



**The Hon. Adrian Piccoli MP**  
Minister for Education



Mr Russell D Grove  
Clerk of the Legislative Assembly  
Office of the Clerk of the House  
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Macquarie Street  
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MT 10/2300 – 19989

Dear Mr Grove

I write in response to your letter of 10 December 2010 (your reference: LAG5390), to the former Minister for Education and Training, regarding Report No. 5/54 of the Standing Committee on Broadband in Rural and Regional Communities – “Transforming life outside cities: The potential of broadband services for rural and regional communities” dated November 2010.

This report identified one recommendation relevant to the Education portfolio, as follows:

**Recommendation 1:**

*The Minister for Health, Attorney General and Minister for Education and Training develop state-wide strategies or plans for the introduction of new technology, associated with greater access to telecommunications, for each of their portfolios. These strategies or plans should outline gaps in service provision, initiatives to address these gaps, resource requirements, solutions to potential barriers and a detailed implementation schedule.*

There are significant remote locations and communities in rural New South Wales and indeed Australia (Accessibility/Remoteness Index Australia classification, *Remote and Very Remote*) that will not be commercially viable or technically feasible for the National Broadband Network to service in the foreseeable future. These areas also contain the families which rely on access to distance education via satellite services.

These very remote locations and communities are significantly disadvantaged by their geographical isolation. This is because geographical isolation creates physical barriers and amplifies all other forms of intersecting disadvantage.

In keeping with Recommendation 3, priority should be given to a common high speed satellite service which is capable of providing the level of interaction described in Paragraphs 2.38 to 2.40.

✓ Original to: Table office    ✓ Copy to: Clerk-Assistant (Committees)

The implementation of the "Connected Classrooms" program and related initiatives as reported on in Chapter 2, Paragraphs 2.38 to 2.42 are on track.

The commitment outlined in Chapter 2, Paragraph 2.42 may be updated to advise that as of 18 April 2011, 2,139 interactive classrooms have been installed and 114 are to be installed by June 2011.

The Department of Education and Communities response to the Standing Committee's recommendation is attached (TAFE NSW advice attached at **TAB A** and Office of Schools advice attached at **TAB B**). This advice includes identified gaps in ICT service provision and a list of the strategies in place aimed at improving educational service and efficiency in service delivery, and improving the level of engagement of rural and regional communities through new technologies.

The initiatives listed are focused not only on technological and infrastructure advancement (including faster and more reliable broadband and wireless internet services), but also on collaboration tools and flexible online learning options including the use of web and video conferencing for learning opportunities which were previously impossible. The list includes new programs and proposals to expand existing pilot programs.

Yours sincerely



**Adrian Piccoli MP**  
**Minister for Education**

31 MAY 2011

**TAFE NSW strategies for the introduction of new technologies in rural and regional communities**

**1. Current gaps in service provision - identified current gaps in ICT service delivery to students of TAFE NSW in rural and regional communities**

Origin	Current gap in ICT service delivery	Impact
TAFE NSW Illawarra Institute	<ul style="list-style-type: none"> <li>Dial-up or no internet services available for some isolated/rural students at home</li> </ul>	<ul style="list-style-type: none"> <li>Limited access to flexible and online learning services provided by TAFE Illawarra</li> <li>Limited access to information services about learning and training opportunities</li> </ul>
TAFE NSW Illawarra Institute	<ul style="list-style-type: none"> <li>Lack of access to broadband internet services on campus for student-owned computing devices (eg wireless, laptops)</li> </ul>	<ul style="list-style-type: none"> <li>Limits usage of broadband to Department of Education and Communities only provided devices which is inadequate for student needs</li> <li>Providing ICT access devices puts a significant capital load on the Institute</li> </ul>
TAFE NSW Illawarra Institute	<ul style="list-style-type: none"> <li>Insufficient technology available at rural/regional campuses to fully support educational delivery, eg wireless, Smartboards, Video Conferencing, IT integrated classrooms and learning spaces</li> </ul>	<ul style="list-style-type: none"> <li>Discourages delivery using technology and does not meet student demand for technology-based learning</li> </ul>
TAFE NSW Illawarra Institute	<ul style="list-style-type: none"> <li>Access to Department of Education and Communities web portal for staff access to information services off-campus</li> </ul>	<ul style="list-style-type: none"> <li>Limited access to knowledge/information services for staff off-campus, particularly part-time teachers</li> </ul>
TAFE NSW Western Institute	<ul style="list-style-type: none"> <li>TAFE Western Institute currently hosts the Interactive Distance Learning (IDL) Project which has been delivering TAFE courses via satellite and video conferencing into the most remote communities and Distance Education Primary School home sites in NSW since 2003. Upgrades of software and hardware are required to maintain ICT currency and effective teaching and learning practices in rural and remote communities.</li> </ul>	<ul style="list-style-type: none"> <li>Vastly improved interactivity for existing 15 remote Aboriginal communities and over 200 homesteads</li> <li>Expansion of range of qualifications, presentations and units of competence delivered to students</li> <li>Enabling more flexibility and improvements in assessment methods of competencies</li> <li>Providing interactive delivery to Distance Education Secondary Students for the first time</li> <li>Expansion of TVET and School based VET delivery into 15 remote Aboriginal communities and over 200 homesteads</li> <li>Enabling flexibility of delivery and student sites</li> </ul>
TAFE NSW Western Institute	<ul style="list-style-type: none"> <li>Due to isolation of communities additional local ICT and educational support is required to support regional development of skills</li> </ul>	<ul style="list-style-type: none"> <li>Community capacity building in increasing local community ICT and mentoring skills</li> <li>Increasing the uptake of VET courses and ICT skills across the community</li> <li>Ensuring a quality services is provided</li> </ul>

Origin	Current gap in ICT service delivery	Impact
TAFE NSW New England Institute	<ul style="list-style-type: none"> <li>Lack of access for students to fast, affordable and reliable bandwidth both through landlines and wireless (eg Next G). Some users have only dial-up internet connectivity and others are obliged to use satellite connections with high latency.</li> </ul>	<ul style="list-style-type: none"> <li>Poor quality real-time communications between teachers and students, and their peers, using virtual training rooms eg Adobe Connect</li> <li>Slow, intermittent or insufficient bandwidth to enable access to learning resources, eg through learning management system (LMS)</li> <li>Costly data download fees</li> <li>Slow data upload speeds for student LMS interaction</li> </ul>
TAFE NSW New England Institute	<ul style="list-style-type: none"> <li>Lack of bandwidth available to Institute for service delivery</li> </ul>	<ul style="list-style-type: none"> <li>Prevents exploration of new technologies to improve service delivery to learners eg. using tele-presence technology for high quality real-time engagement with learners at home or in the workplace to assess evidence of learner competence</li> </ul>
TAFE NSW New England Institute	<ul style="list-style-type: none"> <li>Department of Education and Communities firewall filtering for TAFE should reflect TAFE business needs</li> </ul>	<ul style="list-style-type: none"> <li>Firewall settings can cause problems with access by off-campus learners to Institute services eg Adobe Connect</li> </ul>
TAFE NSW New England Institute	<ul style="list-style-type: none"> <li>Limited access to teachers and students to Web 2 and social networking tools and platforms.</li> <li>Department of Education and Communities firewall filtering for TAFE should reflect TAFE business needs.</li> </ul>	<ul style="list-style-type: none"> <li>Corporate communication systems viewed as "old school" by 15-25 y/o.</li> <li>Missed opportunity to engage students using technologies familiar to them</li> <li>Filters block a range of educational content</li> </ul>
TAFE NSW Hunter Institute	<ul style="list-style-type: none"> <li>Variable access to reliable network services including bandwidth capacity, reduced options for network accessibility.</li> </ul>	<ul style="list-style-type: none"> <li>Inequities/inequalities based on geographic location</li> <li>Inconsistent access to network services leading to difficulty in constituting consistent educational services and service delivery using ICT</li> <li>Disengagement with online access to services due to poor performance impacting core delivery</li> </ul>
TAFE NSW Hunter Institute	<ul style="list-style-type: none"> <li>Variable and limited knowledge/understanding of ICT technology within the community</li> </ul>	<ul style="list-style-type: none"> <li>Difficult to establish remote/distance services because many potential students lack the basic knowledge and skills required to establish and maintain ICT technology in the home and/or workplace</li> <li>Limited businesses established due to the unavailability of broadband services in regional services</li> </ul>
TAFE NSW Hunter Institute	<ul style="list-style-type: none"> <li>Competition for scarce ICT resources in DEC to meet TAFE business imperatives.</li> </ul>	<ul style="list-style-type: none"> <li>Extreme difficulty in providing adequate support for ICT distributed across multiple campus locations</li> <li>Impossible to provide ICT support for students in their home or workplace</li> <li>Inability to grow capacity to support the exponential growth in online and distance learning innovations</li> </ul>

**2. Barriers to fast and reliable ICT services** – identified barriers that prevent fast and reliable ICT services being available to regional and rural communities for accessing educational services. Includes logistical and cost impediments that physical distance brings to rural and regional students.

