final report

Project code: A.MIN.0080

Prepared by: Jenny Kroonstuiver

MINTRAC

Date submitted: April 2009

PUBLISHED BY
Meat & Livestock Australia Limited
Locked Bag 991
NORTH SYDNEY NSW 2059

Flexible delivery of the Diploma of Meat Processing

Meat & Livestock Australia acknowledges the matching funds provided by the Australian Government and contributions from the Australian Meat Processor Corporation to support the research and development detailed in this publication.

Executive summary

The Australian meat industry is utilising a wide range of software products to capture, store, analyse and report on data gathered in meat processing establishments. Although the industry is essentially a labour intensive, hands-on industry, behind the scenes there has been a rapidly increasing use and reliance on Information Technology for information management, data collection and reporting.

This project sought to identify the immediate skills and training needs of Quality Assurance and Meat Inspection personnel at meat processing plants. In addition it also investigated the emerging and future technology developments which may require a higher level of skills among Quality Assurance personnel.
A questionnaire was developed and distributed at all MINTRAC Meat Inspection and Quality Assurance network meetings between July and December 2008.

In addition, face-to-face meetings were held with a variety of people and companies who either relied on the Information Technology skills of company personnel to provide information, or who were providers of Information Technology software to the industry. It was soon evident that there was a clear need for increased Information Technology capacity and skills in Quality Assurance Managers. Most had learned skills on an *ad hoc* basis as they needed them and were often among the limited number of on-plant system users. They lacked a comprehensive understanding of the software systems they were using, and correctly perceived that these demands would increase in the future.

Many plants were using multiple software systems and there was little evidence of comprehensive planning, integration, training and implementation. There was a strong reliance on help desks and external Information Technology support systems.
It was established that there is a shortage of systems, networking and infrastructure knowledge in the industry. In some cases there was evidence of multiple software systems having been purchased, sometimes duplicating existing capacity, with little understanding of whether they would integrate with other programs, intranet capacity or infrastructure. Nor was there evidence of on-plant capacity to assess the value of a proposed software system to the business.

Once installed, there was little evidence of a planned approach to maintaining data integrity and security, storage and back-up, staff training or succession planning. Most staff appeared to rely on just-in-time trouble shooting to expand their skills, drawing on colleagues, helpdesks or instruction manuals as required.

It is clear that some industry-wide solutions are required to address the rapidly increasing use of information technology solutions across the industry. The lack of capacity across the industry to assess, compare and analyse proposed systems in terms of plant requirements is a concern. Opportunities to achieve industry-wide cost savings through a system-wide adoption of some IT solutions have been lost or overlooked, or insufficiently promoted.

Four recommendations are made:
1. That MINTRAC identify and customise professional development courses in form building in InformationLeader. These courses should be included in the 2009 July-December MINTRAC professional development program.

2. That MINTRAC should develop a meat-industry focused training program for develop, interpreting and analysing reports in Excel.
3. That an Information Technology Scholarship program be developed as a research and Development project for 2009-11.

4. That discussion occurs between AMIC, MLA and AMPC to develop a more coordinated and pro-active industry wide-approach to the development and adoption of information technology systems and infrastructure.

Contents

1 Background

The Australian meat industry is utilising a wide range of software products to capture, store, analyse and report on data gathered in meat processing establishments. Although the industry is essentially a labour intensive, hands-on industry, behind the scenes there has been a rapidly increasing use and reliance on Information Technology for information management, data collection and reporting.

One of the most prominent developments has been the introduction and update of the Information Leader product to gather the Quality Assurance data at works in the export and domestic sectors. The use of this system to allow for on-site interrogation and audit by the regulator as well as the trials of on-line auditing by remote auditors has emphasised that electronic data gathering is going to place new requirements on industry personnel. Likewise the electronic recording of meat inspection results as currently being trialled with an Animal Health Australia will expand the required number of people who can enter and retrieve data on plant.

This requirement for some Information Technology skills among operators, meat inspectors, Quality Assurance officers and managers may well require a systematic approach to servicing an industry need for the upskilling of its personnel. This would be relatively easy in metropolitan areas where Information Technology trainers are located or in regional areas where a large processor can free up staff to create a critical mass which can justify training.

