Case study: NBN E-Learning Project
QLD > 2012

Beef Industry *Stocktake Reef* e-learning package (NB107). Jane Pryor

Department of Agriculture, Fisheries and Forestry, Queensland

Queensland
Government

Future
Beef

gvm
Global Vision Media

SECTION HEADING

1. Who we are

Brief description of the lead organisation and key partners

The Department of Agriculture, Fisheries and Forestry (DAFF) Queensland was the lead organisation for the Beef Industry *Stocktake Reef* e-learning package project. DAFF is the Queensland State Department committed to supporting a highly efficient, innovative, productive and successful agricultural sector. DAFF achieves this through their commitment to:
- improved agricultural research, development and extension
- improved agricultural skills and career pathways
- the facilitation of new infrastructure to support agriculture across the state
- biosecurity.

The FutureBeef extension team within DAFF developed and implemented this project. This team is made up of forty Beef Extension Officers across Queensland. These officers play an important role in improving the productivity and sustainability of the beef industry by working with producers to develop and extend the latest research and technologies. The FutureBeef team also designs and delivers a suite of training workshops to improve agricultural skills and result which practice change or adoption of new information or technologies. Most of the FutureBeef training workshops are mapped to Vocational Education and Training (VET) units of competencies and participants can apply for recognition of prior learning (RPL) with a Registered Training Organisation (RTO) post workshop.

DAFF's technology partner for this project was Global Vision Media (GVMedia), based in Melbourne. GVMedia is a learning, communications and multimedia company with substantial experience deploying online learning modules and learning management systems. Established in 1994, GVMedia employs creative and astute educators, multimedia programmers, video producers, scriptwriters and trainers to build innovative and effective online learning modules. GVMedia used their expertise in instructional design and video and multimedia development to produce the *Stocktake Reef* e-learning package for this project.

The Australian Agricultural Colleges Corporation (AACC) within DAFF, was also a partner in this project and since 1967, has developed invaluable relationships and partnerships with peak rural and agricultural industry bodies. More importantly, AACC has equipped young people with the necessary rural management skills to ensure a strong work force for the continued growth of Queensland's valuable primary industries. AACC's role within this project was assisting with mapping content to new national competencies, under the Agriculture, Horticulture and Conservation (AHC) Training Package. They also provided advice around e-learning and Learning Management Systems (LMS).

*Please note for this case-study:
Learners and clients will be used interchangeably in this case-study and they refer to beef producers and other interested parties such as beef industry advisors and students.
Trainers broadly refer to FutureBeef extension officers within DAFFQ.

2. Scope

What parts of the NBN E-Learning Program scope did your project address?

The Beef Industry *Stocktake Reef* e-learning project addressed two components of the NBN e-learning scope simultaneously;
1. Trialling innovative programs using high speed connection
2. Preparing organisational readiness models for delivering training and assessment services for the NBN

The primary focus of this project for the FutureBeef team was to trial the development and use of e-learning packages using the NBN. However, in undertaking the project, the project team were also gauging organisational (DAFF and partners) and learners' (beef producers in Queensland) readiness for participating in e-learning programs.

The FutureBeef team deliver a range of workshops and training events to beef producers across Queensland. The traditional delivery method is face-to-face, group workshops, delivered on-farm or in local community venues by an experience trainer. With approximately 17,000 beef producers in Queensland, which is the state's largest agricultural industry, there are severe limitations with the delivery of learning outcomes in the current traditional mode.

Furthermore, many learners are themselves time poor; time required 'off-farm' to travel to and attend training can be a major limitation to participation. By exploring the use of e-learning packages and dedicated virtual classroom sessions, the project team were able to gauge the readiness of our organisation to design, develop and deliver such innovative programs. As well as, gauge the readiness of our clients to engage with this form of extension, training and learning.

As our workshops incorporate detailed presentations, practical activities and paddock based sessions, the use of high-speed, NBN connection was critical. The high-speed connection creates the capacity to use high resolution photos, animation and video, to ensure learning outcomes from our training workshop were equally met though the e-learning package.

This project was a highly critical step in demonstrating the power of broadband to enhance outcomes for beef industry learners and industry trainers. The development, piloting and roll-out of our *Stocktake Reef* e-learning package has served as a flagship for future workshop reviews, as well as, flexible and blended delivery options using e-learning programs.

3. The Objective

What was the main aim of the project and how did it meet the scope?

The aim of the Beef Industry *Stocktake Reef* e-learning Package Project was to determine the power of the NBN network to make interactive e-learning possible for our organisation and clients in regional and remote areas. This was achieved by modernising the delivery of one of FutureBeef's significant training workshops into an interactive e-learning program.

Prior to this project, delivery of *Stocktake Reef* was by traditional, face to face workshops. However, by using the enriched multimedia experience that the NBN offers, a more interactive approach could be delivered and the learner will be able to experience an enhanced delivery of knowledge and skills. Furthermore, the e-learning options could promote greater participation and access for our clients and result in more efficient delivery of skills and knowledge for our organisation (by saving travel costs and time).

Use of the NBN will enable a blended approach to be delivered, where the learner will be able to experience a more interactive approach. It also integrates with other existing eTechnologies, in use and under-development, including webinars, apps and video production, to maximise learning and on-ground practice change in the beef industry.

4. The Team

Knowledge high speed broadband technology being used for training

The FutureBeef team, within DAFF, has a very high level of experience and expertise in designing and delivering traditional training workshops for the Beef industry. Only in the last five years has the team begun to develop our skills in e-Extension; that is, the use of eTechnologies, such as webinars, blogs, podcasts and slide casts, to communicate with our clients on the latest Research and Development (R&D) skills and technologies. Prior to the commencement of this project, we had not developed an e-learning package nor used the NBN for training, teaching, learning or other purposes.