Origin	Barriers to fast and reliable ICT services	Impact
TAFE NSW Illawarra Institute	<ul style="list-style-type: none"> <li>Distance and isolation</li> </ul>	<ul style="list-style-type: none"> <li>Isolation, lack of service/connectivity, unable to access learning, training or information services</li> <li>Increased travel required to access services leading to safety and cost issues</li> <li>Missed opportunities for community employment and development eg internet business, training</li> </ul>
TAFE NSW Illawarra Institute	<ul style="list-style-type: none"> <li>High cost and economic barriers to internet provision</li> </ul>	<ul style="list-style-type: none"> <li>As above</li> </ul>
TAFE NSW Illawarra Institute	<ul style="list-style-type: none"> <li>Dispersed population, thin markets.</li> </ul>	<ul style="list-style-type: none"> <li>Community unemployment, loss of population and young people needing to move to larger centres for learning/training and employment</li> </ul>
TAFE NSW Illawarra Institute	<ul style="list-style-type: none"> <li>Cost, time and staffing barriers to delivery of learning and training services out in rural communities</li> </ul>	<ul style="list-style-type: none"> <li>Inability to provide learning and training out in rural and remote communities</li> </ul>
TAFE NSW Western Institute	<ul style="list-style-type: none"> <li>Limited broadband and the need for Satellite Services upgrade.</li> </ul>	<ul style="list-style-type: none"> <li>Improved interactive ICT services to all of DEC schools, Distance Education and TAFE delivery to rural, remote and regional communities and homesteads</li> <li>Platform to improve efficiency of software for interactive distance learning</li> <li>Enable additional ICT resources and tools for improved delivery of VET to satellite sites</li> <li>Improved linkages with connected classrooms and DEC Connections programs for satellite students</li> </ul>
TAFE NSW Western Institute	<ul style="list-style-type: none"> <li>Suitable software for satellite students to enhance current capabilities of VET delivery reliability, flexibility, more opportunities</li> </ul>	<ul style="list-style-type: none"> <li>Improved reliability, flexibility of services to students, offering more opportunities and shared learning across DEC for communities and isolated homesteads</li> </ul>
TAFE NSW Western Institute	<ul style="list-style-type: none"> <li>Distance of communities and homesteads from educational and other community services result in enormous costs and limited services and opportunities to access training education and employment options.</li> </ul>	<ul style="list-style-type: none"> <li>Off farm and online employment opportunities</li> <li>On farm training has the capacity to improve the viability of farming enterprises</li> </ul>
TAFE NSW New England Institute	<ul style="list-style-type: none"> <li>Competition for scarce ICT resources in DEC to meet TAFE business imperatives.</li> </ul>	<ul style="list-style-type: none"> <li>TAFE NSW has complex business needs as it must be flexible in it's delivery to meet the needs of off-campus learners in the home and workplace. These needs must be given the highest priority of support</li> </ul>

TAFE NSW Response to Legislative Assembly Standing Committee on Broadband in Rural and Regional Communities – Inquiry into the benefits and opportunities for rural and regional communities of having access to telecommunications (including broadband) and other technology services.

Origin	Barriers to fast and reliable ICT services	Impact
TAFE NSW New England Institute	<ul style="list-style-type: none"> <li>Bandwidth</li> </ul>	<ul style="list-style-type: none"> <li>TAFE NSW has complex business needs as it must be flexible in it's delivery to meet the needs of off-campus learners in the home and workplace. These needs must be given the highest priority of support</li> </ul>
TAFE NSW New England Institute	<ul style="list-style-type: none"> <li>Distance of rural and remote students from local exchanges prevent access to ADSL. 3G mobile services also very poor.</li> </ul>	<ul style="list-style-type: none"> <li>As above</li> </ul>
TAFE NSW New England Institute	<ul style="list-style-type: none"> <li>Satellite connection</li> </ul>	<ul style="list-style-type: none"> <li>Although satellite can offer users internet access in very remote locations, the service is very slow and unreliable and unsuited to accessing learning programs provided for example through web conferencing services</li> </ul>
TAFE NSW New England Institute	<ul style="list-style-type: none"> <li>Regional users often have very limited access to internet service providers and what service they can access is at a high cost.</li> </ul>	<ul style="list-style-type: none"> <li>Can be difficult for users to justify the expense of costly data plans to access learning</li> </ul>
TAFE NSW Hunter Institute	<ul style="list-style-type: none"> <li>Limited and inconsistent bandwidth</li> </ul>	<ul style="list-style-type: none"> <li>Greater difficulty in devising and rolling out consistent ICT based training that is sustainable and can be grown to meet demand</li> </ul>
TAFE NSW New England Institute	<ul style="list-style-type: none"> <li>Geographic distance</li> </ul>	<ul style="list-style-type: none"> <li>Multiplies the cost and complexity of providing effective and efficient ICT support</li> </ul>
TAFE NSW New England Institute	<ul style="list-style-type: none"> <li>Competition for scarce ICT resources in DEC to meet TAFE business imperatives.</li> </ul>	<ul style="list-style-type: none"> <li>Impossible to meet real need</li> </ul>
TAFE NSW New England Institute	<ul style="list-style-type: none"> <li>Inadequate knowledge and expertise of ICT amongst Teaching and support staff</li> </ul>	<ul style="list-style-type: none"> <li>Rapidly evolving technology is leaving both students and staff behind, making it hard to exploit new technologies effectively, or at all, even where they are potentially applicable</li> </ul>

**3. Solutions – identified priority areas of ICT within the jurisdiction and new technological advancements available to assist greater access to educational services for rural and regional communities**

Origin	ICT solution	Description of improved service
TAFE NSW Illawarra Institute	<ul style="list-style-type: none"> <li>Need more Wireless Access at campuses (currently only 20% overall coverage in Institute)</li> </ul>	<ul style="list-style-type: none"> <li>Full coverage wireless access available for teaching delivery on-campus to student and staff-owned wireless devices</li> </ul>
TAFE NSW Illawarra Institute	<ul style="list-style-type: none"> <li>Flexible mobile technology for off-campus and workplace training and assessment delivery, eg laptop with mobile broadband internet access</li> </ul>	<ul style="list-style-type: none"> <li>Provide teachers delivering off-campus with wireless-enabled laptop and wireless broadband modem</li> </ul>
TAFE NSW Illawarra Institute	<ul style="list-style-type: none"> <li>Wireless access stations and class sets of laptops for use in remote learning centres or workplaces</li> </ul>	<ul style="list-style-type: none"> <li>Broadband wireless modem for multiple device access to teaching and learning services</li> </ul>
TAFE NSW Illawarra Institute	<ul style="list-style-type: none"> <li>Video Conference and broadband services at remote learning and community centres</li> </ul>	<ul style="list-style-type: none"> <li>Video conference, wireless and broadband service to remote centres to enable access to teaching and learning services</li> </ul>
TAFE NSW Illawarra Institute	<ul style="list-style-type: none"> <li>Additional IT integrated classrooms and learning spaces at rural and remote campuses</li> </ul>	<ul style="list-style-type: none"> <li>Greater access to broadband and educational technology across all teaching areas and access for all students – computers in all learning spaces including IT Laboratories, libraries, flexible learning centres</li> </ul>
TAFE NSW Illawarra Institute	<ul style="list-style-type: none"> <li>Funding to research and develop use of new and innovative technologies, particularly technologies being used by students, prospective students, industry and the community</li> </ul>	<ul style="list-style-type: none"> <li>Provision of funding for innovation in learning technology research and development, eg augmented reality, cloud computing, mobile devices, disability accessibility</li> </ul>
TAFE NSW Illawarra Institute	<ul style="list-style-type: none"> <li>Web Conferencing</li> </ul>	<ul style="list-style-type: none"> <li>Requires broadband access and end-user computing device</li> </ul>
TAFE NSW Western Institute	<ul style="list-style-type: none"> <li>Bandwidth upgrade</li> </ul>	<ul style="list-style-type: none"> <li>Enabling 2 way satellite</li> <li>Improved teaching and learning capabilities</li> <li>Linking of connected classrooms and Distance Education Connections program to TAFE students</li> <li>Connecting Indigenous community members to potential workshops with schools for Cultural Awareness programs</li> <li>Capability of improved satellite software to further improve services and VET delivery</li> </ul>
TAFE NSW Western Institute	<ul style="list-style-type: none"> <li>Improved Satellite Software</li> </ul>	<ul style="list-style-type: none"> <li>Provision of interactive VET to Distance Education secondary students for the first time</li> <li>Expanding current training options to Parents of Distance Education Primary school students, including VET in schools and TVET</li> </ul>

TAFE NSW Response to Legislative Assembly Standing Committee on Broadband in Rural and Regional Communities – Inquiry into the benefits and opportunities for rural and regional communities of having access to telecommunications (including broadband) and other technology services.