However the bulk of abattoirs will only ever have two or three staff requiring training at any one time. This in turn will require the industry to put together customised training to address the specific needs of its personnel. In addition there will need to be industry organised training that enables a range of companies to send personnel to industry co-ordinated programs.

This project sought to identify the immediate skills and training needs of Quality Assurance and Meat Inspection personnel at meat processing plants. In addition it also investigated the emerging and future technology developments which may require a higher level of skills.

2 Methodology

A questionnaire (Attachment 1) was developed with the assistance of Paul Williams, from Norvic. This questionnaire was then distributed at all MINTRAC Meat Inspection and Quality Assurance network meetings between July and December 2008. A total of 20 completed questionnaires were received – many asked to take them away from the meeting and complete them later, but very few of these were returned. However, a good spread of plants was represented across the twenty responses received and the needs and trends were clear.

In the questionnaires, respondents were asked to:

- identify the systems and processes currently in use in their plant, the number of people who could use them, and to provide an estimate of the shortfall (if any) in trained users
- list the skills required to work with the electronic systems currently in place and to identify the scope and shortfall of these skills in their plant
- list the training methods currently used in their plant to acquire these skills
- identify what they believed were the future needs of their plant
- indicate the current and most urgent training needs at their plant

- nominate their preferred training method.

In addition, face-to-face meetings were held with a variety of people and companies who either relied on the Information Technology skills of company personnel to provide information, or who were providers of Information Technology software to the industry.

These interviews included:

- AUS-MEAT
- Geoff Yarham, Swift Australia Ltd (briefly, by telephone)
- Lorna Citer, Animal Health Australia
- John Kitto – InformationLeader
- Sastek/Cedar Creek
- Thorsys Australia
- Des Bowler - Management For Technology Pty Ltd
- Rebecca Underwood, Meat and Livestock Australia
- Carol Sheridan, AQIS.

The interviews explored the perceived shortfall in plant-based Information Technology skills, as well as the emerging and future developments which would require higher order Information Technology skills.

3 A selection of systems used across the Australian Meat Industry

As this project progressed it became evident that there is a wide variety of systems and programs in use across the meat processing industry. In this section a brief overview of some of these systems is provided, with information drawn predominantly from their website or from discussions with the suppliers.

The following information illustrates the diversity of systems in use, differences in user requirements, and the duplication of capacity.

3.1 AUS-MEAT's OsCap system

The On-Site Correlation And Practice system (OsCap) provides correlation and practice for:

- chiller assessment
- high marbling endorsement
- maturity assessment (ossification)
- subcutaneous rib fat
- total rib fat
- eye muscle area
- MSA marbling.

OsCap automatically provides records of correlation for Quality Assurance systems.[1]

[1] Source: http://www.ausmeat.com.au

3.2 InformationLeader

InformationLeader is a software solution designed to manage auditable data in regulated environments. Information is captured on business forms and workflows in an intuitive web based system that can be easily customised to meet specific business needs.
With compliance and traceability in mind, InformationLeader has been purpose built with a robust feature set to ensure compliance with regulatory requirements worldwide.[2]
The Australian Meat Processor Corporation (AMPC), the Australian Meat Industry Council (AMIC), and the Australian Quarantine and Inspection Service (AQIS) are using InformationLeader to trial AQIS Auditing of Export Meat Establishments over the Internet.
The extensive trial is testing the use of InformationLeader to verify the approved documentation, forms, and quality manuals at seventeen leading meat processing plants in Australia.

InformationLeader offers a highly customisable system that is configurable by end users with no prior programming experience. Trained end users can change form layout and design, applying features such as alerts and email notifications, connections to external databases, workflows and document attachments with full confidence that all form templates will have the traceability required to capture the compliance information demanded by the current best practices for the industry. There are also dozens of highly configurable, pre-made templates available for InformationLeader that replicate paper based forms from a wide range of regulated industries.[3]

3.3 Thorsys Australia

The Thorsys Abattoir System encompasses standard proven hardware and software components installed at a number of abattoirs throughout Australia. The system is fully modular and can be compartmentalised and designed to suit the requirements of any installation.

