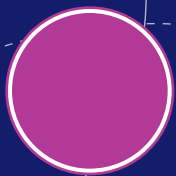
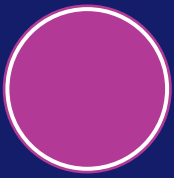


**skills x knowledge = growth**



skills x knowledge = growth

# skills x knowledge = growth



skills x knowledge = growth

## skills x knowledge = growth

### a statement from the victorian government on ICT skills

Victoria's economic future and the strength of our communities depend on the extent to which we invest in, and apply, skills and knowledge.

We must become both more skilled and knowledge intensive to exploit the opportunities from advancements in information and communications technologies (ICT).

ICT pervades all industry sectors and, increasingly, our everyday lives. ICT is as much about reforming and empowering mature industries as it is about creating new opportunities.

Demand for ICT skills has risen 46 per cent over the past 10 years. Victoria's ICT industry currently employs over 70,000 people, and is expected to create jobs for up to 10,000 ICT skilled people in the next year.

Without planned action to meet this demand, Victoria will not realise its full potential. In the area of e-commerce alone, the Victorian economy stands to gain an additional \$13 billion in the coming decade if we can consolidate our leadership in the development and application of ICT.

The Government was quick to recognise the importance of building Victoria's ICT skills base. At our first Parliamentary Session on 11 November 1999, I delivered **Connecting Victoria**, the Government's policy statement on ICT. **Connecting Victoria** is our strategy for cementing Victoria's position as the nation's knowledge and ICT capital. It recognises that an increased uptake of ICT skills and a strengthened commitment to knowledge creation are vital to our future prosperity.

The Government established an ICT Skills Taskforce in April 2000, allowing industry, education and government leaders to tackle the ICT skills issue collaboratively.

The Taskforce presented its Report to the Government in October 2000. The Report validates our existing achievements and offers a clear policy framework to chart the way forward.

There is not one single solution to improving the supply of ICT skills and knowledge for Victoria. Our needs are diverse and rapidly evolving. Achieving our goals will require a complex and dynamic program and policy response.

Further, developing the right balance of skills and knowledge in the economy is a collective responsibility. All Victorians must be part of the task:

- individuals need to appreciate the importance of lifelong learning
- education and training providers need to equip people with the right skills



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- businesses need a commitment to building skills and knowledge
- governments should ensure the necessary infrastructure and resources are in place.

Governments also have a special role to encourage the shared vision and collaboration needed to make things happen.

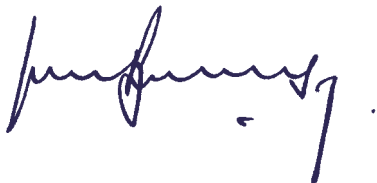
This statement outlines the Victorian Government's policy framework for building the State's ICT skills and knowledge base. It draws together existing Government activity which must continue and announces a package of new measures. It has been formulated following an extensive process of consultation and research that has included:

- the ICT Skills Taskforce
- ICT industry representatives and professional associations
- a select group of local firms
- students and providers of education and training
- the national industry IT&T Skills Task Force and the new IT&T Skills Exchange
- recruitment companies.

We will continue to partner with all stakeholders to develop further initiatives in the short to medium term.

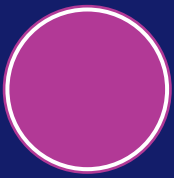
In addition, to complement this statement, the Government will shortly announce a first for Victoria – ***Skilling Victoria for the Information Age: A Strategy for Post Compulsory ICT Education, Training and Employment.***

Finally, on behalf of the Victorian Government, and in particular the Hon Lynne Kosky in her position as co-chair of the ICT Skills Taskforce, I would like to thank each of the Taskforce members for their valuable contribution.



**The Hon John Brumby MP**  
**Minister for State and Regional Development**

November 2000



skills x knowledge = growth

## overview

**skills x knowledge = growth** is the Victorian Government's blueprint for promoting growth in Victoria through the development of ICT skills and knowledge. The Government recognises that Victoria's economic future and the strength of our communities depend on the extent to which we invest in, and apply, skills and knowledge.

Skills and knowledge underpin the Victorian Government's goal to become the knowledge capital of the knowledge nation. Skills and knowledge underpin traditional and emerging industries, and are a major driver of innovation and entrepreneurship.

**skills x knowledge = growth** focuses on five key areas:

1. Changing perceptions about ICT skills
2. Encouraging entrepreneurship and specialist skills
3. Fostering innovation and industry growth
4. Building an e-learning environment
5. Developing ICT skills across the entire community.



