

# Developing Telecommunications E-Learning Modules:

## Flexible Performance Support

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**Abstract**—This article, in conjunction with a presentation at ICELW 2008 in New York, 12-13 June 2008, explores the successful application of eLearn development methodologies, planning processes, and a user-centred design consultative process. This development approach was applied during 2007, and continues through 2008, together with innovative and effective use of the Telstra eLearn platform, enabling the delivery of highly successful performance support solutions for Telstra field and technical support staff around Australia during 2007 and 2008. The integration of simulation and interaction into competency and learning checks, ensures that Telstra Corporation's field work staff remain competent and capable of supporting emerging and changing technologies as continual enhancements keep being deployed to Telstra 3G networks to benefit customers in all facets of Australian life across the vast expanses of the country.

**Index Terms**—Telecommunications, Developing, eLearning, modules

### I. INTRODUCTION

This article, in conjunction with a presentation at ICELW 2008 in New York, 12-13 June 2008, explores the successful application of eLearn development methodologies, planning processes, and a user-centred design consultative process.

This development approach was applied during 2007, and continues through 2008, together with innovative and effective use of the Telstra eLearn platform, enabling the delivery of highly successful performance support solutions for Telstra field and technical support staff around Australia during 2007 and 2008.

The integration of simulation and interaction into competency and learning checks, ensures that Telstra Corporation's field work staff remain competent and capable of supporting emerging and changing technologies as continual enhancements keep being deployed to Telstra 3G networks to benefit customers in all facets of Australian life across the vast expanses of the country.

### II. BACKGROUND

Development of meaningful elearning materials has become critical for many organisations in the corporate space, particularly those whose workforce is spread over huge geographical areas. Perhaps even located in different countries, and/or different campuses.

The Next G™ network is providing rural and regional customers with their first-ever taste of broadband connectivity. The Next G™ network's coverage has been extended to offer mobile broadband access to 98.8 per cent of the Australian population.

Telstra's Next G™ network offers the best breadth and depth of third generation mobile coverage in Australia covering two million square kilometres



Figure 1. Field staff



Figure 2. Local inspectors

Day to day workplace for Telstra Field and Communications technicians, for example, would have to be in some of the most isolated and inhospitable regions of the world.

They can be out of contact with civilisation, as we think of it, for weeks on end. (*perhaps a good thing...?*)

III. AUDIENCE

So, in terms of training, online modules, usually of a technical nature, can be a vital resource in training this far-flung workforce in the maintenance requirements of new telecommunications initiatives where they will be the critical first and second line of support. The main audience for online training are:

- Wireless engineering and operations staff - managers, field technicians, technology specialists, activation and assurance specialists, integration specialists.

Whilst Next G programme staff - programme and project managers, process and training primes, business analysts, instructional designers also need to be catered for.

These are the technical staff charged with undertaking 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> level support across Australia. They need to be constantly up skilled to be able to provide timely and effective support solutions if and when required.

Training Courses		A	B	C	D	E	F	G	H	I	J
Impacted Business Unit	Contact										
TSU - CEMC	Jim Cass			Y		Y					Y
ACCEPTANCE - CEMC	Jim Cass		Y			Y					Y
Access Network Provisioning	Graham Austin/ Grahame Bourke										Y
OSS Delivery Solution	Henning Vull						Y			Y	
Logistics SC (CPE Systems and Processes)	Nicholas Sale		Y							Y	
Service Delivery Field CT	Stephen McLean		Y			Y	Y			Y	
Advanced Services Installations	Mike Codling		Y			Y					
BFS Field Staff	Terry Singleton		Y			Y	Y			Y	
BFS - BPA Satellite	Bob Tunn		Y								
Mobility BFS Platform Support	Alzal Shah		Y				Y			Y	
Access Network Design	Claude Boughen		Y			Y				Y	
INO - Shared Operations Services	Simon Florisson/Gary Lister										
Unified Services	Mark McAndrew		Y								

Figure 3. Training Matrix – with curriculum detail –related worksheet tabs

This presentation will give an overview of how experienced contracted training and development instructional designers from the Wireless and Network Operations business unit within Telstra Corporation have managed the:

- Development and delivery of telecommunications work-related, interactive online modules, containing simulations, voice overs and on-line learning checks, to a
- highly technical target group around Australia, who provide
- 1st, 2nd and 3rd level support to hundreds of thousands of customers using 3G network and wireless devices around Australia.