As a team and department, we have been moving towards offering some services online (DAFF previously had a target of 50% of services available online by 2012). However the slow internet speeds for a proportion of our clients means that we are limited in what services we can provide. For some clients even emails with large file size attachments are a problem for their internet connection. One previous attempt to deliver a webinar to a client on dial-up internet meant that he had time to drop his children at the bus stop (12 km away) before the presentation had even completed loading on his computer. With these issues being commonplace we have been developing our webinar practices to have no webcams or VOIP to minimise issues with slow line speed (instead, we use a teleconference option built into our webinar suppliers program). However this unfortunately means less interaction with and between clients. Regardless of these restrictions for some clients, industry regularly expresses a genuine interest for us to keep building on our suite of eTechnologies for extension, and as a Department, we are committed to expanding our services and products available online.

Even with our limited knowledge of the NBN our team can identify its potential to make the sharing of detailed photos, videos and interactive and engaging e-learning programs possible, whilst reducing barriers to participation (caused by geographical distance, time off-farm, costs and slow internet connections).

Our technology partners, GVMedia has significant experience with producing online learning projects and has years of experience in developing online courses that are required to work on standard (slow) connection speeds. GVMedia had experience in using high speed broadband technology prior to commencement of this project, however not on the speeds that the NBN can provide. Although GVMedia had an NBN connection, theyhad only used it for video conferencing purposes; this was their first project with e-learning on an NBN connection.

Expectations of the team about using the NBN for teaching/training

As a team our expectation of the NBN was that it would enable us to deliver multi-media rich, online training experiences, which we could tailor to give the best possible learning outcome for our clients/learner (most of whom are in rural and remote Queensland). For us, NBN could open the door to broader and more interactive e-extension, saving us time and money, as well as resulting in more flexible and engaging training workshops.

In applying for this project, the project team was aware that the current extent of the NBN roll-out in Queensland meant that the pilot participants would be required to travel to Townsville to participate. We were also aware that it would be some time before our regional and remote learners will have connection to the NBN. Regardless, this project gave us the opportunity to develop our organisation skills and knowledge of the NBN as well as promote its potential to our clients/learners, whilst also demonstrating that, as an organisation, we are 'gearing-up' for these future opportunities.

Competencies and experience of your team in delivering e-learning

Our team members hold current Certificate IV in Training and Assessment, and as such, are skilled at designing, delivering and assessing training. We have been up-skilling ourselves and practicing incorporating eTechnologies (webinars, wikis, podcasts etc) into our projects, however, prior to this project, had not yet worked on an e-learning package or NBN connections. Thus, we engaged GVMedia in this project to ensure we had the right technical competencies and experience for undertaking this project. We were guided by GVMedia on our selection of software, LMS, hardware requirements and connection issues.

5. The Journey

5.1   Part A: Starting our Project

What was done to get the project started?

Project planning
Much of the project planning was completed prior to the application for funding. This project, for the FutureBeef team within DAFF, was an exciting opportunity to create our first e-learning package and evaluate both, Industry's and our own, organisational readiness for blended learning options.

We planned to take a significant, traditional one-day workshop; *Stocktake Reef* and convert it to a multi-media rich e-learning package. The *Stocktake Reef* workshop helps beef producers in Queensland to understand their grazing land condition, develop pasture monitoring skills and use a software tool to assist management decisions involving grazing land management. This project would modernise the delivery of this information into an interactive e-learning program, expanding participation and access, especially to producers in remote areas. It would also integrate with other existing eTechnologies, currently in use and under-development, including webinars, apps and video production.

Following the project Induction Day held in Melbourne, the project team developed and activity schedule for the project (Appendix 1). Given the short-term nature of this project and the distance between the DAFF and GVMedia teams this activity schedule was critical to the success of the project, as it detailed activities, critical dates and communication opportunities.

The following key tasks were then undertaken and implemented:
1. script writing
2. recording (Subject Matter Experts (SME) and mentor)
3. editing and review
4. finding an NBN connected venue and pilot participants

1. **Script development**
Script development was a very important stage in the project, it allowed us to identify the information needed to be covered in the package and which video, animation, photos and other media was required to get those points across to the learner.

Although the learning outcome and design of a traditional Stocktake workshop was very clearly identified we needed to alter the design and delivery of the material to suit our target e-learners. The aim was to have the e-learning package meet the same outcomes as the traditional workshop. The following outline for the script was decided upon and was prepared accordingly (see Appendix 2 for e-learning script):
    Welcome and Orientation
       - what is this about
       - how to navigate through the package
    Module 1. Introduction to Stocktake

- Setting up a photo monitoring site

Module 2. Land condition and it's components
- Land condition assessment

Module 3. Forage budgeting
- Collecting the information for a forage budget

Module 4. Use of Stocktake software
- Using the software

Module 5. Virtual Classroom session

As most of our learners are very practical/task oriented people, each module was directly linked to an applied task or skill based outcome. For example, at the end of Module One learners were shown how to set up a pasture monitoring site and then instructed to go out and set-up a site on their property before starting the next module.

The virtual classroom session was proposed to support the e-learning package, providing a forum for learners to ask questions of the trainers and peers. With the potential of the NBN to provide much faster upload speeds (as well as downloads) it was planned that this session would enable learners to share their own video and photos. The software program called *Vidyo TeleHealth* (http://www.vidyo.com/technology/) was selected by the project team for the virtual classroom session, as it was promoted to have better specifications for the NBN, compared to other webinar software (such as GoToMeeting currently being used by the FutureBeef team).

2. Recording

Once the e-learning package script was finalised the project team began collecting the media required to bring the package together. This required the recording of the package mentor in front of a 'green screen' in the GVMedia studios and importantly, the SME and producer video clips in the field near Charters Towers. Each piece of media collected was recorded with the highest resolution possible to display the finer details (e.g. individual plant features) and to take advantage of the download speed potential of the NBN. Photos and animations were also collated and created to best communicate the learning outcomes within the package.

3. Editing and review

The GVMedia team was responsible for the editing of all these components into the e-learning package, as per the script. Once this was completed the package underwent internal review prior to the pilot. As there was no NBN connect available in Rockhampton or Brisbane the internal review had to be done on a standard ADSL connection (download speeds of 3.5 Mbps on average). Due to the slower download speeds the review progress took significantly longer than anticipated. It also meant that some minor technical issues in the package were not identified until the pilot (these issues have since been resolved).

