ECR
Efficient Consumer Response
AUSTRALASIA

Data Integrity & Synchronisation

Building a foundation for industry collaboration

AUSTRALASIA

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ECR Australasia – working together for total customer satisfaction

Efficient Consumer Response (ECR) is an industry initiative to develop a consumer driven supply chain, through businesses and trading partners working together.

In doing so, ECR best practice will deliver superior business results by reducing costs at all stages throughout the supply chain, achieving efficiency and streamlined processes. ECR best practices can deliver improved range, consumer value, sales, service and convenience offerings. This in turn will lead to greater satisfaction of consumer needs.

ECR Australasia reflects a commitment to take costs out of the grocery supply chain and better satisfy consumer demands through the adoption of world's best practice. In an increasingly global food and grocery industry and a business environment subject to rapid change, the future for Australian and New Zealand suppliers, retailers and wholesalers depends on increased efficiencies, reduced costs and added value for consumers. Influences such as global sourcing, new retail formats and channels, international retailers, competing products and services and technological innovation have all contributed to the pressure for change.

ECR Australasia is an initiative of manufacturers, retailers and wholesalers in the Australian and New Zealand food and grocery industry and is supported by the respective industry associations.

Launched in November 1999 and directed by a board of nine senior industry executives, ECR Australasia seeks to build on earlier collaborative work in the industry in Australia and New Zealand and to access the outcomes of global ECR related activities and the Global Commerce Initiative. Experience and leading practices from around the world are combined with local learnings and developments to generate a roadmap to take the Australasian food and grocery industry forward. This work is directed through the challenging program set by the ECRA Board and made possible by project teams with members from manufacturers, retailers and service providers and by consultants committed to the development of the industry.

The "Data Integrity & Synchronisation" report addresses an underlying cause of many of the problem areas facing the industry – miscommunication and poor master data quality leading to waste, rework, stock-outs and ultimately higher costs and lower service. Data integrity & synchronisation has been recognised in Australasia and globally (through the Global Data Synchronisation program) as a basic requirement for ongoing, scalable trading partner collaboration. Collaboration between trading partners is, in turn, a core concept for ECR and for future industry development.

A key component of the infrastructure needed to implement data synchronisation is a "data pool". A data pool is an external electronic catalogue of standardised master item data and is the foundation for the electronic exchange of data between trading partners. Australasia has, with EANnet®, a data pool which supports both item and regular price data and yet uptake by the industry has, thus far, been modest. This report builds on the global business requirements and standards that have been developed and documented by EAN•UCC, focusing on the benefits of data integrity & synchronisation and how to make it work in Australasia.

For more information about ECR Australasia, visit **www.ecraustralasia.org.au**

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Executive summary

This report has been developed by a team of consumer packaged goods (CPG) manufacturers, grocery retailers and wholesalers brought together by Efficient Consumer Response Australasia (ECRA). The ECRA Board commissioned this work to facilitate progress towards full implementation of data integrity and synchronisation (DIS) across the Australasian grocery industry based on a single regional data pool, EANnet®.

The direct benefit to the Australasian grocery industry through the implementation of DIS is estimated to exceed A$70 million per annum. While this direct benefit is significant, the real driver for DIS implementation is to build a robust foundation for effective, efficient, sustainable and scalable industry collaboration. Numerous studies, including the ECRA Tracking Study 2002, have highlighted that the majority of the remaining benefits from ECR (estimated in the ECRA Tracking Study 2002 to be greater than A$1 billion in operating cost savings and A$800 million in inventory reduction) will only be achieved when collaboration between trading partners is the everyday way of doing business. DIS is an essential enabler – without it, much of the effort on collaboration is likely to be wasted and the potential benefits will remain untapped. Understanding and implementing DIS is therefore the critical next step for the advancement of the Australasian grocery industry.

There are five key recommendations.

- Implement DIS now. All major Australian grocery industry partners are now agreed on a compatible DIS framework. Investment in a single EANnet based DIS solution can now cover the whole industry. In NZ industry players have an opportunity to move quickly to take advantage of DIS developments pioneered in Australia.
- Leverage EANnet across the industry. The EANnet data pool is based on global standards and is a key enabler for effective DIS within the region and across the world[1]. The alternative of multiple DIS data pools within the region is likely to add cost, create uncertainty and significantly slow the progress of DIS in Australasia.
- Think strategically (collaboration), act operationally (data integrity). DIS requires vision and leadership to set direction and objectives, but implementation will require a new level of focus on day-to-day operations, on the use of integrated master data and on the processes and systems essential to manage it.
- Build sustainable DIS solutions. Recognise that DIS implementation is more than one-off data cleansing and that ongoing product information management is a critical component of internal and external DIS. As DIS becomes a foundation for collaboration, it must be robust.
- Anticipate moves towards full electronic trading. Across the industry, retailers will require all manufacturers to use electronic communication for orders, invoices and for collaborative information exchange. DIS, itself maintained by electronic communication, will provide the basis for touchless transactions.

The following statements from leading retailers in Australia and NZ make it clear that now is the time to act, across the industry, on data integrity and synchronisation.

"Our expectation is that all manufacturers will move to synchronise their data with Coles via EANnet by the end of 2004. This coincides with the go-live of a new merchandising system, which has been designed for electronic commerce. After this time the processing of Universal Buying Forms (UBFs) will start to be phased out by Coles"

COLES MYER LTD

[1] Note that EAN Australia is working towards the certification of EANnet as an EAN•UCC compliant data pool and has committed to the participation of EANnet in the Global Data Synchronisation Network (GDSN) – see Appendix C

"The three Foodstuffs companies will work together to define data requirements for EANnet and promote the system. Product data will be seamlessly integrated from EANnet to Foodstuffs' back office systems. Ultimately the Universal Buying Form will be discarded in favour of EANnet"

FOODSTUFFS

"Metcash is working with our trading partners to ensure that the communication and synchronisation of product data is facilitated through EANnet. We envisage that the necessity for paper Universal Buying Forms (UBFs) will be phased out from 31st December 2004 and replaced with electronic PRICATs[2] which will populate our internal systems"

METCASH TRADING LTD

"Electronic trading is critical to continuing to reduce the cost of doing business, and improving prices for customers. This trading has to be based on accurate information if there are not to be significant problems as the dependence on touch-less transactions increases. Progressive is committed to the use of international document standards and interchange mechanisms to deliver this as determined by EAN and EANnet"

PROGRESSIVE ENTERPRISES LTD

"Woolworths aims to source all product data through eCRI, with the first phase live in September 2004. This is intended to become the only way to exchange product information for most items sourced by Woolworths. For those companies using EANnet, eCRI will include the ability to read product data from industry catalogues, including EANnet (commencing November 2004). Alternatively eCRI will provide the facility for trading partners to enter item data electronically via a dedicated on-line form, through the existing extranet WOWlink system"

WOOLWORTHS LTD

[2] PRICAT - Price/sales Catalogue - see Appendix D, Glossary

Introduction

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The Australasian grocery industry has, through EAN Australia, developed one of the world's most advanced data pools, EANnet. At the same time, many leading industry players are investing in advanced supply chain capabilities, many of which will only deliver their full potential when collaborative working between trading partners, founded upon DIS, is the norm. Some leading manufacturers, such as Colgate Palmolive, have realised this and have implemented DIS. Nevertheless, progress towards full implementation of DIS across the industry has been slow, even though all acknowledge the link between DIS, electronic trading and effective collaboration.

1.1 What is "data integrity and synchronisation"?

We have defined DIS as "the timely, accurate and automatic updating of correct product and location information within and between enterprises to ensure a perfect, consistent match of data between the originator and all other users of the data". The word "integrity" was specifically added by the ECRA Board in order to emphasise the importance of getting the data right and sustaining the effort required to do this. Consequently, there is a need for integrity in all systems, processes and organisations associated with data generation, manipulation and transmission.

1.2 Why is DIS important?

The quality and consistency of data passed between trading partners lies at the heart of many current issues in the grocery supply chain, such as out-of-stocks and invoice errors. Synchronisation of accurate and up-to-date information has therefore become a requirement for ongoing, scalable trading partner collaboration. Consumers are demanding ever more from the industry. To respond the industry must direct resources towards innovation and delivery of value-adding services rather than on reconciliations, claims and returns.

1.3 Standards for DIS

Data integrity and synchronisation requires the establishment of common data standards and processes to enable the continuous synchronisation of master data between trading partner systems. Fortunately, there is a global effort in place co-ordinated by parties such as EAN•UCC and the Global Commerce Initiative (GCI) focused on the development and implementation of EAN•UCC standards related to Global Data Synchronisation.

1.4 About EANnet

EANnet is a data synchronisation and registry service[3]. Through the use of EANnet, trading partners are able to continuously and automatically synchronise item and price master data. Data synchronisation is an essential foundation and critical first step toward achieving efficient electronic commerce. It is an absolute prerequisite to contemplating advanced supply chain management applications such as Collaborative Planning, Forecasting and Replenishment (CPFR), Scan Based-Trading and other forms of electronic collaboration including collaborative supply chain management and transaction management. EANnet has been designed by the industry for the industry as a central, standards based data pool which meets the needs of both manufacturers and retailers.

1.5 DIS dataset

This report focuses on the dataset defined by the grocery industry in the Universal Buying Form, the UBF. EANnet also covers all the product data typically included on the UBF. Developed by the GISCC (Grocery Industry Supply Chain Committee) in 1999, the UBF has for a number of years been the standard within Australia for suppliers to provide their retail trading partners with product data relating to new product introductions, pack changes and price changes. A similar form is used in New Zealand. Note that the EANnet dataset presently in use includes both product data which is common across many trading partners and regular pricing data which may be specific to a single trading partner. Although the functionality is available, the EANnet dataset that has been implemented by the Australasian grocery industry to date excludes promotional pricing and this is also excluded from the scope of this report.

It is worth noting that the UBF/EANnet dataset is a subset of the GDD, the Global Data Dictionary, which is the EAN•UCC standard global dataset – see Appendix C, EANnet and Global Data Synchronisation, and Appendix D, Glossary.

[3] When Australasia becomes part of the GDSN, the registry function will be provided by the Global Registry

1.6 DIS and Electronic Product Code (RFID)

There is considerable interest at the current time in the opportunities that may be available to the grocery industry through the implementation of RFID (radio frequency identification). The recent "GCI EPC Roadmap" report[4] stated that "The industry needs master data to be synchronised. Savings… cannot be realised if supply chain partners do not have synchronised master data." DIS is therefore a pre-requisite to collaborative RFID implementation. Without it RFID is merely a faster way to spread poor information and generate waste and re-work. Further, by implementing a product management solution as part of a sustainable DIS initiative, later RFID efforts will have access to richer information and can deliver higher returns.

1.7 Objectives of this report

This report sets out to make clear the need for DIS and the steps needed to implement it effectively. Included in the report are estimates of direct and indirect benefits, and indicative business cases for a DIS project (Appendix B). Companies should assess their own costs and benefits (direct and indirect, short and medium term) in order to build their own business case for DIS. Eleven case studies based on the experience of project team members and others provide a practical perspective on DIS projects.

The report does not attempt to cover the GDS standards, or the detail of how DIS works. This important information has already been published by the GCI and EAN•UCC and may be found on their websites:

- http://www.gci-net.org
- http://www.ean-int.org

This ECRA report is intended to highlight the issues and emerging best practices and to encourage all industry players to take the next step forward with DIS. We believe the starting point is to understand the issues (from all industry perspectives) associated with data integrity and synchronisation.

[4] "Global Commerce Initiative EPC Roadmap" GCI/IBM, 2003

Understanding the issues

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DIS Issues exist at both an industry level and at an individual company level. These lead into the cross industry issues of maintaining data integrity and committing to the use of EANnet.

2.1 Industry level issues

The project team identified five key industry level issues:

1. Understanding costs and benefits (particularly as many benefits are related to the scale of DIS implementation across the industry)
2. There has been a perception that some key industry players have not been committed to DIS using EANnet
3. Cultural change involved in maintaining and sharing data for both retailers and suppliers
4. The importance of data integrity – there is a need to re-evaluate processes and workflows
5. Lack of an industry wide DIS implementation KPI

The combined effect of the first three issues is to retard industry progress towards full DIS implementation; the last issue reduces the visibility of the progress that has been made by leading players to the rest of the industry.

2.2 Individual company level issues

These company level issues may be divided into resource issues and systems issues.