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## growth = changing perceptions about ICT skills

Negative perceptions and lack of awareness are fundamental challenges to ICT skill development and the uptake of ICT careers.

Market research, commissioned by the Government and conducted by Hill and Knowlton Pty Ltd, has revealed that many young people:

- regard ICT skills and careers as boring, solitary and repetitive
- find it difficult to identify links between ICT skills and technology enabled activities that they enjoy (i.e. the Internet, mobile phones and computer games)
- do not realise that ICT skills are required by all industry sectors, not just the ICT industry.

The Government is committed to partnering with industry to:

- make ICT courses and careers more attractive to young people, particularly girls
- inform individuals about job options requiring ICT skills, and education and training pathways to these jobs.

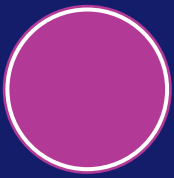
Over the next two years, the Government will commit \$1 million to an **ICT Skills and Careers Communication Campaign**. This campaign will assist students and people in the workforce to recognise that ICT skills open up exciting, long term career options across all sectors.

Targeted to secondary school students, teachers and parents, the campaign will use a range of media including cinema and radio advertising, Internet-based education resources, and information kits for students and teachers.

An **ICT Careers Pathways Information System** will be developed to provide information about pathways and courses for careers requiring ICT skills. This will support other initiatives being developed across the education and training sectors to improve the availability of information on ICT careers.

The Government will continue to collaborate with industry to improve the availability of information on emerging skill and training needs for ICT, and to identify timely training solutions.

We look forward to an ongoing partnership with Australia's first national IT&T Skills Exchange. Recently established by eighteen leading companies, the Exchange will partner with the Government on several initiatives.



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For example, the Exchange will support the Government to deliver the ICT Skills and Careers Communication Campaign.

The Exchange will also assist Multimedia Victoria to develop an **ICT Skills Tracking and Monitoring System**. This system will fill a major gap in State level data. It will provide a blueprint for other States to follow, complementing the broad national data to be provided by the Exchange's second national survey of IT&T skills, to be conducted in the next few months. Most importantly, it will provide the information needed to guide the provision of education and training across the State, ensuring a better match between the demand and supply of ICT skills.

The Government will also continue its work with ICT industry associations and professional bodies. These groups provide a direct link to local industry, offering valuable opportunities to address skills issues. They, with the Government, also provide leadership on the skills issues impacting on the sector.

As an example, this year the Government has partnered with the Australian Information Industry Association to establish the Victorian ICT Education and Training Forums. The forums are held bi-monthly to:

- facilitate networking between the ICT industry, government, and education and training institutions
- develop a program of action to address the specific education and training needs of Victorian industry.



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## **growth = developing specialist skills and encouraging entrepreneurship**

The Government will act across all levels of the education and training system to develop specialist ICT skills and entrepreneurship.

In the current environment of rapid technological change, a focus on the specific education and training needs of local industry is vital. Individuals and businesses need to be able to readily identify and access education and training programs that meet their skill requirements.

### **building specialist skills**

*Skilling Victoria for the Information Age: A Strategy for Post Compulsory ICT Education, Training and Employment* will include a number of new initiatives to:

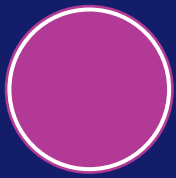
- ensure greater access to innovative education and training options
- improve the accessibility and responsiveness of training, further and higher education institutions for individuals and businesses.

The Government will support the development of new education and training pathways to provide flexible and innovative ICT education and training opportunities. This will require seamless links and credit transfers across the education and training sectors, particularly between TAFEs and universities. It will also require stronger ties between public and private providers and industry.

The Government's consultations clearly indicate that experience in the workplace is often a prerequisite to gaining ICT employment. In its position as a major employer, the Government will consider options to provide practical experience for recent graduates and retraining for people seeking an ICT career.

We will also look to partner with industry to develop new models for education and training, and facilitate work placements for students. Companies with specific ICT skill requirements need to plan with TAFEs and universities to provide and incorporate work placements into major education and training programs.

Further measures will be undertaken to expand and improve ICT study options in schools. Partnership arrangements with ICT Vendors and Vocational Education and Training (VET) providers are fundamental to achieving this goal.