4. Finding a connected NBN venue and pilot participants

Whilst the e-learning package was being edited and reviewed the project team were making enquiries about a suitable NBN connected venue in Townsville for the pilot. The GVMedia team had leased some office space at a NBN hub in Brunswick, so that the e-learning package and virtual classroom session could be delivered and received on NBN connections.

Finding a suitable venue for the pilot in Townsville proved to be more difficult than the project team had initially envisaged. Only a small suburb in Townville was connected to the NBN and although the public library did have a connection, they did not have enough connected computers for the pilot. Fortunately, the Cathedral School in Townsville were willing to hire the project team a

classroom and laptops with NBN connection for the pilot workshop. Furthermore, the school supported the project by providing IT support and set-up prior to the pilot workshop, ensuring the laptops had the software required for the virtual classroom session. Without the good will of the teachers and IT support at the Cathedral School the pilot would not have been able to occur on the NBN connection.

In order for the pilot to have the most value to the project team, the selection of pilot workshop participants was carefully considered. Key stakeholders in the *Stocktake Reef* package, representatives from our FutureBeef team, trainers and students from the Agriculture College (AACC) and beef producers from North Queensland were invited to attend the pilot workshop. With this mix of participants we could gauge organisational and industry readiness for e-learning packages, promote the power of the NBN to deliver innovative e-learning solutions and ensure that the *Stocktake Reef* package met the same outcomes as the traditional *Stocktake Reef* workshop.

5.2   Part B: Running the program

Did any issues arise over the course of running the program?

Pilot Project – Successes, issues experienced and recommendations

The pilot workshop was run on a wireless NBN connection at the Cathedral School, Townsville. The wireless NBN connections provided much faster download and upload speeds than all pilot workshop participants were used to (see metrics of data information) and also provided an excellent platform for our e-learning package. Over the two, half-day sessions of the workshop (see pilot workshop summary attached in Appendix 3) there were 26 participants connected to the NBN via 23 laptops. Each participant worked through the e-learning package at their own pace. On the second day we ran the virtual classroom and evaluation sessions. Although connection speeds were fast and reliable, we still had some technical issues, primarily 'dropping-out'. This seemed to occur predominately when a number of the participants were watching large video files within the e-learning package at the same time. Fortunately this only happened on 2-3 occasions; however, it was very unsettling and frustrating for participants. This was a particularly important lesson for our project, as this frustration when learners are in remote locations would; no doubt, result in them walking way from the package to do another task. For our learners a reliable and fast internet connection will be essential for this e-learning package to be successful commercially. For the pilot workshop, a hardwire NBN connection, fewer participants and/or staggered starting times (so that participants weren't downloading the same file at the same time) would have potentially reduced the few connection drop-outs experienced.

At the beginning of the pilot workshop there was also some minor issues with ensuring individual headsets (for audio) were working correctly. In our pilot, we found that the headsets with two plugs (one for speaker and one microphone) were easier to operate than the headsets connected by a USB plug.

For the virtual classroom session we flew one of our trainers to Melbourne to facilitate the session from GVMedia's NBN hub. This allowed NBN to NBN connection. Participants were split into two groups for this session as only ten laptops had the required software to run the *Vidyo TeleHealth* package. The first group attempted to enter the *Vidyo TeleHealth* session almost simultaneously and this caused some connection issues; however once we staggered the login process (only by a few moments) the issue was resolved. Feedback from the trainer and the participants for this session was that it was very effective and would provide an excellent follow-up, interactive session with learners once they have completed the e-learning package.

5.3   Part C: Wrapping up our project

Evaluation from the pilot workshop

Feedback from our pilot was overwhelming positive for both the value of using NBN for e-learning and for beef industry related training. All participants commented that they would undertake more beef industry related training in this manner. All learning outcomes of the traditional workshop were met by the e-learning package with pilot participants indicating they acquired (or further developed) the same skills and knowledge as would be expected from a traditional workshop. Participants were asked to rate the ease of use for the e-learning package on a 1-5 scale (1 being very hard and 5 easy/'piece of cake') and responses averaged 4.1. Participants were also asked to comment on what would need to change (if anything) for them to do more learning, networking and/or business online. Responses to this question were predominated by the requirement for NBN connections (or any faster broadband internet) in regional/remote areas and some required new computer hardware. More information about pilot evaluation can be found in the pilot summary (Appendix 3)

Costs to the organisation

It is very difficult at this stage to determine the cost saving to DAFF of delivering *Stocktake Reef* via an e-learning package rather than the traditional workshop method. This is an area our team will do further investigation into over the coming months.

Some early information to consider includes: cost of e-learning package development ($114,200), hosting of package on a suitable LMS (free to DAFF due to partnership with AACC) and any subscription costs to virtual classroom (or webinar software).

These costs can be balanced against potential organisational saving of: travel and accommodation for trainer (on average 600km@$0.70/km and one overnight equal to approximately $600), venue hire (avg. $100/day), catering costs (avg. $300) and supply of manuals and materials (~$350/workshop). On average FutureBeef runs ten workshops per year, so these costs would approximately add to $13,500 per year.

The saving to learners/clients is even harder to estimate but may include; travel to attend a workshop (avg. 200km @$0.70/km.$140) plus their time off-farm for the day (replacement staff member could cost $200+/day or some value for lost production). *Please note all costs are only indicative averages, further analysis is required before assumptions are made from this information*.

Traditional, face-to-face workshops will always remain critical to DAFF (and particularly FutureBeef's) core business, so the above savings may never be realised in full. That being said, having an e-learning package available allows for more flexible and/or blended training options for the Beef Industry (giving participants the choice of learning style that suits them best) and would inevitable reduce the number of traditional workshops run per year. The development of the e-learning package also expands our target audience of participants to make the training more accessible to Ag College (AACC) students, university students, partner agency staff (as professional development), smaller beef producers who work off-farm (as most of our workshops are only run mid-week limiting participation from this group) intrastate and potentially international beef producers. Furthermore, having the *Stocktake Reef* e-learning package available means that participants, of either the traditional or e-learning training, can revisit the information when required. This could potentially mean greater on-ground application of the skills and information within the package, which may mean more sustainable and productive land management practices for the Beef Industry.