Resource issues…

1. Effort required to clean and validate an organisation's own master data and review existing internal data management processes
2. Prioritisation of DIS implementation vs other projects (there is a need greater visibility of the project at a senior management level)
3. Effort required to maintain synchronised master data both within and between organisations

These resource issues, particularly that of DIS prioritisation, underline the importance of building a valid business case for DIS – see Section 4.

Systems issues…

1. Understanding software requirements for integration of business systems with EANnet (purchase and implementation costs)
2. Software available may be focused on the USA environment. Industry use of data pools, for example, does not presently include pricing data in North America
3. Some manufacturer systems can only publish one price (vs one price per customer)
4. Some information is not available on manufacturer systems (this may lead to prioritisation of master data elements for DIS)
5. Development is required for manufacturers' existing applications to enable collaboration

2.3 Maintaining data integrity

In DIS the quality of the implemented solution is paramount. A poorly executed solution that does not sustain an up-to-date and accurate dataset will result in bad data being passed between systems and functions internally and between trading partners. It will result in manual interventions and will severely retard the change management task of removing manual systems and building confidence in data quality (see Case Study A). The degree of cultural change involved in DIS implementation should not be underestimated.

2.4 Committing to EANnet

In Europe, there are already several different data pools, each with slightly different data configurations within the emerging EAN•UCC standards (see Case Study K). In Australasia, many leading industry players have publicly declared their support for EANnet as the single standard industry data pool – but not all. This means that an Australasian DIS solution may need to be able to cater for different DIS connections with key trading partners, either directly, or through EANnet.

Woolworths (Case Study B) intends to support integration between EANnet and their internal eCRI initiative. This commitment to EANnet by Woolworths follows similar public commitments by Coles Myer and Metcash. Consequently Australian manufacturers can now invest in implementing DIS through EANnet, with a reasonable degree of confidence that the investment can be leveraged to enable DIS with all the major retailers.

In New Zealand EANnet has recently been made available to use, and manufacturers and retailers are able to build on the work done in Australia. The two major grocery retailing groups in New Zealand have both publicly committed themselves to the use of DIS and EANnet. Now that both these major players have stated their position[5], the way forward for manufacturers is becoming clear and industry-wide take-up of DIS in New Zealand is likely to be faster (Case Study C).

One aspect of moving DIS forward in Australasia is developing an understanding of the issues. The other is an understanding of the business benefits, which is addressed in the next section.

Case Study A: Retail experience of DIS

Coles Myer is one of the largest retailers in Australia, with operations across Australia in both grocery and general merchandise. Coles Supermarkets have been a leading player in the development of DIS and EANnet in Australia since 2001.

In May 2004, Coles Supermarkets was accepting synchronised data via EANnet from 45 manufacturers. Their expectation is that all manufacturers will move to synchronise their data with Coles via EANnet by the end of 2004. This coincides with the go-live of a new merchandising system, which has been designed for electronic commerce. After this time the manual processing of Universal Buying Forms (UBFs) will start to be phased out by Coles.

Benefits

- Claim reduction
- Reduction in paperwork
- Increase in productivity and efficiency
- Foundation for future B2B projects, eg electronic store replenishment, electronic invoices.

Data synchronisation process

- Once a manufacturer is EANnet Ready™ they work with the Coles EANnet Team to synchronise their product data with the data held in the Coles merchandise system
- Typically this takes about two months depending on how many SKUs the manufacturer has and the complexity of their business
- Once the data is synchronised between Coles and the manufacturer, the automated EANnet link is switched on and Coles from that point only accepts product detail changes via EANnet.

Impacts of losing data integrity and synchronisation

- The success of DIS is dependent on the manufacturer's ability to maintain catalogue integrity once they go live with EANnet
- Where a manufacturer does not have integrated systems and a workflow process to maintain their master data through EANnet there is a high risk that their data will fall out of synchronisation. Coles has experienced this situation with about 15% of manufacturers. The main causes of lack of data integrity have been:
  - Workflow processes not established by the manufacturer to ensure all data is collected from relevant departments and sent to Coles via EANnet
  - Manufacturers legacy systems do not validate data sent to EANnet
  - Business managers require data earlier than the manufacturers have released the data to EANnet
  - Business managers and account managers acceptance and use of paper or electronic UBFs in preference to using the current EANnet integration procedures
  - Lack of ongoing focus or commitment by the manufacturer after going EANnet live
- Data resynchronisation is both time consuming (about two months elapsed time) and an inefficient use of Coles' and the manufacturer's resources. This can also result in product launch delays.

Key learnings

- To successfully go live with EANnet, senior management need to be committed to establishing and maintaining an integrated process for ongoing data integrity - one time synchronisation is not enough
- Paper or electronic UBFs need to cease when a manufacturer goes live with EANnet
- Change management is pivotal to the success of any EANnet implementation. EANnet needs to be accepted within the manufacturer's organisation as a standard way of doing business.

Coles recognises that realising the full benefits of DIS is dependent on industry scale and the integration of internal systems.

Case Study B: DIS using eCRI

Woolworths is a large retailer, operating throughout Australia in both CPG (Woolworths and Safeway) and in general merchandise (Big W). Woolworths is implementing DIS using eCRI.

What is eCRI?

Woolworths began project eCRI (electronic core records interface) in late 2003 with the aim of providing a facility for electronic data exchange with all trading partners.

The initial release of eCRI has focused on the electronic exchange of all product attributes maintained in Woolworths' internal systems, both for new products and for amendments to current products.

Woolworths aims to source all product data through eCRI. This is intended to become the only way to exchange product information for most items sourced by Woolworths. For those companies using EANnet, eCRI will include the ability to read product data from industry catalogues, including EANnet. Alternatively eCRI will provide the facility for trading partners to enter item data electronically via a dedicated on-line form, through the existing extranet WOWlink system.

All data provided by either means will be passed through a comprehensive set of business rules to ensure that Woolworths attains a best practice level of data accuracy and integrity.

Objectives of eCRI

These are:

1. To remove the opportunity for errors and duplication of effort in re-keying data between Woolworths and trading partners
2. To improve the integrity of information between Woolworths and trading partners
3. To reduce error rates when matching common data such as cost matching for invoices
4. To reduce scanning errors and thus improve the service provided to consumers
5. To reduce the time taken to load a new line, improving Woolworths' speed to market.

Timing for eCRI

Woolworths is implementing this project over the next 12 months in a series of staged rollouts. It is expected that the first phase of this project will go live in September 2004, with EANnet integration commencing in November 2004. Subsequent phases of the project are scheduled over the next 12 months.

Case Study C: A New Zealand manufacturer perspective

Company Y is a New Zealand based food manufacturer. The company processes about 160,000 orders per year of which in excess of 90% are entered directly at the store by sales reps using tablet PCs. Orders are received and processed in Company Y's back-end systems (SAP), with delivery confirmation available on the tablet PCs. The nature of the categories sold and the retail dynamics of the New Zealand marketplace result in over 63% of the total sales volume of the company being sold on promotion. This results in a highly volatile demand pattern and a necessity to embrace collaborative initiatives with key trading partners in order to deliver supply chain efficiencies.

As retailer priorities evolve more towards e-commerce solutions, the reliance on taking orders directly into Company Y's own systems is set to reduce, with more orders placed directly via retailers' own computer systems. With this in mind, Company Y recognises the need for high levels of data integrity and synchronisation upon which future electronic transactions will be based.

The New Zealand marketplace is dominated by two major retail groups that until recently have not publicly announced their approach to DIS solutions. Company Y, like many manufacturers in New Zealand, has played a waiting game before committing to a particular solution, not wanting to be out-of-step with retailer directions. This has unfortunately led to a "decision paralysis" of no activity and little progress has been made to ensure accuracy and synchronisation of master data on the part of Company Y. With the present predominance of "internal system" order processing the need for DIS has not yet been critical.

In the context of ever increasing market volatilities and changing industry dynamics, Company Y is committing itself to embrace EANnet as part of a series of pilot studies to be undertaken in New Zealand. The benefits obtained by cleansing master data and reducing duplication of data entry are not anticipated to be large given Company Y's current operation. However the main benefits of taking a proactive approach are in improved working relationships with trading partners and in the establishment of a platform upon which future e-commerce initiatives can be based. In addition, given the high percentage of promotional activity, there is a desire to be able to influence the development of EANnet to be able to support synchronisation of promotional pricing in the future.

[5] This was completed at an EAN New Zealand conference in early May, 2004

3 Understanding the benefits

Tangible benefits from DIS have been identified at a number of levels:

- Short-term benefits (eg reduced administration of master data)
- Medium-term benefits (eg out-of-stock reductions)
- Collaborative benefits (eg collaborative demand management)

There are also clear linkages between DIS and benefits identified in previous ECRA projects. Note that most DIS benefits are contingent on DIS being implemented across the majority of the Australasian grocery industry.

3.1 Short-term benefits

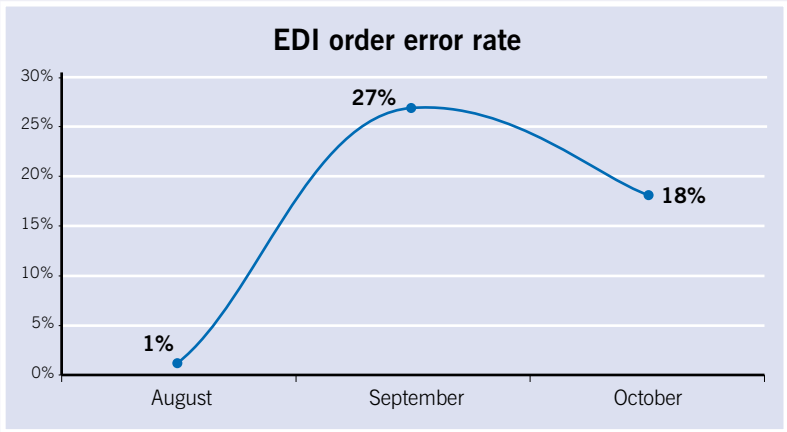
These have been estimated by the project team to be A$34 million for Australasian manufacturers using the short-term benefit model (Appendix A). Benefits are made up of the following areas:

- Administration savings from reduced time compiling new product information – 25%. This includes elimination of manual processing of UBF forms and more effective internal processes for managing data in new product introduction data process
- Profit from increased revenue from complete replenishment of retail shelf for new products – 1%. This is based on the experience of project team members that replenishment order errors increase significantly for new and updated products. Many of these order errors result in stock-outs and lost sales. Note that whilst the profit impact of stock-outs may be comparatively low, the revenue impact is more significant – about A$10m
- Administration savings from reduced processing of non-quality orders – 23% (see Case Study D)
- Administration savings from reduced processing of claims/disputes – 45% (see Case Study E)
- Cash flow benefits of reduced claim disputes – 6%. Claims delay payments to manufacturers and so fewer claims increase cash flow.

Case Study D: The "touch-less" EDI order

Procter & Gamble (P&G) is a multi-national FMCG manufacturer with products in the food, laundry, personal care and household categories. P&G has been a leader worldwide in the development and application of DIS solutions.

P&G in Australia has been using fully integrated EDI order acquisition for more than 10 years. An analysis of P&G EDI order error rates for the past three months in 2003 gives an insight into some of the current problems.



The surge in error rates is attributed to big product launches that involved new product details and barcode changes. P&G calculates that the total value of EDI orders for new and updated products amounts to more than A$15 million over the three months. Of this, more than A$1 million sales (about 7%) are estimated to have been affected by either the wrong code being used for product replacement or ordering using an obsolete barcode.

Product launches have been found to contribute to error rates and lack of data synchronisation. 99% of EDI order errors are attributed to customers using the wrong GTIN codes. Although product change information is sent to customers in advance, customers may not have updated their data on time or frequently enough so "old" codes continue to be used to place orders.

In addition to the effect on sales revenues for changed products given above, there is also a potential loss of sales for new products which customers may not have maintained correctly in their ordering systems.

P&G has estimated that if they can move from the current level of order errors to a consistent 90% touch-less orders (ie the orders go straight to picking when received from customers via EDI), the business benefits will be significant. P&G may gain as much as 10-15% in internal order management productivity, as well as the potential to increase revenue if new products are available to the consumer earlier.

Note that these short-term benefits exclude the otherwise significant benefit of reduced time-to-market for new or updated products, as the project team believed that bottlenecks in other areas (eg allocation of retail warehouse slots) would prevent any improvement by DIS alone. No short-term benefit estimate has been made for retailers due to the lack of available data.