The Thorsys' Abattoir System provides the functionality required to monitor, analyse and keep track of Stock and Inventory Control, Carton Weighing, Loadout, Slaughter, Boning Room Input and Livestock/Feedback subsystems.
In addition to the standard modules, Thorsys can also provide functionality and expertise in the areas of Costing and Traceability. These modules are usually re-designed to suit the individual needs of our clients.

The Thorsys' Abattoir System is designed to operate in a standard Windows environment interfacing to standard SQL databases, thereby minimising operator training and protecting investment. The system is developed using C++ and Microsoft SQL database management for transaction processing and storage of reference data for the plant equipment. Database management and data manipulation is performed with Microsoft SQL database management.

Finally a Microsoft Access front end is used for the BackOffice application, including generic file maintenance, inquiries and reports.[4]

3.4 Cedar Creek

Boning Room System (BRS)

[2] Source: http://www.informationleader.com/
[3] Theta Technologies "*Can electronic systems foster compliance?"* www.InformationLeader.com
[4] Source: http://www.thorsys.com.au

The Boning Room System software comprises of the Boning Room Production In-feed module, the Weigh/Label System and the Yield & Recovery Analysis module. The Boning Room In-feed and Weigh/Label System software modules utilise data from Cedar Creek's:

- Specification & Label Control module and
- Production Scheduling & Control module

Grading System

Cedar Creek's Grading System is a part of its integrated Production Management & Control System, but it can also be used as a stand-alone system.

Our Grading System:

- Provides comprehensive functionalities and comprise of ID/Live-weight Stations, Animal Health Stations, and Carcass Grading Stations.
- Uses the same Grading System software module, with different operator input screens and functions being available according to the designated use of each station.
- Is based on our own HEC Touchscreen computer connected to the network and to appropriate peripherals, such as track scales, barcode scanners and printers.
- Allows carcass identification and tracking which can be enhanced by the use of RFID tags, with RFID readers connected to the KFS stations to automatically track carcass IDs.
- Takes data from Product Specification and Outputs to the Scheduling and the Inventory modules.

Weigh / Label System

The design of Cedar Creek's Weigh/Label Systems is modular. It is based on WLS software module, and comprises of a HEC Touchscreen Unit; Scale base/indicator unit; and either a printer (for manual labelling) or a fully automatic label applicator with a printer.

Procurement & Payment System

The Procurement & Payment System provides a complete solution for procurement.
The system enables:

- Bookings to be managed from their initial purchase with vendors and sale yards suppliers, through to their payment.
- Product value and locations to be tracked from receipt, right through the processing chain. Internet enabling is a major strength of this system.[5]

3.5 Animal Health Australia

The National Animal Health Information System provides timely and accurate summary information on Australia's animal health status to support trade in animal commodities and meet Australia's international reporting obligations. It also provides information on Australia's capabilities and activities with regard to animal disease surveillance and control.

The system has two major functional objectives:

- Collect relevant, existing summary data on animal health status from the Commonwealth Government, states and territories and selected nongovernment agencies as required by Animal Health Australia's Members.

[5] Source: http://www.cedarcc.com

- Collate, manage, analyse and report on data and information collected, to accurately reflect Australia's animal health status as well as its surveillance and disease control activities and capabilities.

Animal Health Australia is currently running a trial collecting data from 7,000 lines across 10 abattoirs on endemic diseases. The data is being collected by Meat inspectors appointed to collect the data. They use a touch screen linked to the Company's software, then the information is uploaded by running reports into NHIS. The NHIS is a Sequil-based database.[6]

3.6 National Livestock Identification Scheme

NLIS uses machine-readable Radio Frequency Identification (RFID) devices to identify cattle. NLIS approved devices come in the form of an ear tag or rumen bolus/ear tag combination. Cattle are tagged with NLIS devices only once in their life unless the device becomes detached. In that case, if the orginal number is known, the replacement should be recorded and linked on the NLIS database, to maintain 'lifetime traceability'.

