Australian Red Meat Industry Supply chain information Standard Projects Example Cost Benefits

A number of red meat industry supply chain information standards demonstration projects have been undertaken over several years. The cost benefit information derived from these projects has been summarised on this fact sheet.

The cost benefit summaries that are included on this fact sheet are:

- Export carton project utilizing GS1 bar coding and electronic messaging
- Domestic carton/ carcase project utilizing GS1 bar coding and electronic messaging
- Livestock production project utilizing GS1 numbering and electronic messaging
- Feedlot project utilizing GS1 numbering and electronic messaging.

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Cost benefit for export carton product

Example 1 – Export Carton Product

Non-GS1 Bar Coding; In this example each of the supply chain participants have computerised systems with scanning ability but the Processor is using a non-GS1 numbering, bar code and eMessaging system.

Steps		Cost $ per Truckload
1 – Processor applies Non-GS1 Bar codes to carton and store on-site	(576 x 0.20)	$115.20
2 – Scan out of on-site store onto truck	(576 x 0.20)	$115.20
3 – Manually prepare MTC for load to 3rd party cold store (for 576 cartons)		$10.00
4 – Truck arrives at 3rd party cold store manual tally of carton, manual record of arrival		$30.00
5 – Manual tally of weights and place in storage	(576 x 0.50)	$288.00
6 – Enter manually in to computer system to record arrival of truckload		$20.00
7 – Manually complete MTC receipt record and return to processor		$5.00
8 – Processor manually reconciles MTC returns and holds on file		$3.00
9 – Processor prepares and faxes order to fill container with load of the 288 cartons.		$30.00
10 – Cold store manually enters order into computer and faxes back details		$25.00
11 – Cold store manually pulls cartons to pack container, sorts by carton descriptions, establishment numbers and production dates.	(576 x 0.50)	$288.00
12 – Cartons Port Marked manually and checked by supervisor	(576 x 0.25)	$144.00
13 – Cold Store manually prepares information to health certificate		$25
14 – Enters health certificate data into EXDOC for health certificate		$10
Travel to US for unloading		
15 – Unload ship at destination – Manually match container to paper work		$50
16 – Cartons travel to bonded cold store – manual tally of cartons matched to paper work	(576 x 0.50)	$288.00
17 – FSIS inspection process and entry to US market (costs incurred by cold store in moving cartons around and manual identification)	(576 x 0.50)	$288.00
18 – Manually sort and pull carton to load for final customer checking description and weights and manually record	(576 x 0.50)	$288.00

Total: $2022.40

GS1 Bar Coding; In this example each of the supply chain participants have computerised systems with scanning ability all based on the GS1 numbering, bar code and eMessaging system. The example is based on achieving electronic Port Marking and Meat Transfer Certificates.

Steps		Cost $ per Truckload
1 – Processor applies GS1 Bar codes to carton and store on-site	(576 x 0.20)	$115.20
2 – Scan out of on-site store onto truck	(576 x 0.20)	$115.20
3 – Electronic MTC to 3rd party cold store (for 576 cartons)		$0.00
4 – Truck arrives at 3rd party cold store Match to eMessage		$1.00
5 – Automatic tally of weights and place in storage	(576 x 0.20)	$115.20
6 – Automatic update to computer system record arrival of truckload		$0.00
7 – Automatic electronic complete MTC receipt record and return to processor		$0.00
8 – Processor automatic reconciles MTC returns and holds on file		$0.00
9 – Processor prepares electronic order to fill container with load of the 288 cartons.		$10.00
10 – Cold store automatic process order into computer and email back details		$1.00
11 – Cold store scans to pull cartons to pack container, sorts by carton descriptions, establishment numbers and production dates.	(576 x 0.20)	$115.20
12 – No Port Marked as each carton is unique		$.0
13 – Cold Store automatically prepares information to health certificate		$5
14 – Enters health certificate data into EXDOC for health certificate		$5
Travel to US for unloading		
15 – Unload ship at destination – Electronically match container to paper work		$20
16 – Cartons travel to bonded cold store – scan tally of cartons matched to paper work	(576 x 0.20)	$115.20
17 – FSIS inspection process and entry to US market (costs incurred by cold store in moving cartons around and scan identification)	(576 x 0.20)	$115.20
18 – Scan sort and pull carton to load for final customer checking description and weights	(576 x 0.20)	$115.20

Total: $828.40

This simple example showed a cost saving of $1189 per container load or a saving of $2.06 per carton. If all the steps in the supply chain are analysed in detail the cost saving could be doubled.