3.2 Medium term benefits

These have been estimated at A$3.0 – 7.7 million for manufacturers and A$1.4 – 3.0 million for retailers. Of this benefit, more than half comes from reduction in out-of-stocks, with additional benefit from increased freight utilisation. Calculations are based on team data for out-of-stocks, and on published GMA/FMI case studies[6] for the other benefits. The benefit of safety stock reduction (estimated at A$2.3 million for manufacturers and A$6.4 million for retailers) has not been included as it was judged by the team to be difficult to measure and verify.

GCI/FMI studies have estimated that manufacturer benefits, based on item synchronisation only, have been of the order of 0.1% of turnover. Based on an Australasian industry turnover for manufacturers of A$41 billion, this would equate to A$41 million. The total estimated manufacturer benefit from this study is A$39.4 million – quite close. However, in Australasia DIS includes price data as well as item data synchronisation, so benefits might be expected to be significantly higher than those for item synchronisation alone. This appears to reflect the current state of understanding of DIS benefits in Australasia and emphasises the need to build business cases for DIS projects and to manage and measure benefits against these business cases (see Section 4).

For retailers, GCI/FMI studies have estimated benefits of around 0.05% of turnover, or A$34.5 million. Estimated benefits for DIS in Australasia would be expected to exceed this due to the fact that EANnet covers both item data and price data synchronisation.

3.3 Collaborative benefits

The ECRA Tracking Study 2002 estimated that benefits worth greater than A$1 billion in operating cost savings and A$800 million in inventory reduction are available through full ECR implementation but are as yet unclaimed by the industry. At least half of these benefits will only be available through collaboration. While DIS is not a prerequisite for collaborative pilots, realistically, retailers and manufacturers cannot effectively engage in more complex relationships without synchronising key item and price information. To date, trading partners have worked together based on confidence in the reliability of the data shared. However, "reliability" can be a subjective term. The only way industry players can be certain that their master data is truly reliable, is for that data to be electronically synchronised in a consistent manner.

The use of global standards is instrumental to the efficient scaling of collaborative activities, helping to ensure that all trading partners operate with the same basic information about products in the supply chain. This transformation may eventually extend throughout numerous joint processes, driving increased value in such areas as product lifecycle management, collaborative demand management, and supply chain logistics (Figure 1).

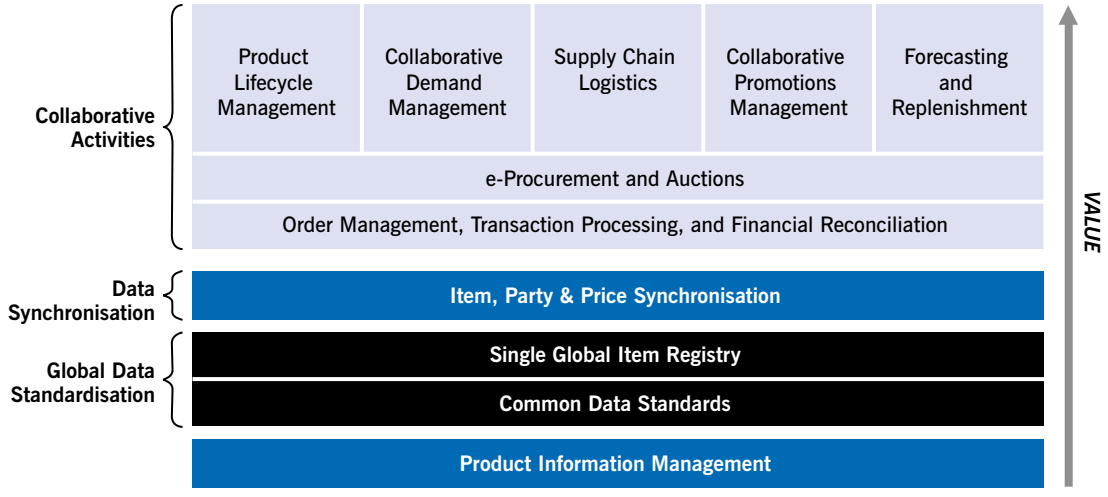


Figure 1 - Driving value through data synchronisation

[6] "Action Plan to Accelerate Trading Partner Electronic Collaboration" GMA/FMI 2003. Note that this study is based on item data synchronisation only – no price data.

Suppliers investing in DIS need to ensure these same investments can be leveraged to support these high value supply chain processes. For example, technologies to connect with EANnet via EANCOM®[7] PRICAT[8] messages may also provide the infrastructure to enable the supplier to send and receive other EANCOM messages, such as purchase orders and despatch advices.

One of the many challenges to effective collaboration is building trust and mutual understanding. Both the process of implementing DIS and the outcome are opportunities to develop an effective trading language and build key trading partner relationships.

Case Study E: Testing the potential for DIS

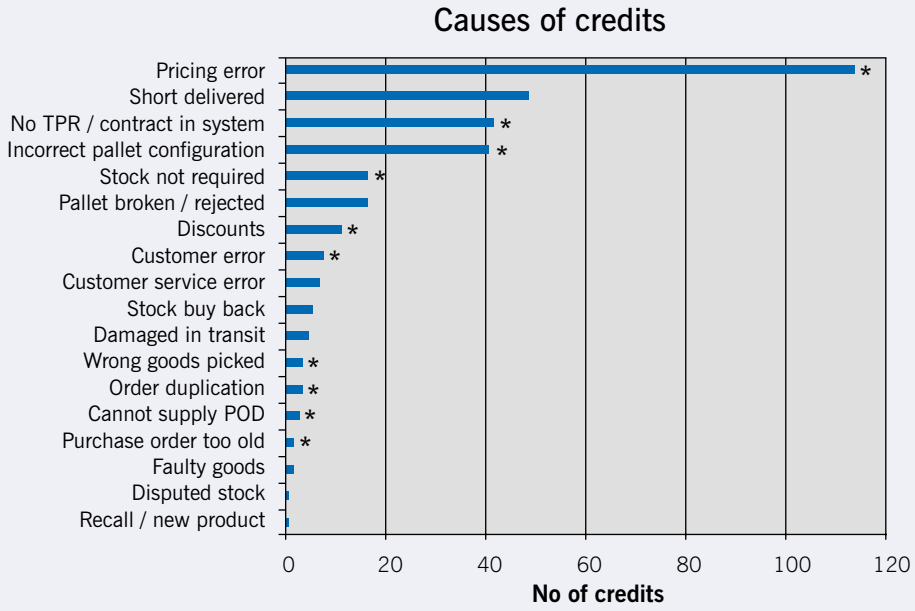
Carter Holt Harvey (CHH) is Australasia's largest consumer paper goods manufacturer, with multiple category presence in paper goods and personal healthcare. Metcash is a leading marketing and distribution company operating in the grocery and liquor wholesale distribution industries.

The challenge:

A significant volume of credits were generated on a monthly basis in CCH's trading relationship with Metcash. The challenge was to identify and quantify how DIS could reduce the number of credits and improve supply chain efficiency.

Assessing the opportunity:

CHH and Metcash met twice during the ECRA project with both companies tabling and sharing data on the root causes of credits. Representatives from buying, sales, accounts, logistics and IT were present at these meetings. An overview of credits in August, September and October 2003 is shown below.



These credits affected 12% of traffic and were causing significant cost and workload for both companies, resulting in an inefficient trading relationship. Actions were undertaken to immediately reduce the volume of credits.

Steps taken:

1. EDI 100% price match enforced, resulting in 34 Metcash orders in December being intercepted and corrected (once CHH and Metcash agreed on the correct price)
2. Reconciliation of Metcash rounding anomalies of consumer units up to cases. Metcash calculated GST on cases by rounding and summing GST on consumer units - resulting in variances in list price. EANnet should be able to address this ongoing
3. Transport companies to supply trucks to match order profile – eg provide B-double 36 pallet capacity for 36 pallet order (vs, say, 34 pallet capacity which would result in pallets not being dispatched). This was resolved by aligning order data and truck capacity over the internet with the transport company. A tool developed by Oxygen (a CHH company) enabled matching of truck capacities with the volume of transport legs within the CHH network. The result - no credits from incorrect transport supply for the trial period

[7] EANCOM® - EDI message set - see Appendix D, Glossary

[8] PRICAT - Price/sales Catalogue - see Appendix D, Glossary

Continued from previous page

4. EANnet to be initiated between CHH and Metcash. CHH is EANnet ready and has agreed with Metcash to commence exchanging data on EANnet. This has the potential to resolve all physical supply chain data variances associated with trade items as well as list price
5. Training on a workaround solution for contract pricing for promotional activity. The initiative revealed that a timely process was not in place to update promotional pricing in CHH systems. A temporary solution was implemented until such time as an automated fix through EANnet or other solution is found. Order intercept for pricing variance is continuing
6. Alignment of ti-hi databases. Due to height restrictions in some Metcash warehouses, some items were being ordered in alternative (lower) pallet configurations. CHH and Metcash stored this configuration data in two separate systems. A significant project was undertaken to synchronise all ti-hi data between the two companies and a formal process put in place to capture any further configuration changes
7. Sharing of reports to track progress with formal joint reviews.

Outcome:

Analysis of credits in the supply chain demonstrated that using the current DIS tools available 10 causes of credits (marked with * in the graph on the previous page) could be eliminated. This would result in a total reduction of 239 credits, 71% of all credits generated over the time period.

3.4 Links to benefits in previous ECRA projects

In addition to the Tracking Study, both the 2001 ECRA "Guide to efficient replenishment and reduction of out-of-stocks" and the 2003 ECRA "Guide to efficient product movement" described opportunities for collaboration. Recommendations in the former publication included "Integrate demand and replenishment planning processes" and "Invest in the appropriate enabling technology and improve data integrity". It also referred to the "collaboration gap" (Figure 2) which is clearly an opportunity for DIS.

The Efficient Product Movement guide recommended "collaborate to identify and realise [product movement] opportunities". DIS would provide the data integrity necessary to underpin collaborative efficiencies based on analyses of order sizes, pallet sizes, case sizes and consumer demand.

With an understanding of both DIS issues and benefits, the DIS team turned their focus to the key components that make a successful DIS implementation. These are detailed in the following section.

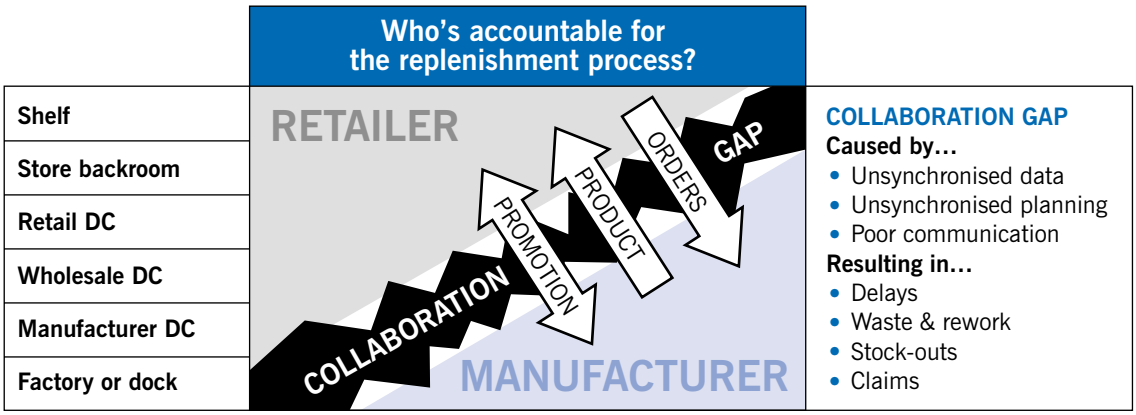


Figure 2: The collaboration gap

4 Key components of DIS

4. Key components of DIS

DIS using EANnet requires manufacturers to provide well over 100 pieces of data for every GTIN they supply to the grocery industry. This data includes information such as the size of the consumer unit, the product's trade release date, GLNs, as well as terms of trade, price and (in the future) promotions. Some of this data will be needed to run the manufacturer's transaction and reporting systems and is collected regularly; other information is used only by the retailer and is not needed by the manufacturer in the day to day running of the business. In other cases the same information is required in several of the manufacturer's information systems. This data is owned by a variety of people across the business. How can all this information be managed in a timely, coherent and accurate fashion?

