CompTIA®

Global Growth Through Information Technology

How organisations and countries are leveraging economic growth through a focus on skills and talent

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Current and future needs

Information and communications technology represents a huge growth area for almost every country in the world, and is key to global competitiveness. It plays a vital role in keeping organisations and countries running effectively, driving them forward, developing new innovations, winning business, reducing costs, cutting carbon emissions, and keeping data secure. It is a critical part of the world's infrastructure and economy.

Governments and companies are embarking upon major projects such as cloud computing and virtualisation, and using IT to drive down carbon emissions. New communications technology is making business more flexible and providing new marketing opportunities, changing the face of everything from setting up a home business to multi million dollar international trading.

ICT is also playing a key role in major industrial development, from micro- and nano-electronics to healthcare and road safety.

None of this would be possible without a network of skilled IT professionals to develop, implement and manage this technology. IT plays a major role in global competitiveness and having the right people is key in enabling countries and businesses to exploit this.

Technology is the single biggest lever for productivity and competitiveness

e-skills, 2009

Leading by example: How are others benefiting from IT?

Some organisations and governments already recognise the opportunities of a highly skilled IT workforce, and have initiated forward thinking programmes to ensure they are prepared to meet future challenges and remain globally competitive. This report highlights some of the best examples.

Singapore

ICT, known locally as Infocomm, has greatly enhanced Singapore's competitiveness by raising productivity and transforming business processes and is a key contributor to its economy. The Infocomm Development Authority of Singapore (IDA) was set up with the strategic goal of cultivating a vibrant and competitive ICT industry in Singapore.

The IDA recognised that to achieve this goal it required a globally competitive ICT workforce to drive national economic competitiveness. It set a target to increase of the number of ICT jobs by 55,000 by 2015. One of its main initiatives in achieving this has been funding training programmes, specifically industry certifications, through a program called Critical Infocomm Technology Resource Programme (CITREP).

CITREP recognises how certain training programmes, such as those leading to CompTIA certifications, equip Singapore's ICT professionals with critical and emerging skills, enhancing their employability and improving their organisations' competitive advantage. By providing funded places with strong career opportunities, it offers an attractive option to young people encouraging them into the growing profession as well as attracting talent from abroad.

IT and global competitiveness

A 2009 e-skills report, *Technology for Growth, IT & Telecoms Insights 2010*, highlighted digital technology as the single biggest lever for productivity and competitiveness. Adoption and utilisation of technology can result in multi billion pound productivity boosts. For example, the report highlighted that one European country could make an additional €40bn from IT.

Many countries have seen important economic success through IT, but are not exploiting it fully. As a result they are missing out on huge opportunities.

For example, the EU's Europe's Digital Competitiveness Report in August 2009 demonstrated how Europe is a world leader for broadband internet and mobile communications. However, it has fallen dramatically behind Asia in high-speed fibre and wireless broadband, whilst the US is well ahead in interactive web.

The EU report recognised that ICT accounts for half of the region's productivity increase and ICT policies are a major driver of economic and social modernisation, which have made Europe more resilient in times of crisis. Similar findings are replicated around the world. IT infrastructure, including high-speed broadband, is key to new jobs, new skills, new markets, and cutting costs.

€5m – average cost per incident of a security breach

Ponemon Institute, 2010

Ireland

FAS, the national training and employment authority in Ireland, aims to enhance the competencies of individuals and enterprises in order for Ireland to further develop as a competitive, inclusive, knowledge-based economy. It does this through providing tailored training and employment programmes to suit the differing needs of the country.

FAS recognises IT as a key employment sector of the future and important to the country's global competitiveness. Relevant industry qualifications, including several CompTIA certifications are therefore approved as 'career development' certifications and therefore eligible for funding within particular FAS programmes. They are used to retrain and upskill unemployed individuals to give them the current and relevant skills demanded by the ICT sector.

USA

Few organisations take security more seriously that the US Department of Defense (DoD).

To ensure staff meet this high expectation, in 2004 the DoD established the 8570 Work Force Improvement Program. This requires all information assurance managers, technicians and contractors, and privileged access users, to be fully qualified, trained and certified to effectively defend DoD information, information systems and information infrastructures.

To guarantee employee's knowledge and skills are at a suitable level for work that is critical to national security, the DoD mandates certifications, including CompTIA's A+, Security+ and Network+.

Backroom to the boardroom

IT can no longer be seen as a backroom function, helping everyone else get on with their job. Various reports, including Gartner's *Leading in Times of Transition: The 2010 CIO agenda*, show how IT departments worldwide are increasingly involved in developing new systems and software, driving down costs, raising productivity and innovation, managing change initiatives, and attracting and retaining customers. New technologies have created opportunities for those with the skills to exploit them. Innovative uses of IT are likely to become key drivers of national economies in the coming years.

