

Matching the Workforce with Tomorrow's Business Discussion Paper

Version 1

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In September Energy 21C requested young industry leaders to describe what network businesses will look like by 2050 and discuss how businesses should address the challenge described.

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Executive Summary

There are very few challenges experienced by the Australian electricity sector more crucial than retaining a skilled workforce. Their workforce must not only deliver their unprecedented capital programs, but also maintain and operate their infrastructure to ensure they will be able to deliver energy to growing urban cities and rural centres for years to come.

The labour market, and the industry skills required by network businesses, will change substantially over the next 40 years due to a wide range of factors including demographic change in the Australian workforce, the introduction of climate change responses and technological change.

Despite much discussion about the shortage of skills to meet current and future requirements for network businesses, responses to address this issue have been short term and are not sufficient to tackle the resourcing crisis in the long run.

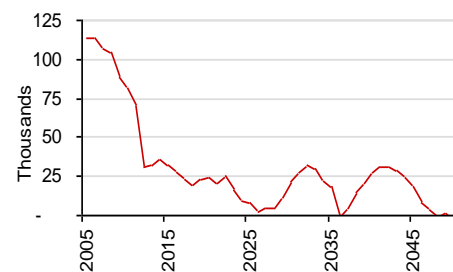
Businesses must make a strategic effort to address this important challenge. This paper will explore a number of different responses, including recruitment and retention strategies, workforce flexibility, knowledge management and training that will help network businesses to establish a workforce that will deliver tomorrow's requirements.

The Challenge

The labour market, and the industry skills required by network businesses, will be subject to unparalleled change over the next 40 years. This change will be driven by a wide range of factors including demographic changes in the Australian workforce, responses to climate change and sustainability issues, and technology changes. Some key characteristics to be observed over the next 40 years include:

- A severe skills shortage, largely as a result of an ageing industry workforce and a decline in the rates of apprentices in training. Although in the short term resourcing pressures have eased, with Australia's economic growth, the demographics of the Australian population as a whole points to a continuation of pressure on labour supply.

Exhibit 1: Estimated net change in the size of the Australian workforce (age 15-64) to 2050.



Source: Australian Bureau of Statistics release 3222.0
Population Projections, Australia (Series A).

- Replacing ageing assets will demand skilled resources for design and construction, as network businesses approach the third asset life cycle and roll out large scale capital programs to improve the quality of existing networks.
- Network businesses will require staff that understand emerging smart grid products and are capable of delivering these customer service offerings.
- Emerging climate change responses, both legislative- and industry-driven, will push businesses to implement a number of initiatives to reduce carbon emissions, invest in energy efficiency technologies, and improve asset management processes to respond to indirect emissions from electrical line losses.
- Climate change will also demand transformations in asset design in order to better withstand the higher environmental impacts associated with expected climate change over the next 30 to 50 years. Many of these technologies and practices will be new to staff across the business, thus commanding substantial learning about climate response techniques.
- An increase in brown field work and network complexity due to changes in urban sprawl and a denser population, will call for changes in the types of skills-mix for field staff.
- Also, remote functionality will be used across the business. Communications in the field will be the standard, and sub -stations will be instrumented, requiring technically competent staff.

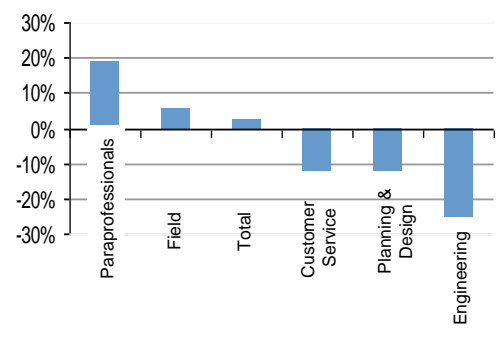
These changes in technologies, roles and network characteristics, coupled with a shrinking workforce, will make it an enormous challenge for businesses to ensure that their workforce is able to meet the demands of the future.

The Response

A competitive position in the labour market

The number of people entering the workforce in Australia has fallen dramatically, largely as a result of an ageing industry workforce and a decline in the rates of apprentices in training.

Exhibit 3: Percentage of experience 2006/07 gained/lost – 2006/07 to 2011/12 for a typical network business



These changes in workforce demographics have a knock-on effect on the utilities sector - the typical network business will have 10% of their workforce will be retired or close to retirement by 2011.

Consequently, the utilities industry is facing severe skills shortages across engineering, planning and design, and customer service trade categories.

Further, current regulatory frameworks promote cost efficiencies which are often at the expense of training, knowledge management and workforce techniques.

A common industry response to the shrinking workforce and regulatory drivers has been to turn to outsourcing low-skilled or easily packaged work, or to use contractors in the design office. These business drivers are reflected in current contract performance frameworks, with majority of utilities viewing cost reduction and productivity as the most important metrics for service provider performance¹. Such metrics provide limited incentive for outsourcing businesses to invest in training, which is consistent with the commonly held view that outsourcing businesses do nothing to increase the aggregate supply of skilled resources.

It is obvious that more needs to be done to address resourcing challenges in the long run. In order to secure the next generation of skilled workers in a tightening labour market, network businesses need to develop a resourcing strategy that considers:

- Successful recruitment begins with effective planning and forecasting. Businesses need to formulate plans based on analysis of future needs, and the skills available within and outside of the organization.
- Businesses will have to become much more conscious and deliberate in establishing a competitive position in the labour market through tactical recruitment and retention. An example is the development of a unique employee value proposition to be an 'employer of choice', with business benefits offered to prospective employees may include location, culture or career progression.