Origin	ICT solution	Description of improved service
TAFE NSW Western Institute	<ul style="list-style-type: none"> <li>Hardware upgrade</li> </ul>	<ul style="list-style-type: none"> <li>Provision of interactive VET to Distance Education secondary students for the first time</li> <li>Maintain current capability to delivery of VET to remote and rural Aboriginal communities and isolated homesteads using satellite technology</li> </ul>
TAFE NSW New England Institute	<ul style="list-style-type: none"> <li>Online delivery advancement and integration</li> </ul>	<ul style="list-style-type: none"> <li>Implementation of Learning Content Management Systems, ePortfolios etc</li> </ul>
TAFE NSW New England Institute	<ul style="list-style-type: none"> <li>Access via privately owned devices</li> </ul>	<ul style="list-style-type: none"> <li>Providing secure ports for controlled access to secure network services allowing students to consume those services from devices that are not owned by the Institute</li> </ul>
TAFE NSW New England Institute	<ul style="list-style-type: none"> <li>Remote Desktop Services (private cloud)</li> </ul>	<ul style="list-style-type: none"> <li>Following from the above, the provision of a desktop that is reliable, persistent and capable regardless of access device, time or style</li> </ul>
TAFE NSW New England Institute	<ul style="list-style-type: none"> <li>Wireless networking</li> </ul>	<ul style="list-style-type: none"> <li>To facilitate the above, especially the access via privately owned devices</li> </ul>
TAFE NSW Hunter Institute	<ul style="list-style-type: none"> <li>Web and standards based videoconferencing</li> </ul>	<ul style="list-style-type: none"> <li>Fully web integrated desktop videoconference environment with interoperability to standards based videoconferencing to support home users as well as business and industry in rural and remote areas</li> </ul>
TAFE NSW Hunter Institute	<ul style="list-style-type: none"> <li>Provision of software and online resources as a service, as opposed to hosted products</li> </ul>	<ul style="list-style-type: none"> <li>Provision of economically viable software as a service option available through a cloud based solution underpinned by high speed broadband services to these rural and remote communities</li> </ul>
TAFE NSW Hunter Institute	<ul style="list-style-type: none"> <li>A cloud based solution to deliver training and development resources</li> </ul>	<ul style="list-style-type: none"> <li>Training in the development of capabilities for rural and remote students and staff via the use of collaborative online workspaces. These workspaces would be hosted in the cloud and supported by high speed broadband services to these rural and remote communities. These services would need to be attractively priced to ensure inequalities and inequity issues do not surface.</li> </ul>



4. **Initiatives and strategies** - Identified planned or current initiatives, pilot projects or strategies focussed on introducing ICT advancements to assist rural and regional communities accessing education. Includes necessary resource requirements to implement these strategies or plans, including ongoing funding, identified barriers being addressed by the strategy and initiative, and a detailed implementation schedule outlining the timeframe and locations for implementation.

Origin / Location	Current (C) or Planned (P)	Name of initiative or strategy	Detailed description of initiative, objectives and benefits	Resources required	Current Barriers or Constraints	Implementation Timeframe
TAFE NSW (Statewide) - All TAFE NSW Institutes	C	TAFE NSW Virtual Learning Environment	<p>The Virtual Learning Environment (VLE) Project aims to position TAFE NSW Institutes at the forefront of eLearning delivery &amp; supports learning &amp; sharing of learning resources with communication and collaboration tools</p> <p>The VLE project includes:</p> <ul style="list-style-type: none"> <li>• <b>Adobe Connect:</b> Adobe / DEC Enterprise Agreement software giving teachers &amp; students across NSW access to integrated content creation tools for visual, digital, digital video &amp; eLearning design.</li> <li>• <b>EQUELLA:</b> a fully integrated Learning Content Management System (LCMS) that enables the storage, management, discovery &amp; access of learning content &amp; other digital resources, including collaborative lesson planning.</li> <li>• <b>Moodle / EQUELLA / Mahara Sandpit Environments:</b> to test, trial and evaluate learning tools &amp; products.</li> </ul>	Capital funding of \$2.5M provided for 2010-2012	<p>Rural and remote access to teaching and learning resources. The VLE will provide:</p> <ul style="list-style-type: none"> <li>• personalised learning services for individual students from a variety of demographic &amp; geographical backgrounds</li> <li>• the ability to design, develop or acquire &amp; manage digital learning content accessible to students via eLearning platforms</li> <li>• the ability to form online communities of practice with multi-point communication where staff, students, employers &amp; industries can engage &amp; share information for business &amp; workforce development</li> <li>• flexibility at Institute level in dealing with specific local and regional demand and business conditions.</li> </ul>	2010-2012

TAFE NSW Response to Legislative Assembly Standing Committee on Broadband in Rural and Regional Communities – Inquiry into the benefits and opportunities for rural and regional communities of having access to telecommunications (including broadband) and other technology services.

Origin / Location	Current (C) or Planned (P)	Name of Initiative or Strategy	Detailed Description of Initiative, Objectives and Benefits	Resources Required	Current Barriers or Constraints	Implementation Timeframe
TAFE NSW Illawarra Institute (Institute-wide: Illawarra, Southern Highlands, South Coast)	C	Flexible eLearning Strategy	TAFE Illawarra objectives in adopting the Flexible eLearning Strategy are to: <ul style="list-style-type: none"> <li>• better meet the needs of students and industry now and in the future</li> <li>• improve access to learning, resources, communication and support</li> <li>• establish high quality classroom and eLearning programs and services</li> <li>• provide world-class technologies, high quality e-resources and teachers open to new ideas.</li> </ul>	Capital Funding - \$20M	<ul style="list-style-type: none"> <li>• Limited funding</li> <li>• Implications for ICT support services</li> <li>• Broadband access in rural/remote areas</li> <li>• Workforce capability</li> </ul>	2010-2012
TAFE NSW (Statewide) - All TAFE NSW Institutes to have VDI implemented during 2011/12	P	Virtual Desktop Infrastructure (VDI)	This project will centralise core applications and software required to support teaching and learning activities to a virtual architecture, allowing students and staff access to a virtual desktop service on almost any device, anywhere and at anytime. Students will benefit through improved responsiveness to meet their learning needs in terms of the availability of specific industry developed IT software and resources. Institute ICT Support Services will benefit through improved resource management and more efficient service delivery. Institutes will benefit through lower costs in terms of fleet equipment service and support.	Capital funding of \$5.075M is being sought for 2011/12 to support the VDI project, via the NSW Treasury ICT Reinvestment Pool.	<ul style="list-style-type: none"> <li>• Students and staff unable to securely access network resources from their own devices or from non-TAFE locations</li> <li>• Issues around software compatibility, application conflict, computer room utilisation and availability of rooms with the right resources</li> <li>• High costs associated with the supply of PC fleet units with required desktop configurations, and support in maintaining physical desktops</li> </ul>	<ul style="list-style-type: none"> <li>• Funding approval obtained by <b>March 2011</b>.</li> <li>• <b>April – June 2011</b> – Market analysis and vendor selection.</li> <li>• <b>July to December 2011</b> - Phase 1 implementation (5 Institutes)</li> <li>• <b>January to June 2012</b> – Phase 2 implementation (remaining 5 Institutes).</li> </ul>
TAFE NSW Illawarra Institute	P	TAFE Illawarra VLE Project	Expanded access to learning services and resources – Learner Management System (LMS), Learning Content Management System (LCMS).	<ul style="list-style-type: none"> <li>• Funding</li> <li>• Internet Services</li> <li>• LMS / LCMS</li> </ul>	<ul style="list-style-type: none"> <li>• Workforce capability</li> <li>• Rural/remote access</li> </ul>	2010-2012