Skills developed by the team

- **Knowledge of the power of NBN.** Though the activities surrounding the pilot for this project, our team has developed an understanding of the NBN, and it's potential for improving our e-Extension activities (once rollout progresses into regional and remote areas). We have discovered, first-hand the speed and reliability to the NBN connection and the uses it has for the training sector, through exposure to other NBN National VET e-learning strategy projects.

- **Experience in the development of an e-learning package.** Our team learnt skills through the implementation of this project around;

  - Designing and scripting an e-learning package

  - Recording and collating media (video and photos) required for an e-learning package

  - Preparing and interviewing SME or producers for video

  - Presenting (as either mentor or SME) on video or voice recording

These skills (and products) are directly applicable to other work we are doing in e-Extension.

Future benefits to the organisation and learner

As a direct result of this project, the FutureBeef team (and DAFF) now has its first, Beef Industry e-learning package. This package (and products from the package, including some videos) will be incorporated into our suite of e-Extension tools for use in promoting the most sustainable and productive industry practices. The skills developed by the team in this project will better position our Department for creating and supplying innovative e-learning and/or eTechnologies to the Beef industry as the rollout of broadband internet continues. We have also through this project been able to undertake a preliminary investigation into the costs and benefits of blended e-learning, better positioning us for future projects.

For the learners involved, they now have exposure to the potential of the NBN for not only learning and training about the Beef Industry but also for networking and doing business. Additionally, they gained new skills and information in pasture monitoring, grazing land condition assessments, forage budgeting and the use of the Stocktake software. As, some of our pilot participant were from other training organisations (AACC) or government departments, they have also taken their knowledge and experience of the use of the NBN for teaching/learning back to their organisations.

Appraisal of using the NBN as a teaching/training tool

The NBN connection is much faster and more reliable than current internet connections used by the lead organisation, our project partners and our clients/learners. As a beef industry extension team, the geographical distance between our team and clients is a significant impediment to engagement and follow-up (post-workshop). Fast and reliable internet (such as the NBN provides) allows us to offer quality, interactive training and services to our clients without the costs associated with travel. It also offers our clients flexibility and convenience when it comes to engaging with our Department.

As the NBN increases both download and upload speeds it also creates the opportunity for greater involvement and interaction. For our team, this means learners can contribute photos, videos and other information for discussion with trainers and/or peers resulting in more 'applied' information and skills.

6. Outcomes and measures

6.1 Main outcome of project

The anticipated outcomes were realised for this project. Through this project we were able to:
- Test our organisational readiness for extension via e-learning (including skills, technology, time and resources needed)
- Gauge the readiness of our clients and stakeholders to use e-learning as a way of access the latest Research, Development and Extension (as well as training to RPL for qualifications)
- Experience the power of the NBN for e-learning (including the sharing of detailed photos, videos etc for learners
- Explore some of the advantages of using e-learning to offer more flexible, timely, relevant and 'on-farm' training to the beef industry

The information, skills and products acquired through this project will be directly applicable to future work in our organisation. Information and evaluation collated at the pilot will be used to inform future workshop reviews and the *Stocktake Reef* e-learning package will be our flagship for this process.

6.2 How were the outcomes measured

Outcomes relating to organisational and client readiness for e-learning were measured through pilot evaluation including facilitated discussion sessions (see Appendix 3).

Outcomes related to the use of the NBN network for e-learning were collected through speedtest measures (see metrics of data), pilot evaluation and pre and post surveys distributed by National VET e-learning strategy (through FLAG).

7. What lessons can be learnt

7.1   What were the key successes and what would you do differently?

The key success of this project was the use of the NBN to pilot FutureBeef's flagship e-learning package; *Stocktake Reef*. The creation of this e-learning package is an important step in FutureBeef's evolvement into the use of e-learning and associated eTechnologies and preparedness for NBN rollout in regional and remote Australia.

Other successes included:
- The information, skills and products from this project which are directly applicable to future work in our team and organisation
- Information and evaluation collated at the pilot will be used to inform future workshop reviews, particularly in terms of the beef industries readiness for research, development and extension to be delivered remotely through eTechnologies/e-learning.
- Partnerships were strengthened with key stakeholders (AACC and other government and natural resource management organisation)
- Exposure for project, FutureBeef, DAFF, National VET e-Learning Strategy and the Federal Government NBN initiative through media articles generated through the project (see appendix 4)
- Cross linkages with other National VET e-Learning Strategy projects. Namely through Barrier Reef Community of practice project (lead by Julie Woodlock)
- Exposure to the NBN as a tool to provide interactive solutions for regional and remote beef producers around training, networking and business

7.2   Suggestions for improvement that come from your experience.

The only limitations for the project were;

1. The extent of the NBN roll-out
As a result of this project we now have an excellent e-learning package, trainers that are excited to deliver it and clients willing to participant in and promote it, what is missing is the NBN in regional and remote areas of Queensland. Solutions will have to be organised to address this issue; as industry wants to start using this e-learning package immediately. Two possible solutions currently being explored outside this project are: (1) packaging the e-learning program into an interactive DVD; and (2) reducing media resolutions to reduce the overall file size of the package (to suit slower download speeds).

2. The timeframe of the project itself
This short timeframe of this project did cause some limitations on what could be achieved. Particularly when we had to coordinate people to film video clips during the wet season in northern Queensland.

The project team would have also liked to have run more pilots with beef industry producers, however given the short time frame of the project, and the fact that they would have to travel to Townsville to participate in the pilot, this is not practical. Our project team will work to promote this package post-project to ensure we get maximum benefit from our involvement.

8. Passing it forward – what can be transferred to another organisation to implement

How can this project help another organisation deploy an NBN e-learning program?

