



## Executive Summary

The Shared Technology project provides individuals with a summary of the technologies that are likely to have an impact in a range of industries in the next five years to 2008. The industries included in this “Shared Technology” project are:

Automotive	Electronics
Building and Construction	Information Technology
Engineering	Telecommunications
Electrical	

This project has canvassed the thoughts of a number of employees and managers in Australian enterprises and organisations. The data collected from these individuals regarding the emerging technologies has been compared with the outcomes of similar projects in other countries. Each of the technologies identified are explained within the report and referenced.

The concept for this project originated during discussions with the Australian National Training Authority (ANTA) and the ElectroComms & EnergyUtilities Qualifications Standards Body (EE-Oz) who are the developers of a number of electrotechnology related training packages. The intention was to be able to provide training providers with information regarding the new technologies that are emerging across these industries.

Data gathering was done in three steps. Firstly, a group of 30 individuals were selected in Western Australia to provide information on the types of new technologies likely to impact in their industry. Secondly, from the content of these interviews there was a process of gathering documentation regarding these technologies. The third stage was the verification of the identified technologies using a larger group of contributors with another 80 interviews conducted.

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It was important to limit the scope of the project very early in the research. The limits placed on the technologies to be included were that they be:

- evident in these industries in five years time;
- shared by two or more of the industries covered in this project;
- commercially available in some location in the world; and,
- adopted by Australian enterprises within the time frame.

These interviews and literature searches provided a list of technology areas. These are:

- Skills relating to understanding computer networking are to be shared by all industries included in this study;
- An understanding of the use and management of wireless communications will be increasingly required by people working in these industries;
- Devices in all industries will become increasingly more powerful in processing and distributing data; and,
- The generation of electricity for grid and non-grid connections will become more decentralised and involve operatives in a number of these industries.

There is continuing concern expressed by employers regarding the ability of existing workers to be able to learn new skills. This remains an important human variable that will facilitate or impede the adoption of new technologies. Managers of enterprises will continue to make or avoid investment decisions relating to these technologies.

Change in technology use is evident in all the industries studied but planning for this change is not necessarily in existence. Many observers of technology and innovation have recognised that change is a normal process and have repeatedly called for industries and other supporting organisations to be prepared for change and to anticipate change.

This project has identified the new technologies that will be evident in the next five years. The use of the data in this report will be of benefit to those who will be reviewing the training packages in these industries.

The data in this report will also be of benefit to those developers of new standards who may be working with today's technology and not aware of the new technologies that are soon to be evident. A failure to consider these developing technologies may see the training packages and standards "age" more quickly than is necessary.

There are four themes that have emerged from this project. These are:

1. There is an undeniable move from closed, vendor-controlled information systems to systems that are open and based upon international standards. These systems are more closely aligned to traditional information technology computer networks and use many of the basic protocols and processes.
2. There is the need for managers and employees to learn about these new technologies in order to plan and anticipate their impact on the day-to-day

processes in the workplace. However an individual must first be able to recognise those addition skills and knowledge bases that are required.

3. Training is available for these technologies but the source of the training is not necessarily seen as being associated with the incumbent industry. Large training providers may have the necessary ability within their organisation to provide training but may need to develop intra-organisational links to manage this training.
4. Managers see new entrants who have the necessary “soft skills” as more valuable to the organisation as these entrants do not have to unlearn the existing work processes and knowledge bases but it is the existing workers who have the expertise to be able to work across legacy systems and within the new technology. However training needs to be made available for these individuals in a way that is user friendly.

While this project has been able to identify those technologies that are impacting upon the business processes of the industries involved, planning needs to be undertaken to enable Australia to meet these challenges. Therefore, a range of issues require further attention. These are:

1. How the training systems and related infrastructure respond in a timely and flexible manner and to identifying how businesses apply respective technologies within an Australia context,
2. How are we to ensure that skill sets residing across industries in common are acknowledge and responded to in an effective manner and to identify how the increasing breadth and range of cross discipline shared technologies are managed in terms of industry leadership and advice to the training system;
3. Determining how rapid adoption of technologies are linked to national workforce planning strategies and processes, aimed at improving the quality of Australia's skills pool and the training system; and,
4. The development of a national strategy to give effect to the above three points.