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The Government will continue to support the provision of vendor-based training programs within an increasing number of schools. These programs, supported by Cisco, Microsoft, Novell and 3Com, provide students with training that is recognised by industry. The Government will work to ensure these programs are accredited as an integral part of the curriculum.

To better engage students, a revised and enhanced VCE curriculum for IT studies will be implemented at the start of the 2001 academic year. Through VET in the VCE, an increasing number of students will also have opportunity to undertake Certificate II courses in Interactive Multimedia and Certificate II and III courses in IT. Teachers involved in the delivery of these programs will receive appropriate professional development, including opportunities to network with TAFE teachers and industry representatives. Incentive programs will also be developed to encourage high achieving VCE students to progress to further and higher education courses that build the technical ICT skill base.

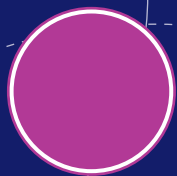
### **encouraging entrepreneurship in schools**

The benefits to Victoria from ICT will depend increasingly on our capacity to create and exploit new advances in technology. From secondary school onwards, we need to encourage a spirit of entrepreneurship, particularly in those who have a special interest in the application of ICT.

As recommended by the ICT Skills Taskforce, the Government will trial programs to attract more young people into the ICT industry and establish learning contexts that:

- enable students to apply ICT in practical settings and participate in entrepreneurial activities
- provide students with a high aptitude in ICT with access to appropriate role models and opportunities to participate in real ICT projects.

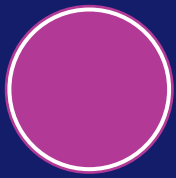
In 2001–2002, a new concept of an **ICT Achievers Program** will be trialed in schools. In the first year of the program \$500,000 has been allocated to develop new secondary school-based models of specialist ICT education. The ICT Achievers Program will provide a wide group of secondary school students with the opportunity to develop and apply their ICT skills in real world entrepreneurial settings. Among participating students, the program will develop entrepreneurial capability, increase experience of ICT applications, and raise awareness and enthusiasm about the diverse array of ICT opportunities.



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Alongside the ICT Achievers Program, an **ICT Excellence Fellowship Program** will be implemented to provide a select group of school students with access to appropriate role models and opportunities to practice their skills in a commercial environment. Participants will be selected according to their potential to develop original ICT applications. Students will not necessarily be chosen on their academic record, rather their passion and aptitude for ICT.

A joint Victorian Government-Microsoft award has also been established to recognise excellence in software development by school students. The recipient student will receive an award worth \$15,000 to be shared with their school. Details of the award will be provided to schools in March 2001.



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## **growth = fostering innovation and industry growth**

Industry growth depends as much on investment in knowledge creation as it does on skill development. This is particularly true in periods of rapid technological change where the creation of new technology generates still more opportunities for wealth generation through the distribution, acquisition and application of new knowledge.

### **scholarship and R&D**

There is a clear role for Government to encourage scholarship, invention and discovery. Research and development (R&D) is essential for innovation, growth, and ultimately for the economic prosperity of our State.

At a time when Australia needs to invest heavily in higher education, it is concerning that the Federal Government is pulling back.

As recommended by the ICT Skills Taskforce, the State Government will build on its existing investment attraction initiatives to promote Victoria as an ideal location for R&D.

Further, the Victorian Government will work with the post compulsory education and training sector to boost R&D activity in strategic areas by:

- encouraging our brightest and best students to enrol in courses that build Victoria's future research capability
- rewarding and encouraging continued study and commitment to lifelong learning (providing opportunities to combine employment with study)
- partnering with industry to provide internationally competitive financial and study incentives for selected PhD and Masters students.

Specific initiatives will be assessed in the context of the Government's next Budget.

### **innovation through new intersections of knowledge**

As recommended by the ICT Skills Taskforce, the Government will act to create opportunities for innovation and knowledge creation.

Ground breaking human discovery is often not planned; it frequently occurs by chance through the combination of previously unrelated capabilities and knowledge.



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The Government will establish a **Victorian Think Bank** to:

- regularly bring together exceptional contributors from diverse fields in an ideas forum
- promote many opportunities for knowledge intersection by supporting a large number of informal gatherings of people who hold and apply knowledge in disparate areas
- support networks that promote interaction.

The Victorian Think Bank will be based on a leading international model, the Global Business Network. It will entail the regular rotation of participants, invited by the Government, to consider and recommend ideas and possible new alliances for the pursuit of incubation, innovation and commercialisation.

### **raising the level of commercialisation**

Knowledge creation is fruitless without opportunities for application and commercialisation.