The advice this project team would provide to another organisation considering deploying an NBN e-learning program would be as follows;

1. **Engage the appropriate team for the job**. Thanks to our partnership with GVMedia, the e-learning package was compiled, piloted and delivered to a professional standard in a short timeframe. Engaging GVMedia as our technology partners ensured any technical issues were resolved quickly with minimal stress (frustrations) for the FutureBeef project team (trainers).
2. **Start with the end in mind**. Ensure the learning outcomes required are documented prior to the commencement of the project and that the target audience is identified and understood (so 'pitch' of information is appropriate).
3. **Invest in the script.** Invest time and energy in the script development process. It makes the collection of media (particularly with SME) so much clearer; as everyone knows what key message is required from each section of the package.
4. **Ensure the user interface is logical.** E-learners seem to be easily frustrated when little glitches in the user interface limit their ability to do the task. Ensuring the user interface (from log-in to completion) is logical, simple and works means you will engage the e-learner for longer.
5. **Virtual classrooms are powerful.** When facilitated correctly the power of the virtual classroom to support learners and assess application of information/skill is immense. This will certainly be something that our organisation will use more in the future (particularly as internet connection improve in regional and remote Queensland).
6. **Support e-learning packages with other eTechnologies.** To obtain maximum benefit for the learner and trainer support the e-learning package with other eTechnologies. Tools such as instant messaging, email/call options, blogs or wikis mean learners can get their questions answered by the trainer or their peers at anytime.

Outcomes of the project which can be passed forward are;
For us (DAFF/FutureBeef)
- Excellent demonstration of the advantages of e-learning for our work
- Definite partnerships, skills, learnings and enthusiasm to continue into e-learning
- Further consideration of costs/benefits of e-learning will be undertaken as past of future workshop review projects
For industry
- Value and enthusiasm for e-learning concept and tools
- Requirement for higher internet speeds in regional and remote areas
- *Practice. Practice. Practice!*

Contact Information

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Website: http://flexiblelearning.net.au

E-learning package may be viewed at http://preview.globalvision.com.au/FutureBeef/preview/

Username and password is required for access.

http://preview.globalvision.com.au/FutureBeef/preview/

Username: guest
Password: ad89cnm1

Metrics of data

Training package area:	*Stocktake Reef pasture monitoring*
Qualification or Unit(s) of Competence being delivered to pilot group/s:	*AHCWRK502A – Collect and manage data* *Agriculture and conservation land management*
No of learners:	*26*
No of learners who agree that broadband has improved their learning experience:	*Question not asked directly, however all participants commented on the comparative speed of the NBN and 100% answered saying they would undertake more e-learning following this experience.*
Trainer's comments on pilot	*Pilot was overwhelming successful. See appendix 3 for summary of pilot. Would definitely use high speed broadband for future use of e-learning (and e-Technologies), however this will only occur gradually as the rollout of NBN continues (particularly into regional and remote areas). Positives of the NBN were the speed (download and upload) as well as the reliability. Negatives were only the limited areas that NBN is currently rolled out in Northern Australia.*

Broadband Capacity: *Use the template below to record data from each session during the pilot project and then document average here*	*Wireless NBN*				
	Connection speed	**Before** **Upload (Mbps)**	**Before** **Download (Mbps)**	**Pilot** **Upload (Mbps)**	**Pilot** **Download (Mbps)**
	Trainer	2.8	3.5	19.9	22.6
	Learner (average of learners	Not requested of all learners **3.0**	4.5	22.2	26.7

We need you to collect some data on connection speeds for your projects. Provide the http://speedtest.net/ tool to trainers and learners to read and record connection speeds before and during trialing of your pilot project.

	Before **Upload (Mbps)**	**Before** **Download (Mbps)**	**Pilot** **Upload (Mbps)**	**Pilot** **Download (Mbps)**
Trainer 1	1.8 (Rockhampton)	3.3	19.9	22.6
Trainer 2	13 (Melbourne)	55	15	65
Learner 1	See appendix 3.			

Insert additional rows for additional learners

Appendix 1. Activity schedule for Beef Industry *Stocktake Reef* e-learning package project.

1. Activity Schedule

 # Fortnightly team teleconferences are scheduled for updates and planning. May not always run depending on project team commitments but aim to create an opportunity for good project team communication to meet project milestone sin a timely manner.

Project manager (or delegate) will report in to monthly wiki updates and monthly national online project team meetings in behalf of team

No.	Description	Responsible	Who will be participating	Resources Required	Start date	End date
1	Project team planning teleconference/webinar	Jane Pryor	Project team	Teleconference	w/o 9 Jan	13 January
	Fortnightly team teleconference#	Project team	Project team	Teleconference	25 Jan 2:30pm	
2.	Checking and final edits of existing *Stocktake Reef* PowerPoint for handover to GVM. *Including clarification of assessment evidence mapping for RPL to VET unit.*	Jane Pryor	Jane Pryor, DERM Reef team AACC	Existing PowerPoint Facilitators guide Assessment evidence mapping	w/o 16 Jan	27 January
3.	Presentation and detailed discussion with script development team of existing *Stocktake Reef* face-to-face training.	Jane Pryor	Jane Pryor Script developer GVM	Webinar	1 February	3 February
	Fortnightly team teleconference	Project team	Project team	Teleconference	8 Feb 2:30pm	
4	GVM script development team: Design and development of e-learning module. Document instructional goals,	Damien Cavenagh	GVM development team.	Instructional design script Graphic design	6 February	29 February

	incorporating NBN technology, performance objectives (technical and pedagogical), create storyboards. Plan shooting and multimedia construction.			assets		
	Fortnightly team teleconference	Project team	Project team	Teleconference	22 Feb 2:30pm	
5.	Sign off script 1st CTP payment to GVM	Damien Cavenagh	Jane Pryor Damien Cavenagh	GVM invoice for 60% of CTP agreed amount of project budget.	29 February	29 February
6	Engage and promote pilot to target audience group. Seek EOI to participate. Development of feedback / evaluation methodologies & tools Development of case study format	Jane Pryor	Project team		6 February	29 February
7.	Development o e-learning model Undertake shooting and multimedia construction. Undertake QA and simulate delivery. Performance testing on conventional technologies to establish baseline. Content reviewed with RTO for alignment with AHC national competencies Including some internal testing.	Damien Cavenagh	GVM development team. E-extension team in DEEDI FutureBeef to collect necessary video and high resolution images to match script AACC		1 March	30 March
	Fortnightly team teleconference	Project team	Project team	Teleconference	7 March 2:30pm	