Making DIS work requires a number of areas of excellence to be combined to create a sustainable solution. In this section we describe each of these areas and why they are important. There are five focus areas:

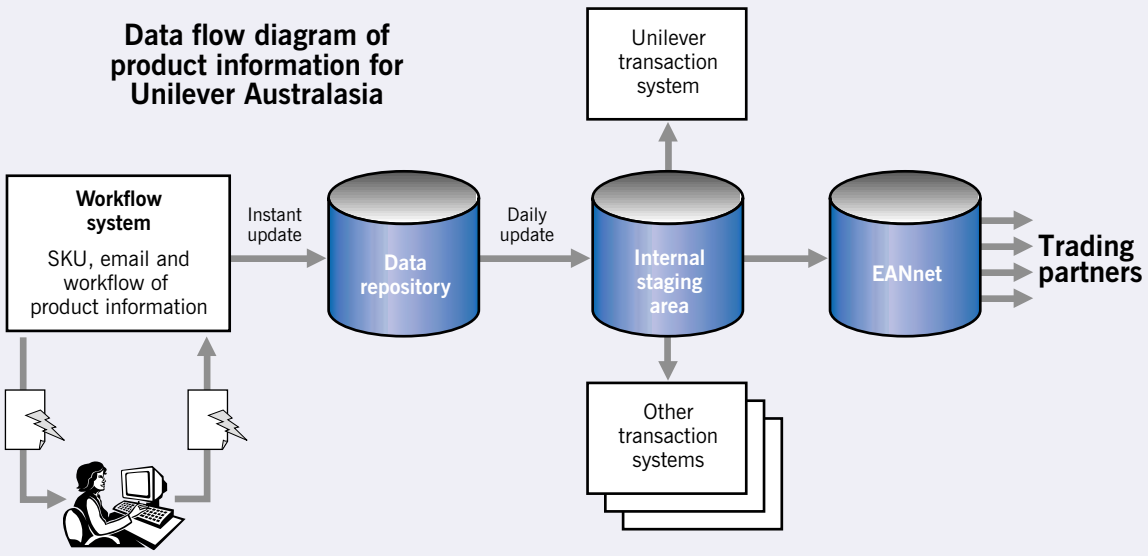
- Workflow systems
- Integrated master data systems
- Data management roles and responsibilities
- External connections
- The DIS business case.

4.1 Workflow systems

DIS will entail changes to data management processes – but the challenge for DIS is how to ensure adherence to these processes. How to make sure that - with all the distractions of day-to-day business - the right people do the right things, at the right times. Workflow systems (see Case Study F) enable organisations to model, automate and monitor their business processes. They normally include notification mechanisms, to allow persons involved in the

Case Study F: Use of a workflow system to maintain DIS

Unilever is a multinational CPG company with products in the foods, healthcare and laundry categories in Australia and New Zealand. Unilever Australasia has developed a workflow system that allows information for a product to be collected from various parts of the business and brought together to form a sustainable DIS dataset. People responsible for each of the various data elements required by EANnet are prompted to populate their data fields by an email. This information is then stored in a central data repository and used as a standard reference point for data required by EANnet, Unilever internal systems and other third party systems, as shown below.



The benefits Unilever has experienced from using workflow include:

- Clarity and integrity of data ownership - with a workflow system the person who originates the information also populates the data field
- Time - it takes less than half the time to collect new product information using the workflow tool compared to the previous manual system
- One method of data collection - it provides a means by which non-system related information can be collected (eg the retailer's vendor number).

The Unilever DIS solution also provides a single point of reference for information that is used by multiple systems (eg ERP and demand planning systems). This results in less duplication and eliminates the possibility of master data conflicts.

Unilever has found that using an integrated workflow system to collect EANnet data has improved data integrity and synchronisation both internally within Unilever and externally with trading partners.

process to be alerted that their action may be required. These systems can be configured to support the data collection process within the manufacturer by co-ordinating the actions of all areas of the business. For example, logistical information may be provided by the supply chain business unit, and pricing by the sales business unit. Once all the necessary activities have been performed, the workflow system would then action the publishing of the complete dataset to EANnet. Further, workflow systems allow the processes to be monitored, thereby allowing bottlenecks or inefficiencies to be identified and rectified, supporting continual improvement of the process.

From work on DIS in the USA, experience suggests that workflow functionality alone may not be sufficient to enable DIS processes. In addition, there may also be a need for a set of user interfaces (behind the firewall) that are tailored to support DIS processes by enabling the user to perform specific DIS activities (eg managing item information, requesting publication, etc). If required, these should be built into DIS support systems.

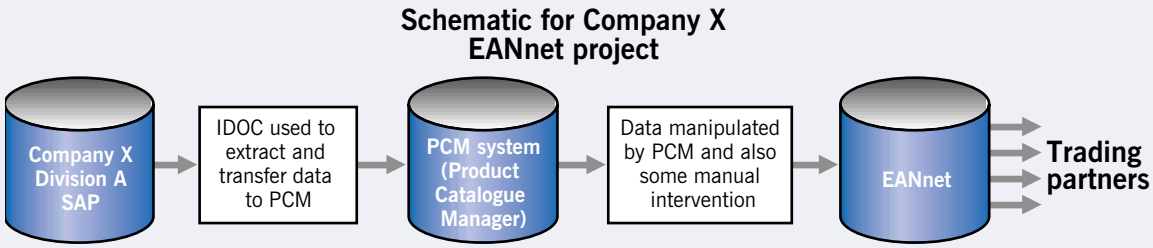
4.2 Integrated master data systems

Manufacturers should establish a single consolidated source of master data. For some, this may be held in an extension to their ERP systems. However for many companies, where master data is distributed between systems, it may be necessary to establish a new repository which is integrated with multiple systems. Problems can occur when the internal master data configuration is not effectively aligned (either using middleware or directly) with the EANnet data structure – see Case Study G.

For companies with large numbers of SKUs and GTINs, multiple trading partners, multiple sets of trading terms, and a high rate of product churn, managing the total dataset can be a complex challenge. For these companies, it may be worth considering the implementation of a PIM (Product Information Management) system. A product information management system is internal enterprise software that establishes a single, accurate, reliable repository of linked product, location, trading partner, organisational and terms of trade information that is

Case Study G: Challenges of a DIS project

Company X, a multinational CPG company, initiated a DIS project in 2002 due to a perceived future requirement by a major grocery retailer. The project team included both IT and business focused staff. The project scope was initially to be product data from Division A only. Later this was increased to include Division B as well. The systems platform and data transfer process was envisaged as shown below:



The project was developed to a point where it was approximately 60% complete with much of the IT resource focused on the data transfer process. Eventually the project was put on hold. Project issues included project structure, data and data formats, systems and processes.

Project structure:

- Resources could not be devoted to the project as required as an ongoing SAP implementation was the priority
- No real commercial imperative or project buy-in (no business case).

Data and data formats:

- Data contained within SAP fields did not readily map into EANnet
- Data conventions used by Division A did not match those required by EANnet
- Some EANnet required data was not covered in the original SAP implementation design.

Systems:

- IDOC data transfer design was not sufficiently aligned with EANnet requirements
- IDOC solution was imposed by Company X Centre team as the Global Company X standard (as were SAP data conventions), but this was not necessarily the most appropriate solution for the Australian operations
- Additional process "flags" were required in SAP to trigger EANnet events
- Division A and Division B continued to operate on separate SAP platforms for longer than anticipated.

Processes:

- The master data management process was based on Division A SAP implementation which was still only in the build phase and not adequately understood
- Some process requirements were not clearly defined with the retailer.

synchronised internally inside the organisation as well as externally with trading partners via data pools. It may also provide workflow functionality. Product information management systems can provide foundational infrastructure for both DIS and RFID initiatives.

4.3 Data management roles and responsibilities

DIS may result in changes to the roles of many people engaged in data management and the possible development of a role specifically tasked with master data management. The former requires both explicit allocation of responsibilities (eg assigning a new GTIN number to a new product) and consistency between roles. The latter may or may not be necessary, depending on the workload and DIS issues. When workflow systems are implemented, such roles and responsibilities can be included in the business process design.

4.4 External connections

To enable data synchronisation through EANnet, suppliers are likely to require two specific connection functions:

- A transformation engine – the internal representation and format of master data within supplier systems is unlikely to match the requirements of EANnet exactly. A transformation engine is required to map and translate the internal representation into that required by EANnet and also to format the messaging

Option	Integrated Solution	Process Involved
Online via EANnet web browser	No	Manual, online data entry and maintenance of all data elements, for all GTINs, via the EANnet web browser.
EANnet Batch Files via FTP	Optional	The creation of tab delimited text file (.txt) in accordance with the documented EANnet proprietary Batch File format. This file would be used to publish and maintain the vendor's EANnet catalogue. Creation and maintenance of EANnet Batch Files can be done either manually or by programmatic generation from data extracted from the vendor's internal information systems. Scheduling routines may also be developed to automate the ongoing creation and transmission of these files via File Transfer Protocol (FTP) either via a dial up connection or via the internet to a hosted mailbox.
EANnet Batch Files via EANnet Browser Upload Service	Optional	The process for creating and maintaining EANnet Batch Files under this option are the same as outlined in EANnet Batch Files via FTP. This option simply provides the vendor with an alternative method for uploading the EANnet Batch File into their EANnet catalogue. Uploading of the EANnet Batch File is via the EANnet Web Browser over the internet.
InSynch™[9]	Optional	InSynch allows vendors to efficiently manage the process of synchronising Item Master File information from back-office and legacy systems with EANnet. InSynch facilitates the initial upload of data to EANnet after verifying that the initial data requirements of EANnet have been met. On an ongoing basis, InSynch identifies the data that has changed since the last upload to EANnet and sends an update to EANnet to synchronise vendor systems with EANnet.
PCM[10]	Optional	Product Catalogue Manager (PCM) Software is designed to make the preparation and maintenance of catalogue data as smooth and simple as possible. PCM extracts data from both existing systems and via data entry. The data is verified for accuracy and then translated into the EANnet format. The product is available with different levels of functionality.
IBM Websphere Product Centre[11]	Optional	Websphere Product Centre provides basic connectivity to EANnet for data exchange and provides an internal repository for the storage and maintenance of item data and other attributes. Mandatory and optional attributes can be exchanged with EANnet online, via batch (FTP) processes, or through customised scripts. In addition, through Websphere Business Integration, more complex exchanges can be choreographed, combining data held in multiple applications and integrated processes.
UBF Module[12]	Optional	Use of the UBF EANnet module in conjunction with UBF Version 6.00. Processing of data to EANnet using the UBF software requires the installation of the UBF EANnet module. The UBF EANnet module is sold separately.
EANnet PRICAT[13] via EDI	Yes	The programmatic generation of an EANnet PRICAT message by mapping fields from the vendor's internal information systems into the PRICAT structure. The PRICAT message must meet EANnet PRICAT specifications. Data extraction and scheduling routines may be required to automate this process.

Figure 3 - EANnet data upload and maintenance options

Source: EAN Australia, IBM

[9] InSynch is third party software for item data management from Leadtec Systems
[10] PCM is third party software for item data management from Global eXchange Services
[11] IBM Websphere Product Centre is third party software from IBM
[12] UBF Module is third party software for item data management from Australian Brokers and Manufacturers Lobby
[13] PRICAT - Price/sales Catalogue - see Appendix D, Glossary

- EANnet connectivity – to load and maintain master data in EANnet, it is necessary to establish mechanisms for connecting with the data pool. EANnet provides manufacturers with a number of alternatives for connecting to the data pool, enabling manufacturers to select the method that best suits their requirements and capabilities. These alternatives include on-line, FTP and via VAN[14] services. The table in Figure 3 lists upload and maintenance alternatives available to manufacturers. Some of these options combine transformation engine requirements with EANnet connectivity.

The system diagram below (Figure 4) shows a high level DIS systems map for synchronisation with the two largest retailers in Australia. Note that the same infrastructure configuration should now be able to meet the requirements of all major trading partners.

In considering required investments in data synchronisation capabilities, companies should take into account long-term trading partner collaboration strategies, rather than just data synchronisation. Ultimately, the true payback comes from the optimisation of supply chain relationships enabled by the data synchronisation foundation (see section 3).

