Grocery Industry
Supply Chain Benchmark Study
September 2002

Published by Electronic Commerce Council of Canada September 2002

TABLE OF CONTENTS

I PREFACE

Peter Keen, one of the most published authors on E-Commerce and the Internet said, "*In the future, the success of any company will be determined by the strength of its supply chain.*"

We have come a long way since we made our first commitment in 1997 to improve the efficiency of the supply chain for the Canadian Grocery Industry. A number of programs and initiatives have crossed our supply chain path in pursuit of efficiency with some spanning two decades. We have lived through Min/Max Systems, Quick Response (QR) Manufacturing and Resource Planning (MRP), Just in Time (JIT), Vendor Managed Inventory (VMI), Distribution Resource Planning (DRP) Category Management, and Efficient Consumer Response (ECR). ECCC in conjunction with the ECR Steering Committee has defined, deployed and monitored Supply Chain Initiatives in the name of efficiency and effectiveness. Critical to the success of these Supply Chain initiatives is the continued commitment from our Industry Associations, Committees, Partners and Members.

We are currently at the stage where we need to review our progress to date and put forth a strategy for continued progress. ECR, Category Management and Activity Based Costing (ABC) have been the focus of Industry Pilot Studies, Research Reports and Industry Scorecards. We have audited warehouse, conducted surveys, developed scorecards and held numerous strategy sessions in order to position the Canadian Grocery Industry as a leader in the deployment of new and emerging technologies. We have embraced Global Trends and opportunities in supply chain efficiency and gained significant knowledge from our experience.

The greatest challenge we face today is the development and deployment of a more disciplined approach in our attempts to achieve critical mass. A complete review of our research indicates that while we have made progress we need to deploy a more focused approach where all stakeholders are responsible and accountable for moving the industry forward.

Collaborative Planning, Forecasting and Replenishment (CPFR) is the latest in a series of supply chain concepts that has emerged as a supply chain best practice. CPFR is a well-developed and tested method of jointly managing inventory and replenishment throughout the supply chain. CPFR is essentially a nine step process that links buyers to sellers through collaboration via EDI. The success of CPFR will be dictated by the quality of the data it captures throughout the supply. Data capture at POS and throughout the supply chain is a critical component of effectively forecasting demand. Accurate, timely reliable data will be the battle cry of supply CPFR adopters and data synchronization (EDI transaction #832's) will emerge as the tool of choice. ECCnet is poised to play a pivotal role as it represents a repository of accurate reliable data.

CPFR Step	**EDI dependent**	**Barcode Dependent**
1. Develop Collaboration Arrangement	YES	YES
2. Create Joint Business Plan	YES	YES
3. Create Sales Forecast	YES	YES
4. Identify Exceptions in Sales Forecast	YES	YES
5. Resolve/Collaborate on Exception Items	YES	YES
6. Create Order Forecast	YES	YES
7. Identify Exceptions in Order Forecast	YES	YES
8. Resolve Collaborate on Exception Items	YES	YES
9. Order Generation	YES	YES
10. Delivery Execution	YES	YES

The tools and technologies required to fully implement CPFR is quite complex. When you step back and really think about it, you come to the realization that every aspect of your current business processes will be impacted. You will also need the following applications that are not only compatible with each other but compatible with your current business processes, trading partners and customers. Each one of these systems

must have full EDI, and E-Commerce capabilities in an environment where the implementation of barcoding has reached critical mass.

CPFR System Requirements

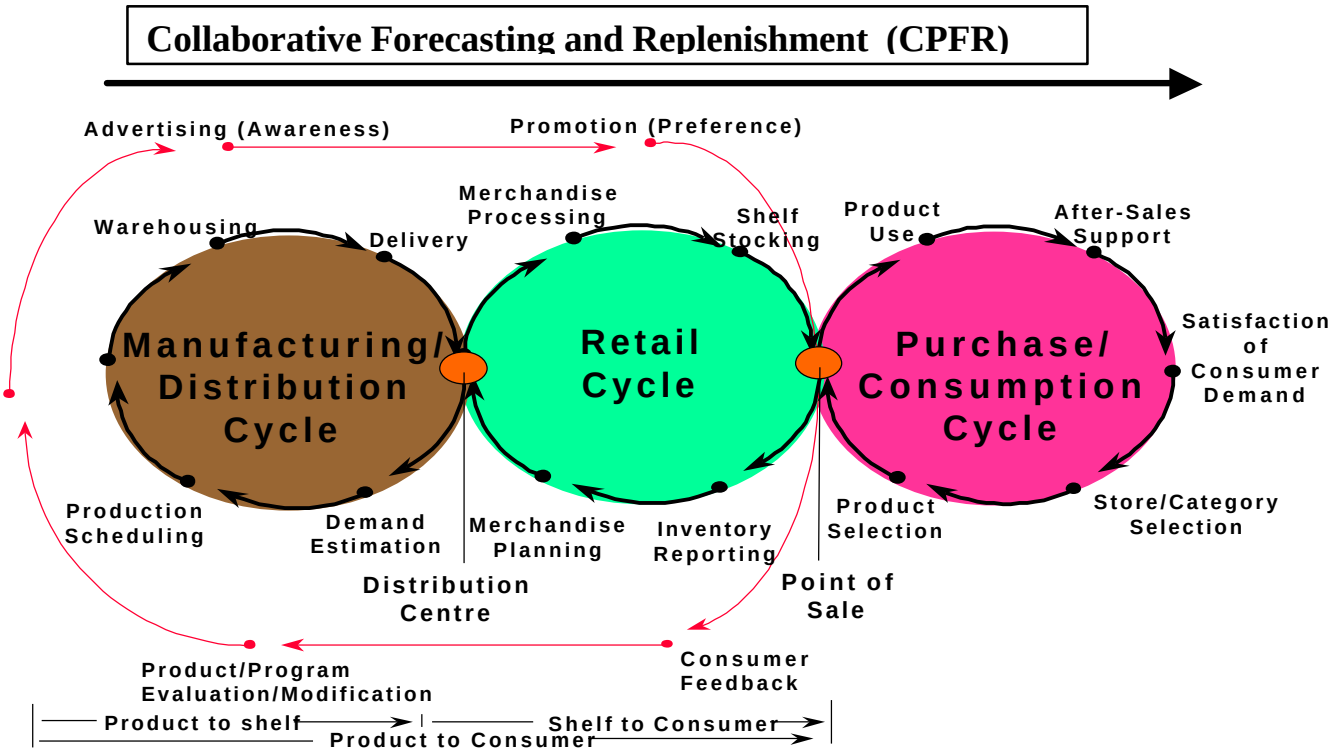
- Fully Integrated POS System
- Warehouse Management System
- Inventory System Management System
- Purchasing and Demand Forecasting System
- A Sophisticated Accounting System
- Transportation and Distribution System
- Category Management and Analysis Tools
- Demand forecasting analytics to link POS and warehouse data to external influences
- Vendor Revenue and Profitability Module
- Promotion Planning and Analysis Tools
- Scheduling and Production Planning

Critical to the success of CPFR is an understanding of the role and importance of ECR. ECR is positioned as an industry initiative anchored to four cornerstones, efficient assortment, efficient replenishment, efficient promotion and efficient new product introduction. These principles are critical to the effective implementation of CPFR as they independently and collectively act as the replenishment component of CPFR . The success of the CPFR is also largely dependent on achieving critical mass in the implementation of Barcodes and EDI transaction sets. Finally, ECR touches on several of the nine steps in the CPFR process largely due to the fact that CPFR was built on the ECR objective of working cooperatively between retailers and manufacturers to reduce costs and improve customer satisfaction.

ECR Component	**Primary Goal**	**CPFR Impact**	**EDI Transaction Support**
Efficient Store Assortment	Optimize Inventory levels and maximize space productivity	Yes	More effective inventory management improves turns, reduces carrying costs and eliminates stock outs
Efficient Replenishment	Optimized replenishment systems for cost effectiveness	Yes	Automated processing increases supply chain responsiveness and reduces overall costs
Efficient Promotion	Maximize trade and consumer promotion efficiency	Yes	Electronic transmission facilitates and expedites flow of new promotion information
Efficient Product Introduction	Maximize new product introduction and effectiveness	Yes	A proven approach for effectively implementing ECR will require continued commitment for the technology platforms that support ECR and the commitment of senior executives to deploy the required resources for industry wide change.