So – what process has been followed?

Through intensive and ongoing consultation at all levels, we (instructional designers/training primes):

A. Identify

- eLearn module training requirements and gaps from Project documents and consultation

- Process changes that will require training from Project documents and consultation
- Stakeholders
- Target audience (Process documents contain a list of impacted workgroups) - demographics of their roles (as seen in Figure 1).
  - Survey/consult target audience to identify knowledge gaps – Training Needs Analysis process
  - Collate feedback and results
- Roadmap timelines – as seen in Fig. 4.

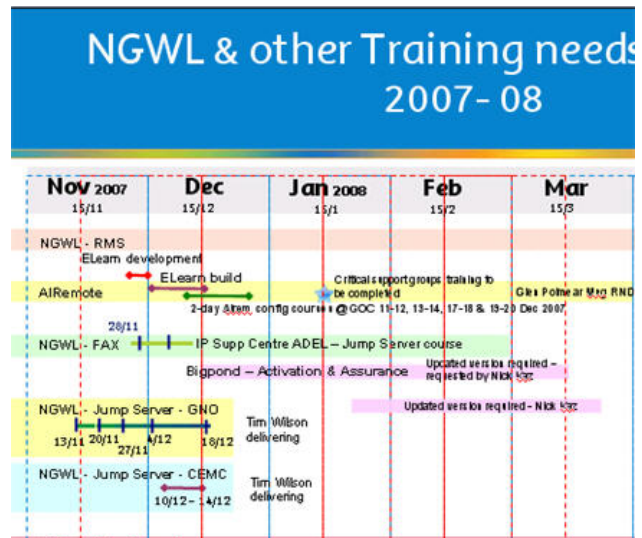


Figure 4. NGWL training roadmap

B. Determine

- ELearn modules that need to be designed and their curricula
- SMEs best placed to act as consultants
- Content to be included
- Determine availability of funding – who pays!
  - Line of Business
  - Project
  - Opex
  - Capex
- Amount and availability of funding and source/s – becomes extremely critical when projects don't have funds allocated for training

C. Gather Content

An important part of determining content is to gather as much information as possible that is relevant to the ELearn modules proposed for development.

This is accomplished through a variety of processes, including:

Researching the organisation's knowledge base/archive system

Contacting the Operational Readiness prime designated as part of the project team

If an OR prime hasn't been allocated, discuss with stakeholders and project leaders

D. Develop

- A LMO – Learning Module Outline
- Content and storyboard document, as seen in Fig. 6

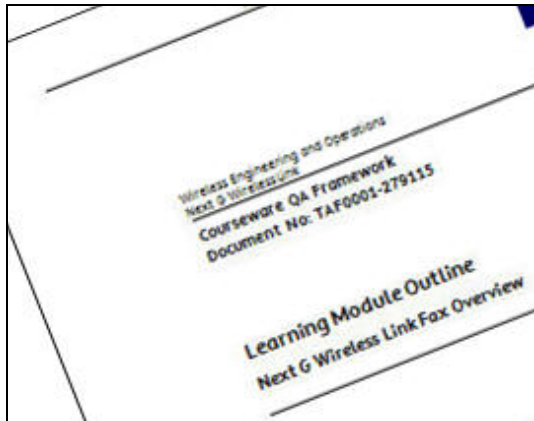


Figure 5. Learning Module Outline

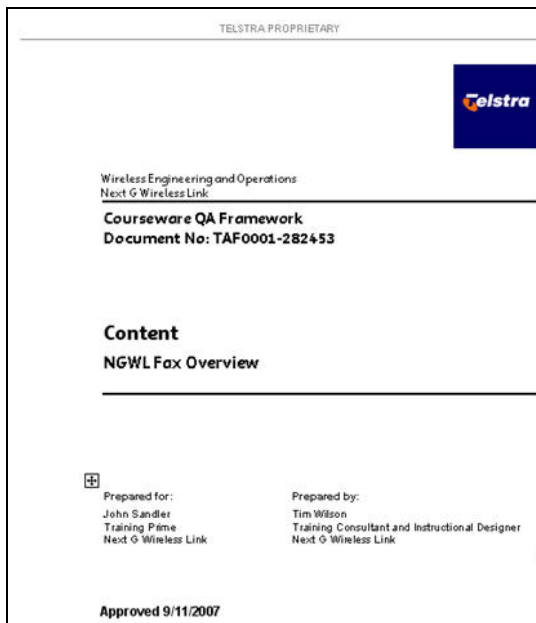


Figure 6. NGWL Fax Overview online module content

**E. A Reality check**

The landscape of the corporate workplace is often not a very friendly place to survive and work in. Generally the larger the corporation, the less user friendly it can be to work within, attempting to understand and survive internal politics, among other hurdles.