8.	Development of checklist for extension officers and trainers document including video, photos and podcasts (where applicable).	Damien Cavenagh and Jane Pryor	Project team	Video clips Photos Checklist/ requirements listing	9 January	11 May
9	Locate, test and make arrangements for use of appropriate NBN-ready pilot space in Townsville and Melbourne.	Damien Cavenagh and Jane Pryor	Damien Cavenagh and Jane Pryor	NBN ready facility 10+ laptops/PC with internet, webcams, speakers and headsets	20 Feb	9 March
	Fortnightly team teleconference	Project team	Project team	Teleconference	21 March 2:30pm	
10	Final internal testing of e-learning module and follow-up session requirements. Make necessary changes.	Damien Cavenagh and Jane Pryor	Project team	NBN ready facilities	2 April	9 April
	Fortnightly team teleconference	Project team	Project team	Teleconference	4 April 2:30pm	
11.	**PILOT (2 *1/2 days) with target audience** Including internal project team evaluation and debriefing and collection of target participant's feedback.	Damien Cavenagh and Jane Pryor	Project team Target pilot group	NBN ready facility 10+ laptops/PC with internet, webcams, speakers and headsets	9 April	13 April
12	Promotion of project and outcomes	Jane Pryor	Project team	Media release	9 April	13 April
13	Development of checklist for extension officers and trainers document including video, photos and podcasts (where applicable). Inclusion of information from pilot	Damien Cavenagh and Jane Pryor	Project team	Video clips Photos Checklist/ requirements listing	13 April	11 May

	Fortnightly team teleconference ** Drop back to monthly teleconferences post-pilot*	Project team	Project team	Teleconference	2 May 2:30pm	
14	Evaluation of project and preparation of final report Draft 1 due for internal review by 11th May.	Damien Cavenagh and Jane Pryor	Project team		13 April	11 May
	Fortnightly team teleconference (FINAL)	Project team	Project team	Teleconference	13 June 2:30pm	
15	**Hand over packaged deliverables and final report (including financial acquittal and final invoice for payment)**	Jane Pryor	Project team		15 June	15 June
16.	Final Payment to GVM	Damien Cavenagh	Damien Cavenagh and Jane Pryor	GVM invoice for 40% of CTP agreed amount of project budget.	18 June	29 June

Appendix 2. *Stocktake Reef* e-learning package script

See attached file.

Appendix 3. Summary of Beef Industry *Stocktake Reef* e-learning package pilot workshop

The Beef Industry *Stocktake Reef* e-learning package pilot workshop
Cathedral School Townsville on the 10-11th April 2012

Twenty-six participants representing the beef industry, stakeholders, FutureBeef extension officers, AACC trainers and students connected to the NBN network to undertake the *Stocktake Reef* e-learning package training.

The agenda was as follows:

10th April. Midday - 5pm. *Stocktake Reef* e-learning training session
Pilot participants were briefed on the background of the project and undertook a basic computer skills check. Following this participants their worked through the e-learning package at their own pace.

Stocktake e-learning package structure was as follows:
Welcome and orientation to the online workshop
1. Introduction to Stocktake
2. Assessing Land condition
3. Forage budgeting
4. Using the Stocktake software
This structure met all the important skills and information outcomes from the traditional *Stocktake Reef* (and Stocktake) workshops but does so in a more learner-centric manner, especially designed to maximise the benefits of e-learning in our target audience.

11th April. 8am - Midday. Virtual classroom session.
The success of many training workshops is the interaction between participants and the trainers, and between participants and their peers. The virtual classroom session was designed to allow for this interaction. Participant uploaded and discussed grazing land photos with our trainer, Ian McConnel (DAFF), who was on the NBN connection in Melbourne.

In a commercial sense this virtual classroom sessions would be run monthly or bimonthly for learners to log on and get help with plant identification, land condition assessment and/or use and interpretation of Stocktake reports.

Figure 1. Photos from pilot

Summary of *Stocktake Reef* e-learning package pilot workshop evaluation

Table 1. Pilot workshop internet connection speeds, as measured by <u>speedtest.net</u>

Download Mbps	Upload Mbps
28.03	24.49
19.82	20.73
22.81	19.47
16.76	23.92
16.41	23.92
11.03	24.20
43.00	17.12
14.32	23.16
23.08	24.00
40.20	17.17
69.00	23.13
42.66	24.42
11.10	24.00
18.45	24.41
24.05	19.19
Average: 26.7	**Average 22.2**

Evaluation questions for pilot participants were broken down into 5 sections:
1. What did you think?
2. Content as an e-learning package
3. Content - technically (representation of Stocktake)
4. You the learner
5. Where is this going to take you?

NB: 26 participants started the training, however one participant did not complete, due to a family emergency. Evaluation reflects the 25 participants who completed the pilot workshop.

<u>Section 1: What did you think?</u>

Please describe in 3 words your experience with the Stock take Reed e-learning package

Example responses:
Interesting, frustrating, exciting,
Informative, interesting, entertaining
Fantastic, a real tool for the industry
Anticipation, self paced, stylish
Much potential, work at individual pace, easy to use.
Different, interesting, informative
Interesting, achievable, interactive
Interesting, interactive, informative
Useful skills and information, informative
Interesting, new, straight forward
Still teething, good informative, exciting
Good content, interactive
Interactive, engaging, easy to access
Sound, concise, relevant and practical
User Friendly, easy, effective
Good, scientific, detailed

Interactive, informative, excellent
Interesting, informative, logical
Comprehensive, clear, informative
Interesting, Engaging, Informative
Interactive, informative, fun

Would you undertake more e-learning in beef industry related training?

YES – 25 respondents:
No – 0
Comments:
The discussions with landholders (videos) made it easy to put into context and kept if interesting.
You can never know enough and this simplistic (easy to use) but informative package made it a
pleasure to learn.

Section 2: Content - as e-learning package

How easy did you find the e-learning package to navigate?
Easy to use: 1 ('Very hard') 2 – 3 ('I got through ok') 4 – 5 ('piece of cake')

Average response -4.1/5 (range 2-5)

What were the best features of the e-learning package?