The following diagram demonstrates transition cycles in marketing consumer goods in order to demonstrate the impact and reach of CPFR. It also brings attention to the fact that if you are effectively going to collaborate in forecasting and replenishment you need to understand and align these three cycles through the effective deployment of technology. Achieving critical mass in the implementation of barcodes and EDI transaction sets is an important prerequisite of CPFR as it represents the backbone of communication between trading partners. .

TRANSITION CYCLES IN MARKETING CONSUMER GOODS



The ability to accurately forecast demand has plagued companies for decades. The consideration set for an effective demand forecast is forever increasing place increased pressure on the supporting tools and technologies. An accurate forecast will marry internal and external data in order to understand and respond to current consumption patterns and emerging trends.

Biggest Forecasting Challenge

- Not Enough Information
- Too much Information
- Wrong Information

Demand Forecast Components

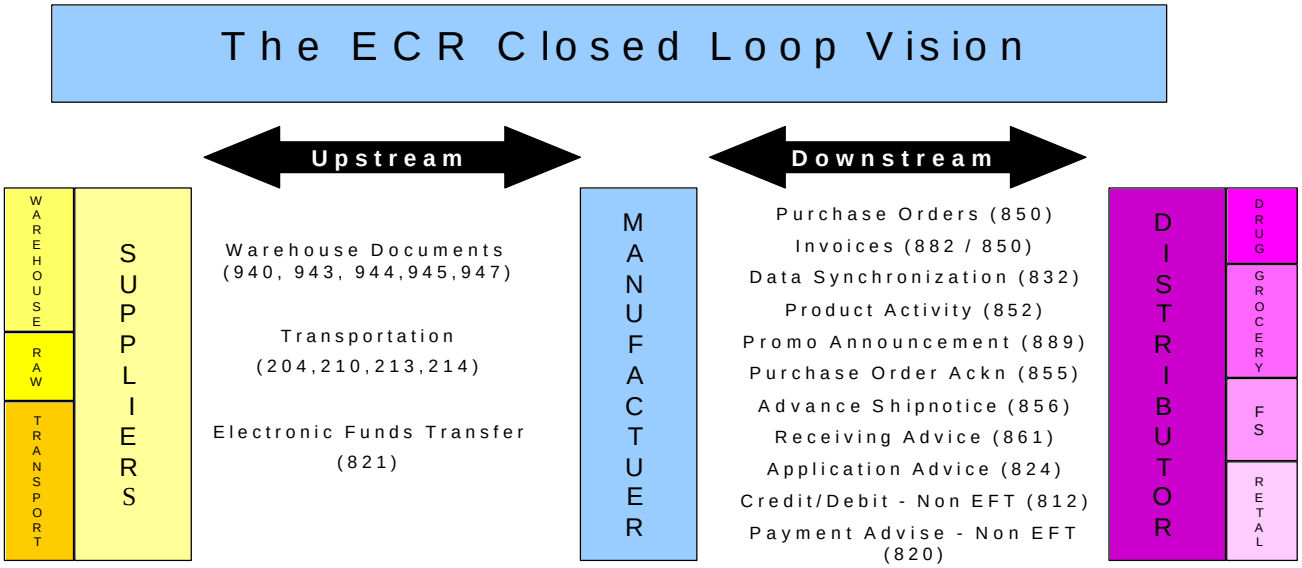
- # Customers
- # Suppliers
- Size of customers

- Capacity of Supplier
- Market presence
- Growth potential
- Product Lines Depth and Breadth
- # of Products
- Size of market

Prerequisite to Demand Forecast

- Market potential
- Capacity
- Marketing Input - The Marketplace
- Marketing Plan
- Key Business Segment
- Customer
- Product
- Overview of current Market Conditions
- Size of Market
- Growth potential
- Financial Strength

Experience has taught us that as each new initiative evolves to take centre stage, we cannot loose sight of, or abandon the tools and technologies that got us this far. Achieving critical mass in the implementation of bar-coding and EDI transaction sets is still very much our focus and our priority and a concern. The supply chain initiatives that we see today are not mutually exclusive and or frequently dependent on each other. The reciprocity that exists between ECR and CPFR is well documented. For example the EDI transaction sets listed below can be directly linked to CPFR in the generation of a sales and order forecast as well as developing a delivery schedule..



A review of our progress to date indicates that while a significant amount of progress has been achieved but there are still areas that present opportunities for improvement:

- Data Synchronization – Numerous Industry studies indicate that retailer – manufacturer data synchronization is still a challenge and will require a mechanism to incorporate this process into their internal business practices. ECCnet was designed to effectively address the data synchronization issue .
- Scalable Collaborative Planning – Pilot projects must extend beyond limited use of collaborative planning to more product lines and trading partners. To achieve this goal more automation of manual processes will be required.
- Multi-Channel Integration – Many Retailers sell through multiple channels including the Internet, catalogues, in-store kiosks and traditional retail outlets. Consumers . Coordinating customer data, pricing information and fulfillment processes is critical to creating a Multi-channel strategy.

ECCC in conjunction with the ECR/CPFR committee is committed to doing whatever it takes for the Grocery industry to achieve critical mass in the use of Barcodes and EDI transaction sets. The 2002 Grocery Industry Benchmark Study discussed in this document was designed to update you on our progress as well as be positioned as a call to action. Every manual process that you currently undertake that could be enhanced or replaced by EDI or barcoding is costing you money and the money it's costing you is significant! If

you could save a dollar for every invoice, purchase order and error you correct how much would save over the year? If you could reduce inventory levels by 10% how much would you save in carrying costs? The following chart further demonstrates this point by showing you where you could be saving money.

Participant	**Process**	**Function**	**Activities**
Supplier	Invoicing	Send Invoices	Personnel time to prepare and stuff envelopes Mail Cost
	Payment advice and Invoice Adjustments	Match Payment Advice	Personnel time to prepare and stuff envelopes Mail Cost Savings per transaction $10-$20
Broker	Invoicing	Match Invoice	Personnel time to match Invoice to original Order Savings per transaction $5-$10
Distributor	Invoicing	Match Invoice	Personnel time to match and validate invoice to receiving document and stuff envelopes
		Send Invoice Adjustment	Personnel time to Match Adjustment with payment Advice Mail cost Savings per transaction $10-$25

ECCC's vision is to leverage the knowledge gained from this Industry Benchmark Study to achieve critical mass in the deployment of barcodes and EDI. We would also like to recognize the dedication and commitment of all participants and we wish to thank them for their significant contribution.

ECCC in conjunction with the ECR/CPFR Steering Committees remain committed to the elimination of paper based transactions in the supply chain. We are confident that the knowledge gained from this study will assist you in achieving your supply chain goals.

II BACKGROUND

In order improve the efficiency and effectiveness of Grocery Industry we have established an ECR Vision and Implementation Timelines, developed ECR education and awareness programs, launched and monitored Industry Scorecards, conducted warehouse audits and conducted surveys ,all in the name of supply chain efficiency.

- 1997 - Recognized the need for a Canadian Grocery Supply Chain Initiative
- 1998 Established ECR Vision and Time Lines, developed ECR Education and Awareness Programs and deployed ECR Scorecard
- 1999-2001 Implementation of ECR Vision and Timelines, conducted Warehouse Audits and Industry Surveys
- 2002 – Conducted Grocery Industry Benchmark Study

1997

1997 Recognition of need for supply Chain Strategy and Established ECR Vision

In 1997 ECCC in conjunction with our association, partners and members identified global trends in supply chain efficiency and recognized the need to develop a more comprehensive and formal approach moving the Canadian Grocery Industry forward. We recognized the need and importance of ECR and took significant steps to ensure that the Canadian Grocery Industry would not lag global innovation in the supply chain.