Reality is that there is often an unwillingness and wariness to work across business units.

Sometimes there is an initial kick-off meeting, with the main internal sponsor, project manager and stakeholders present to commence to strategise and scope the project.

This may or may not be a successful beginning, depending on a vast array of internal business factors. In terms of eLearn development, it's always an enormous positive to be able to secure funding. It seems there is always a greater willingness to participate, and give co-operation and knowledge more freely when funding is assured.

**F. Signoff**

- Signoff from key stakeholders
- Build

- Build the module
- Review
  - Final review and signoff prior to release, seen in Fig.7

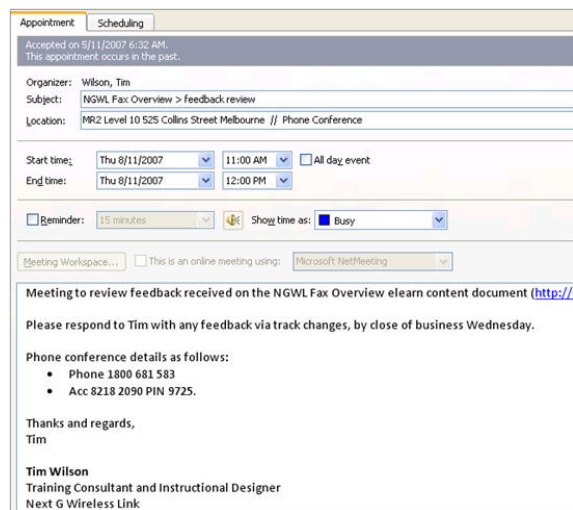


Figure 7. Meeting notification for review and signoff

**G. Deploy/release**

Training events on appropriate platforms, as seen in Fig. 8.

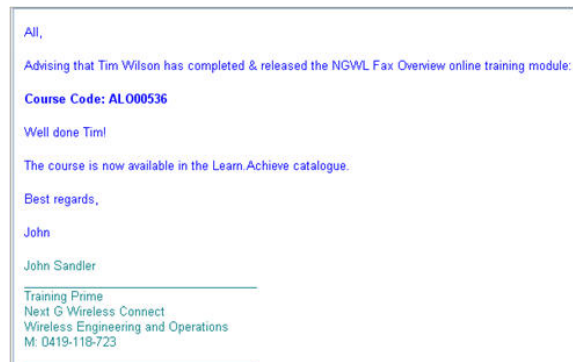


Figure 8. NGWL Fax Overview online module release notification

**H. Manage**

and administer training events, including:

- Online enrolment sessions for self & manager enrolment of participants (Fig. 9).

**I. Maintain**

A regular update process to review & update content to match current firmware release

**J. Competency**

A critical component of the development of technical online modules is the development of relevant learning checks. The business needs to know that staff who complete these modules will be taking new skills and competencies back to their workplaces.