Examples of responses:
- It presents the material very clearly and caters to a range of learning styles with the text, spoken and video clips. The links to additional information are presented when useful and are a great aid.
- Follows a logical sequence, can stop and start or go back as required. Interactive e-classroom is great for remote graziers.
- The producer and DAFF videos were very informative. These videos generally contained content which we haven't already been exposed to at previous workshops etc.
- You can go back through it anytime, grass quizzes, resources and links.

What were the worst features of the package?

Examples of responses:
- Some of the navigation issues if you missed something or wanted to hear it again.
- Nothing comes to mind.
- Simply the technical problems experienced with a number of people accessing the program at the same time (videos freezing, cutting off to soon, logon issues, unable to proceed to next page etc).
- Like anything new, refinements needed to remove operational issues.
NB: Post pilot further refinements were made to the e-learning package in line with participant feedback.

Did you find having a video of the trainer (Mentor) in the online learning useful?

YES – 24 respondents
No – 1 respondent
Why or why not?
Examples of responses:

- The material was presented very clearly and the terminology used was appropriate to the audience.
- Information sunk in easy with having the video trainer. Helped make the experience less scary having the trainer talking you through the whole thing.
- It is the basis for the e-learning package, provides reassurance and guidance at you own pace.
- Explained what to do reinforce read learning. It felt more interactive / personable
- Reassuring and informative lends a "human" touch to a program.

Do you think the Subject Matter Expert videos (Bob, Karl, Olivia, Grant, Steve) added to your learning experience or detracted from it? Why?

Examples of responses:
It was good to hear and see from experts out in the field performing the different activities. Good clear pictures used to demonstrate different land conditions.
excellent – critical hearing from the experts rather than actors.
Yes, It is good to gain some extra insight into the topic.
Yes – added next best thing to being in field and seeing for yourself

Section 3: Content-Technically

As a result of this training, could you:

Skill / knowledge	Yes	Not yet
Set up a photo monitoring site (or sites)?	25	0
Assess ABCD land condition?	23	2
Measure tree densities?	23	2
Assess pasture quantity?	22	3
Complete a forage budget?	22	3
Get started using the Stocktake software?	22	3

Section 4 You the Learner

Have you attended a Stock take or Stock take Reef workshop before?

YES – 16 respondents
No – 9 respondent

If Yes, describe how well you think this training represents the traditional training

Examples of responses:
- **Pro:** – self paced and able to be reflective > Resources link provided further info able to stop and read and understand better. **Con:** Can't clarify, nobody to answer questions, anxiety when something technically didn't work as "unknown".
- The virtual classroom session needs to, have a clear structure with objectives. I would consider including an asynchronous discussion board or blog in the design of the course to increase interaction between participants and between the trainer and participants.
- The e-learning package was a great revision tool. There were a few key messages in the face to face workshop that were really hammered home and they didn't seem to be exaggerated enough in the e-learning, eg definition of land condition and tools.
- Quite similar although the ability to "go back" and review context is very useful.

Have you previously studied or completed training online:

YES – 22 respondents
No – 3 respondent

Describe what would need to change (if anything) for you to want to do more learning, networking and / or business online?

Examples of responses:
- Make it cheaper
- Accessing assistance when having issues is important.
- Speed – sitting at computer while it thinks or loads something can make a 20 min presentation into 40 min. Also the interactive online session is excellent – if I could see and talk to other learners it would make me happy.
- High speed NBN in rural areas.
- Purchase new / faster PC, upgrade from wireless internet to faster connections.

Section 5: Where is this going to take you?

As a result of this training, will you?

	Yes	No
Implement Stock take (or aspects of it)?	22	3
Undertake further training from the FutureBeef Team?	24	1
Will you look for further e-learning opportunities?	25	0
Promote this Stock take Reef e-learning package?	25	0

Will you do anything else differently as a result of this workshop?

Examples of responses:
- Look for opportunities to incorporate this package into training for residential students at AACC Emerald and I would be really interested in future interaction with the AACC / DAFF partnerships re training delivery and e-learning in the future.
- I would really like to promote this learning resource, hopefully the barriers can be worked through and the product can be utilised other ways – maybe a CD as an interim measure to overcome the current lack of NBN in regional and remote areas .
- More positive about online training interactive session very good.
- This workshop has improved my knowledge of pasture management, which I will use through studies and in the future.
- I would like to investigate further opportunities to transform other training (within AACC) into e-learning platforms. This pilot has inspired enthusiasm for on line training This e-learning package should achieved expected outcomes as it is easy to access and use, doesn't need great time commitment from the participant, and links learning to practical tasks that reinforces the learning.

Appendix 4. Media releases.

Date:	27 February 2012
Subject:	Beef industry turns to e-learning for training

Beef producers in Queensland are trialling an e-learning training initiative that will deliver online programs in environmental, land and stock management to their doorsteps...or paddocks.

With around 17,000 beef producers in Queensland alone, the traditional mode of face-to-face workshops delivered by several accredited trainers requires participants to travel significant distances. This can be inconvenient and costly, particularly given the vastness of outback Queensland. Some producers also have to wait many months for a workshop to be run in their area.

"The Stocktake Reef e-learning package will provide beef producers from reef catchment areas in North and Central Queensland with access to broadband-based training programs," says project leader Jane Hamilton, of Queensland's Department of Employment, Economic Development and Innovation (DEEDI).

"The e-learning package delivered on the National Broadband Network (NBN) will bring training to them that will help them understand their land condition, develop stocktake pasture monitoring skills and use software tools to assist management decisions around grazing lands."

"The NBN will deliver rich media training typically only distributed in the past via CDRom. Using the high speed capacity and stability of the NBN, DEEDI trainers will deliver online workshops for up to 10 beef producers concurrently, where the trainer will be able to see and communicate with each producer in a virtual classroom set-up," says Kathy Barakis from GVMedia, DEEDI's technology partner for this program.

'Participants will even learn the quality of their own pasture in real time by sharing visuals, with the clarity and speed that only the NBN can deliver.'