Origin / Location	Current (C) or Planned (P)	Name of Initiative or Strategy	Detailed Description of Initiative, Objectives and Benefits	Resources Required	Current Barriers or Constraints	Implementation Timeframe
TAFE NSW Western Institute (Pilot in TAFE Western Institute, scalable to state-wide)	P	Building Remote Learning Communities  Building on the Interactive Distance Learning (IDL)	<p>Since 2003, Western Institute and DEC Distance Education (School of the Air), the previous federal government department DCITA, and OPTUS SingTel have been in a partnership to utilise cutting edge satellite technologies to bring interactive distance learning to primary school students and adult students of TAFE.</p> <p>Satellite and video conferencing have been used to provide both primary school education and adult vocational education and training (VET) to in excess of 200 remote stations across NSW as well as VET courses broadcast to 15 very isolated Aboriginal communities. New software solutions now exist to expand and enhance this delivery by enabling return video (existing services are one-way vision only) and interconnectivity with other Web 2.0 solutions.</p> <p>Upgrading the existing IDL network with this new software, plus an infrastructure upgrade has the capacity to increase TAFE sites on distance education &amp; allowing courses to be broadcast from any TAFE classrooms in NSW and, potentially, nationally to isolated individuals and remote Aboriginal communities.</p>	\$1,892,262 over 2 years to 2012, matched by in kind contribution.	<ul style="list-style-type: none"> <li>Limited broadband and the need for Satellite Services upgrade</li> <li>Upgrades of software and hardware are required to maintain ICT currency and effective teaching and learning practices in rural and remote communities</li> <li>Cutting edge software is required for satellite students to enhance current capabilities of VET delivery reliability, flexibility, and to provide more opportunities for full delivery and assessment of vocational units of competency due to the new software enabling two way video</li> <li>Distance of communities and homesteads from educational and other community services result in enormous costs and limited services and opportunities to access training education and employment options</li> </ul>	<p>Funding approval <b>March 2011</b>. <b>April 2011</b> Project plans prepared, software purchased, TAFE studio upgrade, recruit technical support staff &amp; admin support. <b>May 2011</b> recruit educational support officers for Broken Hill, Bourke &amp; Walgett. Install additional 4 remote TAFE communities with satellite equipment. Install Distance Education secondary school sites. Commence TAFE &amp; DE delivery to all new sites. Upgrade technology at existing IDL sites &amp; join into delivery. Installation of interactive classrooms at TAFE campuses. Distance Education homestead sites access connected classrooms &amp; satellite. By <b>December 2012</b> additional 320 TAFE enrolments via satellite &amp; connected classrooms, sourced in remote Aboriginal communities &amp; isolated homesteads, medical and behavioural students.</p>

Origin / Location	Current (C) or Planned (P)	Name of Initiative or Strategy	Detailed Description of Initiative, Objectives and Benefits	Resources Required	Current Barriers or Constraints	Implementation Timeframe
<p>TAFE NSW New England Institute (New England Institute in partnership with University of New England and Community Technology Centres Association. Outcomes of trial can be shared across TAFE NSW as appropriate.</p>	<p>P</p>	<p>Myconnect Project trial, to align with Armidale NSW being a first-release site for NBN rollout</p>	<ul style="list-style-type: none"> <li>• Explore the teaching and learning opportunities afforded by high speed communications</li> <li>• Provide Open Education Resources (OERs) through a community portal for the benefit of community members</li> <li>• Provide enhanced services to the community through Community Technology Centres</li> </ul>	<p>Funding being sought through Federal DBCDE Digital Initiatives</p>	<ul style="list-style-type: none"> <li>• Student lack of access to affordable and reliable high speed communications</li> <li>• Bandwidth limitations for the Institute</li> <li>• Configuration of DEC firewall which can limit Institute ability to meet business needs</li> </ul>	<p><b>April 2011</b>, funding outcome anticipated. <b>May 2011</b> confirm project scope. <b>May to November 2011</b> confirm technical architecture. <b>May to November 2011</b> develop OERs. <b>February 2012</b> implement learning technologies. <b>February 2012</b> implement community portal. <b>January to June 2013</b> refine technologies and complete iterative evaluation of the trial and report outcomes.</p>

Schools strategies for the introduction of new technologies in rural and regional communities

1. **Current gaps in service provision - identified current gaps in ICT service delivery to students of schools in rural and regional communities**

Origin	Current gap in ICT service delivery	Impact
Hunter/Central Coast	<ul style="list-style-type: none"> <li>Variable access to reliable network services including bandwidth capacity, reduced options for network accessibility</li> </ul>	<ul style="list-style-type: none"> <li>Inequities/inequalities based on geographic location</li> <li>Inconsistent access to network services leading to difficulty in constituting consistent educational services and service delivery using ICT.</li> <li>Disengagement with online access to services due to poor performance impacting core delivery</li> </ul>
Hunter/Central Coast	<ul style="list-style-type: none"> <li>Variable and limited knowledge/understanding of ICT technology within the community</li> </ul>	<ul style="list-style-type: none"> <li>Difficult to establish remote/distance services because many potential students lack the basic knowledge and skills required to establish and maintain ICT technology in the home and/or workplace</li> <li>Limited businesses established due to the unavailability of broadband services in regional services.</li> </ul>
Hunter/Central Coast	<ul style="list-style-type: none"> <li>Acute and worsening limitations in resourcing for DET IT services and support, exacerbated by recent budget reductions</li> </ul>	<ul style="list-style-type: none"> <li>Extreme difficulty in providing adequate support for ICT distributed across multiple campus locations.</li> <li>Impossible to provide ICT support for students in their home or workplace.</li> <li>Inability to grow capacity to support the exponential growth in online and distance learning innovations</li> </ul>
Illawarra and South East Region	<ul style="list-style-type: none"> <li>Variable access to reliable network services including bandwidth capacity, reduced options for network accessibility</li> </ul>	<ul style="list-style-type: none"> <li>Inequities/inequalities based on geographic location</li> <li>Inconsistent access to network services leading to difficulty in ensuring consistent educational services and service delivery using ICT.</li> <li>Internet access slow for schools in the far south coast during peak periods.</li> </ul>
Illawarra and South East Region	<ul style="list-style-type: none"> <li>Acute and worsening limitations in resourcing for DET IT services and support</li> </ul>	<ul style="list-style-type: none"> <li>Extreme difficulty in providing adequate support for ICT</li> <li>Impossible to provide ICT support for students in their home or workplace.</li> <li>Inability to grow capacity to support the exponential growth in online and distance learning innovations</li> </ul>
Illawarra and South East Region	<ul style="list-style-type: none"> <li>Schools in southern area of region rely on dial up or satellite</li> </ul>	<ul style="list-style-type: none"> <li>Inequities/inequalities based on geographic location</li> </ul>
New England Region	<ul style="list-style-type: none"> <li>Current level of professional learning support for teachers and regional staff does not allow for the effective pedagogical use of ICT</li> </ul>	<ul style="list-style-type: none"> <li>Students in classrooms are not gaining the full benefit of the investment in infrastructure and equipment</li> </ul>

Office of Schools Response to Legislative Assembly Standing Committee on Broadband in Rural and Regional Communities – Inquiry into the benefits and opportunities for rural and regional communities of having access to telecommunications (including broadband) and other technology services.

Origin	Current gap in ICT service delivery	Impact
New England Region	<ul style="list-style-type: none"> <li>Parent/student access to network services - many small communities within the New England region suffer relatively poor broadband network services when compared to other areas and regions.</li> </ul>	<ul style="list-style-type: none"> <li>Due to distances, acceptable (ADSL or ADSL2) services are very often not available and wireless service quality is variable.</li> <li>This leads to a level of inequity in terms of accessing DET online services from home.</li> </ul>
New England Region	<ul style="list-style-type: none"> <li>Some schools have access to staff and resources that they can use to the benefit of their students, while others struggle. The DET is yet to roll out a standardised, high quality online platform for teaching and learning within New England schools – the SALM project could cover this need.</li> </ul>	<ul style="list-style-type: none"> <li>Difficulty in schools getting access to online services at a reasonable cost.</li> </ul>
New England Region	<ul style="list-style-type: none"> <li>Access to network services in schools is good, but the environment is highly standardised and slow to adjust to emergent needs.</li> </ul>	<ul style="list-style-type: none"> <li>As students in New England schools want to contribute and collaborate more, especially from home, the current limitations in the network environment will become more noticeable.</li> </ul>
New England Region	<ul style="list-style-type: none"> <li>Many small, isolated schools with low staff numbers having little knowledge of ICT.</li> </ul>	<ul style="list-style-type: none"> <li>Student learning is hindered when technical problems arise</li> </ul>
North Coast Region DE&C  (Many elements in common with TAFE NSW provided information)	<ul style="list-style-type: none"> <li>Lack of access to broadband internet services on campus for student-owned computing devices (eg wireless, laptops)</li> </ul>	<ul style="list-style-type: none"> <li>Limits usage of broadband to Department of Education and Communities only provided devices which is inadequate for student needs</li> <li>Providing ICT access devices puts a significant capital load on the Institute</li> </ul>
North Coast Region	<ul style="list-style-type: none"> <li>Insufficient technology available at rural/regional campuses to fully support educational delivery, eg wireless, Smartboards, Video Conferencing, IT integrated classrooms and learning spaces</li> </ul>	<ul style="list-style-type: none"> <li>Discourages delivery using technology and does not meet student demand for technology-based learning</li> </ul>
North Coast Region	<ul style="list-style-type: none"> <li>Lack of access for students to fast, affordable and reliable bandwidth both through landlines and wireless (eg Next G). Some users have only dial-up internet connectivity and others are obliged to use satellite connections with high latency.</li> </ul>	<ul style="list-style-type: none"> <li>Poor quality real-time communications between teachers and students, and their peers, using virtual training rooms eg Adobe Connect</li> <li>Slow, intermittent or insufficient bandwidth to enable access to learning resources, eg through learning management system (LMS)</li> <li>Costly data download fees</li> <li>Slow data upload speeds for student LMS interaction</li> </ul>