1998

1998 Established ECR Implementation Timelines and ECR Scorecards

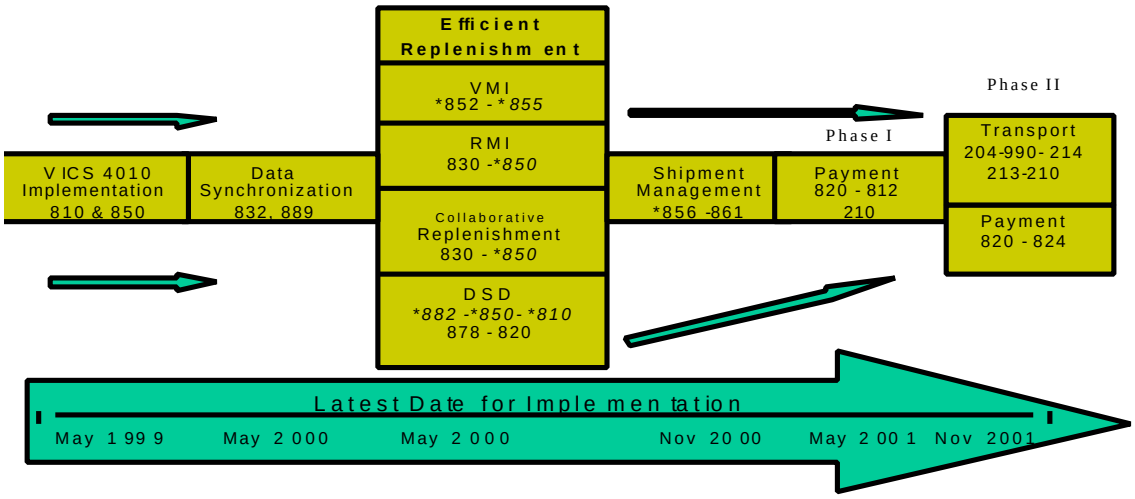
In 1998 ECCC in conjunction with the ECR Steering Committee and ECR Supply Chain Executive Committee developed and initiated an awareness campaign with respect to supply chain opportunities and conducted industry specific education and training sessions. We developed and published ECR Best Practices Documents that defined ECR Roadmaps and critical success factors. We also developed Industry Implementation Guidelines and deployed Industry Scorecards to monitor our progress.

The 1998 ECR timelines were developed to promote the timely adoption of ECR standards to achieve critical mass.

1998 ECR Implementation Timelines

- **Shipping Container Codes (SCC)**
  - **September 1998 grace period to January 1999** - SCC-14 codes to be assigned to all individual units and shipping container codes (Assigned numbers to be referenced on all order forms, sell sheets etc.)
  - **December 1999** - All items manufactured after December 1999 to include a scannable and verified UPC Barcode. Some small package exemptions will be granted
  - **December 2000** - SCC-14 scannable codes to be printed on all shipping units and SCC- 18 codes on all variable cases
- **Electronic Data Interchange (EDI)**
  - **May 1999 –** 100% implementation of Invoices (810) and Purchase Orders (850)
  - **May 2000** – Master Data Alignment (888/832, 879,889)
  - **May 2000** – Efficient Replenishment (830, 850, 852, 855, 810, 878, 882)
  - **November 2000** – Shipment Management (856, 861)
  - **May 2001** – Transportation Management
  - **November 2001 -** Financial Settlement (810, 210, 820, 812)

VICS 4010 Implementation Timetable



The success of EDI is largely dependent on the ability of the participants to deploy the processes and infrastructure required guaranteeing the integrity of the information. Contained within appendices A&B of this document are more detailed

descriptions of the EDI process as well as a glossary of terms. If you are new to this process, it will be useful to read these appendices before you read the main body of this document.

The 1998 ECR Scorecard was developed to identify various levels of progress and performance that would indicate a relative positioning against the market leader. The primary mission of the Scorecard was to drive performance between trading partners through a collaborative process of evaluation and dialogue.

1998 SCORECORD OBJECTIVES

Objective 1 – Drive progress in performance between trading partners through a collaborative process of evaluation and dialogue. The Scorecards primary goal was to assess individual companies' programs, progress and relative positioning with respect to ECR readiness.

Objective 2 – Each company would be able to monitor current progress and position by conducting a gap analysis against Industry Benchmarks and Industry Leaders

Objective 3 – Identify barriers to implementation of ECR enablers and measure the state of critical mass

The Scorecard measures were designed to be used as an internal or external measure and were designed to make it easy for a participant to monitor progress from one year to the next. The scorecard was also designed to be used as an aid to identify strategies and help translate these strategies in ECR based actions. (Please see Appendix for more information on the ECR Scorecard)

The Scorecard initiative was anchored in essentially five views :

1. EDI Implementation
2. Barcode Implementation
3. Replenishment Process Implementation
4. Continuous Replenishment Implementation
5. Customer Service Implementation

1999-2001

1999-2001 Period of Implementation –Monitored performance and level of implementation via Industry audits and surveys

In the period 1999-2001 we conducted warehouse audits, deployed Industry surveys and increased our efforts in education and awareness. The period 1999-2001 was also critical to our supply chain initiatives as it was the period that reflected the ECR implementation Timelines and Guidelines.

2002

Conducted Grocery Industry Benchmark Study in the form of an industry survey to monitor and understand our progress to date in achieving critical mass in the implementation of Barcodes and EDI transaction sets.

III RESEARCH OBJECTIVES AND KEY FINDINGS

The Electronic Commerce Council of Canada (ECCC) and various Trade Associations have participated in numerous research studies to monitor the Grocery Industry's progress on various supply chain initiatives. The main objective of the 2002 Benchmark Study was to determine our progress with respect to ECR and determine our readiness for CPFR.

The 2002 Benchmark Study was primarily designed to monitor progress in accordance to the ECR Implementation timelines and to identify any concerns or performance inhibitors. The essential areas of the study included but were not limited to:

1. Deployment and use of U.P.C. Codes
2. Deployment and use of SCC14 Codes
3. Required infrastructure and deployment of EDI Transaction Sets
4. VICS 4010 compliance
5. Insight into emerging technologies

Research Methodology

The Benchmark Study was conducted on a representative sample of manufacturers and retailers in the grocery industry in order to accurately reflect the target segment. A stratified sample of participants was used to insure the statistical significance of the representative sample and to minimize the standard deviation. The surveys were conducted in person or via a telephone interview in two phases with a grace period allowed for respondents to make changes to their responses. The survey was designed to

allow respondents to elaborate on their answers as well as provide an explanation for their responses. The survey was divided into four in order to cluster and codify and cross reference responses. (See appendix D for complete survey)

- Section #1 - Implementation and status on the implementation of UPC codes
- Section #2 - Implementation and status of SCC14 and SCC 18 codes
- Section #3 - Implementation and status of EDI transaction sets
- Section #4 – Awareness and Adoption of new and emerging technologies (RFID and XML)

The survey participants are as follows;

Survey Participants - Distributors
- Safeway
- Federated Coop
- Coop Atlantic
- Loblaw Companies
- Overwaitea
- Sobeys
- A de la Chevrotier
- Metro Richelieu

Survey Participants - Manufatcurers
- Campbell
- Kellog Canada
- Unilever
- Kraft
- Coca Cola
- P&G

BENCHMARK STUDY FINDINGS

Section #1 - Implementation and status on the implementation of UPC codes

Critical mass has been achieved in the implementation of UPC Codes as all respondents were at implementation levels of >98%

Section #2 - Implementation and status of SCC14 and SCC 18 codes

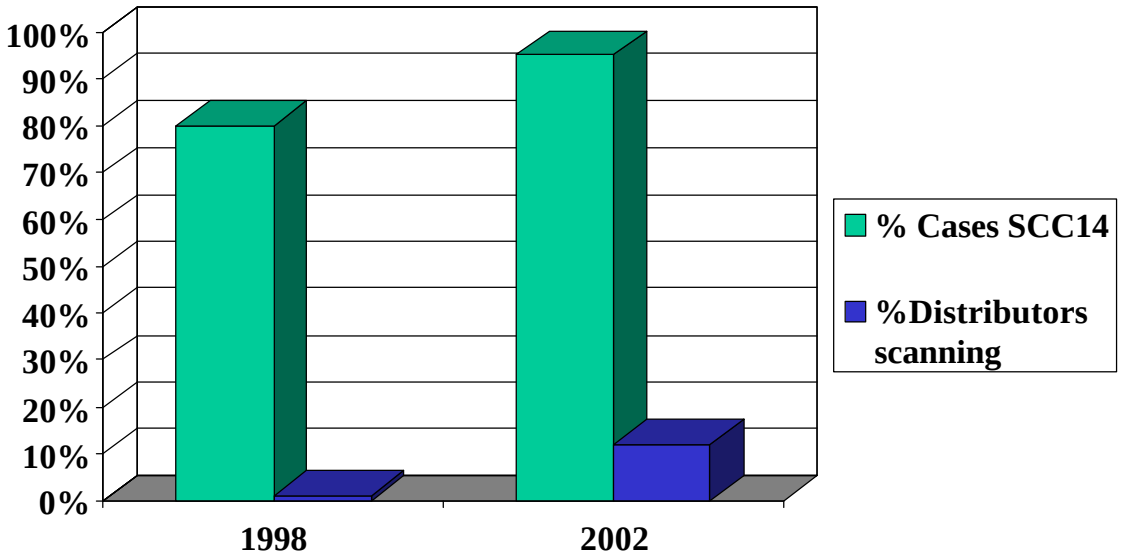
Only two of the distributors in the sample scan SCC codes at their warehouse and only two are fully committed to full bar-coding compliance for SCC14 codes and SCC 18 codes. Only one respondent currently scans SCC-14's at the store level with no respondents indicating that they have plans to scan SCC14 codes at the store level by the close of this fiscal year. None of the distributors scan SCC18 codes at their warehouse or

are planning to do so this fiscal year. Most respondents cite systems limitations and costs as a major hurdle scanning SCC14 and SCC 18 codes in addition to problems with data integrity.