Cost benefit for domestic carton/carcase product

Example 2 – Domestic Carton/ Carcase Product

Non-GS1 Bar Coding; In this example each of the supply chain participants have computerised systems with scanning ability but the Processor is using a non-GS1 numbering, bar code and eMessaging system.

Steps		Cost $ per Truckload
1 – Processor applies Non-GS1 Bar codes to carton and carcases and stores on-site	(576 x 0.20)	$115.20
2 – Scan out of on-site store onto truck	(576 x 0.20)	$115.20
3 – Manually prepare MTC for load to 3rd party cold store (for 576 cartons/ carcases)		$10.00
4 – Truck arrives at 3rd party cold store manual tally of carton, manual record of arrival		$30.00
5 – Manual tally of weights and place in storage	(576 x 0.50)	$288.00
6 – Enter manually into computer system to record arrival of truckload		$20.00
7 – Manually complete MTC receipt record and return to processor		$5.00
8 – Processor manually reconciles MTC returns and holds on file		$3.00
9 – Processor sells cartons and carcases to retails then prepares and faxes delivery details to Cold Store		$60.00
10 – Cold store manually enters delivery schedule in to computer and faxes back confirmation details		$40.00
11 – Cold store manually pulls truckload of carton/ carcases to fill delivery schedule, sorts by carton descriptions, carcase grades and production dates.	(576 x 0.60)	$345.60
12 – Cold store prints out various delivery dockets for each delivery and drop off at retailers	(576 x 0.25)	$144.00
13 – Retailers manually checks cartons and carcases against orders and ignores weight and other details	(576 x 0.50)	$288.00
14 – Processor raises invoices for retailer against manual records from cold store. Enters health certificate data into		$100.00

Total: $1564.00

GS1 Bar Coding; In this example each of the supply chain participants have computerised systems with scanning ability all based on the GS1 numbering, bar code and eMessaging system. The example is based on achieving electronic Meat Transfer Certificates.

Steps		Cost $ per Truckload
1 – Processor applies GS1 Bar codes to carton and store on-site	(576 x 0.20)	$115.20
2 – Scan out of on-site store onto truck	(576 x 0.20)	$115.20
3 – Electronic MTC to 3rd party cold store (for 576 cartons/ carcases)		$0.00
4 – Truck arrives at 3rd party cold store Match to eMessage		$1.00
5 – Automatic tally of weights and place in storage	(576 x 0.20)	$115.20
6 – Automatic update to computer system record arrival of truckload		$0.00
7 – Automatic electronic complete MTC receipt record and return to processor		$0.00
8 – Processor automatic reconciles MTC returns and holds on file		$0.00
9 – Processor sells via electronic messaging, web site and phone order and sends electronically to cold store.		$10.00
10 – Cold store automatic process order into computer and email back details		$1.00
11 – Cold store scans to pulls truckload of carton/ carcases to fill delivery schedule, sorts by carton descriptions, carcase grades and production dates.	(576 x 0.20)	$115.20
12 – Cold store automatically sends electronically and prints out various delivery dockets for each delivery and drop off at retailers		$5
13 – Retailers Scans in to check cartons and carcases against orders and tally weight and other details	(576 x 0.20)	$115.20
14 – Processor automatically raises invoices for retailer against electronic records from cold store.		$5

Total: $598.00

This simple example showed a cost saving of $961 per truckload or a saving of $1.67 per carton/carcase. If all the steps in the supply chain are analysed in detail the cost saving could be doubled.

Cost benefit for on-farm livestock production

Example 3 – Livestock Production

Non-GS1 system; In this example each of the supply chain participants have limited computerised systems with email ability but all are using non-GS1 numbering and eMessaging system. This example is based on 50 head.

Steps		Cost $ per head
1 – Producer uses simple computer system or manual system to record stock levels and stock types at birth or induction	(50 x 1.50)	$75.00
2 – Producer manually records dates and weights for the 50 head and enters information into computer at a later time	(50 x 2.50)	$125.00
3 – Producer manually records drug use and stock feed records over a 4 month period	(50 x 1.00)	$50.00
4 – Producer manually prepares the waybill, NVD and MSA declaration for 50 head. Records are kept and filed for required period.		$20.00
5 – Producer manually creates an invoice for the cattle and records into computer system		$30.00
6 – Gets manual feedback from next link in supply chain or from slaughter. Tries to match livestock details to performance	(50 x 1.00)	$50.00
7 – Producer manually sorts out invoice for transport and matches to sale.		$25.00

This process is repeated 4 time from Breeding to Slaughter

Each Total: $375.00

4 x $375.00

Total for Life $1500.00

GS1 based systems; In this example each of the supply chain participants have computerised systems with email for eMessaging ability all based on the GS1 numbering and eMessaging system. The example is based on achieving electronic regulatory forms and records. This example is based on 50 head.