Origin	Current gap in ICT service delivery	Impact
North Coast Region	<ul style="list-style-type: none"> <li>Limited access to teachers and students to Web 2 and social networking tools and platforms.</li> </ul>	<ul style="list-style-type: none"> <li>Corporate communication systems viewed as “old school” by 15-25 y/o.</li> <li>Missed opportunity to engage students using technologies familiar to them</li> <li>Filters block a range of educational content</li> </ul>
North Coast Region	<ul style="list-style-type: none"> <li>Variable access to reliable network services including bandwidth capacity, reduced options for network accessibility.</li> </ul>	<ul style="list-style-type: none"> <li>Inequities/inequalities based on geographic location</li> <li>Inconsistent access to network services leading to difficulty in constituting consistent educational services and service delivery using ICT</li> <li>Disengagement with online access to services due to poor performance impacting core delivery</li> <li>Extreme difficulty in providing adequate support for ICT distributed across multiple campus locations</li> <li>Inability to grow capacity to support the exponential growth in online and distance learning innovations</li> </ul>
Riverina Region	<ul style="list-style-type: none"> <li>Dial-up, satellite or no internet services available for some isolated/rural students at home</li> </ul>	<ul style="list-style-type: none"> <li>Limited access to resources to support learning at home and/or to complete assigned work</li> <li>Slow, intermittent or insufficient bandwidth to enable access to designated learning management system if utilised by a school</li> </ul>
Riverina Region	<ul style="list-style-type: none"> <li>Lack of access to broadband internet services in some areas including halls, in secondary schools for student- computing devices (eg DER NSW laptops)</li> </ul>	<ul style="list-style-type: none"> <li>Limits usage and implementation of new initiatives such as online examinations</li> <li>Providing ICT access devices puts a significant capital load on schools</li> </ul>
Riverina Region	<ul style="list-style-type: none"> <li>Insufficient technology available at regional offices to fully support educational delivery, eg wireless, interactive white boards and video conferencing units</li> </ul>	<ul style="list-style-type: none"> <li>Discourages delivery using technology and does not meet teacher professional learning demand for technology-based learning</li> </ul>
Riverina Region	<ul style="list-style-type: none"> <li>Satellite access and no broadband services available to a number of rural schools</li> </ul>	<ul style="list-style-type: none"> <li>Limited access to a number of services including no video conferencing facilities</li> </ul>
Riverina Region	<ul style="list-style-type: none"> <li>Due to isolation of communities additional local ICT and educational support is required to support ICT infrastructure</li> </ul>	<ul style="list-style-type: none"> <li>Community capacity building in increasing local community ICT and mentoring skills within schools</li> <li>Ensuring a quality service is provided in a timely manner</li> <li>Limited staff to support teacher professional learning</li> </ul>
Riverina Region	<ul style="list-style-type: none"> <li>Variation in the amount of technology across schools, for example, school with only 2 interactive white boards for 15 classes vs school with IWB in all classrooms</li> </ul>	<ul style="list-style-type: none"> <li>Limits the access of students to the technologies</li> <li>Discourages teachers from undertaking training as not a required skill</li> </ul>
Riverina Region	<ul style="list-style-type: none"> <li>Limited bandwidth available to schools for service delivery</li> </ul>	<ul style="list-style-type: none"> <li>Prevents exploration of new technologies to improve learning for students and limits the hardware that can be added, for example, maximum number of video conference units</li> </ul>

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Riverina Region	<ul style="list-style-type: none"> <li>No accepted standard in the use of learning management system across the state</li> </ul>	<ul style="list-style-type: none"> <li>Reduces opportunities for collaboration and sharing of resources</li> <li>Increased financial impact on region to support a system hardware and support</li> </ul>
Western NSW Region	<ul style="list-style-type: none"> <li>Lack of internet services available in the homes of many isolated/rural students or students in low SES families</li> </ul>	<ul style="list-style-type: none"> <li>Inability to access learning resources on school Learning Management Systems</li> <li>Inability to meet growing demand for flexibility in access to learning resources outside school hours, particularly for secondary students</li> </ul>
Western NSW Region	<ul style="list-style-type: none"> <li>Lack of access to adequate synchronous broadband Internet services at some small school (only satellite delivered services are available to this cohort of schools)</li> </ul>	<ul style="list-style-type: none"> <li>Inability to engage in the use of interactive, collaborative technologies creates greater disadvantage for already disadvantaged students</li> </ul>
Western NSW Region	<ul style="list-style-type: none"> <li>Inadequate local 'on the ground' technical support for teachers using ICT</li> </ul>	<ul style="list-style-type: none"> <li>Poor response times to fix problems or meet requests for assistance forces teachers into avoiding the use of ICT and reduces teacher confidence in the use of technology</li> </ul>
Western NSW Region	<ul style="list-style-type: none"> <li>Lack of DEC Infrastructure to support large scale use of web conferencing technologies needing industrial strength reliability</li> </ul>	<ul style="list-style-type: none"> <li>Collaborative tools are used spasmodically, with opportunities missed for engaging students in current world technologies</li> <li>Unreliable services leads to lack of confidence in the technology and increased reluctance to risk exposure to new ways of doing things</li> </ul>
Western NSW Region	<ul style="list-style-type: none"> <li>Inadequate capacity for real-time technical support of classes utilising (depending on) video conferencing</li> </ul>	<ul style="list-style-type: none"> <li>Unresponsive problem resolution leads to lower levels of confidence in the technology and reduced usage, limiting student opportunities</li> </ul>



**2. Barriers to fast and reliable ICT services** – identified barriers that prevent fast and reliable ICT services being available to regional and rural communities for accessing educational services. Includes logistical and cost impediments that physical distance brings to rural and regional students.

Origin	Barriers to fast and reliable ICT services	Impact
Hunter/Central Coast	<ul style="list-style-type: none"> <li>Limited and inconsistent bandwidth</li> </ul>	<ul style="list-style-type: none"> <li>Greater difficulty in devising and rolling out consistent ICT based training that is sustainable and can be grown to meet demand</li> </ul>
Hunter/Central Coast	<ul style="list-style-type: none"> <li>Geographic distance</li> </ul>	<ul style="list-style-type: none"> <li>Multiplies the cost and complexity of providing effective and efficient ICT support</li> </ul>
Hunter/Central Coast	<ul style="list-style-type: none"> <li>Inadequate resourcing for DET IT services</li> </ul>	<ul style="list-style-type: none"> <li>Impossible to meet real need</li> </ul>
Hunter/Central Coast	<ul style="list-style-type: none"> <li>Inadequate knowledge and expertise of ICT amongst Teaching and support staff</li> </ul>	<ul style="list-style-type: none"> <li>Rapidly evolving technology is leaving both students and staff behind, making it hard to exploit new technologies effectively, or at all, even where they are potentially applicable.</li> </ul>
Illawarra and South East Region	<ul style="list-style-type: none"> <li>Distance and isolation in terms of infrastructure and people</li> </ul>	<ul style="list-style-type: none"> <li>Access to the skilled people required to build and maintain the services is a constant challenge.</li> <li>Increased travel costs, safety concerns.</li> </ul>
Illawarra and South East Region	<ul style="list-style-type: none"> <li>Some southern schools still rely on satellite network services and dial up services</li> </ul>	<ul style="list-style-type: none"> <li>Poor access, speed and reliability leads to limited use</li> </ul>
Illawarra and South East Region	<ul style="list-style-type: none"> <li>EEC awaits permission for fibre cable to be laid through National Park and on private land</li> </ul>	<ul style="list-style-type: none"> <li>Isolation, lack of service/connectivity, unable to gain flexible access to learning resources provided by schools or connected learning communities</li> </ul>
Illawarra and South East Region	<ul style="list-style-type: none"> <li>Broadband access is restricted in communities identified as low socio-economic</li> </ul>	<ul style="list-style-type: none"> <li>Computers and broadband internet not available in the home</li> <li>Inequity of access</li> </ul>
New England Region	<ul style="list-style-type: none"> <li>Distance and isolation in terms of infrastructure and people</li> </ul>	<ul style="list-style-type: none"> <li>Access to the skilled people required to build and maintain the services is a constant challenge.</li> <li>Increased travel costs, safety concerns.</li> </ul>
New England Region	<ul style="list-style-type: none"> <li>Some New England Region schools still rely on satellite network services</li> </ul>	<ul style="list-style-type: none"> <li>Poor access, speed and reliability leads to limited use</li> </ul>
New England Region	<ul style="list-style-type: none"> <li>Costs– a result of distance and isolation</li> </ul>	<ul style="list-style-type: none"> <li>More school funds need to be allocated to ICT from school budgets</li> <li>Parents often cannot justify the high costs associated with internet services, which has the effect of disadvantaging some students.</li> </ul>
North Coast Region DE&C	<ul style="list-style-type: none"> <li>Distance and isolation</li> </ul>	<ul style="list-style-type: none"> <li>Isolation, lack of service/connectivity, unable to access learning, training or information services</li> </ul>
North Coast Region	<ul style="list-style-type: none"> <li>High cost and economic barriers to internet provision</li> </ul>	<ul style="list-style-type: none"> <li>As above</li> </ul>
North Coast Region	<ul style="list-style-type: none"> <li>Dispersed population, thin markets.</li> </ul>	<ul style="list-style-type: none"> <li>Community unemployment, loss of population and young people needing to move to larger centres for learning/training and employment</li> </ul>