Case Bar Codes (SCC14) Implementation History

- 2000 - Manufactures – (*50% implemented case markings)*
- 2002 - Manufactures – (*85% implemented case markings)*
- 2000 - Distributors –(1/10 *implemented scanning technology)*
- 2002 - Distributors (2/10 *implemented scanning technology)*

SCC14's Progress to date 1998 versus 2002



The actual survey questions and responses have been reflected in this section for your review and to highlight some of the reasons why we have not achieved critical mass with respect to case codes.

Survey Question - What percentage of all case products received have an assigned and scannable SCC-14 code?

Distributor 1 - < 80% - Distributor 1 is not committed to full bar-coding compliance and is not scanning SCC-14's at their warehouse.

Comments: We do not currently scan SCC-14's at the warehouse because we do not have a warehouse management system in place and it will take time to load all SCC-14's and map them to UPC codes.

Distributor 2 - 91-95% - Distributor 2 is not committed to full bar-coding compliance and is currently scanning SCC-14's at their warehouse.

Comments:We are in the process of bringing all manufacturers on side but it takes time to get and verify manufacturer SCC- codes. There are still errors in our database with respect to SCC-14 tracing to manufacturer data. We are currently modifying our warehouse procedures to accommodate SCC-14 scanning. Manufacturers need to be more focused on accurate information with respect to mapping UPC and SCC-14 codes as errors cause significant delays in warehouse receiving,

Distributor 3 - < 80% - Distributor 3 is not committed to full bar-coding compliance and is not scanning SCC-14's at their warehouse.

Comments:We need to upgrade our warehouse systems as well as put in place the necessary technology. (ie scanners) We also need to secure more cross-departmental commitment in order to ensure the integrity of our data. We need to put in place a more structured process to easily update our databases with UPC and SCC 14 data as well as case dimensions.

Distributor 4 - 81-90% - Distributor 4 is not committed to full bar-coding compliance and is not scanning SCC-14's at their warehouse.

Comments:
The cost of the perquisite infrastructure represents a big hurdle at this time as we do not have hand held scanners, or the required computer systems and up to date databases to leverage scanning SCC14's at this time. We need to conduct further analysis to determine cost/benefit.

Distributor 5 - <80% - Distributor 5 is committed to full bar-coding compliance and is scanning SCC-14's at their warehouse.

Comments: We have committed significant resources to improving the efficiency of our warehouse operations and are starting to see the benefits. It took a lot of resources and systems commitment to fully implement, as data integrity is an ongoing challenge.

You must ensure that your warehouse systems are compatible with your accounting and purchasing systems in advance of any implementation.

Distributor 6 - <80% - Distributor 6 is not committed to full bar-coding compliance and is not scanning SCC-14's at their warehouse.

Comments: We need to conduct further analysis with respect to system and resource requirements. We also need to understand the impact on current processes at the DC level. We may not have the computer systems in place to handle scanning, as our systems cannot currently accommodate 14 digits in their database.

Distributor 7 - 96-99% - Distributor 7 is not committed to full bar-coding compliance and is not scanning SCC-14's at their warehouse.

Comments: Need to upgrade our distribution and warehouse systems to gain value from process. We need to determine cost implications.

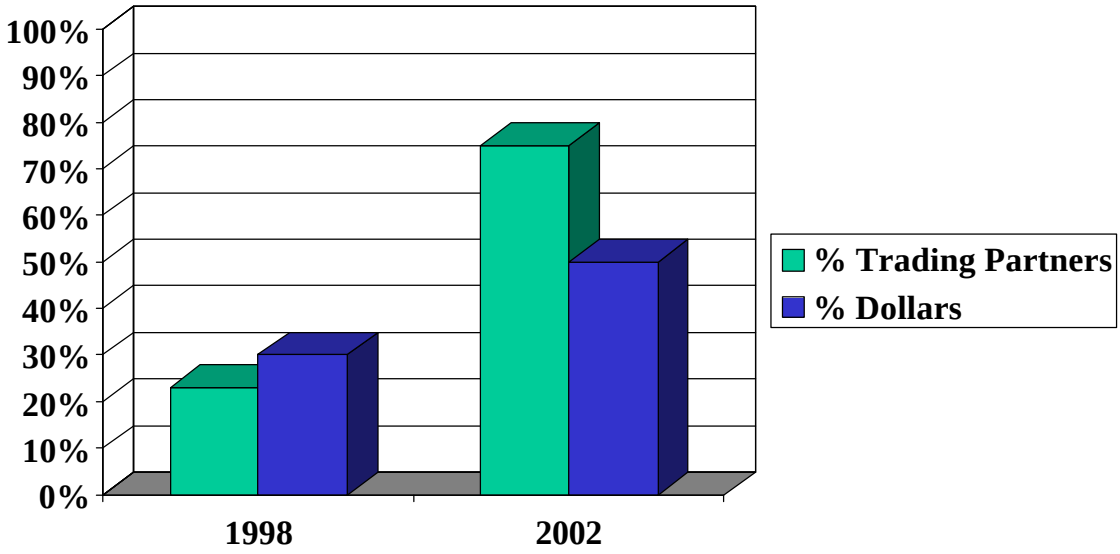
Distributor 8- < 80% - Distributor 8 is not committed to full bar-coding compliance and is not scanning SCC-14's at their warehouse.

Comments: Not currently a high priority, we are currently in the process of upgrading current

Section #3 - Implementation and Status of EDI Transaction Sets

The implementation of EDI transaction sets and barcodes have fallen short of implementation guidelines despite the significant progress since 1998. EDI transaction sets for invoices (810) and purchase orders (850 and 855) reached the highest levels of implementation . EDI transaction sets for price /sales catalogues (832) a critical enabler for data synchronization fell significantly short of expectations with the highest level of implementation reaching 25%. Many respondents referenced ECCnet as a key enabler in implementing new EDI transaction sets specifically the Price/change catalogue 832's.

Purchase Orders 850 - 1998 versus 2002



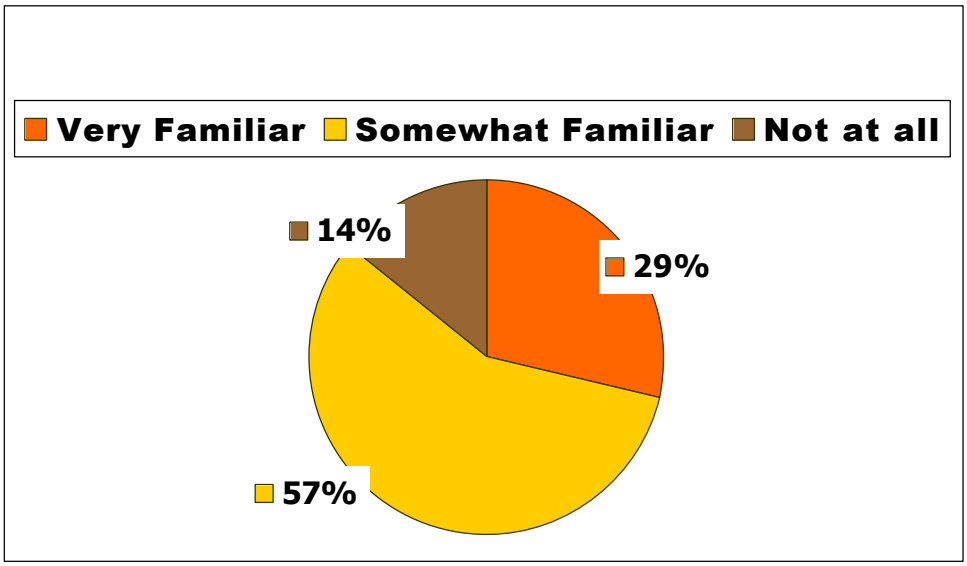
When interpreting these results it is important to point out that while we were successful in achieving critical mass in assigning UPC codes and SCC-14 codes we only achieved critical mass in scanning UPC codes. Only two respondents in the representative sample scan SCC codes at the warehouse or distribution centre.