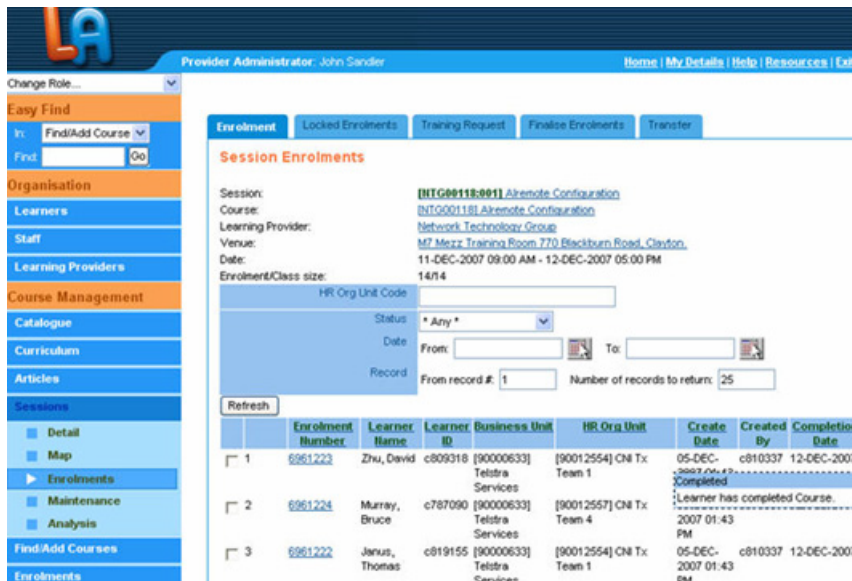


Figure 9. NGWL Fax Overview – online session enrolments screen

Competency learning checks are developed in conjunction and consultation with highly experienced technical Subject Matter Experts, ensuring that staff successfully completing these checks will be competent enough to apply their new knowledge and skills in their work environments.

Depending on the nature and technical complexity of the content, we have generally been able to design Learning checks are designed to be interactive, including voice overs, and to be completed online.

Where appropriate delivery platforms are unavailable, paper-based versions are made available through the document management system, email, and/or delivery on CD.

Field staff are increasingly being wirelessly connected via 3G modems, laptops and GPS units, to enable them to access the intranet and internet from even the remotest locations in outback Australia.

*K. Recent eLearn module*

Some examples from a recent eLearn module, NGWL for Fax Overview, an introductory package that provides learnings about product features, technical solutions, activation, billing and assurance processes.

Screen shots of the:

- Welcome screen,
- Interactive Learning Checks with rollovers and multiple choice



Figure 10. NGWL Fax Overview – Introduction screen



Figure 11. NGWL Training Programme

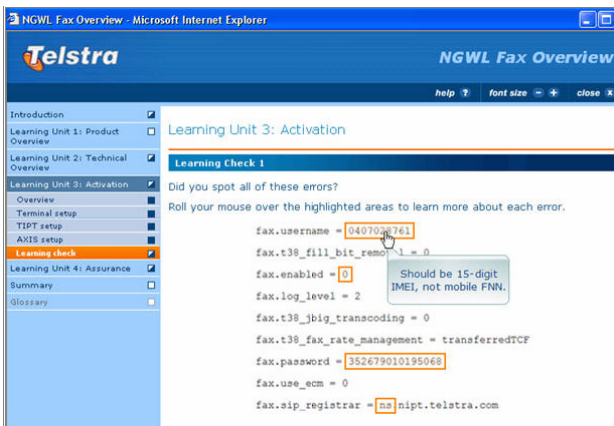


Figure 12. NGWL Fax Overview – Learning Check with rollovers

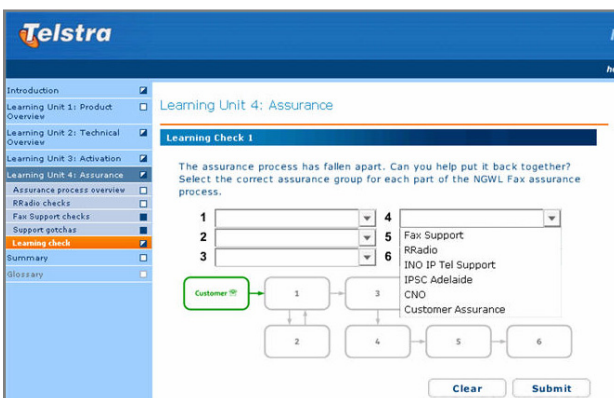


Figure 13. NGWL Fax Overview – Learning Check – Assurance Process

#### IV. SUMMARY

A continuing consultative process to develop technical training solutions, incorporating simulation and interaction, together with innovative and effective use of the Telstra eLearn platform, will ensure that Telstra Corporation's field work staff remain competent in all emerging and changing technologies as continual enhancements keep being deployed to Telstra 3G networks to benefit customers in all facets of Australian life across the vast expanses of the country.

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This article was modified from a presentation at the The International Conference on E-Learning in the Workplace, June 2008, New York, USA. Manuscript received 20 May 2008. Published as submitted by the author.