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Origin	Barriers to fast and reliable ICT services	Impact
North Coast Region	<ul style="list-style-type: none"> <li>• Cost, time and staffing barriers to delivery of learning and training services out in rural communities</li> </ul>	<ul style="list-style-type: none"> <li>• Inability to provide learning and training out in rural and remote communities</li> </ul>
North Coast Region	<ul style="list-style-type: none"> <li>• Limited broadband and the need for Satellite Services upgrade.</li> </ul>	<ul style="list-style-type: none"> <li>• Improved interactive ICT services to all of DEC schools, Distance Education and TAFE delivery to rural, remote and regional communities and homesteads</li> <li>• Platform to improve efficiency of software for interactive distance learning</li> <li>• Improved linkages with connected classrooms and DEC Connections programs for satellite students</li> </ul>
North Coast Region	<ul style="list-style-type: none"> <li>• Satellite connection</li> </ul>	<ul style="list-style-type: none"> <li>• Although satellite can offer users internet access in very remote locations, the service is very slow and unreliable and unsuited to accessing learning programs provided for example through web conferencing services</li> </ul>
North Coast Region	<ul style="list-style-type: none"> <li>• Limited and inconsistent bandwidth</li> </ul>	<ul style="list-style-type: none"> <li>• Greater difficulty in devising and rolling out consistent ICT based training that is sustainable and can be grown to meet demand</li> </ul>
North Coast Region	<ul style="list-style-type: none"> <li>• Geographic distance</li> </ul>	<ul style="list-style-type: none"> <li>• Multiplies the cost and complexity of providing effective and efficient ICT support</li> </ul>
North Coast Region	<ul style="list-style-type: none"> <li>• Competition for scarce ICT resources in DEC</li> </ul>	<ul style="list-style-type: none"> <li>• Impossible to meet real need</li> </ul>
North Coast Region	<ul style="list-style-type: none"> <li>• Inadequate knowledge and expertise of ICT amongst Teaching and support staff</li> </ul>	<ul style="list-style-type: none"> <li>• Rapidly evolving technology is leaving both students and staff behind, making it hard to exploit new technologies effectively, or at all, even where they are potentially applicable</li> </ul>
Riverina Region	<ul style="list-style-type: none"> <li>• Distance and isolation</li> </ul>	<ul style="list-style-type: none"> <li>• Isolation, lack of service/connectivity, unable to access learning, training or information services</li> <li>• Increased travel required to access services leading to safety and cost issues</li> </ul>
Riverina Region	<ul style="list-style-type: none"> <li>• High cost and economic barriers to broadband provision for schools on satellite connections</li> </ul>	<ul style="list-style-type: none"> <li>• Isolation, lack of service/connectivity, unable to access learning, training or information services</li> <li>• Limited local service support for satellite connections with technology issues</li> </ul>
Riverina Region	<ul style="list-style-type: none"> <li>• Cost, time and staffing barriers to delivery of professional learning in rural schools</li> </ul>	<ul style="list-style-type: none"> <li>• Reduced services in supporting professional learning in rural and remote schools</li> <li>• Increased travel time for staff from schools to access the professional learning</li> <li>• Reduced participation in activities means both students and staff are being 'left behind', making it hard to exploit and learn about the new technologies effectively, or at all.</li> </ul>
Riverina Region	<ul style="list-style-type: none"> <li>• Capped broadband and the need for satellite services upgrade</li> </ul>	<ul style="list-style-type: none"> <li>• Improved interactive ICT services to all of DEC schools for delivery to rural, remote and regional schools</li> <li>• Platform to improve efficiency of software for interactive learning on a range of bandwidths</li> <li>• Enable additional ICT resources and tools for improved delivery to satellite sites</li> </ul>
Riverina Region	<ul style="list-style-type: none"> <li>• Geographic distance from support centre</li> </ul>	<ul style="list-style-type: none"> <li>• Multiplies the cost and complexity of providing effective and efficient ICT support</li> <li>• Difficulty in attracting suitable skilled staff to deliver the support</li> </ul>

Origin	Barriers to fast and reliable ICT services	Impact
Western NSW Region	<ul style="list-style-type: none"> <li>High cost of broadband service to homes in rural and remote locations</li> </ul>	<ul style="list-style-type: none"> <li>Isolation, lack of service/connectivity, unable to gain flexible access to learning resources provided by schools or connected learning communities</li> </ul>
Western NSW Region	<ul style="list-style-type: none"> <li>High cost of high-end broadband service to schools in rural and remote locations</li> </ul>	<ul style="list-style-type: none"> <li>Access to live class collaboration activities (eg using video conferencing) is limited</li> <li>Inadequate access for classes to video and audio based learning resources on the Internet</li> </ul>
Western NSW Region	<ul style="list-style-type: none"> <li>Availability of Telstra network infrastructure required to supply terrestrial broadband services to some remote schools</li> </ul>	<ul style="list-style-type: none"> <li>As above</li> </ul>

**3. Solutions – identified priority areas of ICT within the jurisdiction and new technological advancements available to assist greater access to educational services for rural and regional communities**

Origin	ICT solution	Description of improved service
Hunter/Central Coast	<ul style="list-style-type: none"> <li>Web and standards based videoconferencing</li> </ul>	<ul style="list-style-type: none"> <li>Fully web integrated desktop videoconference environment with interoperability to standards based videoconferencing support home users as well as business and industry in rural and remote areas.</li> </ul>
Hunter/Central Coast	<ul style="list-style-type: none"> <li>Provision of software and online resources as a service, as opposed to a hosted products</li> </ul>	<ul style="list-style-type: none"> <li>Provision of economically viable software as a service options available through a cloud based solution underpinned by high speed broadband services to these rural and remote communities.</li> </ul>
Hunter/Central Coast	<ul style="list-style-type: none"> <li>A cloud based solution to deliver training and development resources</li> </ul>	<ul style="list-style-type: none"> <li>Training in the development of capabilities for rural and remote students and staff via the use of collaborative online workspaces. These workspaces would be hosted in the cloud and supported by high speed broadband services to these rural and remote communities. These services would need to be attractively priced to ensure inequalities and inequity issues do not surface.</li> </ul>
Illawarra and South East Region	<ul style="list-style-type: none"> <li>Bandwidth upgrade</li> </ul>	<ul style="list-style-type: none"> <li>Improved teaching and learning capabilities</li> <li>Linking of connected classrooms in satellite schools to same access available to broadband schools</li> <li>Capability of improved satellite software to further improve services and VET delivery</li> </ul>
Illawarra and South East Region	<ul style="list-style-type: none"> <li>Completed wireless access to all primary schools</li> </ul>	<ul style="list-style-type: none"> <li>Full coverage wireless access available for teaching</li> </ul>
New England Region	<ul style="list-style-type: none"> <li>Investment in remote and regional infrastructure – there seems to be some movement here with NBN and other programs to improve network services</li> </ul>	<ul style="list-style-type: none"> <li>Full coverage wireless access available for teaching delivery on-campus to student and staff-owned wireless devices. Almost all New England schools enjoy broadband delivered over optical fibre.</li> </ul>
New England Region	<ul style="list-style-type: none"> <li>A commitment to regional communities</li> </ul>	<ul style="list-style-type: none"> <li>Balance out the drift to further and more substantial centralisation of services (and with them, jobs and skilled people)</li> <li>Consistent, standardised online learning and network services in school education</li> </ul>
North Coast Region DE&C	<ul style="list-style-type: none"> <li>Install wireless solution to all DE&amp;C primary school sites</li> </ul>	<ul style="list-style-type: none"> <li>Full coverage wireless access available for primary school sites.</li> </ul>
North Coast Region	<ul style="list-style-type: none"> <li>Funding to research and develop use of new and innovative technologies, particularly technologies being used by students, prospective students, industry and the community</li> </ul>	<ul style="list-style-type: none"> <li>Provision of funding for innovation in learning technology research and development, eg augmented reality, cloud computing, mobile devices, disability accessibility</li> </ul>