4.5 The DIS business case

One of the major obstacles to DIS implementation identified by the team was lack of prioritisation of DIS compared to other initiatives. One way to address this is simply to wait until a major trading partner insists on DIS as a pre-requisite of trading. A more proactive option is to recognise the benefits that are realisable through DIS and articulate this in a DIS business case. Indicative business cases for DIS implementation are given in Appendix B. The business case should not only build support within the business, but it should also enable the implementation to focus on areas where benefits can be obtained. The next section considers how to build business case development, along with the other key components of DIS, into a structured roadmap for DIS implementation.

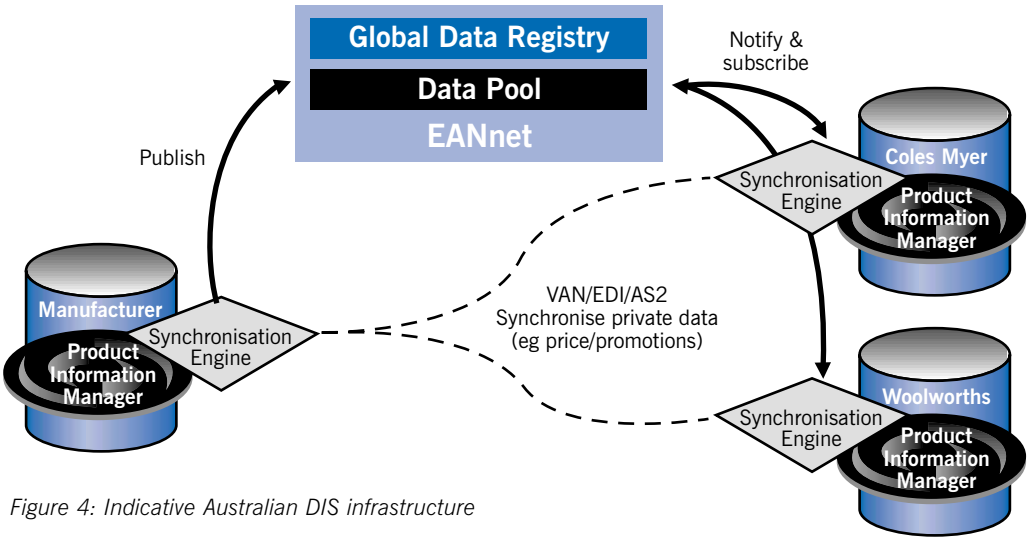


Figure 4: Indicative Australian DIS infrastructure

Source: IBM Institute for Business Value

[14] VAN – Value Added Network - network service used for exchanging EDI messages

5 Implementing DIS

Figure 5: DIS roadmap

There are five key stages in the implementation of DIS (Figure 5):

- Develop a DIS vision
- Prepare internally
- Select trading partners
- Pilot DIS
- Rollout to full scale DIS

These are considered in turn in the following pages. Note that these steps assume that the organisation has already completed the basic step of engaging with EANnet or a similar standards-based data pool.

5.1 Develop a DIS vision

Implementing DIS is not another cost-saving project or a short-term endeavour. It is a strategic commitment to enable ongoing collaboration. It entails a step change in the integrity of internal business processes, in the integration of systems and in the definition of organisational roles and responsibilities. The DIS project should therefore have the support of the executive team, in the form of a documented and signed-off business vision. This vision should not just define DIS as an end in itself, but should link DIS to the company's strategy for trading partner collaboration. The vision ensures that the DIS project is a positive decision by the company and not merely a response to a request from an important trading partner.

The first step in bringing the vision to life is to empower a champion. The DIS champion will guide the project through to completion and will act as a conduit for executive sponsorship. The DIS champion will lead the development of a DIS business case that includes short-term and long-term benefits, KPIs and the optimisation of supply chain processes. Three indicative business cases are given in Appendix B. The business case should:

- List the expected business benefits
- Define the measures that will be used to ensure that DIS is operating effectively and generating benefits
- Outline the scope of the DIS project and the priority for different divisions and trading partners
- Estimate the resources required – people, systems, outside experts

KPIs may include:

- For the manufacturer:
  - Hours spent managing product data
  - Percentage of non-quality invoices queried by retailer
  - Number of claims raised on retailer due to DIS issues
  - Cycle time to introduce/delete a product to market
- For the retailer:
  - Hours spent managing product data
  - Percentage of non-quality orders queried by manufacturer
  - Number of claims raised on manufacturer due to DIS issues
  - Number and percentage of invalid barcodes at the point-of-sale
  - Cycle time to introduce/delete a product to market

Other KPIs may be defined to measure specific identified benefits (see indicative business cases in Appendix B). A general industry KPI may be the percentage of business that is conducted based on DIS.

A key decision at the vision stage of DIS implementation is the degree of internal data alignment that is appropriate. At one extreme there is "mend and send" and DIS is treated as a compliance issue, getting data right for external consumption only. In this scenario internal data might still be dis-integrated and of poor quality. Preparation of data for external transmission may involve considerable manual processing and checking. Alternatively, a company can invest in data quality and data integration internally, both to get internal benefits and to reduce the effort required to prepare data for external use. Where a company should position their DIS vision will depend on several factors, including:

- *The capability of existing data management systems*
- *The complexity of the product dataset (number of products, trading partners, channels, etc)*
- *Identified benefits from the DIS business case.*

5.2 Prepare internally

In the experience of the project team, internal preparation is the longest and most challenging stage of DIS. It involves not only the sometimes painstaking clean-up and synchronisation of internal data, but also the establishment of processes, systems and organisation (roles and responsibilities) to sustain the new DIS environment. Preparation may be structured into five steps:

1. Define internal DIS project, allocate resources, define scope (divisions involved, data elements required, etc)
2. Understand and assess existing master data processes and the business activities that rely upon this data
3. Design the DIS solution
4. Cleanse data
5. Implement the DIS solution

Analysis of existing master data processes (step 2) will ask the following questions:

- Are item and price management workflows consistent? Consider regions, product categories and channels
- Which functional areas are involved and how is data synchronised across them? For example:
  - merchandise planning
  - procurement
  - replenishment planning, distribution
  - logistics / warehousing
  - finance (financial reconciliation)
  - trading partner relationship management
- How effective are master data management processes and what are the measures of performance? (eg cycle times, purchase order error rates, inventory / replenishment visibility)
- Are current business processes aligned with EAN•UCC master data standards? These standards will include EANnet standards and formats and usage of GTINs and GLNs

Mapping the management and flow of master data (step 2) can identify how many different functions are involved. For example a "simple" product deletion may involve:

A. finance – audit trail and impact analysis

B. marketing – managing media and advertising impacts

C. merchandise planning – eg assortment planning for item replacement

D. supply chain management – eg procurement and DC operations

E. demand and inventory management – eg forecasting and mark-down strategy

F. store operations – eg sales floor maintenance and plan-o-gram updates

G. customer care – eg catalogue updates

In addition to analysing processes, the systems that currently store or process master data should also be reviewed (step 2), including:

- Application systems, including:
  - Application systems involved in associated processes today
  - New systems which will be added as part of the current plan
  - For these systems, consider the role they play and how they communicate
  - Methods / technologies in use today to interface with, provide data to, or pull data from these systems today
  - Platforms and languages
  - Application architecture
  - Type of associated user interface, and identity of users
  - System operational data (size of database, number of users, number of transactions per minute, hours of operation, etc)
  - Business functions supported by each application.
- Systems integration, including:
  - Enterprise integration architecture
  - Applying integration standards
  - Integration tools currently in use
  - Identifying / defining integration patterns
  - B2B integration that is in place today, and tools / technologies in use
  - Security rules/standards/guidelines that apply to B2B integration
  - Types of "custom" integration approaches that are in use (FTP, sockets, e-mail, etc)
  - Monitoring and maintaining interactions across multiple systems.

Last, but not least, it is important to look at the structure of the master data itself (step 2):

- Where master data is stored today
- Data model for the enterprise
- Modelling of key business entities for DIS
- Is there a single source for each attribute of each item?
- Are there data standards in place?
- Are industry standard representations of data used in the enterprise, where applicable?
- How is data synchronised between systems which have the same items?

Design (step 3) should ensure that the DIS solution architecture provides optimum flexibility to adapt to the ongoing business environment. In the Australasian grocery industry there are already several different ways in which DIS may be executed between trading partners.

It is also likely that there will be some ongoing development of EANnet.

Prepare internal systems and processes to create, aggregate, standardise and cleanse all required item information. A sample process design is shown in Figure 6. Implementation (step 5) will include process and organisation changes, and integration of systems to sustain DIS. The combined solution should be tested to ensure that it is ready to support internal and external DIS. Change management is important to ensure that the importance of quality master data is recognised and that it is no longer necessary to verify and maintain separate master data files throughout the organisation.

The cleansed dataset is uploaded into EANnet ready for the next stage, selection of trading partners. The EANnet Ready™ Checklist may be used as an aid to developing an effective DIS solution.

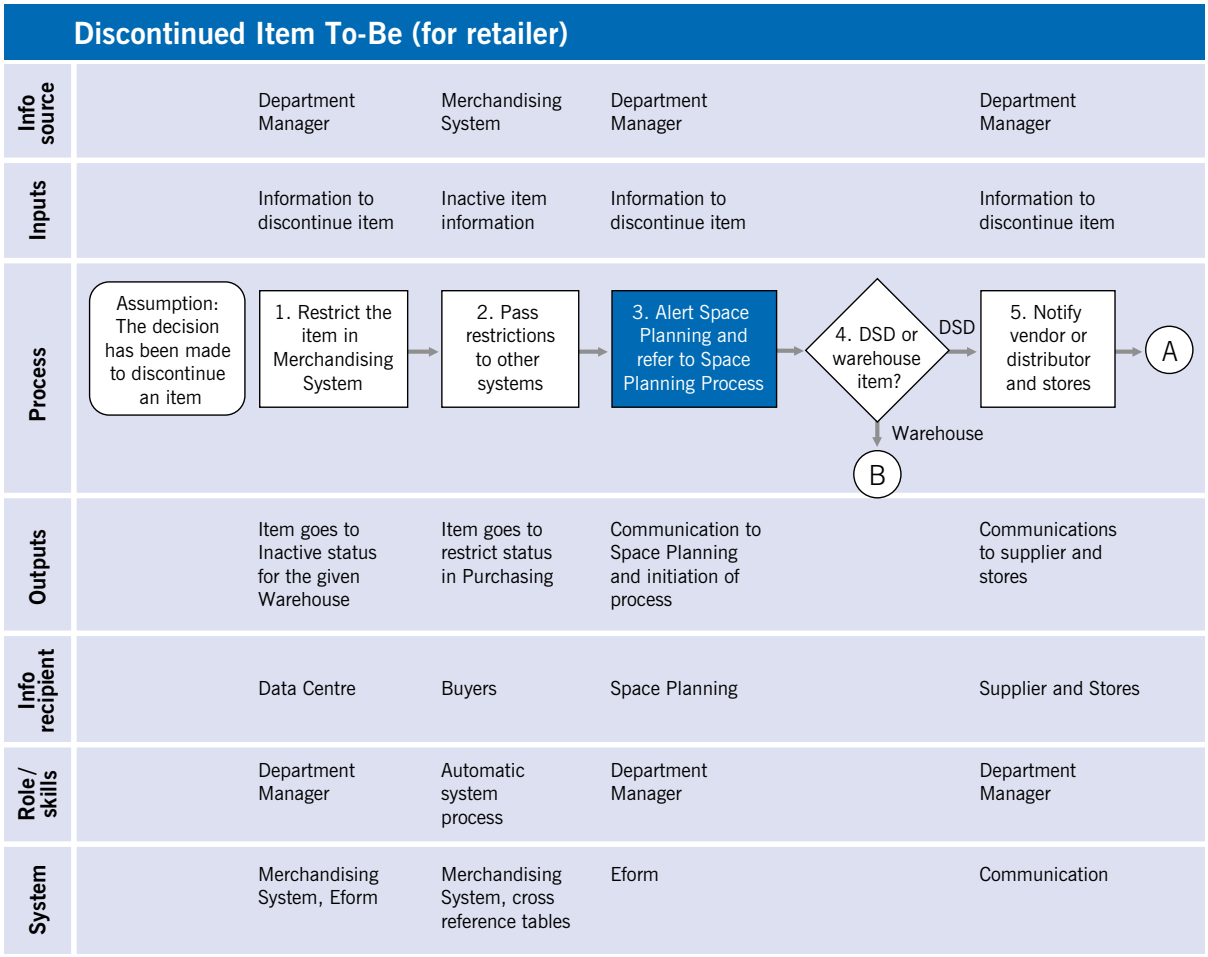


Figure 6: Sample DIS process design

Source: IBM Institute for Business Value

Case Study H: Implementation of DIS

Colgate Palmolive (CP) is a multinational CPG company manufacturing and selling personal healthcare products in Australia. CP participated in an early DIS pilot in November 2000 to test and evaluate EANnet. CP committed to this pilot because they believed that:

- There was broad retailer commitment to the EANnet project
- Data quality and synchronisation were key to the electronic exchange of information which would provide the foundation for future B2B data exchanges
- Cost savings would accrue from improved data integrity for master data exchange with retailers.