Steps		Cost $ per head
1 – Producer uses simple computer system to electronic capture information based on GS1 System to record stock levels and stock types at birth or induction	(50 x 0.20)	$10.00
2 – Producer electronically records dates and weights for the 50 head	(50 x .50)	$25.00
3 – Producer electronically records drug use and stock feed records over a 4 month period by eMessaging and scanning	(50 x .20)	$10.00
4 – Producer electronically prepares and prints the waybill, NVD and MSA declaration for 50 head. Records are electrically kept and filed for required period. EMessage is sent to next link is supply chain.		$5.00
5 – Producer electronically creates an invoice for the cattle and sends as eMessage.		$5.00
6 – Gets eMessage feedback from next link in supply chain or from slaughter. Electronically matches livestock details to performance	(50 x .10)	$5.00
7 – Producer electronically matches invoice for transport and to sale.		$5.00

This process is repeated 4 time from Breeding to Slaughter

Each Total: $65.00

4 x $65.00

Total for Life $260.00

This simple example showed a cost saving of $1,240 per truckload of 50 head of cattle over the life of the cattle. This equates to a saving of $24.80 per head. If all the steps in the supply chain are analysed in detail the cost saving could be doubled.

Cost benefit for feedlot livestock production

Example 4 – Feedlot

Non-GS1 system; In this example the feedlot has limited computerised systems with email ability but manually collects information and enters it using non-GS1 numbering and eMessaging system. This example is based on 200 head.

Steps		Cost $ (per head)
1 – Feedlot uses simple computer system to record induction of cattle with weights, PIC, Vendors, NVDs, market and drugs used for individual animals	(200 x 4.00)	$800.00
2 – Feedlot manually records dates and weights at specific times for the 200 head individually and enters information into computer at a later time	(200 x 2.00)	$400.00
3 – Feedlot manually records drug use on an individual bases and stock feed records over a 6 month period	(200 x 2.00)	$400.00
4 – Feedlot manually records weights on exit from feedlot for each animal individually.	(200 x 2.00)	$400.00
5 – Feedlot manually prepares the waybill, NVD, MSA declaration and NFAS declaration for 200 head as four lots of 50 head. Records are kept and filed for required period.		$80.00
6 – Feedlot manually creates an invoice for the feeding of the cattle and records into computer system		$40.00
7 – Gets manual feedback from slaughter. Tries to match livestock details to performance	(200 x 1.50)	$300.00
8 – Feedlot manually sorts out invoice for transport and matches to sale.		$50.00

Total $2470.00

GS1 based systems; In this example the feedlot, producer and slaughter plant have computerised systems with email for eMessaging ability all based on the GS1 numbering and eMessaging system. The example is based on achieving electronic regulatory forms and records. This example is based on 200 head.

Steps		Cost $ (per head)
1 – Feedlot receives NVD from supplier electronically and matches to induction of cattle with weights, PIC, Vendors, NVDs, market and drugs used for individual animals	(200 x 2.00)	$400.00
2 – Feedlot electronically records dates and weights at specific times for the 200 head individually and enters information into computer automatically.	(200 x 1.00)	$200.00
3 – Feedlot electronically records drug use on an individual bases and stock feed records over a 6 month period	(200 x .50)	$100.00
4 – Feedlot electronically records weights on exit from feedlot for each animal individually.	(200 x 1.00)	$200.00
5 – Feedlot electronically prepares and prints the waybill, NVD, MSA declaration and NFAS declaration for 200 head as four lots of 50 head. Records are kept and filed for required period.		$10.00
6 – Feedlot electronically creates an invoice for the feeding of the cattle and records into computer system		$5.00
7 – Gets electronically eMessage feedback from slaughter. Electronically matches livestock details to performance	(200 x .10)	$20.00
8 – Feedlot electronically matches invoice for transport and to sale.		$5.00

Total $940.00

This simple example showed a cost saving of $1,530 for 200 head of cattle over six months of feeding. This equates to a saving of $7.65 per head.