Origin	ICT solution	Description of improved service
North Coast Region	<ul style="list-style-type: none"> <li>Web Conferencing</li> </ul>	<ul style="list-style-type: none"> <li>Requires broadband access and end-user computing device</li> </ul>
North Coast Region DE&C	<ul style="list-style-type: none"> <li>Bandwidth upgrade</li> </ul>	<ul style="list-style-type: none"> <li>Enabling 2 way satellite</li> <li>Improved teaching and learning capabilities</li> </ul>
North Coast Region DE&C	<ul style="list-style-type: none"> <li>Wireless networking</li> </ul>	<ul style="list-style-type: none"> <li>To facilitate the above, especially the access via privately owned devices</li> </ul>
North Coast Region DE&C	<ul style="list-style-type: none"> <li>Web and standards based videoconferencing</li> </ul>	<ul style="list-style-type: none"> <li>Fully web integrated desktop videoconference environment with interoperability to standards based videoconferencing to support home users as well as business and industry in rural and remote areas</li> </ul>
North Coast Region DE&C	<ul style="list-style-type: none"> <li>Provision of software and online resources as a service, as opposed to hosted products</li> </ul>	<ul style="list-style-type: none"> <li>Provision of economically viable software as a service option available through a cloud based solution underpinned by high speed broadband services to these rural and remote communities</li> </ul>
North Coast Region DE&C	<ul style="list-style-type: none"> <li>A cloud based solution to deliver training and development resources</li> </ul>	<ul style="list-style-type: none"> <li>Training in the development of capabilities for rural and remote students and staff via the use of collaborative online workspaces. These workspaces would be hosted in the cloud and supported by high speed broadband services to these rural and remote communities.</li> </ul>
Riverina Region	<ul style="list-style-type: none"> <li>Completed wireless access at to all areas in a secondary school including halls and staff rooms.</li> </ul>	<ul style="list-style-type: none"> <li>Full coverage wireless access available for teaching using the DER -NSW laptops</li> </ul>
Riverina Region	<ul style="list-style-type: none"> <li>Flexible include mobile learning devices into the school setting</li> </ul>	<ul style="list-style-type: none"> <li>Improved services for students</li> <li>Increased ability to support leaning in the current trends</li> <li>Time savings for staff using mobile technologies to support administration tasks such as email, class roll marking</li> </ul>
Riverina Region	<ul style="list-style-type: none"> <li>Standardised supported wireless network system in all primary schools</li> </ul>	<ul style="list-style-type: none"> <li>Full coverage wireless access available for teaching and learning allowing greater flexibility</li> <li>Improved integrated services with secondary partner schools</li> <li>Reduced skill set required by support staff to support the system</li> <li>Reduced costs to school ICT maintenance budgets</li> </ul>
Riverina Region	<ul style="list-style-type: none"> <li>Increased broadband capacity to support multiple video conferencing units</li> </ul>	<ul style="list-style-type: none"> <li>Allow greater student access to curriculum delivery from other sites</li> <li>Greater flexibility for schools in accessing teacher professional development opportunities</li> <li>Opportunities for students to be supported in areas of identified talents or skills</li> </ul>
Riverina Region	<ul style="list-style-type: none"> <li>Additional ICT funded positions in region to support delivery of professional learning</li> </ul>	<ul style="list-style-type: none"> <li>Greater access to educational information on advancements</li> <li>Increased opportunity to access trained people to develop skills in the use of the new technologies</li> <li>Reduced travel requirements from staff in schools to access training and development activities</li> </ul>

Origin	ICT solution	Description of improved service
Riverina Region	<ul style="list-style-type: none"> <li>Funding to support pilots of innovative practice</li> </ul>	<ul style="list-style-type: none"> <li>Provision of funding for innovation in learning technology leading to development of new practices</li> <li>Opportunities to trial new advancements and establish benefits prior to making large investments in infrastructure.</li> </ul>
Riverina Region	<ul style="list-style-type: none"> <li>Web conferencing solutions that allow integration between school and home</li> </ul>	<ul style="list-style-type: none"> <li>Requires broadband access and end-user computing device</li> <li>Students and staff can join web seminars outside school hours</li> </ul>
Riverina Region	<ul style="list-style-type: none"> <li>Bandwidth upgrade</li> </ul>	<ul style="list-style-type: none"> <li>Improved teaching and learning capabilities</li> <li>Linking of connected classrooms in satellite schools to same access available to broadband schools</li> <li>Capability of improved satellite software to further improve services and VET delivery</li> </ul>
Riverina Region	<ul style="list-style-type: none"> <li>System supported hardware upgrade in all areas of ICT to ensure currency of equipment</li> </ul>	<ul style="list-style-type: none"> <li>Maintain current capability of equipment such as interactive white boards</li> <li>Reduce the impact of schools and their communities to find fading for ongoing replacement of capital items</li> </ul>
Riverina Region	<ul style="list-style-type: none"> <li>Online delivery advancement and integration with the standardisation of learning management content systems</li> </ul>	<ul style="list-style-type: none"> <li>Increased opportunities for collaboration and sharing of resources</li> <li>Reduced duplication of resources and more streamlined approach to providing support</li> <li>Reduced financial impact on region to support a system hardware and support</li> </ul>
Western NSW Region	<ul style="list-style-type: none"> <li>Dramatic improvements in satellite services to schools in locations where this is the only means of connectivity</li> </ul>	<ul style="list-style-type: none"> <li>Greater potential for use of interactive technologies</li> <li>The greater the isolation the greater the need for access to high speed connectivity to provide opportunities to overcome distance barriers</li> </ul>
Western NSW Region	<ul style="list-style-type: none"> <li>Increase capacity for video conferencing support for live classes</li> </ul>	<ul style="list-style-type: none"> <li>Increased usage of existing investment in connected classrooms across all schools</li> <li>Increased teacher confidence in the use of video conferencing through more responsive support in times of urgent need</li> </ul>
Western NSW Region	<ul style="list-style-type: none"> <li>Improve local technical support capacity for schools</li> </ul>	<ul style="list-style-type: none"> <li>Improved resilience of classroom technology</li> <li>Increased teacher confidence and preparedness to risk using ICT to enhance learning opportunities for students</li> </ul>
Western NSW Region	<ul style="list-style-type: none"> <li>Improve local school infrastructure and systems that enable self-help software deployment</li> </ul>	<ul style="list-style-type: none"> <li>Greater control and flexibility at local school level, with shorter response times for software installation or complete computer re-imaging</li> </ul>
Western NSW Region	<ul style="list-style-type: none"> <li>Web conferencing and other improvements in Web 2.0 supporting infrastructure</li> </ul>	<ul style="list-style-type: none"> <li>Increased capacity for collaboration amongst classes, schools and communities</li> </ul>

4. **Initiatives and strategies** - Identified planned or current initiatives, pilot projects or strategies focussed on introducing ICT advancements to assist rural and regional communities accessing education. Includes necessary resource requirements to implement these strategies or plans, including ongoing funding, identified barriers being addressed by the strategy and initiative, and a detailed implementation schedule outlining the timeframe and locations for implementation.

Origin / Location	Current (C) or Planned (P)	Name of initiative or strategy	Detailed description of initiative, objectives and benefits	Resources required	Current Barriers or Constraints	Implementation Timeframe
New England Region	C	New England Online Network (NEON)	Repository and collaboration space has been established for currently 42 teacher and regional staff networks. The site is at <a href="http://intranet.newengland.tafensw.edu.au/RegionalOffice/NEON/default.aspx">http://intranet.newengland.tafensw.edu.au/RegionalOffice/NEON/default.aspx</a>	Personnel to manage.		Ongoing
New England Region	P	New England Online Learning (NEOL)	Online collaboration and learning management space to support professional learning.	\$1000 annually to maintain Moodle. Personnel to manage		
North Coast Region DE&C	C	Stage 6 Maths Extension Strategy	<ul style="list-style-type: none"> <li>Connecting experienced Extension maths teachers and aspiring Extension Maths teachers to expand the number of capable extension maths teachers in the region</li> <li>Connecting students in more remote schools or in schools without an experienced Extension Maths teacher with an existing Extension Maths class.</li> </ul>	Skilled ICT capable staff to facilitate the program	<ul style="list-style-type: none"> <li>Limited access to</li> </ul>	2011

