

Digital and Telecommunications Industry Issues

Industry Issues

The Telecommunications industry, through its Communications Advisory Group (CAG) members (a telecommunications industry technical group) have highlighted many issues that require attention confronts a wide range of matters and this section is a snapshot of the technical issues.

Below is a summary of identified current issues within Digital and Telecommunications that will impact the capability of the Digital Economy and consumer transformation to maximise the usage of Internet of Things (IoT), applications, data and video streaming and so on:-

- The problems/challenges associated with the growing use of Power over Ethernet (PoE) and Fire-stopping activities are becoming a significant issue relating to the general power supply in the context of safety and responsibility as many current and legacy installations are not capable of handling PoE safely. Government and industry policies and training programs need to be developed or enhanced as part of a Professional Development (PD) program to new and existing workers where regular installation and training breaches occur that cause both customer service problems and safety risks to users and cablers from electrical shocks or fire or alarm system failures
- Legacy cabling remaining in buildings is becoming an expensive and major issue for building owners and telecommunication installers as its causing poor wiring and connectivity as in Australia this has generally been “left to the market” to provide a solution which is causing frustration and extra costs to customers. Telecommunications needs were often unplanned in the older buildings requiring a number of ad hoc solutions. But for newer commercial buildings there should be provision of space for telecommunications capacity, data cabling and associated equipment including access to buildings for RSPs and carriers to cable between floors for connection frames, equipment panels, and communications/radio antenna systems such as Distributed Antenna Systems (DAS) that are growing in number and diversity
- Of concern are the successive cut backs of funding has diminished the role of the ACMA’s ability to field regulate and monitor the quality of spectrum interference, OH&S, customer cabling, support consumer equity and access issues, and equipment installations sector. ACMA and industry evidence highlight an alarming amount of non-compliance to technical standards relating to service quality and importantly safety
- The skills levels of cablers and thus the quality of work is a major concern to the integrity of the Digital Economy, particularly where widespread sub-contracting occurs in the industry. There is a tendency for the responsibility for mandated registrations, training and development of workers in many cases to be cascaded down the contracting levels and hence no quality system is in place other than commercial requirements
- The costs to consumers is also higher than needed due to rework and remedial work, and the growing use of the broadband network has highlighted limitation of the current systems in coping with high demands in many communities. This highlights the need for an industry Professional Development/Skills Maintenance programme every 5 years for

the telecommunication workers as the MTS, 5G and so on does provide a number of training problems due to the need for a diversity of skills and limited ability to deliver training for this field by RTOs/training providers

Network Infrastructure:

Virtually all businesses and consumers are “Internet-dependant”. The internet, whether it’s communicating via email, transacting online, accessing data stored off-site in the cloud, utilising operating systems in the cloud, or simply obtaining information off the web. This dependency is expected to grow exponentially in coming years with the adoption of the Internet of Things and 5G.

NBN Infrastructure:

The multi technology broadband system (MTS) being currently finalised by NBN Co has coped well under the pandemic demand of working from home. There were pockets of concerns but this manly dealt with poor installation or internet products purchased.

In the longer term, the increased use of broadband and in particular more people working from home, requires future upgrading of core network infrastructure and improved connectivity. Based on global experience the fibre to the node installations will need to be upgraded to fibre to the kerb or fibre to the home and this brings about the issue of costings and who will bear these most significant costs.

The current infrastructure will be enhanced with the deployment of other telecommunications connections such as enhanced wireless spectrum including 5G, satellites and so on. This should improve the capacity to increase the opportunities of the Digital Economy but its limitation will still be driven by the workers skills and capabilities for installing the infrastructure and equipment to a relatively high level.

5G Wireless Infrastructure:

Currently 5G is being rolled out throughout Australia and 5G is the most recent stage in the evolution of cellular mobile networks. It represents, in the first instance, a response to the exponential growth of mobile data traffic and digital products, especially data and video, over the last decade as 5G is designed to be a more pervasive technology set than its predecessors, supporting a wide range of social and industrial uses over both fixed and mobile access platforms.

As wireless connectivity sits at the heart of this larger 5G “ecosystem”, radio-communications skills and knowledge will be increasingly in demand not only within the telecommunications sector but across all sections of the economy and to achieve this they will need to be flexible and rapidly responsive to demand.

In the course of this evolution many existing workforce roles will disappear while new skill needs will arise. Industry reports that the skills available in the current radio-communications workforce have not kept pace with network evolution and that there is a lack of publicly available training to remedy such shortages, at least at the VET level.