The Government is already acting to raise the level of commercialisation in the area of high technology.

An example is our \$20 million Technology Commercialisation Program which focuses on bridging the gap between great ideas and commercial reality, supporting incubation of new high-technology businesses and opening up international high-tech business opportunities. Through this program, inventors and innovators gain easy access to quality professional business support and development services critical to startup and early stage growth technology firms.

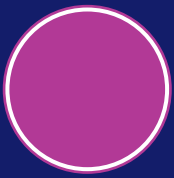
For metropolitan and regional start-up businesses operating in the new economy, the Government will explore new options to raise the quality of assistance provided by Victorian business incubators. New business growth requires highly targeted skills training integrated with seed capital and expert business assistance.

The Government will also advocate to the Commonwealth Government options to remove barriers to commercialising new knowledge by universities.

### **assisting small firms**

As recommended by the ICT Skills Taskforce, the Government will build on existing initiatives to encourage the application of ICT and e-commerce by small firms across the economy. This will involve:

- making simple e-commerce tools readily available through VicNet
- helping firms in targeted areas to determine the role that e-commerce might play in their own business



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- building critical mass in targeted business networks that can benefit from coordinated use of e-commerce
- identifying e-commerce innovators and disseminating the results of their experimentation to Victorian firms
- encouraging mentoring to increase the accessibility of business advice.

The Government will work with small business representatives and industry associations to develop initiatives in these areas.

### **encouraging knowledge creation and application in niche areas**

The Government will act to develop the ICT skills necessary for knowledge creation and application in niche areas of activity important for Victoria. These may be areas that will provide a competitive strategic advantage to the State's ICT industry.

One such example is the computer game industry, which is providing young Victorians with exciting and dynamic career paths and is generating valuable export revenue for Victoria. To encourage the growth of this industry, the Government will support the development of a local training agenda for interactive games.



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## **growth = building an e-learning environment**

The Government is committed to creating an e-learning environment for all Victorians regardless of where they live and study.

Digital curricula and materials can significantly enhance education and training practices and learning opportunities. Research shows that high quality digital resources and curricula increase student engagement and motivation, and help teachers to teach better – key ingredients for improving learning outcomes.

Victoria is providing leadership in the national development of online content, creating opportunities for Victorian companies to be involved in this key area. The Australian States and Territories, together with the Commonwealth Government, are moving to cooperate nationally in the development of online content. To demonstrate what is possible, the Victorian Government has invested in the PRISM (Practical Resources and Interactive Science Materials) project. PRISM has seen the development of exemplary science resources for learning.

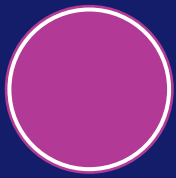
Through initiatives such as the new Victorian Education Channel, the Government will make digital learning materials and curricula pervasive across the education and training system. This Channel will provide access to some 200,000 digital resources from over 300 affiliated content providers for schools, teachers and students, and communities.

To encourage the integration of ICT across all key learning areas, **curriculum@work** was distributed to all Victorian school teachers in October 2000. From early 2001, this rich collection of curriculum support materials will be accessible through the Victorian Education Channel, enabling ready access to a wider range of online resources.

**Where's English**, a set of interactive CD-ROMs, will also be made available for students and teachers of English as a Second Language.

In rural and regional areas, digital resources expand curriculum choice and provide opportunities to increase participation and retention rates of young people. From 2001–2002, new Online Distance Education Courses and support mechanisms will be developed to provide a learning sequence for students studying at a distance.

As recommended by the ICT Skills Taskforce, the Government will continue to assess the impact of technology on learning. In 2001–2002, a Successful Implementation of Learning Technologies Project will analyse the integration of technology at schools and identify ways to improve student and teacher learning.



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### improving access to ICT infrastructure

Accessible and appropriate ICT infrastructure and resources are fundamental for the development of a strong ICT skill base.

The Government will ensure that all students, teachers and trainers have proper access to computers and learning technologies. As stated by the Premier of Victoria, the Hon Steve Bracks, at the Education Foundation Summit in October 2000:

“Education for all, equally, is an inalienable democratic right which Governments have an absolute duty to protect.”

The Government is already making a substantial investment in ICT infrastructure and resources, a fact acknowledged by the ICT Skills Taskforce.

VicOne is the Government's network connecting all education and training sites. VicOne has enabled the re-engineering of curriculum delivery and administration in Victoria. Over the next 12 to 18 months, communications infrastructure will be enhanced in rural and regional Victoria through a \$52 million investment by AAPT, the VicOne provider. This will dramatically reduce telecommunications costs in regional Victoria, making broadband capacity more accessible.