Origin / Location	Current (C) or Planned (P)	Name of initiative or strategy	Detailed description of initiative, objectives and benefits	Resources required	Current Barriers or Constraints	Implementation Timeframe
North Coast Region DE&C	C	<b>ICT/DER leader package of support</b>	<p>Adopting the mentor approach, this initiative is aimed at increasing the effective use of technology in schools by preparing leading teachers to support other teachers at the shoulder in a plan-teach-reflect type of model.</p> <p>The ICT/DER leaders form a collegial group supported by the connected learning trainers.</p>			2011
		Egats	<p>Gifted and talented students from yr5-8 across the region are selected to enrol in the 12 week Egats program that offers enriching activities using a moodle site hosted at Southern Cross University.</p>	Moodle site	Access to Web 2.0 technology. Trained staff capable of supporting uptake of new technologies.	2011
		Connected Learning Centres	<p>Three Connected Learning Centres across region equipped with connected classrooms providing professional learning opportunities for up to 300 staff per year.</p>	Connected Classroom technology	Lack of band width capacity	



Origin / Location	Current (C) or Planned (P)	Name of initiative or strategy	Detailed description of initiative, objectives and benefits	Resources required	Current Barriers or Constraints	Implementation Timeframe
North Coast Region DE&C	P	<p>Building Remote Learning Communities</p> <p>Building on the Interactive Distance Learning (IDL)</p>	<p>Since 2003, Western Institute and DEC Distance Education (School of the Air), the previous federal government department DCITA, and OPTUS SingTel have been in a partnership to utilise cutting edge satellite technologies to bring interactive distance learning to primary school students and adult students of TAFE.</p> <p>Satellite and video conferencing have been used to provide both primary school education and adult vocational education and training (VET) to in excess of 200 remote stations across NSW as well as VET courses broadcast to 15 very isolated Aboriginal communities. New software solutions now exist to expand and enhance this delivery by enabling return video (existing services are one-way vision only) and interconnectivity with other Web 2.0 solutions.</p> <p>Upgrading the existing IDL network with this new software, plus an infrastructure upgrade has the capacity to increase TAFE sites on distance education &amp; allowing courses to be broadcast from any TAFE classrooms in NSW and, potentially, nationally to isolated individuals and remote Aboriginal communities.</p>	<p>\$1,892,262 over 2 years to 2012, matched by in kind contribution.</p>	<ul style="list-style-type: none"> <li>Limited broadband and the need for Satellite Services upgrade</li> <li>Upgrades of software and hardware are required to maintain ICT currency and effective teaching and learning practices in rural and remote communities</li> <li>Cutting edge software is required for satellite students to enhance current capabilities of VET delivery reliability, flexibility, and to provide more opportunities for full delivery and assessment of vocational units of competency due to the new software enabling two way video</li> <li>Distance of communities and homesteads from educational and other community services result in enormous costs and limited services and opportunities to access training education and employment options</li> </ul>	<p>Funding approval <b>March 2011</b>. <b>April 2011</b> Project plans prepared, software purchased, TAFE studio upgrade, recruit technical support staff &amp; admin support. <b>May 2011</b> recruit educational support officers for Broken Hill, Bourke &amp; Walgett. Install additional 4 remote TAFE communities with satellite equipment. Install Distance Education secondary school sites. Commence TAFE &amp; DE delivery to all new sites. Upgrade technology at existing IDL sites &amp; join into delivery. Installation of interactive classrooms at TAFE campuses. Distance Education homestead sites access connected classrooms &amp; satellite. By <b>December 2012</b> additional 320 TAFE enrolments via satellite &amp; connected classrooms, sourced in remote Aboriginal communities &amp; isolated homesteads, medical and behavioural students.</p>

Origin / Location	Current (C) or Planned (P)	Name of initiative or strategy	Detailed description of initiative, objectives and benefits	Resources required	Current Barriers or Constraints	Implementation Timeframe
North Coast Region DE&C	P	Myconnect Project trial, to align with Armidale NSW being a first-release site for NBN rollout	<ul style="list-style-type: none"> <li>Explore the teaching and learning opportunities afforded by high speed communications</li> <li>Provide Open Education Resources (OERs) through a community portal for the benefit of community members</li> <li>Provide enhanced services to the community through Community Technology Centres</li> </ul>	Funding being sought through Federal DBCDE Digital Initiatives	<ul style="list-style-type: none"> <li>Student lack of access to affordable and reliable high speed communications</li> <li>Bandwidth limitations for the Institute Configuration of DEC firewall which can limit Institute ability to meet business needs</li> </ul>	<p><b>April 2011</b>, funding outcome anticipated. <b>May 2011</b> confirm project scope. <b>May to November 2011</b> confirm technical architecture. <b>May to November 2011</b> develop OERs. <b>February 2012</b> implement learning technologies. <b>February 2012</b> implement community portal. <b>January to June 2013</b> refine technologies and complete iterative evaluation of the trial and report outcomes.</p>
Regional/State	C	School ICT Planning	Ensure each school has a ICT plan (integrated with the school plan) that is aligned to current and proposed technology programs.	The plan identifies areas of shortfall in school infrastructure and capability for local and regional staff to focus on, and as a guide for spending.		Ongoing
Regional	C	Network modernisation	Focus on a program of work (especially included with the planning program above) to modernise and update school local area network infrastructure.	Includes (but isn't limited to) cabling works, new network switches and wireless installations		Ongoing

Origin / Location	Current (C) or Planned (P)	Name of initiative or strategy	Detailed description of initiative, objectives and benefits	Resources required	Current Barriers or Constraints	Implementation Timeframe
Regional/State	C	Country Areas Program LMS	The CAP-LMS enables nominated New England schools to access a remotely hosted and maintained learning management system (Moodle). New England schools not eligible for CAP funds can also gain access to the service for a modest fee. CAP applies to private and independent schools as well as public schools.	Initial funding for hardware and software (plus a small amount of maintenance funding) was provided under the Country Areas Program.		Ongoing
Riverina Region	C	Riverina Moodle	The learning management system project aims to position Riverina Region to better support learning & sharing of learning resources.  The LMS project includes: <ul style="list-style-type: none"> <li>• <b>Moodle Environments:</b> to test, trial and evaluate learning tools &amp; products.</li> <li>• <b>Professional Learning:</b> skills the staff and schools in the use of this technology and operation matters</li> </ul>	Regional Funding \$20 000	<ul style="list-style-type: none"> <li>• Upskilling of staff to deliver training</li> <li>• Capacity of the infrastructure to support growing requirements</li> <li>• No state-wide system so ICT support is limited</li> <li>• Integrating into existing DEC IT structures eg password authentication</li> </ul>	2010-2012
Riverina Region	C	Enhanced Curriculum Delivery	Supported small pilots of schools sharing curriculum delivery through the use of the connected classroom and addition video conferencing facilities	School Based funds and staffing	<ul style="list-style-type: none"> <li>• Limited IT resources in the schools</li> <li>• Increasing the staff skill level in the technologies</li> <li>• Funding to allow a greater flexibility in the model of delivery</li> </ul>	2010-2011

Origin / Location	Current (C) or Planned (P)	Name of initiative or strategy	Detailed description of initiative, objectives and benefits	Resources required	Current Barriers or Constraints	Implementation Timeframe
Western NSW Region	C	xsel	Xsel is a "virtual selective high school provision for the students of Western NSW Region supporting study in the core areas of English, Maths and Science. This program involves teachers and students from more than 20 locations across the region including students and teachers from rural, remote and regional settings.	DEC budget allocation  Staffing allocation  Technology support	<ul style="list-style-type: none"> <li>Fast reliable broad band services for all students in their homes to allow for successful connection to the Learning Management System to access homework, assessments etc outside of school hours.</li> <li>High cost of access for same families as above</li> <li>Lack of access to live session support during "Synops" – these are the synchronous teaching sessions delivered via the internet and a web conferencing tool.</li> </ul>	Commenced operation in 2010 – with 30 Year 7 students, in 2011 involves 60 students in Years 7 and 8. Will grow to 180 plus students in 2015
Western NSW Region	C	Moodle LMS in Connected Learning Communities	Communities of Schools sharing the development of teaching and learning resources across and within schools	Budget allocation from individual schools	<ul style="list-style-type: none"> <li>Staff knowledge and skills base</li> </ul>	First program commenced in 2008 however we are seeing steady growth and the development of new communities of learners each year

Origin / Location	Current (C) or Planned (P)	Name of initiative or strategy	Detailed description of initiative, objectives and benefits	Resources required	Current Barriers or Constraints	Implementation Timeframe
Western NSW Region	c	eiteach	Intensive two year training program for teachers on integrating ICT into Quality Teaching. Developed as a result of an extensive collaboration with the University of Missouri, recognised as one of the most successful teacher training providers in the use of technology integration to enhance student performance.	Western NSW Region budget allocation.  Budget allocation from individual schools	<ul style="list-style-type: none"> <li>• Access to sufficient funds to support teacher involvement</li> <li>• Access to sufficient technical support and in classroom support</li> <li>• Provision of appropriate infrastructure in the classroom to support multiple internet connections and associated equipment. (program requires a 1:2 laptop allocation, IWB, data projector, document camera, still/video cameras etc.</li> </ul>	Started in 2011 with 10 schools involved from across the region Planning for increased participation on a yearly basis.