5G Recommendations

Training Products

- That training products be developed for those sections of the telecommunications workforce involved in the construction, operation and maintenance of 5G networks provide a thorough grounding in underlying radio-communications principles and technologies such as may be applicable across other industry sectors

Quality Assurance

- Need to investigate what mechanisms may be required to support up-skilling and cross-skilling of the sub-contractor workforce in the 5G context
- That ACMA and/or government support mechanisms for improving the quality of customer premises wireless installations

Related Activities

- The need to develop a 5G information/awareness programme suitable for delivery to local government representatives and officers, RSPs, businesses and consumers

Work Health & Safety

Work health and safety has become a more commonly used term and for telecommunications and the digital economy. Emerging technologies have introduced new problems for example with radiation, electrical shock risk from associating with power and more general risks associated with alarm failures where monitors are linked by telecommunications infrastructure with digital technology in the alarm system.

A recent review by ACMA demonstrated a high level of non-compliance to safety standards where there was close proximity of telecommunications cable to mains power and that safety switches in small commercial and domestic situations do not provide the level of safety that is commonly perceived - and it will probably take decades for retrofitting to be complete.

There is sometimes overlap with state/territory authorities laws, insurances and compensation regulations in workers safety and consequently variations in some requirements for areas such as confined spaces, working overhead and other work situations.

The telecommunications industry has been a national responsibility from Federation and in the main, the larger telecommunications and data enterprises have very good systems in place but there is a significant problem with shortcuts being taken by sub-contractors once in the field, due to time and commercial pressures, where a significant number of serious accidents occur due to these short cuts.

Review of Telecommunications and allied standards, that apply to the installation and maintenance of fixed or concealed cabling or equipment connected, being undertaken by Communications Alliance will include new requirements and standards for:

- Fire Stopping
- PoE (Power over Ethernet)
- Introduction of new energy source classifications (Response to IoT and PoE related products and associated dangers)

- Redefine the Network Boundary
- Update of ICT equipment safety requirements
- Introduction of one-pair cable and connectors
- Remote Power Feed requirements
- Revised labelling requirements for fibre optic enclosures
- New “fit for purpose” requirements to ensure products provided actually do what they are supposed to do

These areas have become more pervasive in the industry and as end users demand it more and more, the safety and network integrity risks, particularly for end users, escalates. Cabling regulation and standards regime contribute to the dependability of telecommunications across emerging digital and community services. It provides the platform for Government, Councils, industries and business to deliver Smart Cities and a productive and growing economy.

It's recommended that both federal and state Government Training Funds be provided to develop an online Industry Program that bridges the gaps in knowledge required to ensure that the technical workers across Australia are upskilled with these changes that are about to be introduced the reviews of standards.

This will not be a mandatory program but Industry and the Cabler Registrars will provide the support to ensure that Cablers comply with undertaking the upskilling program to ensure safety of users and cablers and also to maintain the integrity of the network.

Quality Assurance

There is a direct link between quality assurance (QA), safety and training delivery, and the ability of the industry to service changing technology with the growing needs for more data delivery to customers.

Adherence to technical standards and quality training are key factors in quality assurance and there is a strong need for a national system for *Professional Development* or *Skills Maintenance (PD)* for current telecommunications and allied technical workers to keep them up to speed with technological change. Co Regulation is also a facility supported by the industry but not taken up actively by the regulator but could assist in QA.

Professional Development could be delivered on-line or in session but an essential need is for a national PD system that is recognised by both the industry, enterprises, ACMA and the VET regulators.

Co-Regulation has been supported by most of the industry for some time and in the recent past at least three detailed submissions have been presented by ADTIA and TITAB to ACMA and political representatives setting out costings and benefits. The Industry has for many years requested the ACMA (Telecommunications Regulator) that Professional Development for its Registered Cablers should be mandated to ensure they keep at the forefront of technology changes and new practices required to maintain safety of users, cablers and also to maintain the integrity of the network.

In terms of cost and risk, what is commonly overlooked where poor installations have been made by unregistered and/or unqualified worker is the risk to buildings and people regarding insurance liabilities in the event of a fire or an alarm failure for fire, burglar or medical alarms.

Sometimes well after a faulty installation occurs problem arise resulting in litigation around insurance requirements. This type of cost/risk is rarely factored in when consideration is given to relatively small extra imposts from improved training or management of a co-regulatory system.

Small and Medium Enterprises

Small and medium enterprises play a major role in the Australian economy and for them telecommunications is a vital tool and the expanding use of data in a digital economy affects them very directly.

Often the “cost” and impact of telecommunications and data service delivery, or interruptions, to this group is much higher proportionately than it should be due to a range of factors. Recent experiences with COVID-19 closures in some overseas locations has also demonstrated the excessive reliance we have on overseas operators for technical support.

It is noted that some parties in Australia are bringing Call Centres and technical contact centres back home for security and service reasons and these will also provide an ideal work location for handicapped Australians and young people seeking an entry level job.