♦ **Shipping Container Codes (SCC)**	**September 1998 grace period to January 1999** - SCC-14 codes to be assigned to all individual units and shipping container codes (Assigned numbers to be referenced on all order forms, sell sheets etc.)	**Goal** 100 % Compliance	**2002 Survey Results** >95 % Compliant
	December 1999 - All items manufactured after December 1999 to include a scannable and verified UPC Barcode. Some small package exemptions will be granted	100 % Compliance 100 % Compliance	>95 % Compliant >95 % Compliant

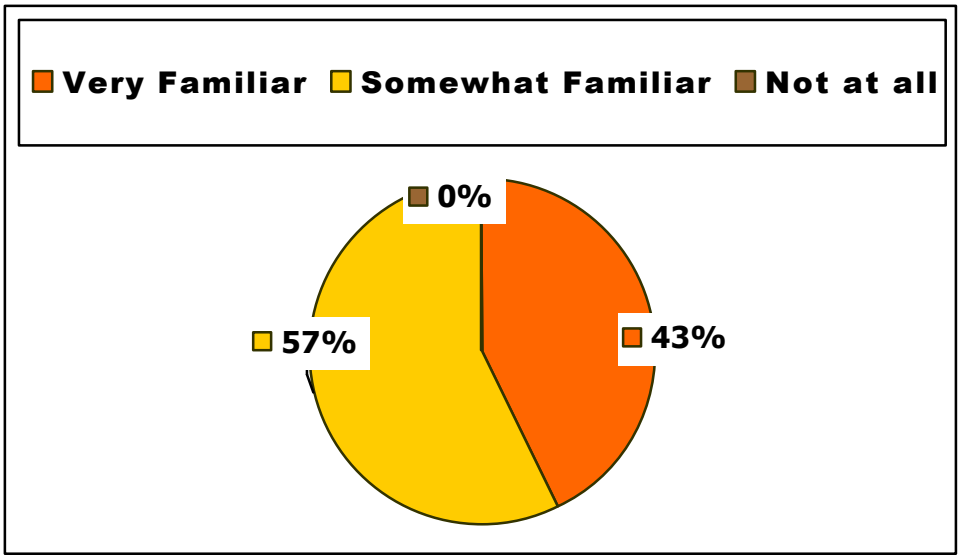
	December 2000 - SCC-14 scannable codes to be printed on all shipping units and SCC- 18 codes on all variable cases	100% Compliance	<75% Compliant
Electronic Data Interchange (EDI)	**May 1999 –** 100% implementation of Invoices (810)	100 % Compliance	Only 3 /14 respondents have >75% of Invoices using EDI 810's
	May 2000 – Master Data Alignment (888/832, 879,889)	100 % Compliance	No one achieved >75 % of transaction volume using EDI 832's
	May 2000 – Efficient Replenishment (830, 850, 852, 855, 810, 878, 882)	100 % Compliance	9/14 respondents have >75% of Invoices using EDI 850's
	November 2000 – Shipment Management (856, 861)	100 % Compliance	Highest level of transaction volume for 856's - 25% 1/14 > 75% transaction volume
	May 2001 – Transportation Management **November 2001** - Financial Settlement (810, 210, 820, 812)	100 % Compliance	Critical Mass not achieved – need to elaborate

Section #4 – Awareness and Adoption of new and emerging technologies (RFID and XML)

Are you familiar with XML?



Are you familiar with RFID?



IV COST BENEFIT ANALYSIS

The impact of EDI on the supply chain goes far beyond the procurement cycle. The effective deployment of EDI transaction sets allows companies to improve quality and reduce the cost of output.

EDI has proven its value in helping to achieve benefits in a number of areas:

- Increased responsiveness to customers and customer service.
- More effective product planning and execution.
- Reduced operating costs through reductions in clerical, material and systems costs
- Improved delivery in goods and services.
- Significant reductions in errors and corresponding savings

The second major benefit of EDI is a more effective business strategy. Supply chain initiatives such as Just-In-Time and CRP will help improve performance through better

product planning and execution, thus reducing costs. However, this can only be accomplished through a coordinated supply chain that includes error free fast transmission of business critical information.

The direct labor savings gained for companies that implement possible best practices for integrated EDI can be substantial. Implementing integrated EDI in an ECR context, however, can require careful reengineering of the associated processes. The possible best practices and implementation tips found herein and listed in the Contents are examples to help companies maximize the benefits and minimize the effort, pain and time required to obtain them

Manufacturers (supply-side companies) have thousands of products that they modify, improve and repackage, requiring a product manager to communicate the updated product specifications (size of contents, number of products per case, price, nutritional, image, etc.) to hundreds of buyers. Similarly, when a new product is shipped to market, all potential and actual buyers (demand-side companies) must receive product specifications.

Currently there are several processes that must be followed by a supply-side company. Examples are:

1. A new product is created or the specifications change on a current product. Because of these changes, all companies who buy this product must be provided with new information.
2. The product manager must input the new information into their current system and then deliver that information to sales managers on a monthly basis via hard copy or e-mail.
3. The sales force and the buyer must spend time together and review all of the changes and new products. They must spend additional time reviewing sales and marketing strategies.
4. The buyer then manually inputs the data into their information system, along with every other manufacturer’s information.

5. On top of these traditional processes the magnitude and complexity of information required to support advanced logistics and ERP requirements is increasing the need for more sophisticated trading partner interfaces to manage all parts of the supply chain.

The manual process has proven to be slow and error prone. For example:

- New Items and price changes take 10 days to get to store shelves.
- 30% of the information in the retailer systems is wrong because of non-compliance to U.P.C. standards (Product, case, pallet), the lack of an agreed upon system for trading partners, human error during manual processing and the lack of data integrity.
- Many orders that a manufacturer receives have incorrect or outdated information, which delays the processing of orders and shipment of goods and can lead to empty shelves where the product is sold.

A 1996 Survey of the Canadian Grocery Industry determined that one million working hours were spent resolving deductions, representing $27 million. ECCnet represents a potential savings of $20.2 million /year from a single industry as a result of data synchronization alone! This point is further demonstrated by the following list of activities eliminated by EDI.

It is our belief that a major challenge in justifying the investment in ECR and correspondingly EDI traces to a noted absence of an easy to use cost calculator that clearly indicates the cost saving components in a measurable fashion. The following table will further demonstrate this point.

KEY COST COMPONENTS

Business Benefit Measures	Component	Cost Component

Productivity $	Manufacturer / Broker Time	▪ Initial Contact or Deal Sheet preparation ▪ Initial Communication to Customer ▪ Rework of contracts or Deal Sheets ▪ Follow-up time at Customer ▪ Price/Allowance Checking and Table Correction ▪ Deduction Handling
	Wholesaler /Retailer Time	▪ Initial Communication with Manufacturer ▪ Data entry Administration ▪ Rework of Contracts /deals ▪ Price allowance Checking ▪ Order Quantity Checking and Table Correction ▪ Deduction Handling
Cash Flow $	Price and Allowance Deductions	▪ Allowance Corrections: off Invoice $ #, Bill Back $ # ▪ Price Correction
	Return and Refusal Deductions ($ #)	▪ Manufacturer/ Broker Handling and Administration Costs ▪ Wholesaler /Retailer Handling and Administration

APPENDIX A - ELECTRONIC DATA INTERCHANGE (EDI)

Electronic Data Interchange (EDI) is the application to application transfer of business data using a recognized industry standard. This standard incorporates both the format and layout of the data as well as the communication protocol used in the transmission of the data. In other words it concerns the file structure of the data as well as the method or manner in which the data is sent.

The EDI standards currently endorsed by the EFR committee are the **VICS** (Voluntary Inter-industry Communication Standards) **Standards**. With the onset of the year 2000, the release of VICS being endorsed is **4010.** The endorsement of this standard is consistent with other industry initiatives (i.e. ECR, ECRx etc.)

How Does EDI Work?

EDI is a process, which allows companies to transmit data electronically using a **non-proprietary public standard**. The primary goals of EDI are to more effectively and efficiently communicate with your business partners by exchanging common business documents electronically. Traditional documents would include but not be limited to

- Price/Sales Catalogues
- Purchase Orders
- Purchase Order Acknowledgments
- Invoices

This integration not only improves the efficiency but speeds up the communication between the two participating parties.