NLIS devices may be provisionally or fully accredited. If a device is provisionally accredited, the NLIS Standards Committee is satisfied that it is demonstrating compliance with the system's performance requirements (for criteria such as retention and readability), but the device has not yet completed a three year field trial.

Cattle identified with NLIS devices can be read electronically as they move through the livestock chain. At time of reading, each owner’s PIC can be recorded and linked to the NLIS device. This transaction information is then stored in the secure central NLIS database.

A life record of an animal’s residency and all animals it has interacted with is established. It is this centrally-stored electronic history of an individual animal’s residency that enables rapid and accurate traceability.[7]

3.7 Meat Standards Australia

Meat Standards Australia™ (MSA) is a beef and sheepmeat eating quality program that labels beef and sheepmeat with a guaranteed grade and recommended cooking method to identify eating quality according to consumers perceptions. MSA certified graders collate information from the producer, supervise processing standards and collect individual carcase attributes using a uniform set of standards.

Individual beef carcase attributes collected include breed content, meat colour, fat depth, marbling, maturity and ultimate pH. Results are allocated to the carcase including individual primal quality grades, days of ageing required and recommended cooking method.

The MSA graders collate information provided from the cattle supplier, through the MSA vendor declaration, with abattoir information and chiller assessment detail. The data is entered into a hand held computer that enables a complex statistical calculation to be made estimating the interactive effect of all factors on eating quality. Information on each carcase is provided to the abattoir and the supplier in MSA feedback.

[6] Source: Animal Health Australia
[7] Source: http://www.mla.com.au/

3.8 Refrigeration Index

The Refrigeration Index (RI) is a term used in the Export Control (Meat and Meat Products) Orders 2005 which came into effect from 1 July 2005. RI is used to assess effectiveness and regulate meat refrigeration processes throughout the Australian industry.

The RI is an index for the log growth of *E. coli.* It predicts the expected growth from temperature and other data. The current RI model allows for the user to enter data mainly on temperatures of the product over time. The model also has values for pH, water activity and lactate concentration which in addition to temperature, all affect the growth rate of *E. coli*.

The central idea of the RI is to measure the performance of the chilling process until all thesites of microbiological interest are at or below 7oC. This is the temperature at which *E. coli* and Salmonella stop growing.

The RI calculator has been developed by Meat & Livestock Australia based on the predictive model for E.Coli growth rate and algorithms for population growth developed at the University of Tasmania.[8]

MINTRAC developed an e-learning version of the RI training program for use by individual Quality Assurance personnel at plant level. While data on the level of uptake of the elearning Version is not available, it is clear that there is a preference for the face-to-face training sessions.

[8] Source: MINTRAC training and assessment materials

4 Findings

QA Managers

The following systems and programs are currently in use in the plants who participated in the review:

- InformationLeader - in about 50% on the plants covered; generally widespread use on-plant
- MECS and Thorsys – in use in two respondent plants only
- SASTEK/Cedar Creek – in use in 50% of the plants
- OsCap – in 12 of the 20 plants
- MSA reporting – in 7 of the plants covered
- AQIS risk ranking – in 7 of the plants covered
- NLIS – in 12 of the plants covered
- Refrigeration Index – in 16 of the twenty plants
- Electronic MTC – in 4 of the plants
- Microsoft Office Suite – in widespread use across all plants
- Other systems listed by individual plants included: DAISY, Promadis, SAGE, MainPAC, Electronic monitoring of maintenance systems, TRITON, Carlton Manager, Exdoc.

> *"Even top management, who think they may not need training, should know how to analyse and interpret results"*
>
> Questionnaire respondent

In the larger plants, the number of users of various systems was generally widespread, but in smaller plants the experienced users tended to be restricted to one or two people.
Most people indicated that although they may have received some initial training by the software or systems supplier, they had gained their skills by working with colleagues or teaching themselves. A few relied on the instruction book or had attended an external workshop. Only six people indicated that they had the requisite skills before they commenced work with their plant.