Following a successful pilot CP decided to implement EANnet in March 2001. Two major benefits were perceived:

1. Better quality data management internally:
   - Improved alignment between functions when creating and amending master data
   - Improved business processes to create and manage the release of product data to retailers

   The implementation of EANnet also led to a heightened awareness within the company that internal master data can be shared externally
2. Cost savings from the exchange of quality data with retailers via reduced claims and reduced time spent evaluating and correcting data.

Two of the key implementation steps were the clean up of master data and process redesign to ensure ongoing data quality. The process redesign integrated the adoption of EANnet into business practices and built a methodology where the product data was checked and authorised prior to its release to EANnet and retailers.

Data errors are now being picked up and corrected before information is passed on to retailers, eliminating potential credits and reducing errors such as:

– List price

– Pallet configuration

– Product dimension and weight

– Unauthorised system changes

– Integrity of data for products sourced outside Australia.

Following internal implementation an external trial was commenced with GHPL (Coles Myer) in July 2001. CP went live with EANnet with GHPL in March 2002 and the exchange of manula UBFs ended in September 2002.

Results from the implementation of EANnet and the synchronisation of data with GHPL are shown in the table below:

MEASURES OF DIS PERFORMANCE	2001	2002	2003
GHPL credits as a % of all CP credits	11.4%	10.4%	10.0%
Pricing credits as a % of all GHPL credits	36.7%	6.7%	5.4%

For CP pricing adjustment credits for other retailers have run at 44% of total credits for both 2002 and 2003. The figures for GHPL are significantly less following the adoption of EANnet. Similarly GHPL have experienced a reduction in pricing claims for CP in excess of 65%. The combination of improved internal data integrity and the seamless exchange of synchronised data with retailers has made the adoption of EANnet a very worthwhile investment for Colgate Palmolive.

5.3 Select trading partners

Selection of trading partners for DIS pilots is similar to other collaborative initiatives in that the four principles of collaboration, the four C's, are a useful starting point (Figure 7).

- Objectives of both organisations are **compatible**
- Both organisations are **committed** at a senior level
- Organisations have the **capability** to collaborate, eg to generate, share and use specified data
- Both organisations are agreed on mechanisms to **control** the inputs to, and outputs from, collaboration.

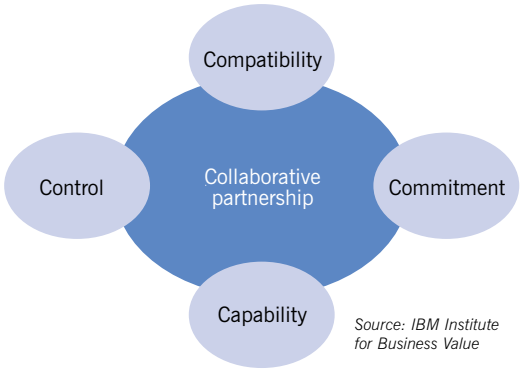


Figure 7: The four C's of collaboration

Choose strategic trading partners that are committed to developing DIS for pilots, but also ensure that these trading partners have the systems and processes necessary to maintain DIS into the future. In preparing for the pilot, establish clear business rules and agreements with pilot trading partners. These will include the procedures for synchronising the data for the first time (eg once a manufacturer has been accredited as EANnet Ready™) and how to resolve discrepancies between the different initial datasets of the trading partner.

5.4 Pilot DIS

The pilot may uncover a number of issues (see Case Study I) which should be addressed by the trading partners involved working with EANnet, making necessary adjustments to processes, workflow or technologies. Once targeted DIS capabilities are in place, closely monitor the results of the pilot and forecast return on investment. Publishing pilot results will help to move the whole industry towards DIS.

5.5 Rollout to full scale DIS

Rollout to full scale may involve additional divisions as well as engaging additional trading partners to synchronise data. It may also include a process to develop and maintain the DIS solution, as trading partner requirements and DIS standards and technologies will evolve over time. Once DIS is in place then the real opportunity is available. Work with the strongest partners to identify, prioritise, plan and implement further processes for collaboration, with associated ECR benefits.

The next section of this report summarises the learning and experience of the project team into five key recommendations.

Case Study I: Issues in a DIS implementation

Gillette is a multinational company producing consumer products in the personal healthcare and household categories. Gillette had a number of issues which were addressed through the course of their DIS implementation project.

EANnet data definitions:

– All levels of product in EANnet are required to have GTINs. A number of Gillette saleable units did not have barcodes

– Interpretations of fields - eg unit of measure, trade, dispatch, order and invoice

– Different definitions of terms between EANnet and Gillette – eg “multi-pack".

System issues:

– Not all mandatory/grocery required fields could be directly mapped to fields with the SAP ERP system

– Because of Gillette global restrictions many fields are manually maintained

– Missing leading zeros in SAP ERP system were downloaded into EANnet and had to be identified and data reloaded.

Data issues:

– The field UNSPSC, which is a field that determines the type of product, does not have the capability to set up promotional items with one or more product. For example a promotional item that contains a razor and a toothbrush. To solve this issue Gillette currently determine what the majority of the product is and classify it under that code

– All product descriptions had to be changed to fit EANnet requirements

– Pallet net weights had to be recalculated due to differences between EANnet and Gillette

– Unable to load more than nine components for pre-packs next lower level of product identification (workaround solution - information manually loaded)

– Premium products could not be added into EANnet field – so added to text line (workaround solution).

Retailer issues on data download:

– All intermediate packing levels were required to have GTINs and be in EANnet

– The retailer’s system was picking up pre-pack pricing on individual items

– Retailer required only one source of supply for each product - their systems could not cope with three flags

– Retailer required pricing to be at the shipper level even if the sales unit for Gillette was at another level

– Issues arose with the flagging of shipper/retail units. Some items are flagged as both trade and dispatch units. Retailer required only the shipper to be flagged as trade and dispatch although product can be shipped at both levels.

Recommendations

6

Of the 14 organisations represented on the project team, eight have implemented DIS with at least one trading partner. From discussions in this team, and with local and global experts in IBM, there are five key recommendations:

- Implement DIS now
- Leverage EANnet across the industry
- Think strategically (collaboration), act operationally (data integrity)
- Build sustainable DIS solutions
- Anticipate moves towards full electronic trading.

6.1 Implement DIS now

Initiated in 1999, DIS in Australasia has progressed slowly to date (Figure 8).

However, the pieces are now in place for a rapid conclusion to this phase of grocery industry development. In particular, manufacturers have been reluctant to commit to a particular DIS solution without knowing how the major retailers intend to implement DIS. In Australia this dilemma now seems to have been resolved. All major Australian grocery industry partners, including retailers, wholesalers and manufacturers, are now agreed on a single DIS framework which is compatible with all proposed data transfer methods. Investment in a single EANnet based DIS solution can now cover the whole industry.

In New Zealand, the major retailers are now rallying behind DIS and use of EANnet, which has been available there for less than 12 months. The industry in New Zealand now has an opportunity to move quickly to take advantage of DIS developments pioneered in Australia (see Case Study J).

6.2 Leverage EANnet across the industry

One of the challenges of DIS is that many of the benefits accrue only when the majority of the industry has implemented it. Similarly, a standard (such as the UBF dataset) or a tool (such as EANnet) is of little advantage if none use it. Australasia is a comparatively small and isolated grocery market, and as such it is both easier and more important that there is a single data pool to enable Australasia-wide DIS. Early trials have proved and refined EANnet and the way it has been configured and implemented. Industry bodies, including ECRA and AFGC, have endorsed the use of EANnet as a single industry-wide DIS enabler.

The alternative is to use a variety of different data pools, all of which should be EAN•UCC compliant, but which might have a variety of requirements in terms of data, data formats and systems connections (see Case Study K). This is a feasible solution for the industry and has been used elsewhere, however it is likely to add cost, create uncertainty and significantly slow the progress of DIS in Australasia.

The present situation is that the majority of major players in Australasia are committed to use of EANnet. Multiple industry data pools are therefore unlikely. The remaining question is how quickly EANnet enabled DIS can be rolled out across the industry.

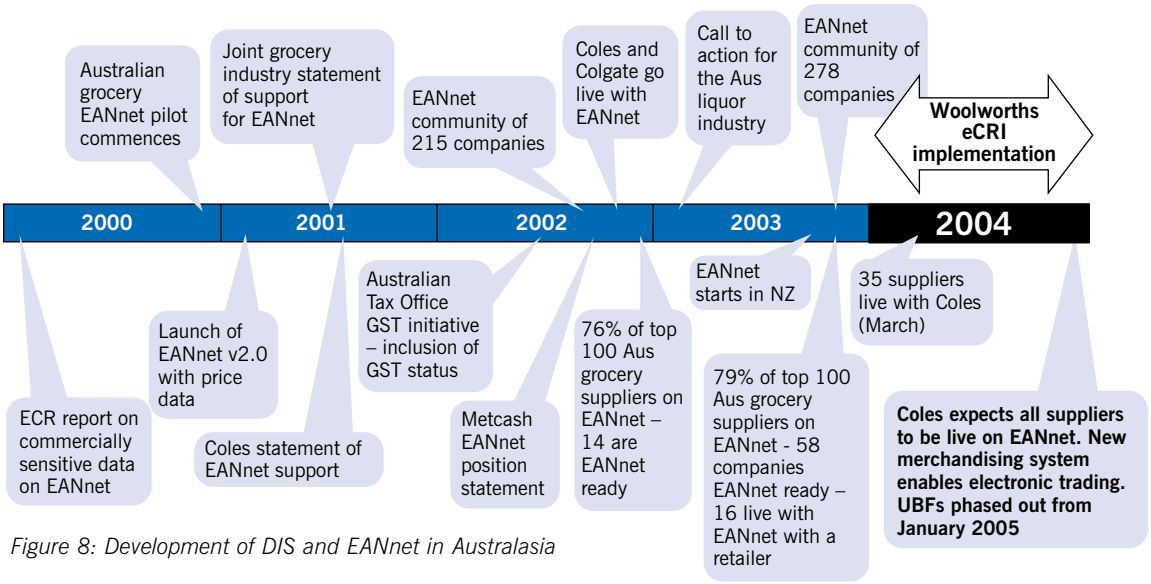


Figure 8: Development of DIS and EANnet in Australasia

Sources: EAN Australia, IBM Institute for Business Value

6.3 Think strategically (collaboration), act operationally (data integrity)

The implementation of DIS is a strategic initiative. It requires a commitment to internal changes of processes, systems and culture. It also makes possible a whole new set of collaborative opportunities for working with strategic trading partners to reduce costs and improve efficiency. Strategy provides the vision and the enduring commitment that are vital to a successful DIS implementation.

The actual work of implementing DIS, however, is mostly operational. It requires attention to the detail of the processes and systems which create and use master data (see Case Studies F and I). A vision without the operational focus is likely to lead to an incomplete and/or un-sustainable solution. Operational changes without vision may result in a failed DIS project as the executive sponsorship to resource the implementation and make the difficult decisions (see Case Study G) is lacking.

6.4 Build sustainable DIS solutions

One of the painful lessons learnt by some early adopters of DIS is that synchronised data and even going live with EANnet with a trading partner is not the end of the story (see Case Study A). Data cleansing is an integral part of the DIS implementation process, but this is of limited benefit unless it is sustainable. Sustainable solutions generally include two fundamentals; firstly, management of the quality of master data from the point of its creation (eg workflow systems), and secondly, appropriate system integration. The latter ensures that all systems can electronically share a single set of master data.