In order to understand the EDI process there are a few technical concepts or definitions that must be understood. They are as follows:

Transaction Set – Term used to describe an existing business document. These transaction sets have specific numbers assigned to them to clearly identify to all participants the document or process being discussed. Example: A purchase order carries the transaction set number **850**. Anyone in the world discussing an **850**-transaction set knows the discussion is centered on a Purchase Order.

Translator/Translation Software – Software that changes various machine languages into EDI format/ language.

Mapping – Process that takes data from one system format and puts it into another format in a very specific and defined manner. Placement and sizing of the data must conform to industry standards. In this case VICS would define the standards.

Communications – Process which sends the data to the intended receiver. Software used in this process uses some type of communication protocol to send data from one location to another.

VAN – Value Added Network. This is an independent third party communication company that handles the transferring of data from one company to another. Services provided include security and visibility of the communication process as well as back up in the event of disaster (Intranet, Extranet, Internet).

Mailbox – Location within VAN environment which stores documents. These mailboxes can only be accessed using specific codes known only to the owner of the mailbox. Security is maintained as part of the VAN services.

Process Flow for Purchase Order

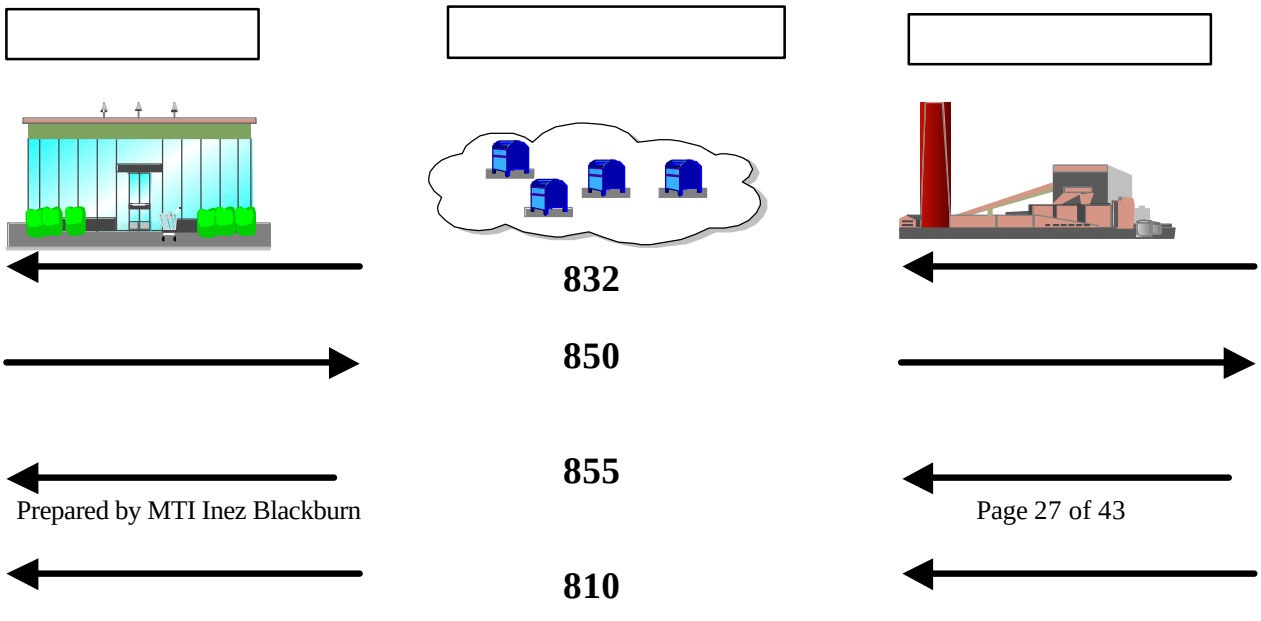
- Purchase Order is generated within Distributors purchasing system
- File is sent to EDI translator
- File is translated into EDI format and sent VAN
- VAN distributes PO to the suppliers mailbox
- The supplier picks up purchase order from his mailbox
- PO is translated from EDI format into computer readable language
- PO is automatically loaded into manufacturers order entry system - no data entry required

EDI Transaction Sets

The following is a list of the most common EDI transaction sets currently being used in the foodservice industry.

Transaction Set Number	Description
832	Price/Sales Catalogue
850	Purchase Order
855	Purchase Order Acknowledgement
810	Invoice

Transaction Set Flow



EDI TRANSACTION SETS

832 - Price Sales/Catalogue

The 832 Price/Sales Catalogue transaction set allows companies to exchange product information electronically thereby eliminating the need for re-keying by the recipient of the data. All products related information that is required for item master set-up is contained within this transaction set. They include:

U.P.C codes,
SCC-14s (Shipping Container Codes)
Item description
Product sizing, dimensions, cube, weight, special handling etc
Packaging configuration i.e. pack, size, unit of measure
Pricing / Terms

General information such as U.P.C. code descriptions etc. can be set up and made available to a broad range of customers. Specific information such as pricing or terms is usually set up on a more confidential basis and has higher levels of security surrounding them. In many instances a supplier will carry multiple pricing files to ensure the integrity of the data.

850 – Purchase Order

The 850-purchase order is a transaction set that allows a distributor to order product from a supplier. The 850 transaction set currently includes all the data normally seen in a paper version of a purchase order in an electronic format. The cost savings associated with this transaction realized by all stakeholders. Significant savings occur in data entry, transmission and modification. Automation of the PO process will significantly reduce errors and productivity levels.

855 – Purchase Order Acknowledgement

The 855-purchase order acknowledgement is a transaction set that gives the distributor early visibility to the status of the purchase orders that was sent to the manufacturer. It will confirm product availability for the requested delivery date as well as confirm that the pricing sent on the PO was correct. Product availability will allow the distributor to second source the product if necessary while the pricing confirmation will minimize pricing disputes at time of payment.

810 – Invoice (Manufacturer/Supplier to Distributor)

The 810-Invoice is an electronic transaction set which eliminates the need for sending a hard copy, paper invoice. The manufacturer/supplier sends it to the distributor indicating

payment details. Within the transaction set would be all the relative data needed to effect a payment for the shipment(s) of goods. The cost savings associated with this transaction are usually seen on the recipient's side of the transmission. Since the information is in electronic format, the recipient can upload the information directly into their payment system thereby avoiding the expense of data entry.

APPENDIX B –GLOSSARY

Activity Based Costing	An accounting method that enables a business to understand more precisely *how* and *where* it makes a profit. In ABC, all major activities within a cost center are identified and the cost of performing each are calculated—including costs those cross-functional boundaries. The resulting costs are then charged to the product, product line, customer or supplier that caused the activity to be performed.
Broker	Business which acts as an agent for a manufacturer and may sell product to Distributors/Operators.
Canadian Food & Drug Retail and Foodservice Implementation Guideline for EDI	The Canadian EDI Implementation Guide for the Grocery, Foodservice and Retail Chain Drug Industries
Communications	Process which sends the data to the intended receiver. Software used in this process uses some type of communication protocol to send data from one location to another.
Data Mapping	Process that takes data from one system format and puts it into another format in a very specific and defined manner. Placement and sizing of the data must conform to industry standards. In this case VICS would define the standards.
Distributor	Business which buys for resale to the operator.
EDI Translator	Computer software used to perform the conversion of application data to and from the X12 standard
EDI Mailbox	Location within VAN environment which stores documents. These mailboxes can only be accessed using specific codes known only to the owner of the mailbox. Security's maintained as part of the VAN services.
Electronic Data Interchange (EDI)	The computer application to computer application exchange of business information in a standard format.
EFR	Efficient Foodservice Response
Intranet	An Intranet is a private network that is contained within an enterprise. It may consist of many linked local area networks. The main purpose of an Intranet is to share company information with employees over the Internet in a secure environment.

