and retail and only 7 per cent in ICT equipment manufacturing. Between 1995/96 and 2000/01, overall ICT industry income from domestic production grew on average 10 per cent per year, but computer service providers' income from domestic production grew 14 per cent, while remaining roughly constant for ICT manufacturers. From 1996/97 to 2000/01, expenditure on ICT goods and services also grew a rapid 10 per cent per year, while business expenditure on ICT research and development, R&D, grew by 14 per cent per year, over three times faster than overall R&D spending. In 2000/01, ICT industries accounted for 24 per cent of total R&D spending; computer software and communications technologies accounted for 64 per cent of business ICT R&D, indicating growing competitiveness in these sectors.

While several large firms, including multinationals, supply telecommunications services and produce ICT equipment, small firms dominate Australia's ICT industry. Over 95 per cent of ICT specialist businesses employ less than 20 people; most are computing consultancies. Involving these ICT firms in exporting will require a strategic firm and industry level approach and appropriate government support. Smaller ICT businesses may benefit from cooperating with other firms including multinationals, which already have an overseas market presence.

Australia's e-commerce sector is growing rapidly from a low base and ranks highly against other developed economies on most indicators of Internet access and cost. Australia also has a strong legal environment and security infrastructure to support e-commerce. Between December 2000 and mid 2002, Australian businesses almost doubled their online revenues to A$43 billion, up by around 33 per cent per year, much faster than businesses expected. Surveys indicate firms also are making significant cost savings from Internet based business to business transactions. However, only 21 per cent of firms allow customers and suppliers to place secure orders and make e-payments.

As a net importer of ICT goods, Australia has gained considerably from a decade of dramatic ICT equipment price declines and quality improvements. At the same time, Australian exports of some ICT equipment, such as electronic components and parts, have grown rapidly. Between 1997 and 2001, computer services were Australia's fastest growing ICT services export, growing by 30 per cent per year.

## EAST ASIAN ICT MARKETS GROWING, REGULATION VARIABLE

East Asia's ICT market is large and growing rapidly. By 2001, after expanding 9 per cent per year since 1993, the region's ICT goods and services spending topped US$613 billion, or 24 per cent of the world's total. As would be expected, industrialised East Asia spends more per capita and as a share of GDP on ICT than developing East Asia; industrialised economies also allocate a much larger share of their ICT spending to ICT services. Hence, as regional incomes and ICT take up increase, Australian ICT service exports have strong growth potential. Not only is East Asia a major ICT production centre but most regional governments actively support the ICT industry and foster new technology take up. In 2000, APEC leaders committed to tripling their populations' Internet access by 2005.

ICT and e-commerce regulation and policies vary considerably throughout the region. To accelerate ICT and e-commerce take up, East Asian governments are seeking to strengthen relevant infrastructure, regulatory regimes and education systems. Most East Asian economies have commenced liberalising and opening their telecommunication sectors, but few economies have completed this process or established independent regulatory bodies. This inhibits telephony and broadband penetration and raises costs. In several developing regional economies, impediments to fixed telephony promote mobile telephony; for example, the Philippines has more mobile than fixed line subscribers. Personal computer diffusion also is low and a stronger legal environment and infrastructure for e-commerce would increase certainty and improve security for electronic transactions. Several regional economies, including China, Indonesia and Vietnam, do not yet have functioning electronic payment systems, hindering e-commerce development. In most regional economies, stronger measures are needed to reduce intellectual property piracy and to increase privacy of electronic data. Regional governments also are seeking to develop their populations' education and ICT skill levels.

Industrialised East Asia generally has high levels of ICT diffusion and more advanced telecommunications infrastructure, particularly in broadband services. These economies also have more comprehensive market oriented legal and regulatory structures to support ICT and e-commerce, including relatively more open telecommunications regimes and stronger legal structures for e-commerce.

## ICT AND E-COMMERCE BUSINESS OPPORTUNITIES IN EAST ASIA

The Australian and East Asian ICT sectors are increasingly complementary. Over the 1990s, East Asia became a strong global producer, assembler and trader in ICT components and finished equipment while the Australian ICT industry oriented more towards ICT services and advanced equipment. As East Asia accelerates ICT adoption, opportunities are emerging in regional economies for Australian ICT service and advanced ICT equipment exporters. However, the market for ICT services still is developing. In 2000/01, nearly 80 per cent of Australia's ICT services exports to East Asia went to its most advanced economies, Japan and Singapore, which account for 63 per cent of the region's market for these services. From 1997/98 to 2000/01 Australia's computer and information services exports to East Asia grew by over 10 per cent per year, but Australia's exports of these services to the European Union grew over 33 per cent per year. Hence, over the 2000s, as East Asian economies grow and accelerate their ICT take up, much scope exists for Australia to increase computer and information services exports to East Asia; Australian ICT firms can then leverage their experience in the more mature North American and European ICT services markets to build on their early successes in East Asian markets.

Due to the World Trade Organization's Information Technology Agreement, East Asian ICT import tariffs are falling; by 2005, most ICT goods trade should be duty free. However, non tariff barriers, including opaque or excessive regulations, standards, conformance and testing requirements and labelling significantly restrict some ICT trade. ICT services trade also faces barriers including onerous residency, temporary stay and citizenship requirements, quotas on numbers of foreign staff, foreign equity and other foreign direct investment limitations, refusal to recognise qualifications, compulsory membership of industry associations, less favourable licence conditions for foreign licensees, burdensome or non-transparent business operation regulations and a lack of independent ICT industry regulators. For example, while foreign direct investment in East Asia's ICT equipment industries grew strongly in the 1990s, in all but a few regional economies foreign telecommunication services investment is limited. Australian telecommunication service providers are active in several East Asian economies.

Australian ICT export opportunities vary considerably depending on the wealth and sophistication of particular East Asian markets. In industrialised East Asia, good opportunities exist for ICT services suppliers in Internet and e-commerce applications, multimedia, games software development, telecommunications, particularly wireless, ICT consulting, network and system integration services, product research and development, smart card systems, ICT security, business application software and industry specific application software including in financial services and mining. In developing East Asia, major opportunities exist in application specific software, integrating and developing computing environments, Internet based infrastructure, software and applications for remote education and e-learning, financial and banking systems, government front end customer services and integration and telecommunications equipment, technology and services.

## IMPLICATIONS FOR BUSINESS AND GOVERNMENT

The growing complementarity of Australian and East Asian ICT sectors should generate many trade and investment opportunities in East Asia's dynamic ICT and e-commerce markets in the 2000s. As East Asian economies increasingly apply ICT to mainstream economic activities, Australia's world class specialist ICT equipment and services firms are well placed to take advantage of expanding consumer and business ICT demand for advanced equipment and specialist ICT services. In pursuing these opportunities, business will benefit from knowledge of regional governments' policies and activities supporting the ICT sector and impacting on ICT trade and investment.

Australian assistance to developing East Asian governments, including through the Virtual Colombo Plan and APEC related capacity building, is designed to help accelerate ICT and e-commerce take up, reduce the digital divide, accelerate productivity and output growth and reduce income disparities. Many Virtual Colombo Plan activities involve Australian firms and institutions experienced in e-learning and e-health helping deliver relevant ICT based programs throughout the region.