Applying intelligent analysis to data allows organisations to gain new insights into the changing market place and gain competitive advantage. Business intelligence, once an expensive commodity, will soon become widely available through new software and IT practices.

IT is responsible for 2% of global carbon emissions. IT skills are playing a key part in addressing these concerns in a commercially sustainable way, from the efficient design of power management systems to the development of new services to assess carbon footprints.

New opportunities such as smart mobile devices, cloud computing and high definition voice and video systems offer increased cost-saving, flexibility and efficiency to organisations. Some sectors are already benefiting such as RFID tagging in healthcare, smart metering in energy, and smart ticketing in transport. This places increased demands on information and network architectures, and innovation in areas such as information display, transaction processing and service assurance.

The Economist Intelligence Unit Report, *Converging on the customer: new media for closer relationships, February 2010*, found nearly 70% of companies worldwide expect social media to become an important tool in the next 12 months, and 92% say they have either developed or are investigating a mobile application strategy. 74% of survey respondents see emerging technologies as an opportunity to increase revenues and margins, but half have trouble identifying which technologies can achieve those goals. Understanding and harnessing social networking will be essential for all businesses and governments.

Those who have grown up with digital technology are consumers of new products and services and the next generation digital workforce. Understanding their demands will shape the success of technology businesses. Harnessing their skills will shape the future of countries' prosperity.

Data has become an extremely valuable commodity for business, as have the consequences of its loss. Ponemon Institute research across 15 countries in 2010 found that the average cost of a breach was €5m per incident. Reputational cost is hard to quantify but can take years to recover from. Security and data protection must be a central theme for any successful company or country's future growth strategy.

The 2009 e-skills report highlighted all the above trends as driving change in business and global economies, and requiring new skills to ensure businesses remains competitive.

Changing technologies and attitudes create new opportunities but also demand new skills. IT is essential to benefitting from these opportunities to remain competitive at an organisational and a national level. Those who do not raise their workforce's IT skill level will be left behind.

46% of managers lose key staff through inadequate training

Chartered Management Institute, 2009

Workforce trends in IT

Technology advances rapidly, often beyond an organisation's, or even a country's, current skill set. As noted in the e-skills 2009 report "finding insufficient applicants with the appropriate skills, qualifications or experience is still a very common issue".

This could be about to get worse. The Baby Boomer generation, those born between 1946 and 1964, are approaching the age of retirement. This will result in a sudden, sharp exodus of skilled workers in most developed countries over the next decade.

On top of this workforce loss, lower skill jobs are increasingly off-shored and many different sectors are competing for the remaining skilled workers. This is a problem for those who can not offer low cost, highly skilled labour.

In developed markets, fewer people are choosing IT careers, partly due to the misplaced perception that IT is no longer a high growth industry. In reality, high level skills are increasingly in global demand and offer exciting opportunities for individuals and countries. As lower level jobs disappear, those who do not fill the gap by creating higher skill jobs and attracting talented people into them will be left behind.

This presents one of the biggest problems for the next ten years. The skills of a country's workforce are essential to productivity and gaining a competitive edge and IT is widely recognised as one of the most important areas in achieving this.

If businesses and governments are to reap the economic and social benefits from this vast, often untapped, resource, they need to ensure the right training and skills are available to support new people entering the IT industry and develop those already in working in it.

Thailand

The Thai Government considers developing its software capabilities a key strategy to enhance the country's industrial competitiveness.

The Software Industry Promotion Agency (SIPA) was setup in 2003 to develop Thailand's software development industry to take advantage of the growth of the global software industry and generate economic value for the country.

SIPA saw huge potential for Thailand to profit from the IT industry, both internally and by providing outsourcing services to global companies. It recognised that the ICT being taught in schools and university was not meeting the needs of industry, especially in foundation or core competency learnings.

To redress this, SIPA identified existing certifications that could meet the country's educational needs and support its strategy to make Thailand the regional information and communications technology hub, enhancing the country's industrial competitiveness. In September 2009, SIPA decided to fund CompTIA's A+ certification across the country to ensure its IT workforce had the core competencies needed to support the Government's vision.

Creating the skills for growth

Innovative projects and new technologies, as well as everyday well-run IT infrastructure, bring huge opportunities, benefit all sectors of society and are a key part of global growth. To benefit from existing and changing technology, every organisation needs a highly skilled IT workforce to build the technology, systems, services, software and networks on which it relies. It needs managers who understand the potential of technology for innovation, productivity and competitiveness, and who can develop powerful IT strategies aligned with the organisations goals.