The consequences of poor master data management internally are miscommunication and rework, and a devaluing of the meaning of "master" data. When DIS is the basis for collaboration and electronic trading, the consequences of poor and unsynchronised master data are more serious, both in terms of costs and in terms of damage to the trading relationship. As the basis for a new set of trading relationships, the DIS solution must be robust.

Case Study J – DIS in New Zealand through EANnet

Foodstuffs is New Zealand's largest grocery organisation, with retail market share of 55.8% and combined annual turnover for the group of NZ$5.75 billion in fiscal 2002-2003. Within the New Zealand market three separate but allied co-operative companies operate in defined regional areas: upper North Island, lower North Island and South Island.

Expectations

– The three Foodstuffs companies will work together to define data requirements for EANnet and promote the system
– Product data will be seamlessly integrated from EANnet to Foodstuffs' back office systems
– Ultimately the Universal Buying Form will be discarded in favour of EANnet.

Benefits

– Increased product data accuracy
– Increased pricing accuracy
– Reduced time to market for new and updated products
– Improved transparency of product changes
– Reduction in claims and credits
– Reduction in scan-errors at retail level.

Risks

– The three companies must agree on required data and formats
– Data cleansing may be seen as a "once-off" activity rather than an ongoing data integrity process with appropriate system support
– Manufacturers/suppliers need to integrate their own internal data management systems.

Timeline

March 2004 – June 2004:	Set budgets and form project team; write project charter.
July 2004 – January 2005:	Define data requirements for all three companies.
February 2005:	Commence development for back office integration.

6.5 Anticipate moves towards full electronic trading

Key industry players have invested and are likely to continue to invest in technology and processes that remove non-value adding activities and focus resources to develop competitive differentiators. Electronic trading is the first communication benefit (Figure 9) made possible through DIS implementation that is already in the sights of these players. In anticipation of this, all companies in the grocery industry should prepare and align themselves with this new way of doing business. Transactions such as orders and invoices will be only the first step. Collaborative information exchange will follow, in support of objectives such as CPFR. DIS, itself maintained by electronic communication, will provide the basis for this new channel for data traffic. These future opportunities for development of, and building on, DIS are the subject of the final section of this report.

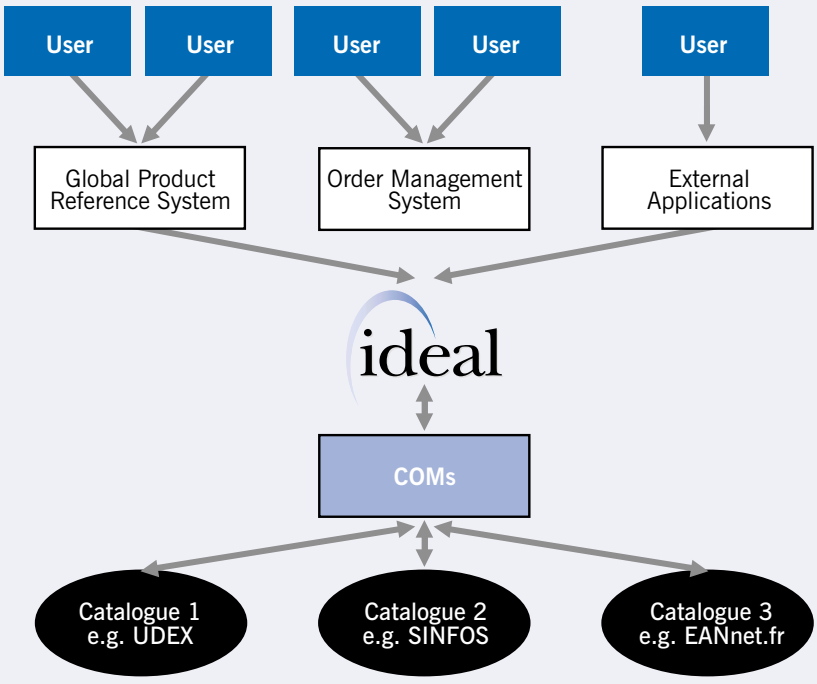
Case Study K: DIS experience from Europe

Kellogg, a multi-national food manufacturer, has a European operation headquartered in the UK which covers nine different countries. Manufacturing, logistics and finance are organised on a regional basis with sales and marketing based in each country to meet different local cultural needs.

In 2002, several Kellogg European business units were already members of data pool services or wished to join in order to be able to e-collaborate with retail customers. At the same time, Kellogg Europe was experiencing the global trend of retailer-driven mandatory subscription to data pools. For example Sainsbury's, a major UK retailer, published a plan to implement "highly automated fulfilment factories" to replace their warehouse and distribution network in 1992. One of the six requirements for manufacturers was to subscribe to the UDEX data pool, which would be an enabler for complete automation of transactions through data accuracy.

This business landscape led to the development of a solution called "IDEAL" (**I**tem **D**ata **E**lectronic **A**lignment) which synchronises external product catalogues with Kellogg item data. The third party catalogues that are currently or will soon be linked to "IDEAL" are AECOC in Spain, Equadis and EANnet.fr in France, UDEX in the UK and SINFOS in Germany, Austria, Switzerland and the Netherlands. This means that there are five different data pools, each of which may have slightly different data and connection requirements.

"IDEAL" monitors the Kellogg Europe logistical and commercial databases and triggers messages on a publish-subscribe basis. Every time a new product is created or an existing one is changed or deleted "IDEAL" picks up this update and sends a message to the registered catalogue. The solution is versatile enough to send more or less data to any catalogue or retailer in any format and provides a universal product data synchronisation solution which adheres to GCI standards. The figure below illustrates the "IDEAL" model.



7 DIS – the future

DIS is only the beginning of a new era in business and supply chain development in the grocery industry. Until now, collaborative projects have been limited trials and tests to determine what might be possible. Once DIS is in place using EANnet in the majority of the Australasian grocery industry, work can begin in earnest to leverage the power of quality communications and sound data, and to potentially extend the use of current EANnet capabilities in the area of promotional pricing data. Figure 9 shows the progression of collaborative initiatives and potential industry benefits.

DIS can be seen to be the last building block to complete the foundation for collaborative initiatives. Once it is in place, data shared between trading partners can take on a new significance, a new reliability, and the trading relationship is able to focus on adding value through efficient transactions, enhanced supplier relations (such as portals, metrics and KPIs) and CPFR. This level of communication builds mutual trust and understanding to engage on the third tier of collaboration – innovation.

For the future development of EANnet, the twin challenges are certification to the recently developed Global Data Synchronisation standards (see Appendix C) and support for promotional pricing. EANnet already has much of the functionality required to handle promotional data; promotional pricing was piloted as part of the EANnet grocery industry pilot completed in 2001. This functionality would need to be re-tested against current business requirements and would also require a new level of coordinated promotional planning between trading partners. This in turn will require an increased level of trust in the relationship and in the data. ECR is showing the way for the industry and individual companies to meet these challenges and respond to the ever-changing needs of the Australasian consumer.

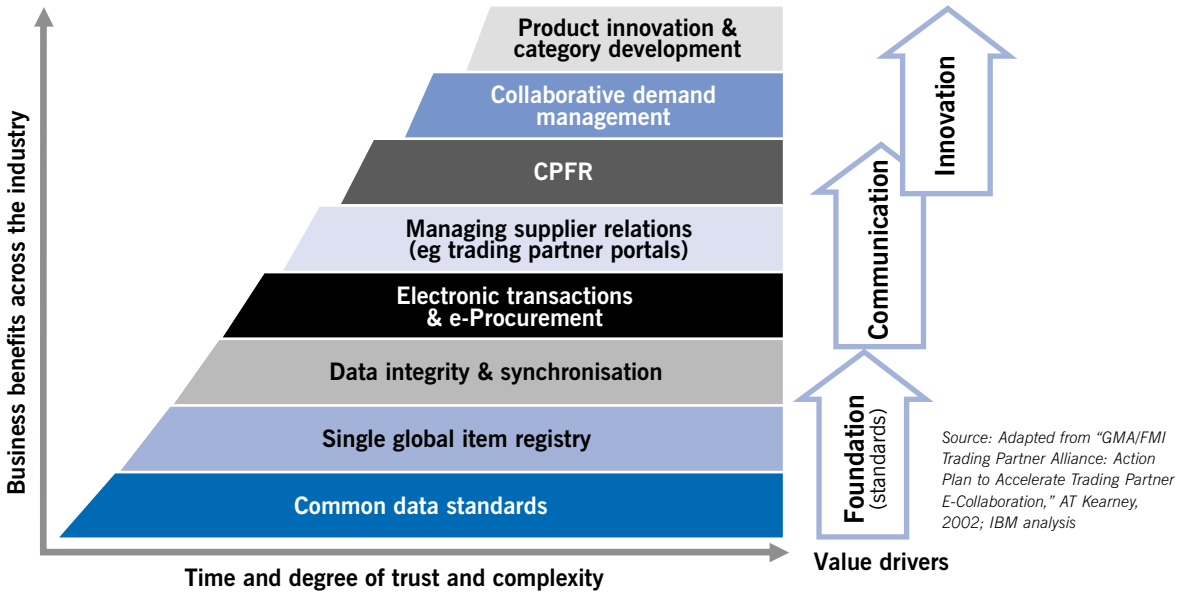


Figure 9: Building value through collaboration

Appendix A

A

Short-term tangible benefit model

DATA INTEGRITY AND SYNCHRONISATION BENEFITS (MANUFACTURERS AND RETAILERS)

1. ADMINISTRATION PROCESSING - NEW PRODUCT INTRODUCTIONS AND PRODUCT UPDATES	Calculations:
A. Number of new or updated products or price changes introduced annually	Input by User
B. Manufacturer hours compiling new or updated product/pricing information per SKU	Input by User
BB. % of this time which could be eliminated if data was synchronised through EANnet	Input by User
C. Total manufacturer hours saved managing new product information	A x B x BB
D. Retailer hours rekeying new and updated product information per SKU	Input by User
DD. % of this time which could be eliminated if data was synchronised	Input by User
E. Total retailer hours rekeying new and updated product information	A x D x DD
2. INCOMPLETE REPLENISHMENT OF RETAIL SHELF FOR NEW/UPDATED PRODUCTS	**Calculations:**
F. Average time (in days) for which each retail store is out-of-stock of new/updated product due to DIS issues	Input by User
G. % of sales of new/updated products affected	Input by User
J. Average annual turnover due to new/updated products	Input by User
K. Product substitution factor (% of sales lost after substitution)	Input by User
L. Number of trading days per year	Input by User
M. Revenue benefit from reducing incomplete replenishment to retail shelf associated with new/updated products	F x G x J / L x K
3. OUT-OF-STOCKS	**Calculations:**
O. Previous studies have found that 80% of out-of-stocks (OOS) are the result of in-store issues. What percentage of these OOSs are estimated to be due to DIS issues?	Input by User
Q. Previous studies have found that 20% of OOSs are the result of DC/head office issues. What percentage of these are estimated to be due to DIS issues?	Input by User
Other calculations relating to OOSs will be based on data gathered from the ECRA Efficient Replenishment Study.	
4. ADMINISTRATION PROCESSING – NON-QUALITY ORDERS	**Calculations:**
V. Number of customer orders per year	Input by User
W. % of non-quality orders	Input by User
X. # of non-quality orders per year	V x W
Y. Minutes of processing time per non-quality order	Input by User
Z. Total hours per year extra processing	X x Y/60
5. SHELF TAG AND CHECKOUT ERRORS	**Calculations:**
AA. Number of checkout scan failures per annum	Input by User
AB. % of scan failures per that can be attributed to barcode errors	Input by User
AC. Number of scan failures that result from lack of system updating (real time data synchronisation) for all retail outlets	AA x (1-AB)
AD. Minutes per scan error spent correcting/manually overriding system	Input by User
AE. Total hours spent correcting scan errors per annum	AC x AD/60 x L
N. Total number of items sold annually	Input by User
P. Average price of an item	H / N
AF. Weighted average GST rate per item in retail outlets	Input by User
AG. GST rate paid on items that did not scan	Input by User
AH. Additional GST paid per item (averaged)	(((AG-AF)/(1+(AG-AF)))xS
AI. Additional GST paid (annual total)	AC x AH
6. ADMINISTRATION PROCESSING - CLAIMS AND DISPUTES	**Calculations:**
AJ. Number of claims/invoice mismatches per month relating to discrepancies in basic item data	Input by User
AK. Cost of adminstration per claim/dispute	Input by User
AL. Annual administration cost of processing claims and disputes	AJ x AK x12
7. CASH FLOW EFFECT - CLAIMS AND DISPUTES	**Calculations:**
AM. Average value of each claim	Input by User
AN. Average time taken (in days) to resolve dispute (and pay outstanding invoice)	Input by User
AO. Effective monthly rate of return on cash invested	Input by User
AP. Money tied up in claims/disputes per month	AJ x AN
AQ. Annual cost of claim disputes	((AP x (1+AO)^(AN/30.5))-AP) x 12
AT. Manufacturer labour costs (per hour) associated with compiling new and updated product information	Input by User
AU. Hourly costs associated with managing/correcting non-quality orders	Input by User
AV. Retailer labour costs (per hour) associated with rekeying new and updated product information	Input by User
AW. Retail labour cost of checkout employees	Input by User
=> TOTAL SAVINGS <=	
INCREASED REVENUE DUE TO IMPROVED TIME TO MARKET FOR NEW AND UPDATED PRODUCTS	**M**
ADMINISTRATION PROCESSING - CLAIMS AND DISPUTES	**AL**
SAVINGS ON ADDITIONAL GST FROM SCAN FAILURES	**Retailers=AI**
CASH FLOW SAVINGS	**AQ**
TOTAL LABOUR HOURS SAVED PER YEAR	**M=C+Z, R=E+Z**
TOTAL LABOUR COST SAVED PER YEAR	**M=ATxC+AUxZ, R=AVxE+AUxZ**

B Appendix B

Indicative DIS business cases

These business cases are included to give some indication of the level of resource required, the timing of benefits and the overall value added. They are based on the experience of team members together with expert input from IBM and EAN Australia. These business cases are indicative only, and any company undertaking a DIS project should build their own business case based on their particular business and commercial environment.