Extranet	An Extranet allows levels of accessibility .Whereas Intranets are accessible only to people of the same organization extranets allow the sharing of information with external companies over the Internet in a secure environment.
Master Data Synchronization/Item Maintenance	The EDI process of aligning data between the manufacturer's database and the retailer's database
Manufacturer/Supplier	Business which sells to the Distributor/Broker
Operator	A company, such as a restaurant chain, who purchases product from the distributor and provides services to the end consumer
VAN	Value Added Network. This is an independent third party communication company, which handles the transferring of data from one company to another. Services provided include security and visibility of the communication process as well as back-up in the event of disaster
VICS EDI	Voluntary Inter-Industry Commerce Standard for Electronic Data Inter-change

APPENDIX C – A Bit about Activity Based Costing

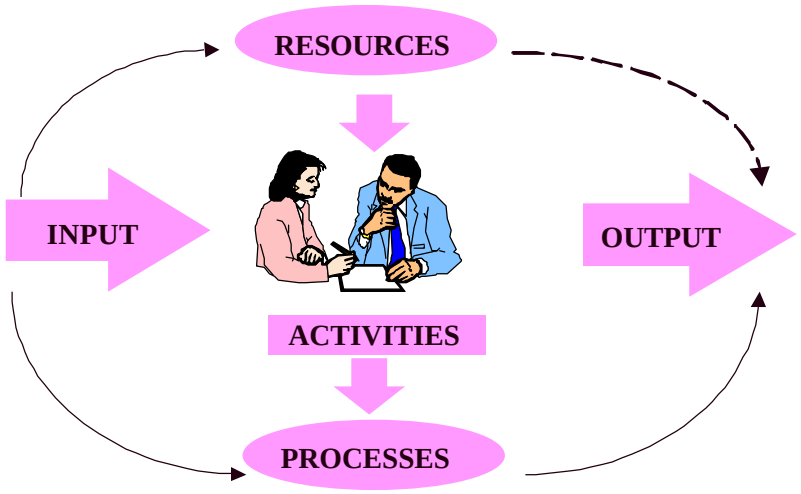
"Management's challenge is to translate Critical Business issues into measurable goals that can be targeted, achieved and monitored by focusing on improving process. The key is to look beyond the narrow confines of existing systems to a set of controls that include all stakeholders."

Robert Eccles "The Performance Measurement Manifesto"

The challenges facing the Grocery Industry are not new. Most organizations have identified a need to accurately determine how the resources they consume are reflected in the services they provide. The need to provide improved service with reduced resources has resulted in a requirement for full cost visibility and a clear understanding by all the affected staff members. Such an understanding not only provides insights into how efficiently and effectively activities and processes are being conducted but also identifies potential areas of internal improvement and implications of the product/service/client mix. A better understanding of an accurate activity - based costing and management (ABC/ABM) system can serve as a basis for decision making; as the foundation for defensible charge-back or cost recovery systems; as the data-set for planning, re-engineering and re-organization analysis; and as the backbone for performance measurement and activity- based budgeting initiatives.

Fully appreciating what activities, processes and outputs truly cost, and fully understanding the components which make up that cost, is often the cornerstone to improving overall organizational effectiveness.

Activities are the Building Block



MEASURABLE ACTIVITY ATTRIBUTES

- TIME **- COST**
- QUALITY **- VOLUME**

Performance Measurement Provides the Feedback Mechanism

4

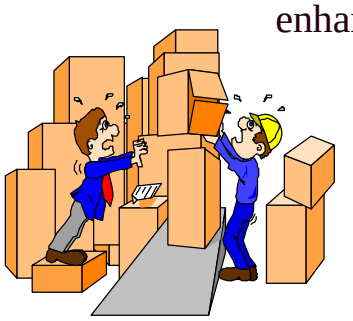
True gross profit will include all costs associated with moving a product from the manufacturer to the consumer. Costs associated with listing, promoting and processing payments are often overlooked. Companies often find out the hard way that it costs more to support a vendor than the margin provides.

Activity Analysis

Why? Prioritize utilization of resources to meet department and process goals and strategies

What?
1. Value
2. Cost Driver / Root Causes and Disconnect
3. Activity Budgets

How? Identifies activities that consume resources that either enhance or inhibit performance



ACTIVITIES WILL AFFECT PERFORMANCE

- **Cost**
- **Efficiency**
- **Effectiveness**
- **Organizational Goals**
- **Quality**
- **Cycle Time**
- **Customer Satisfaction**

An ABC approach is valuable in identifying both the appropriateness as well as the cost of various activities undertaken by a corporation. ABC can be a critical input when a company is about to make strategic decisions and/or try to achieve operational improvements. In justifying the cost/benefit of the increased usage of EDI, an ABC exercise might therefore be a valuable justification tool. If you would like to learn more about the overall ABC approach, appendices C & D should be useful background reading.

The following list identifies the major drivers of inefficiencies within the supply chain:

- Errors (pricing, promotions, dates)
- Missing Information
- Unexplained deductions

Each one of these cost drivers resulted in a significant number of incremental activities being performed and therefore in resources being consumed by the affected departments at a significant cost.

Identified Improvement Opportunities

- More customers on EDI
- Reduce the error rate on invoices and Purchase Orders
- More accurate information on pricing and effective dates
- Increased communication i.e. pricing and promotional changes
- Automation of points of communication

General Implementation Tips for EDI

To maximize the chances for a successful implementation, your company is encouraged to do the following:

- Obtain Senior Management support and financial commitment.
- Measure and analyze current system and process performance levels prior to the study.
- Understand the inefficiencies currently in place prior to commencing the project.
- Create flow charts to truly understand your current processes so as to eliminate redundant steps before implementing EDI.
- Limit the design Scope, keep it simple. Focus your EDI implementation on the synchronization of generating a P/O. Adding additional functionality at the onset could potentially delay your project completion, and/or add significant cost with minimal benefit.
- Assign a separate and full-time business owner (Process) and technology owner (IT) in order to balance the requirements of business processes and users with system capabilities and limitations. Both owners must fully understand EDI transactions sets, implications and functionality.
- Ensure you have the flexibility to send, receive and process the effective date qualifier (i.e. order or ship date) that most accurately communicates the manufactures terms of sale for price changes, promotions and product availability. Carefully determine whether the order date or ship date is more accurate. The date qualifier should reflect the manufacturers actual effective date.
- Ensure that you have adequate and qualified staff to complete the project. It will not be a short-term effort.
- Continually monitor actual levels versus expectations.
- Ideally, the 832-transaction set should be deployed first if you have not as yet embarked on any of these four transaction sets, as the accuracy of information provided by the implementation of the 832 transaction set is critical to all the others. Too often at the pilot stage there is a propensity to deploy other transactions sets prior to 832 due to the complexity of rolling out 832 transaction sets. Following 832, it is recommended dot proceed with 850, 855 and 810 respectively.

APPENDIX D – BENCHMARK STUDY SURVEY

ECCC Supply Chain Industry Survey

Company Name: _____

Industry Segment: ❒ Pharmacy Retail ❒ Grocery Retail ❒ Food Service ❒ Other

Your Name: _____

Your Position: _____

SECTION 1

U.P.C. Codes

1. ***What percentage of consumer products including pharmaceutical has an assigned and scannable U.P.C. code?***

2. What categories or products do not have a manufacturer's assigned U.P.C. code? (please list)

_____

_____

3. If your U.P.C. compliance is below 100%, is your company prepared to mandate full bar coding
   compliance for consumer items?

   ❒ Yes ❒ No

4. What percentage of product at POS has an assigned U.P.C. code by the manufacturer?

RETAILERS ONLY

SECTION 2

SCC-14/SSCC-18 Codes

5. What percentage of all case products received have an assigned and scannable SCC-14 code?

6. Is your company prepared to mandate full bar coding compliance? ❒ Yes ❒ No

7. Are you currently scanning SCC-14 codes at your D.C. operation? ❒ Yes ❒ No

   If not, what are the obstacles preventing your company from scanning more?