We need to assist our schools to sustain and refresh their computers and other ICT infrastructure. To this end, the Government has established a program to provide all schools with an annual Information Technology Grant. In 2000-01, Information Technology Grants to schools will total approximately \$10 million. Schools are also supported through an ICT Technicians in Schools Initiative. This initiative, with a total value of \$30 million in a full year, supports schools in managing and maintaining ICT infrastructure. It provides schools with access to 289 specialist technicians and funding for the equivalent of 250 additional technicians for routine and operational maintenance.

To date the Government has committed \$27 million to improve access to ICT infrastructure in training and further education institutions. **Skilling Victoria for the Information Age** will build on this investment and will include measures to:

- improve the connectivity and quality of ICT infrastructure in TAFE to enable the delivery of customised training models and programs in a manner responsive to the needs of employers and individuals
- achieve a more even distribution across Institutes and regions.

Additional infrastructure funding is being assessed under the Government's \$1 billion Growing Victoria Infrastructure Reserve. In particular, the Government is examining options to increase the availability of bandwidth and ICT resources across the education and training system.



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## **growth = developing ICT skills across the entire community**

Foundation ICT skills are fundamental to the capacity of individuals to undertake lifelong learning.

The ability to use ICT is increasingly becoming a basic life skill. To enter training and higher education, and then participate in the labour market, individuals need skills to discover and exploit the opportunities made available by ICT. The skills we learn at school are a basis for continued learning.

As recommended by the ICT Skills Taskforce, the Government will act to develop ICT literacy and fluency amongst all students, teachers and trainers by partnering with the education and training system to:

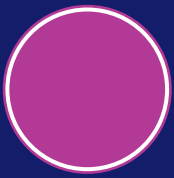
- identify the core competencies necessary for success and establish common standards of ICT literacy and fluency across the education and training system
- support teachers and trainers to develop ICT literacy and fluency and to incorporate ICT into teaching, training, learning and assessment strategies.

By the end of 2001, all schools will be required to report against a revised Curriculum and Standards Framework which integrates the use of ICT across all key learning areas.

An Innovations Council will be established to provide advice on public schooling, including options for the application of ICT to enhance teaching and learning.

The Government will also contribute to the establishment of national ICT performance standards and monitoring through the National Education Performance Monitoring Taskforce IT Working Group.

All teachers will be supported to develop ICT literacy and fluency through appropriate resourcing and new professional development programs. The Notebook Computer Program is a highly successful initiative designed to make a computer available to every teacher and principal. In recognition of the value of this program, the Government has reduced the implementation period from five to three years so all teachers and principals will have access to the program by March 2001. To complement this process, a network of support teachers will be established to deliver peer to peer, school-based professional development in the effective application of ICT across all areas of the curriculum.



## skills x knowledge = growth

While foundation ICT skills are best established in schools, the Government is acting to ensure that all Victorian adults have opportunities to acquire these skills, using the latest technologies. Digital learning materials make this possible.

Training and further education is playing an increasingly important role in the development of ICT literacy and fluency for Victorians. ***Skilling Victoria for the Information Age*** will address the development of foundation ICT skills in later secondary education and beyond.

The Victorian Government recently announced the ***Flexible Learning Strategy for TAFE in Victoria: Towards a Learning Society***. The Government also announced an \$11 million expansion of technology and infrastructure that will give TAFE Institutes and Adult Community Education providers access to the latest technology, enabling the delivery of more online courses and services. The Learning Strategy will deliver a package of more than \$8 million to equip and support teachers and other TAFE staff to deliver online learning.

As part of its commitment to ICT skills development, the Government is providing free or affordable internet access to Victorians who otherwise would not have the opportunity to go online. Connecting Communities forms an umbrella over a number of programs including:

- Libraries Online, which provides Victorians with 24 hour user-friendly access to the Internet and online library services
- Skills.net, which will have provided 80,000 people with free or affordable Internet access and training by 2003
- access@schools, which makes Internet access available at 146 schools in rural and regional Victoria – by September 2001, access@schools will have provided 12,000 Victorians with 60,000 free or affordable hours of Internet access.

These programs demonstrate the Government's commitment to ensuring all Victorians can make the most of the opportunities of the information age.

**multimedia victoria**

[www.mmv.vic.gov.au](http://www.mmv.vic.gov.au)