Apprenticeships/Cadetships/Internships – Technical training

A new approach to support training and entrance of recruits into the Digital and Telecommunications industry needs to be adopted. Our approach to technical training must start at Secondary College level and proceed via “new” Cadetship and Internship models for technical training within the Digital and Telecommunications industry.

The contracting and privatisation arrangements in recent years has left a policy gap for mid and higher level technical skills which will have serious impact on the capability of workers to meet demand for additional Digital and ICT workers as the Digital Economy, Transformation, 5G, IoT, Cybersecurity and other areas evolve.

It is recommended that State and Federal Governments need to be more proactive in initiating support and opportunities for those wanting to undertake technical studies. Innovation and creativity within industries that rely on technologies such as broadband and digital will come from those that are given the opportunity to learn and understand the application of those technologies across all areas of homes and business.

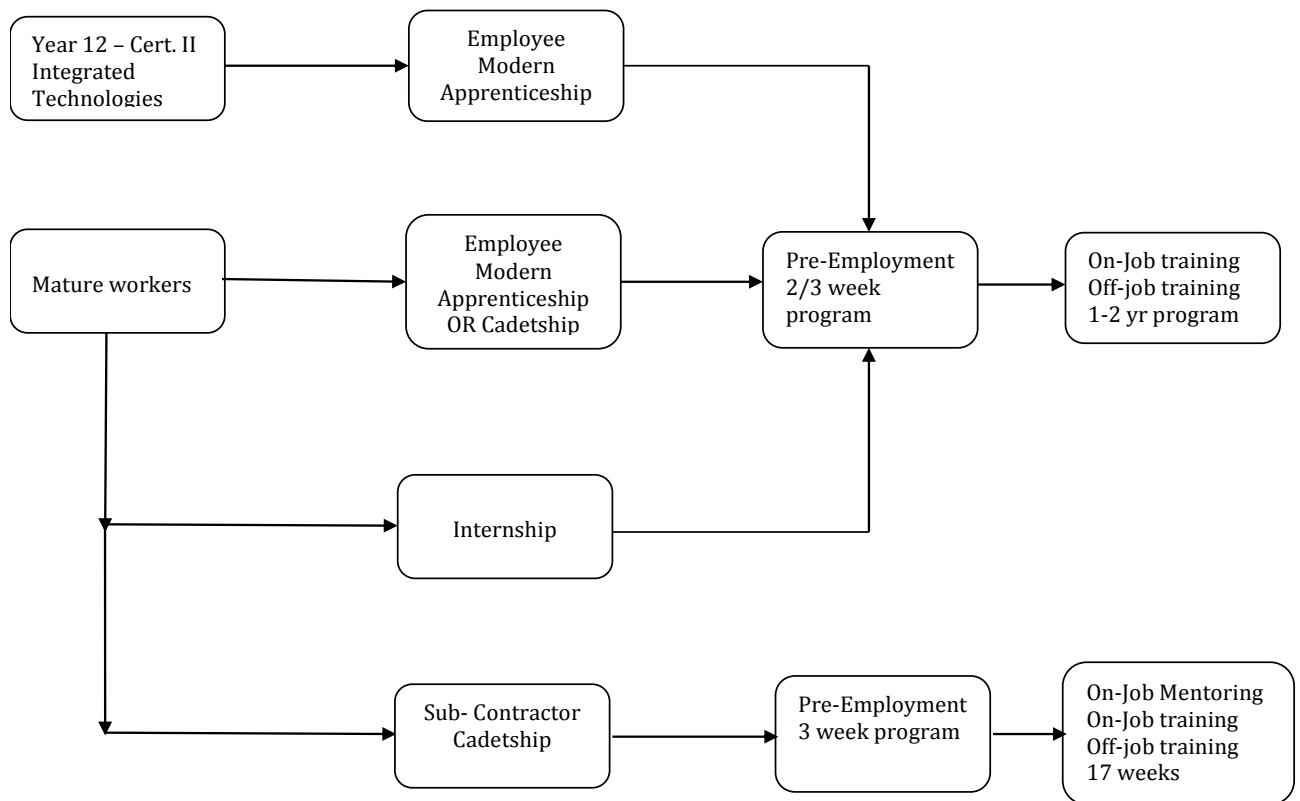
Cadetships/Internships, Micro-credentials and Skill Set based funded training with greater incentives when linked with permanent employment or contracting outcomes could assist with School to Work transition programs as well as job creation programs.

A cadetship model includes sub-contractors, existing and older workers within that would see the cadetship providing training for up to 4 Skill Sets with on-job experience and mentoring during a 1-2 year period – See Appendix 3 for the model.

The outcome could be either a Micro-credential, Certificate III or Certificate IV in Telecommunications specialising in Broadband, Wireless and 5G Technology, Customer Premises or Digital Technology.

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The model would integrate on and off the job employment and training BUT within a flexible government and working arrangement:



Sample Model Delivery Program