DEEDI's FutureBeef program helps commercial beef businesses to become more productive and sustainable through the on-farm adoption of best management practices and technologies. The FutureBeef team uses a range of engagement modes including research projects, facilitated producer groups, field days, producer demonstration sites and training workshops. This exciting expansion into e-learning complements its face-to-face delivery and improves accessibility to information and flexibility of training options for producers.

This project has been made possible through funding from the National VET E-learning Strategy, whose NBN E-learning Programs provide opportunities to create innovative approaches to demonstrate the power of broadband to enhance outcomes for learners, and promote growth in broadband-based training as the NBN rollout proceeds.

The National VET E-learning Strategy is the responsibility of the Flexible Learning Advisory Group (FLAG), a key policy advisory group on national directions and priorities for information and communication technologies in the VET sector.

"Used strategically, this new technological environment is providing unprecedented access to more accessible training and learning opportunities," says FLAG Chair Raymond Garrand, Chief Executive of the South Australian Department of Further Education, Employment, Science and Technology.

Core statements for editorial use

- The National VET E-learning Strategy 2012-2015 ('the Strategy') is aimed at strengthening the Australian training sector's use of new learning technologies, stimulating innovative approaches to increasing participation in training and employment, and improving the skill levels of the Australian workforce
- Investment in the Strategy will stimulate innovative approaches to increasing participation in training and improve the skill levels of the Australian workforce
- To enable the three-year program of action, government funding has been approved to:
  - capitalise on the rollout of the National Broadband Network by demonstrating the benefits of the national investment in broadband
  - support large-scale workforce development in industry through partnerships and comprehensive e-learning advice
  - expand participation and access for individuals through e-learning programs delivering foundation skills and e-literacy
- The Strategy is managed by the Flexible Learning Advisory Group (FLAG), a key policy advisory group on national directions and priorities for information and communication technologies in the VET sector
- The chair of FLAG is Mr Raymond Garrand, Chief Executive of the South Australian Department of Further Education, Employment, Science and Technology.

About GVMedia

GVMedia is an eLearning and Communications technology company with substantial experience delivering award-winning educational, promotional and corporate communications solutions. We partner with subject matter experts (including private and public TAFEs and RTOs) to produce innovative and measurably effective eLearning programs and deploy LMS and integrated online platforms rich in their use of collaboration and 2-way communication tools.

GVMedia delivers to high standards, against PRINCE2 methodology and we are a preferred supplier to federal and state government eLearning panels. GVMedia is currently deploying two NBN trials and is one of the first IT companies to establish a presence on the NBN.

We advocate for innovation, continuous improvement and industry collaboration.

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NBN beefs up learning opportunities for northern Australian producers

GRAZIERS across northern Australia will soon be able to learn how to improve the efficiency and sustainability of their beef operations without leaving their properties thanks to an innovation from FutureBeef and the National VET E-learning Strategy that has modified the Stocktake course for delivery over the National Broadband Network.

Stocktake is a paddock-scale land condition monitoring and management training package that was been developed to provide grazing land managers with a practical, systematic way to assess land condition and long-term carrying capacity, and to calculate seasonal paddock forage budgets.

An NBN connection means that producers will not just be able to participate in online Stocktake training and videoconferencing but also upload photos or videos of pastures and soils on their property in high-resolution to allow accurate identification and targeted group discussion.

Jane Pryor, a Rockhampton-based extension officer with the Queensland Department of Agriculture, Fisheries and Forestry, says this ability to upload as well as download quickly via the NBN appeals to the "practical" nature of most beef producers.

"These days with just about everyone having a smartphone in their pocket, producers with access to the NBN will be able to take a photo of a pasture plant they are unsure about or a landscape within a paddock to identify land condition and upload it in a Stocktake videoconferencing session."

NBN delivery also eliminates the need for what could be a more than four-hour round trip for some producers to attend a face-to-face Stocktake course.

Stocktake workshops delivered by e-learning over the NBN were piloted in a classroom in Townsville in April and connected 26 participants via laptops, headphones and webcam with each other and a remote trainer located in technology partner Global Vision Media's Melbourne studio.

Participants included producers from as far away as Richmond, 500km west of Townsville, trainers and students from AACCo's Emerald campus 500km south of Townsville and industry partners and participants from across Queensland.

"They've described the experience of doing Stocktake over the NBN with words like interactive, engaging, easy to access and entertaining."

Not to mention fast.

With upload and download speeds of around 25mbps coming their way with the NBN, Ms Pryor says producers will be more likely to do the Stocktake course and benefit from the improved communication it offers with peers, scientists and other industry experts.

"It's so different to a couple of years ago when we tried a web conferencing session with a producer on a dial-up connection in Texas in southern Queensland. It was so slow he had time to drop his kids off at the school bus stop 12km away and the material was still downloading when he came back."

Many traditional, face-to-face Stocktake courses have been held across northern Australia since the package was rolled out over ten years ago and Ms Pryor says one unforeseen benefit of NBN delivery is the privacy it offers graziers nervous about being in a classroom-type situation and having to complete tasks like forage budgets.

"Some of them haven't sat in a classroom for a long time and they are much more comfortable working at their own pace and knowing they can get help if and when they need it."

"What I'm excited about is that producers can dive in to Stocktake by e-learning when it suits them to complete the modules or to revisit the information when it's of most use to them."

Ms Pryor said the end of the pasture growing season in April, May and June is likely to be a key time for producers to revisit Stocktake online.

"If they attended a face-to-face workshop in September, they might have forgotten what to look for in their pastures by this time of year so having this e-learning facility will be of huge benefit in evaluating what's happening on their property and making decisions around that."

The package's main aim is to assist producers to quantify the state of their pastures, soils, woodlands and other indicators to identify trends over time in terms of land condition which help determine long-term carrying capacity, profitability and sustainability.

Stocktake is available to beef producers through FutureBeef, a collaboration between the Northern Territory, Queensland and Western Australian governments and Meat & Livestock Australia.The FutureBeef team uses a range of engagement modes including research projects, facilitated producer groups, field days, producer demonstration sites and training workshops. This exciting expansion into e-learning complements its face-to-face delivery and improves accessibility to information and flexibility of training options for producers.