> *"The current skills are either organically grown within the smaller sized processors or externally sourced for the large end of town (Swift, Teys, etc) that have brought people in from outside of the meat industry.*
>
> *"From the QA perspective there is a considerable lack of understanding of the importance of information systems as a key quality management system element. E.g. if you can't control or manage the collection, processing, storage, retrieval and analysis of core business information related to operational and compliance activities, you have a significant shortcoming in your quality management system."*
>
> Des Bowler - Management For Technology Pty Ltd

When asked about their future needs, most respondents predicted an increase in their company's reliance in information technology systems as being critical to the business success

of the plant and integral to the company reporting and management systems. Over 75% of respondents claimed that the ability to read and interpret electronic data was becoming part of the daily requirements of the Quality Assurance Manager. Many predicted that their customers would increasingly demand electronic reporting and that their own roles would increasingly require ability to undertake data analysis and interpretation. Nearly 75% of respondents indicated that they felt that all supervisors and above would need to become familiar with computerised information management systems.

Respondents were asked to indicate what they felt were the current most urgent training needs at their plant. Responses to this question were diverse but two areas were clear:

- form building in InformationLeader
- ability to develop, interpret and analyse reports in Excel.

In addition some plants reported a significant shortfall in the current skills areas:

- logging on and undertaking basic navigation of various systems
- inputting data
- accessing and interpreting screen information
- using software to conduct statistical analysis of data and graph data.

Respondents were also given six possible methods of delivery for training, and asked to rank them. The results were, in order from most preferred to least preferred:

- specific software training for a small group on plant
- generic classroom computer training
- intensive training by a workplace mentor
- one-on-one by an external trainer while using a specific software package
- on-line training
- off-plant intensive training in a simulated meat plant.

4.1 Face-to-face meetings

Software suppliers

Most suppliers indicated that they provided on-plant training at the time of installation and then help-desk support as required. There was however, a consistent theme in their perception of the major issues affecting the ongoing effective use of the systems on-plant.

These included:

- lack of consistent practice using all aspects of the software, hence ability to use various components was forgotten
- lack of basic understanding of how a computer works and the main functions
- often no dedicated IT personnel on-plant able to undertake trouble shooting or provide on-the-spot assistance
- no internal training to accommodate staff changes
- lack of management level understanding or appreciation of the system
- general inability to interrogate data.

Without exception the suppliers predicted that there would be increasing sophistication in their products, such as

- wireless and touch screen
- voice recognition
- finger scanning
- bar coding.

As these changes are gradually introduced, they predicted that meat processing companies would need to assess and address related issues such as:

- security implications
- capacity to assess business potential/impact of new development
- infrastructure capacity and forward planning
- convergence – systems 'talking' to each other.

Regulators

The respondents in this category included auditors and data recipients. They all expressed a view that there was generally limited on-plant capacity to effectively use and interrogate the systems. Issues identified included:

- inadequate password management systems
- inadequate on-plant hardware and connections
- inability to check data, take correlations
- capacity to use systems restricted to too few people; no succession planning
- limited systems knowledge and understanding
- inconsistent industry approach to software systems – multiple systems in place, poor roll-out and follow up of systems such as InformationLeader.

Others

Respondents in this category had the capacity to step back and look at the use of Information Technology systems and planning across the industry. Some of their observations included:

- limited understanding implications and consequences of systems at plant level
  - reliance on the advice of the suppliers
- limited data integrity and validation; control systems
- no ability to compare and evaluate systems – essentially need training on every system; view is based in knowledge of the individual system
- reactive approach to dealing with Information Technology – very little forward planning or assessment of business, infrastructure and security implications of new developments
- tendency to rely on on-plant personnel to 'skill-up' – many simply do not have the capacity or time to gain the depth of understanding required to effectively manage technological change
- in an ideal world there would be personnel within the plants who would obtain the fundamental information system skills (~Certificate IV level), then a process for detailed training on each of the major current industry systems (SASTEK/ Cedar Creek, Thorsys, Triton, iLeader, etc) and then training covering the meat industry quality management issues related to information systems
- there is an issue with the mind sets of quality assurance personnel and information system personnel. Very few people have the aptitude to comprehend, obtain and apply the necessary skills across both disciplines
- at the higher management levels there is a need for degree level information system professionals providing management direction
- there is a need for a process for recognizing meat industry information systems specialists as well as providing ongoing vocational training for these specialists
- there may be potential for the MLA undergraduate program (students over the Christmas break) to undertake some work in the areas of documenting the industry current skills, finding potential courses etc.