   _____

   _____

8. In what year did you first start scanning SCC-14 codes?_____

9. Are you currently scanning SCC-14 codes at your stores for receiving purposes?
❒ Yes ❒ No

10. Are you currently scanning manufacturer SSCC-18 codes at your D.C. operation?

❒ Yes ❒ No

SECTION 3

EDI

❒ Yes ❒ No

11. My company currently has the ability to send or receive documents in EDI format.

❒ If No- what do you use instead of EDI - Fax_____ E-mail _____ Other_____

*If no, please go to section 4

12. **EDI - Part 1 – This section refers to EDI Transaction Sets – Please check "yes" or "no" to indicate whether you use the Transaction set and indicate what percentage of your $Dollar Volume is impacted**

$Dollar Volume **(EDI transaction sets are listed in numeric order)**

204	Motor Carrier Load	Yes _____	No _____	❒ 0-10% ❒ 11-25% ❒ 26-50% ❒
210	Motor Car Freight Details	Yes _____	No _____	❒ 0-10% ❒ 11-25% ❒ 26-50% ❒
214	Trans. Carrier Ship Notice	Yes _____	No _____	❒ 0-10% ❒ 11-25% ❒ 26-50% ❒
810	Invoices	Yes _____	No _____	❒ 0-10% ❒ 11-25% ❒ 26-50% ❒
820	Payment Order Advice	Yes _____	No _____	❒ 0-10% ❒ 11-25% ❒ 26-50% ❒
824	Application Advice	Yes _____	No _____	❒ 0-10% ❒ 11-25% ❒ 26-50% ❒

830	Planning Schedule	Yes _____	No _____	❒ 0-10% ❒ 11-25% ❒ 26-50% ❒
832	Price /Sales Cat.	Yes _____	No _____	❒ 0-10% ❒ 11-25% ❒ 26-50% ❒
850	Purchase Order	Yes _____	No _____	❒ 0-10% ❒ 11-25% ❒ 26-50% ❒
852	Product Activity Data	Yes _____	No _____	❒ 0-10% ❒ 11-25% ❒ 26-50% ❒
855	P.O. Confirmation	Yes _____	No _____	❒ 0-10% ❒ 11-25% ❒ 26-50% ❒
856	Ship. Notice/Manifest	Yes _____	No _____	❒ 0-10% ❒ 11-25% ❒ 26-50% ❒
878	Product Authorization	Yes _____	No _____	❒ 0-10% ❒ 11-25% ❒ 26-50% ❒
882	DSD Summary	Yes _____	No _____	❒ 0-10% ❒ 11-25% ❒ 26-50% ❒
889	Promotion Announcement	Yes _____	No _____	❒ 0-10% ❒ 11-25% ❒ 26-50% ❒
940	Whse. Shipping Order	Yes _____	No _____	❒ 0-10% ❒ 11-25% ❒ 26-50% ❒
944	Whse. Stock Trsfr. Advice	Yes _____	No _____	❒ 0-10% ❒ 11-25% ❒ 26-50% ❒
945	Whse. Shipping Advice	Yes _____	No _____	❒ 0-10% ❒ 11-25% ❒ 26-50% ❒
	Other	Yes _____	No _____	❒ 0-10% ❒ 11-25% ❒ 26-50% ❒
	Other	Yes _____	No _____	❒ 0-10% ❒ 11-25% ❒ 26-50% ❒

13. **EDI - Part 2 – This section refers to EDI Transaction Sets – Please check "yes" or "no" to indicate whether you use the Transaction set and indicate what percentage of your Trading Partners are impacted**

% of Trading Partners **(EDI transaction sets are listed in numeric order)**

204	Motor Carrier Load	Yes _____	No _____	❒ 0-10% ❒ 11-25% ❒ 26-50% ❒
210	Motor Car Freight Details	Yes _____	No _____	❒ 0-10% ❒ 11-25% ❒ 26-50% ❒
214	Trans. Carrier Ship Notice	Yes _____	No _____	❒ 0-10% ❒ 11-25% ❒ 26-50% ❒
810	Invoices	Yes _____	No _____	❒ 0-10% ❒ 11-25% ❒ 26-50% ❒
820	Payment Order Advice	Yes _____	No _____	❒ 0-10% ❒ 11-25% ❒ 26-50% ❒
824	Application Advice	Yes _____	No _____	❒ 0-10% ❒ 11-25% ❒ 26-50% ❒
830	Planning Schedule	Yes _____	No _____	❒ 0-10% ❒ 11-25% ❒ 26-50% ❒
832	Price /Sales Cat.	Yes _____	No _____	❒ 0-10% ❒ 11-25% ❒ 26-50% ❒

850	Purchase Order	Yes _____	No _____	❒ 0-10% ❒ 11-25% ❒ 26-50% ❒
852	Product Activity Data	Yes _____	No _____	❒ 0-10% ❒ 11-25% ❒ 26-50% ❒
855	P.O. Confirmation	Yes _____	No _____	❒ 0-10% ❒ 11-25% ❒ 26-50% ❒
856	Ship.Notice/Manifest	Yes _____	No _____	❒ 0-10% ❒ 11-25% ❒ 26-50% ❒
878	Product Authorization	Yes _____	No _____	❒ 0-10% ❒ 11-25% ❒ 26-50% ❒
882	DSD Summary	Yes _____	No _____	❒ 0-10% ❒ 11-25% ❒ 26-50% ❒
889	Promotion Announcement	Yes _____	No _____	❒ 0-10% ❒ 11-25% ❒ 26-50% ❒
940	Whse. Shipping Order	Yes _____	No _____	❒ 0-10% ❒ 11-25% ❒ 26-50% ❒
944	Whse. Stock Trsfr. Advice	Yes _____	No _____	❒ 0-10% ❒ 11-25% ❒ 26-50% ❒
945	Whse. Shipping Advice	Yes _____	No _____	❒ 0-10% ❒ 11-25% ❒ 26-50% ❒
	Other	Yes _____	No _____	❒ 0-10% ❒ 11-25% ❒ 26-50% ❒
	Other	Yes _____	No _____	❒ 0-10% ❒ 11-25% ❒ 26-50% ❒

14. Part 3 – Are you VICS 4010 Compliant?

204	Motor Carrier Load	Yes _____	No _____	If no, which version or standard are you using?
210	Motor Car Freight Details	Yes _____	No _____	If no, which version or standard are you using?
214	Trans.Carrier Ship Notice	Yes _____	No _____	If no, which version or standard are you using?
810	Invoices	Yes _____	No _____	If no, which version or standard are you using?
820	Payment Order Advice	Yes _____	No _____	If no, which version or standard are you using?
824	Application Advice	Yes _____	No _____	If no, which version or standard are you using?
830	Planning Schedule	Yes _____	No _____	If no, which version or standard are you using?
832	Price /Sales Cat.	Yes _____	No _____	If no, which version or standard are you using?
850	Purchase Order	Yes _____	No _____	If no, which version or standard are you using?

852	Product Activity Data	Yes _____	No _____	If no, which version or standard are you using?
855	P.O. Confirmation	Yes _____	No _____	If no, which version or standard are you using?
856	Ship. Notice/Manifest	Yes _____	No _____	If no, which version or standard are you using?
882	DSD Summary	Yes _____	No _____	If no, which version or standard are you using?
940	Whse. Shipping Order	Yes _____	No _____	If no, which version or standard are you using?
944	Whse.StockTrsfr. Advice	Yes _____	No _____	If no, which version or standard are you using?
945	Whse. Shipping Advice	Yes _____	No _____	If no, which version or standard are you using?
	Other	Yes _____	No _____	If no, which version or standard are you using?
	Other	Yes _____	No _____	If no, which version or standard are you using?
	Other	Yes _____	No _____	If no, which version or standard are you using?
	Other	Yes _____	No _____	If no, which version or standard are you using?

15. What are your plans for expanding EDI use in 2002?

_____

_____

SECTION 4, EMERGING TECHNOLOGIES

Extensible Markup Language (XML)

16. Are you familiar with XML? **❒ Very familiar ❒ Somewhat ❒ Not at all**

17. Are you planning to pilot or implement XML in the next 12 months? ❒ Yes ❒ No ❒

18. ❒ Education ❒ Standards ❒ Greater Base of Trading Partners ❒ Additional Software ❒ Other

What would accelerate your adoption of XML?

_____

_____

19. Are you aware of any trading partners capable of exchanging messages of XML? ❒ Yes ❒ No ❒

If yes which ones?

_____

_____

Emerging Technologies – RFID

Radio Frequency Identification (RFID)

20. Are you familiar with Radio Frequency Identification?

❒ Very familiar ❒ Somewhat ❒ Not at all

21. If you are familiar with RFID, what do you see as a key enabler that will lead to your adoption?

_____

22. Are you planning to pilot RFID in the next 12-18 months?
❒ Yes ❒ No

23. Do you know if any of your trading partners are capable or considering to use RFID? ❒ Yes ❒ No

If yes, which ones?

EDI Over the Internet

24. Are you familiar with EDI over the Internet Technologies? ❒ Very familiar ❒ Somewhat ❒ Not at all

If you are familiar with EDI over the Internet, what do you see as a key enabler?

25. Are you planning to use EDI over the Internet in the next 12-18 months? ❒ Yes ❒ No ❒

26. Are you familiar with the Global Location Number standard?
❒ Very familiar ❒ Somewhat ❒ Not at all

If familiar, do you require your trading partner to provide or supply this number? ❒ Yes ❒ No ❒

CCGD and ECCC thank-you for taking the time to fill out this survey.

Please fax completed survey to 905-712-0877