¹ Jon Brock, 'Over to outsourcing', Power and Utility, 2009

A flexible workforce – effective deployment of resources

Whilst utilities will continue to rely on outsourcing to maintain quantitative flexibility, they need to shift from the current ad hoc approach and be more strategic in their use of external parties in order to secure long term availability of necessary skills and improve knowledge management.

- Leverage the expertise of external parties. Due to a history of long term contracting, it is no surprise that utilities often feel that external service providers know parts of their business better than they do. There is a wealth of information available for businesses to acquire from their external partners. Utilities therefore need to establish incentives and capabilities for third parties to capture, manage and disseminate knowledge.
- Enable and encourage contractor investment in skills development. Contractors are proven willing to invest in skills development, such as training apprentices, but they require commercial certainty and the right contract performance framework to do so.

Another important approach to maintaining workforce flexibility is to provide functional flexibility, where businesses optimise staff capacity to perform different tasks through job rotation, widening job scope, and job enrichment, such as granting more authority to staff for making job-related decisions. Benefits from functional flexibility include:

- Skills development, due to its relationship with several positive working conditions, such as involvement in decision-making and greater autonomy in directing one's skills.
- Improving workforce efficiencies through the use of 'all rounders' rather than having to recruit each of the specialisms separately.
- Improved customer satisfaction because staff are able to perform a range of services, thus improving delivery times.

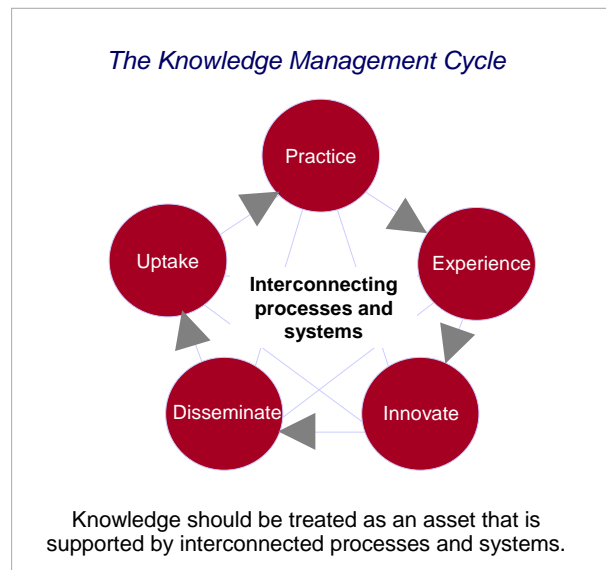
Knowledge Management

As the industry is exposed to departure of technical know-how and rapidly changing skills requirements, businesses must enhance their ability to acquire, share and use knowledge more effectively. Relying on the traditional model of person-to-person communication of business insights severely limits a business's ability to share knowledge. Australian utilities have a range of alternatives for maintaining and deploying knowledge:

- IT-enabled data management, where systems are used to capture and facilitate access to asset condition and geospatial data.
- Encoding the collective knowledge of the business in its business processes and procedures.

Most importantly, without the benefit of a culture that recognises, encourages, and rewards knowledge

management activities, consistent good performance of knowledge management will not be possible.



Customer Service

Smart metering, smart grids, smart appliances, micro generation and two way communications directly into the customers premise will significantly change the relationship between the customer and network business.

Currently, electricity customers predominantly deal with their electricity retailers, or the retail arm of their integrated electricity supplier. In the future, technology will create an opportunity for network operators to interact directly with the customer and influence their behaviour. Network businesses will need staff that understand this new technology, understand the strategic value of the technology and can create product offerings that are valued by the customer.

Training

The expected rapid speed of changes in technology will make it increasingly difficult for industry to keep pace with the changes in skills required. In order to develop an effective training strategy, businesses must:

- Know the facts: establish a detailed understanding of skills requirements and shortages across all elements of the business, highlighting areas that will require accelerated training and/or development.
- Develop a training program that addresses the skill shortages and, therefore, aligns with the organisation to achieve business goals and objectives.
- Industry wide approach. Develop, between their industry peers, suppliers and outside parties, a skills formation strategy appropriate to capability and capacity to train, and to their particular needs. The approach should assess whether current regulatory frameworks incentivise the right behaviour.

Conclusion

The labour market, and the industry skills required by network businesses will transform significantly over the next 40 years due to changes in Australian workforce demographics, business direction, the environment, and technology.

This essay highlights specific approaches that businesses must employ in order to prepare for the substantial changes in workforce supply and demand.

Whilst each of these initiatives will provide noteworthy benefit they cannot be done in isolation. That is, network businesses will need to develop a resourcing strategy that considers a combination of all of these approaches; recruitment and retention strategies, workforce flexibility, knowledge management, customer service and technical training. By implementing all of these elements businesses will be better equipped to deliver the requirements of the future.

BIOGRAPHY - Sarah Clarke

Sarah Clarke is an Analyst Consultant with Marchment Hill Consulting who has worked across the electricity sector for two years including resourcing and works management studies, market analysis projects, business modelling and implementation frameworks.

During her graduate year at MHC, Sarah analysed the resourcing strategies to enable a major electricity networks company to meet its growing CAPEX program. As part of this process Sarah developed a detailed model of projected program of works, and the resource gaps that would develop over a five year period. Sarah also undertook a diagnostic of a major distribution business, focusing on issues regarding works management and delivery. These experiences have provided Sarah with a deep understanding of the short- and long-term resourcing challenges to be faced by network businesses that are detailed in this paper.

Sarah has a Bachelor of Psychology and Management from the University of Monash, and has a range of academic experience in organisational change, employee relations, management communications and organisational psychology.

Marchment Hill Consulting has offices in three locations which serve Australia and New Zealand, Asia and the Middle East.

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