Discussion

When this study commenced, it was anticipated that there would be a clear need for increased Information Technology capacity and skills in Quality Assurance Managers. This was soon evident in the responses from the Quality Assurance staff. Most had learned skills on an *ad hoc* basis as they needed them and were often among the limited number of on-plant system users. They lacked a comprehensive understanding of the software systems they were using, and correctly perceived that these demands would increase in the future.

The wide diversity of systems in use was surprising. Many plants were using multiple software systems and there was little evidence of comprehensive planning, integration, training and implementation. There was a strong reliance on help desks and external Information Technology support systems – this was confirmed by the suppliers. On the whole knowledge of systems and capacity to use them was restricted to a small group of immediately affected personnel. For example, the average number of plant-based users of the following systems was:

System	Ave. No of users
Oscap	3
MSA	4
NLIS	3
MECS	4
Refrigeration Index	2
I-Leader	10
SASTEK	6

This means that changeover of personnel poses a threat to companies which do not have succession planning systems in place. It was clear that most do not as training appears to occur mostly on an as-needed, reactive basis.

What was relatively unexpected was the universal lack of systems, networking and infrastructure knowledge in the industry. In some cases there was evidence of multiple software systems having been purchased, sometimes duplicating existing capacity, with little understanding of whether they would integrate, intranet capacity or infrastructure. Nor was there evidence of on-plant capacity to assess the value of a proposed software system to the business.

Once installed, there was little evidence of a planned approach to maintaining data integrity and security, storage and back-up, staff training or succession planning. There were numerous anecdotes of one or two people receiving user training for a system, then leaving the plant and taking all the knowledge with them. Similarly there were many examples of staff having received some intensive up-front training, and then forgetting how to use key aspects of the system either because there was no call for regular use, or simply because of ‘information overload’ at the start. Most staff appeared to rely on just-in-time trouble shooting to expand their skills, drawing on colleagues, helpdesks or instruction manuals as required.

It is clear that some industry-wide solutions are required to address the rapidly increasing use of information technology solutions across the industry. The piece-meal adoption of a multiplicity of systems creates duplication, infrastructure capacity issues and frustration among regulators who must learn to use and interrogate a variety of systems. The lack of capacity across the industry to assess, compare and analyse proposed systems in terms of plant requirements is a concern.

Opportunities to achieve industry-wide cost savings through a system-wide adoption of some IT solutions have been lost or overlooked, or insufficiently promoted.

5 Recommendations

The following recommendations are made:

1. That MINTRAC identify and customise professional development courses in form building in InformationLeader. These courses should be included in the 2009 July-December MINTRAC professional development program.
   In developing these courses, MINTRAC will need to negotiate with AMPC and Theta Technologies in order to:
   - identify suitable trainers
   - develop cost-effective, customised delivery strategies.

   Wherever possible, a 'train the trainer' approach should be used to ensure that recipients of this training have the skills to provide ongoing training and support to other plant-based personnel. To this end, RTOs should be included in the training programs offered.
   It is also recommended that a self-paced e-learning version of the training be developed for use in locations where insufficient numbers are available to warrant running a face-to-face course.
2. That MINTRAC should develop a meat-industry focused training program for develop, interpreting and analysing reports in Excel.
   Wherever possible, a 'train the trainer' approach should be used to ensure that recipients of this training have the skills to provide ongoing training and support to other plant-based personnel.
   These courses should be included in the 2009 July-December MINTRAC professional development program.
   It is also recommended that a self-paced e-learning version of the training be developed for use in locations where insufficient numbers are available to warrant running a face-to-face course.
3. That an Information Technology Scholarship program be developed as a research and Development project for 2009-11 (see Attachment 2). This two-year project is for the provision of up to five Diploma level or higher scholarships in Information Technology to be offered across Australia during 2009.
   The applicants would be selected specifically for future employment in the meat industry, and would receive additional training to become familiar with meat industry enterprises, IT systems, technology and equipment.
4. That discussion occurs between AMIC, MLA and AMPC to develop a more coordinated and pro-active industry wide-approach to the development and adoption of information technology systems and infrastructure.