Three indicative business cases have been developed; one for a large CPG manufacturer (turnover A$500 million), one for a mid-size CPG manufacturer (turnover A$100 million) and one for a smaller manufacturer (turnover A$20 million). In each case, the number of GTINs has been determined pro rata turnover and implementation costs and benefits have been related to the number of GTINs. No business cases have been developed for retailers due to the lack of available data.

Indicative business case for large manufacturer:

YEARS	1	2	3	4	5	NPV
Costs						
Systems	-200,000	-	-	-	-	-$200,000
Systems licence	-10,000	-10,000	-10,000	-10,000	-10,000	-$43,121
EANnet subscription	-15,000	-15,000	-15,000	-15,000	-15,000	-$64,682
Implementation internal labour	-60,352	-	-	-	-	-$60,352
Ongoing labour	-13,271	-13,271	-13,271	-13,271	-13,271	-$57,228
Benefits						
S/term benefits %	10%	80%	100%	100%	100%	
S/term	41,463	331,707	414,634	414,634	414,634	$1,338,000
M/term benefits %	0%	30%	60%	80%	100%	
M/term	-	19,756	39,512	52,683	65,854	$142,394
Net present value						**$1,055,011**
Cumulative cashflow	-$257,160	$56,032	$471,907	$900,953	$1,343,169	

Industry data

Total mfr industry s/term benefits (A$m)	34	
Total mfr industry m/term benefits (A$m)	5.4	(average)
Total manufacturer industry turnover (A$m)	41,000	(taken from EPM calc)
Total industry GTINs	130,000	(estimate from EAN Australia)

Assumptions/inputs

Systems & external costs (eg PIM, consultant) (A$)	200,000
Systems licence etc (A$ pa)	10,000
Internal labour rate (A$ pa)	100,000
Hours/day	8
Working days per year	220
Internal labour for implementation (hrs per GTIN)	0.67
Ongoing labour for master data (mins/wk/100 GTINs)	17
Eg mfr turnover (A$m)	500
Cost of capital	8%

Calculated inputs

Internal labour (A$/h)	57
Eg mfr GTINs	1585
Eg mfr internal labour for implementation (hrs)	1062
Eg mfr ongoing labour for master data (hrs pa)	234
Eg mfr s/term benefits (A$ pa)	414,634
Eg mfr m/term benefits (A$ pa)	65,854

Indicative business case for mid-size manufacturer:

YEARS	1	2	3	4	5	NPV
Costs						
Systems	-55,000	-	-	-	-	-$55,000
Systems licence	-3,000	-3,000	-3,000	-3,000	-3,000	-$12,936
EANnet subscription	-3,300	-3,300	-3,300	-3,300	-3,300	-$14,230
Implementation internal labour	-12,070	-	-	-	-	-$12,070
Ongoing labour	-2,654	-2,654	-2,654	-2,654	-2,654	-$11,446
Benefits						
S/term benefits %	20%	80%	100%	100%	100%	
S/term	16,585	66,341	82,927	82,927	82,927	$275,893
M/term benefits %	0%	30%	60%	80%	100%	
M/term	-	3,951	7,902	10,537	13,171	$28,479
Net present value						**$198,689**
Cumulative cashflow	-$59,439	$1,899	$83,774	$168,283	$255,426	

Industry data

Total mfr industry s/term benefits (A$m)	34	
Total mfr industry m/term benefits (A$m)	5.4	(average)
Total manufacturer industry turnover (A$m)	41,000	(taken from EPM calc)
Total industry GTINs	130,000	(estimate from EAN Australia)

Assumptions/inputs

Systems & external costs (eg PIM, consultant) (A$)	55,000
Systems licence etc (A$ pa)	3,000
Internal labour rate (A$ pa)	100,000
Hours/day	8
Working days per year	220
Internal labour for implementation (hrs per GTIN)	0.67
Ongoing labour for master data (mins/wk/100 GTINs)	17
Eg mfr turnover (A$m)	100
Cost of capital	8%

Calculated inputs

Internal labour (A$/h)	57
Eg mfr GTINs	317
Eg mfr internal labour for implementation (hrs)	212
Eg mfr ongoing labour for master data (hrs pa)	47
Eg mfr s/term benefits (A$ pa)	82,927
Eg mfr m/term benefits (A$ pa)	13,171

Indicative business case for smaller manufacturer:

YEARS	1	2	3	4	5	NPV
Costs						
Systems	-15,000	-	-	-	-	-$15,000
Systems licence	-1,000	-1,000	-1,000	-1,000	-1,000	-$4,312
EANnet subscription	-500	-500	-500	-500	-500	-$2,156
Implementation internal labour	-2,414	-	-	-	-	-$2,414
Ongoing labour	-531	-531	-531	-531	-531	-$2,289
Benefits						
S/term benefits %	50%	80%	100%	100%	100%	
S/term	8,293	13,268	16,585	16,585	16,585	$60,154
M/term benefits %	0%	30%	60%	80%	100%	
M/term	-	790	1,580	2,107	2,634	$5,696
Net present value						**$39,679**
Cumulative cashflow	-$11,152	$875	$17,010	$33,672	$50,861	

Industry data

Total mfr industry s/term benefits (A$m)	34	
Total mfr industry m/term benefits (A$m)	5.4	(average)
Total manufacturer industry turnover (A$m)	41,000	(taken from EPM calc)
Total industry GTINs	130,000	(estimate from EAN Australia)

Assumptions/inputs

Systems & external costs (eg PIM, consultant) (A$)	15,000
Systems licence etc (A$ pa)	1,000
Internal labour rate (A$ pa)	100,000
Hours/day	8
Working days per year	220
Internal labour for implementation (hrs per GTIN)	0.67
Ongoing labour for master data (mins/wk/100 GTINs)	17
Eg mfr turnover (A$m)	20
Cost of capital	8%

Calculated inputs

Internal labour (A$/h)	57
Eg mfr GTINs	63
Eg mfr internal labour for implementation (hrs)	42
Eg mfr ongoing labour for master data (hrs pa)	9
Eg mfr s/term benefits (A$ pa)	16,585
Eg mfr m/term benefits (A$ pa)	2,634

Appendix C

C

EANnet and Global Data Synchronisation

EANnet is one of a network of country data pools that together with the EAN•UCC Global Registry will form the future Global Data Synchronisation Network (GDSN). Presently the details of how the GDSN will operate are being agreed and a number of data pool and technology providers (including CABASnet, Transora, UCCnet, WWRE, Stirling Commerce and Global eXchange Services (GXS), the technology provider of the current EANnet platform) will test the GDSN concept for the first time in July 2004. At this time none of the operational data pools around the world are completely compliant with the latest internationally agreed GDSN standards. EAN Australia is assessing the gap between the current GDSN version (1.3.1) and EANnet to determine the priority of initiatives for the future development of EANnet to become a certified GDSN data pool. For example, in some regions, such as Europe, the USA and Canada, interoperability between data pools is a high priority; in Australasia this is a lower priority as all parties are planning to use a single data pool, EANnet.

The key areas of difference between EANnet and GDSN are summarised in the table below.

The existing variances between EANnet and GDSN does not imply that data synchronisation is not ready for use in Australasia, but it does indicate that EANnet and all other data pools are in an ongoing process to harmonise with emerging GDSN standards.

Data pool attributes	EANnet	GDS standards	Implications
Dataset	Based on a previous data dictionary standard fully replicating the UBF, this contains product, price, allowance & charges information	The GDD (Global data Dictionary – see Appendix D, Glossary) includes more options for trade item definition, business process dependent data and additional category specific data	When Australasia becomes an integrated part of the GDSN, some additional data attributes may need to be added to EANnet and some data reformatting may be required.
Messaging format	Uses EANCOM PRICAT[15] message format, based on EDI transaction standards	EAN•UCC message set using XML (see Appendix C) and the AS2 messaging protocol	The present configuration of EANnet does not support XML transactions. This would need to be addressed before Australasia integrates with the GDSN
Messaging types	Presently using a web GUI to manage the publish and subscribe process, and does not support all the message types that would otherwise be required for GDSN	GDSN has 21 different message types with 31 different use cases (some use cases use the same message type) throughout the entire network. This includes messages for use between data pools, and between a data pool and the Global Registry (see Appendix C)	When Australasia becomes an integrated part of the GDSN, for certain processes there will be a migration from the web GUI to use of XML messages. Determine how many of picking slots require this technology

[15] PRICAT - Price/sales Catalogue - see Appendix D, Glossary

D Appendix D

Glossary

EAN	European Article Numbering – an international numbering system
EAN•UCC	Global standard setting and data pool organisation, formed from the combination of EAN and UCC
EANCOM®	EANCOM® is an EDI business directory of messages and components based upon the UN/EDIFACT standard
EPC	The Electronic Product Code (EPC) is a unique number that identifies a specific item in the supply chain. The EPC is stored on an RFID tag, which combines a silicon chip and an antenna. Once the EPC is retrieved from the tag, it can be associated with dynamic data such as from where an item originated or the date of its production
Auto-ID	Automatic Identification – uses RFID technology to identify EPCs using a remote scanning device
Data Pool	A Data Pool is a repository of GCI data where trading partners can obtain, maintain and exchange information on items and parties in a standard format through electronic means. Multiple trading partners use data pools in order to align / synchronise their internal master databases (GCI GDS definition)
DC	Distribution Centre (warehouse)
GCI	The Global Commerce Initiative (GCI) is a voluntary body created in October 1999 to improve the performance of the international supply chain for consumer goods through the collaborative development and endorsement of recommended standards and key business processes. See www.gci-net.org
GDD	Global Data Dictionary - a global list of data items, including: 1. Neutral data: relationship independent, general valid data 2. Relationship dependent data: Depending on bilateral partner agreements 3. Core data: irrespective of the sector and country 4. Extension: sector specific, country specific The GDD also includes a definition of transaction types
GDS	Global Data Synchronisation – the global program, sponsored by the GCI, to implement data synchronisation worldwide
GLN	Global Location Number - a reference number used to identify legal, functional and physical entities
Global Registry	A global directory for the registration of items and parties. It can only contain data certified GCI compliant. It federates the GCI compliant data pools and acts as a pointer to the data pools where master data has been originally and physically stored
GTIN	Global Trade Item Number – a numbering standard for case and product barcodes
MDC	Manufacturer's Distribution Centre
PRICAT	Price/sales Catalogue – part of UBF/EANnet dataset
RDC	Retail Distribution Centre
RFID	Radio Frequency Identification – technology used for Auto-ID
XML	XML is a language for defining, validating and sharing documents containing structured information. XML provides a file format for representing data, a schema for distinguishing and describing data structures. XML is the standards format that will be used in exchanging information to and from UCCnet