Training and certification are key to achieving this. Training provides the skills to meet the needs of business. Certification demonstrates that professionals are able to perform IT job roles.

Certification is an important part of successful training. Certification inspires staff to make the most of training by rewarding time and effort put in. It improves staff responsibility, commitment and motivation because they see someone is prepared to recognise their work and invest in their future.

Research has shown that this leads to improved overall performance and higher staff loyalty and retention, making companies more competitive and helping them retain top staff. A 2009 report from the Chartered Management Institute revealed that the reverse is also true – 46% of managers have lost key members of staff by offering inadequate training.

Certified skills make people more employable. For example, CompTIA certifications are recognised by top technology companies and organisations such as Dell, Intel, Ricoh, the UK's Oxford Cambridge and RSA Examinations Board, the Singapore Infocomm Development Authority and the US Department of Defense.

On a larger scale, certification provides a means to measure and validate whether people have the skills to meet the needs of a country, region or organisation. It is a way of identifying the right people and the right training methods to fill the skills gap, and ensuring they have the necessary competency, as expected by industry, to meet those requirements.

If countries are going to meet future challenges, exploit changing markets and new technology, and remain competitive in a tough economic climate, they must ensure they have a pool of talented IT workers to draw on. This means training and assessing the skills of IT workers, and promoting the value of a career in IT.

Turkey

Cizgi TAGEM is the non-profit arm of Cizgi Electronics, a Turkish electronics company. It recognised the benefits that training and certification offer to its charitable and business goals. It decided to make a substantial investment in improving the IT skills of the local youth population.

Cizgi TAGEM created an e-education portal to help upskill Turkey's youth population. Its aim is to give people within the technology sector a chance to develop their skills and progress, whilst making others aware of the potential future of a career in IT. As well as fulfilling its charitable intention, this ensures there will be a dynamic pool of young IT professionals in the coming years to meet its own IT needs.

To educate to a suitable level, Cizgi Tagem chose CompTIA's A+ certification because it is developed and adopted by the global IT industry. It is also specifically structured as a globally recognised platform for career changers, for development in the workplace, and for further study.

Hundreds of students are now taking an interest in the fastest moving sector in the country. Turkey wants to lead, not follow. Upskilling the large youth population to take advantage of a fast-moving and growing sector is Turkey's chosen route to growth.

Conclusion

IT and technology hold huge potential for both individual businesses and global competitiveness, from reducing emissions to winning business to inventing the next generation communication device.

To achieve these benefits countries need to ensure they have a pool of highly skilled individuals who can drive innovation in IT and create the products and systems of the future.

Countries that can offer skilled labour at low costs have huge opportunities to pick up big contracts for outsourced work. But all countries need highly skilled IT workers if they are going to be competitive on a global scale in this rapidly developing global marketplace.

Investing in people is key to achieving this. Demand for IT workers is increasing whilst applications are falling. IT will form a vital part of the global economy for the foreseeable future. Those who do not address this will be left behind, whilst companies and countries investing in developing their workforce will reap the rewards of this lucrative market.

Anyone serious about leveraging this competitiveness on a large scale will find certification is crucial. It provides a means to measure and validate whether people have the skills to do the job, to understand the level of skills within organisations and identify and fill the gaps that are holding it back. Critically it demonstrates whether training has been effective in meeting industry requirements and guarantees to employers that certified students have the skills they need.

UK

Major UK examination boards such as Oxford, Cambridge and RSA (OCR) recognised that including vendor certifications in IT practitioner suites would make qualifications more attractive and relevant. CompTIA certifications are created in consultation with industry to satisfy specific business-skill needs and are vendor-neutral, making certified students more attractive to employers. Exam boards have included CompTIA certifications in the National Credit Framework of qualifications that are approved for funding, helping encourage and support people into a career in IT. Employers are also working with exam boards to build tailored qualifications for workforce and apprenticeship programmes that incorporate CompTIA certifications. This is particularly valuable to small businesses as apprentices are cost effective and provide vital skills, whilst the student gets valuable training experience.

New Zealand

The New Zealand Qualifications Authority (NZQA) enables private training establishments to integrate industry certifications, such as CompTIA's, into National Diplomas and higher qualifications. These certifications give students an industry recognised accreditation, proving to employers that they have the skills needed for particular roles and are a valuable business asset.

IT is on the Long Term Skills Shortage list for New Zealand. To help redress this, the NZ Government offers 0% interest loans or means-tested allowances for those studying under private training establishments. This access to funding helps bring young people into key industries like IT that are critical to the future of the country's economy. It also offers an attractive proposition to foreign nationals. Qualifying in areas with skills shortages offers a pathway to permanent residency, helping draw in top talent from abroad.

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