6 Attachment 1: Electronic data collection and analysis in meat processing plants

Interview questionnaire
This MINTRAC project seeks to research a strategy to address the impact of electronic QA data capture and reporting systems on the training needs of QA staff and the regulatory staff that use the systems to interrogate the databases and audit the QA systems.

1. Systems and purposes

Current scope of system types and their purposes at your plant	Are these in use at your plant?	How many people can operate them?
Information Leader		
QTS for training record management		
MECS*		
Thorsis		
SASTEK		
Stock management system		
finance and payroll systems (e.g. Finance One, MYOB, Quickbooks)		
Oscap – AUS-MEAT chiller assessment reporting		
MSA reporting		
AQIS Risk Ranking		
NLIS		
Refrigeration Index		
Electronic MTC		
Microsoft Excel		
Microsoft Access		
Microsoft Word		
Email		
Other: please add		

2. Skills

What general skills are needed to operate these systems?	How many people at your plant currently have these skills?	How many should have these skills?
Basic user		
logging on to an information management system		
undertaking basic navigation of the system		
using input mechanisms (e.g. pages, screens, forms)		
inputting data using various data types and input devices such as bar codes, scanners, keyboard and input pen		
Advanced user		
explaining application structure (e.g. tabs, modules, accounts, pages)		
managing password and security		
accessing and interpreting screen information		
Producing a report		
Utilising software to conduct statistical analysis of data and graph data		
Analysing and interpreting reports		
On-plant administrator		
applying/removing an electronic signature or other tracking mechanism (where applicable).		
Designing a report/form		

Training

Please tick the methods currently used in your plant to acquire basic or advanced operator skills for your electronic systems.

Training method	✓
Training by software or systems supplier	
Trial and error – I taught myself	
I rely on the instruction book	
We train each other	
External workshop	
I had the skills before I started with this plant	

3. The future

Please tick (and comment on, if appropriate) any of the statements below which accurate describe **the future needs of your plant**.

	✓	Comment
I think we'll continue to rely on paper-based systems		
Current training practices will be adequate to meet future needs		
Our customers are increasingly demanding electronic reporting		
Increased use of electronic systems will lead to improved business success of the plant		
We will increasingly use electronic data capture, reporting and management systems		
Data interpretation and analysis is becoming more and more challenging		
I want to be able to develop and produce my own forms and reports		
More and more data entry operators will be required		
Ability to use and interpret electronic data is becoming part of the daily requirements of QA Manager		
Ability to use and interpret electronic data is becoming part of the daily requirements of QA Officer		
There is a need for all supervisors and above to become more familiar with computerised information management systems		

4. Current urgent training needs for using electronic systems

Please list what you consider to be the current most urgent training needs at your plant (list as many as you like)

Need	Comment

6. Preferred training method

Using a **1** (most preferred) to **6** (least preferred) ranking, rank the preferred delivery mode for this training.

Mode of training	1-6, in order of preference
One on one by external trainer while using a specific software package	
Generic classroom computer training	
Specific software training for a small group on plant	
Intensive tutoring by a workplace mentor	
Off plant intensive training in a simulated meat plant	
On line training	

Thank you for participating!

Please hand this back at an MI&QA meeting
Or
Fax to MINTRAC on 02 9819 6099

7 Attachment 2: Research and Development Project proposal

14: Information Technology scholarship

Summary description

This two-year project is for the provision of up to 5 Diploma level or higher scholarships in Information Technology to be offered across Australia during 2009. The applicants would be selected specifically for future employment in the meat industry, and would receive additional training to become familiar with meat industry enterprises, IT systems, technology and equipment.

Project classification
Capacity Building

Background and project description
The current MINTRAC R&D project investigating the IT skills and requirements for QA Managers has revealed a broad shortage of information systems skills across the meat industry. In most cases skills have developed on an as-needs basis at a plant level, or are externally sourced as required through service providers. As a result, there is minimal capacity across the industry to analyse systems and to integrate and use them as a key andeffective component of the Quality Management system.

It is proposed that Diploma level or higher scholarships in Information Technology be offered to a group of 5 applicants across Australia during 2009. Essentially the program would include:

- an introductory meat industry familiarisation workshop prior to course commencement
- paid enrolment (to a maximum of $10,000) in an approved IT course previously assessed as meeting industry requirements
- employment in the meat industry through the MLA Graduate program
- minimum of 6 weeks compulsory placement (paid employment) with at least one meat processing company and/or relevant systems supplier during the period of training
- opportunity to become familiar with a range of meat-industry relevant systems (e.g. iLeader, Sastek, NLIS etc) through a series of intensive workshops (or similar). Each applicant will be eligible for up to $5,000 claimable expenses to cover travel and accommodation costs
- an undertaking by the applicant to remain with the meat industry for a minimum of one year after graduating
- regular promotion of the students and their progress to the industry throughout the course of their study period.

Project duration

Commencement date:
1 July 2009

Completion date:
30 June 2011

Project objectives
This project seeks to:

- improve the systems understanding and internal IT capacity of meat processing companies
- provide employees to the industry who have meat-industry relevant IT skills and an understanding of industry systems and requirements
- provide a model for companies to utilise when recruiting their own IT specialists.

Project outcomes
Products
Five Information Technology graduates ready for employment in the meat industry.

Technology transfer
The five graduates will be able to analyse and provide advice about optimal use of current and new systems for meat processing plants.

Relationship with industry priorities
MINTRAC Strategic Plan 2009-2012
Objective 3 - Enhance capability to provide a timely and flexible response to the needs of industry.

Strategy 3.2
Maintain and improve professional development opportunities**.**

MLA Strategic Plan 2008-2012
4.1 Increasing adoption of R&D outcomes Strategies
1. Deliver tools, information and learning opportunities that deliver clear benefits to individual enterprises
4.2 Building world-class skills and innovation capability Strategies
2. Implement professional development programs to ensure the industry remains an attractive career destination and employer of choice for young people in the future

AMPC Strategic Plan 2008-2011
5.1 Improving processing efficiency and market competitiveness Objective: Encouraging programs to improve capability in the adoption of new technologies
5.3 Addressing labour shortages and improving OH&S Objective: Increasing the adoption and availability of technologies that allow for wider labour force participation

Consultation undertaken
One-paragraph project descriptions were circulated to the MINTRAC Board in November 2008.

This project was proposed to the MINTRAC Scholarships Committee in November 2008, and rejected. Since that time, a number of modifications have been made to the project proposal.
During the course of developing this Project Description, ongoing discussions were held with Rebecca Underwood from MLA, and Des Bowler from Management for Technology Pty Ltd. This project was discussed with MLA staff including Sean Starling, Phil Franks, Ian Jenson and Kristina Garlinge on 27 January 2009. Some adjustments to the project were made following that meeting.

Leveraging opportunities
It is expected that companies such as SATEK, Cedar Creek, Theta Technologies etc will support the program by providing complimentary introductions to their systems.

Project milestones
In addition to the written milestone reports described below, progress reports are provided to key stakeholders as follows:

- MLA - through monthly face-to-face meetings
- MINTRAC Board – quarterly written reports
- AMPC and AMIC – quarterly written reports.

Milestone 1 (October 2009)

- Project plan developed
- Marketing strategies identified
- Companies willing to provide employment placements identified
- Student recruitment commenced
- Interaction with MLA Graduate program described
- Student support processes identified
- Supplier commitments gained.

Milestone 2 (April 2010)

- Progress report on all student enrolments
- Progress report on industry familiarisation activities and placements
- Recommendations for program adjustments based on project experiences to date.

Milestone 3 (October 2010)

- Progress report on all student enrolments
- Progress report on industry familiarisation activities and placements
- Recommendations for program adjustments based on project experiences to date.

Milestone 4 (May 2011)

- Progress and destination report on all students
- Evaluation of project process and outcomes
- Recommendations for future activities relating to Information Technology capacity and services in the meat industry.

Nominated Project Officer
TBA