

Show Them the Money: Building Supply Chains to Increase Profits

Prepared for:
Chicago Booth - Consulting Roundtable
26 February 2009

Michael Hugos
CENTER FOR SYSTEMS INNOVATION
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Overview of Briefing

Part 1 - Supply Chain Context

Part 2 - Moving Toward Responsiveness

Part 3 - Business Case Study

PART 1

Supply Chain Context

“See the Big Picture”

What is Supply Chain Management?

“A supply chain is a network of facilities and distribution options that performs the functions of procurement of materials, transformation of these materials into intermediate and finished products, and distribution of these finished products to customers.”

Ganeshan and Harrison, “An Introduction to Supply Chain Management”, 1995

“Supply chain management is coordination of production, inventory, location, transportation, and information among the participants in a supply chain to achieve the best mix of responsiveness and efficiency for the market being served.”

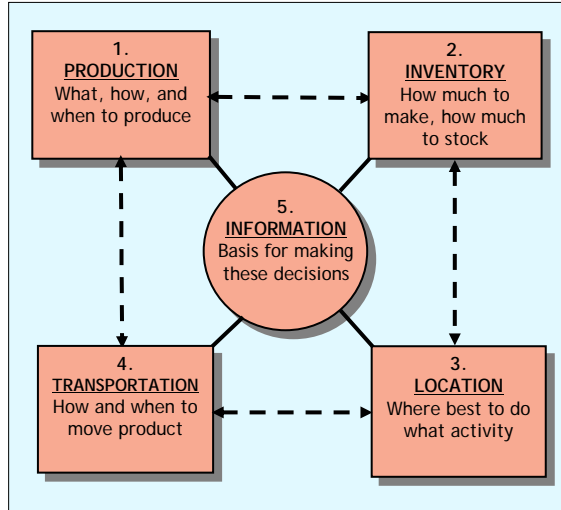
Hugos, *Essentials Of Supply Chain Management, 2nd Edition*, 2006

Supply Chain Drivers

RESPONSIVENESS VS. EFFICIENCY

"Increase throughput while simultaneously reducing inventory and operating expense."

Goldratt, *The Goal*, 1984



Responsiveness versus Efficiency

Supply Chain Drivers	Responsiveness	Efficiency
1. Production	<ul style="list-style-type: none"> - Excess capacity - Flexible manufacturing - Many smaller plants 	<ul style="list-style-type: none"> - Little excess capacity - Narrow focus - Few central plants
2. Inventory	<ul style="list-style-type: none"> - High inventory levels - Wide range of items 	<ul style="list-style-type: none"> - Low inventory levels - Fewer items
3. Location	<ul style="list-style-type: none"> - Many locations close to customers 	<ul style="list-style-type: none"> - Few central locations serve wide areas
4. Transportation	<ul style="list-style-type: none"> - Frequent shipments - Fast & Flexible modes 	<ul style="list-style-type: none"> - Few large shipments - Slower and cheaper modes
5. Information	<ul style="list-style-type: none"> - Collect & share timely and accurate data 	<ul style="list-style-type: none"> - Cost of information drops while other costs rise

Markets & Required Performance

S U P P L Y ↑	MATURE	STEADY
	<ul style="list-style-type: none"> • Customer Service • Internal Efficiency • Demand Flexibility 	<ul style="list-style-type: none"> • Customer Service • Internal Efficiency
	DEVELOPING	GROWTH
	<ul style="list-style-type: none"> • Customer Service • Product Development 	<ul style="list-style-type: none"> • Customer Service
	D E M A N D	→

Performance Measures

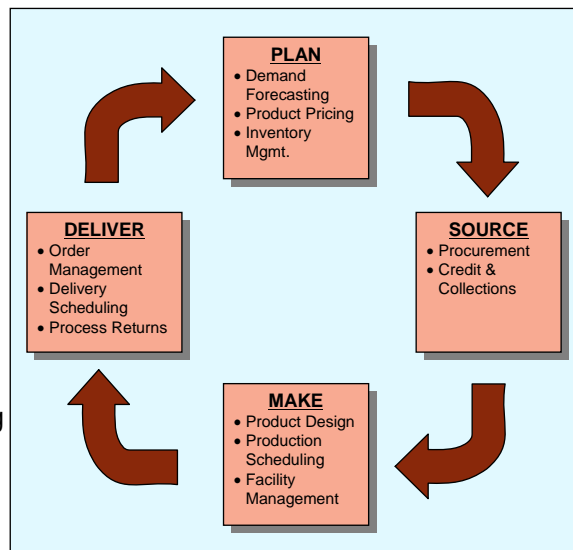
<u>Build to Stock</u>	CUSTOMER SERVICE	<u>Build to Order</u>
<ul style="list-style-type: none"> • Order & line item fill rate • On time delivery rate • Return rate 		<ul style="list-style-type: none"> • Quoted lead time & completion rate • On time delivery rate • Warranty returns & repairs
INTERNAL EFFICIENCY		
<ul style="list-style-type: none"> • Inventory value • Inventory turns 		<ul style="list-style-type: none"> • Return on sales • Cash-to-cash cycle time
DEMAND FLEXIBILITY		
<ul style="list-style-type: none"> • Activity cycle times • Upside flexibility 		<ul style="list-style-type: none"> • Outside flexibility
PRODUCT DEVELOPMENT		
<ul style="list-style-type: none"> • % of sales from new products • % of SKUs as new products 		<ul style="list-style-type: none"> • Cycle time for new product development/introduction

Supply Chain Challenge

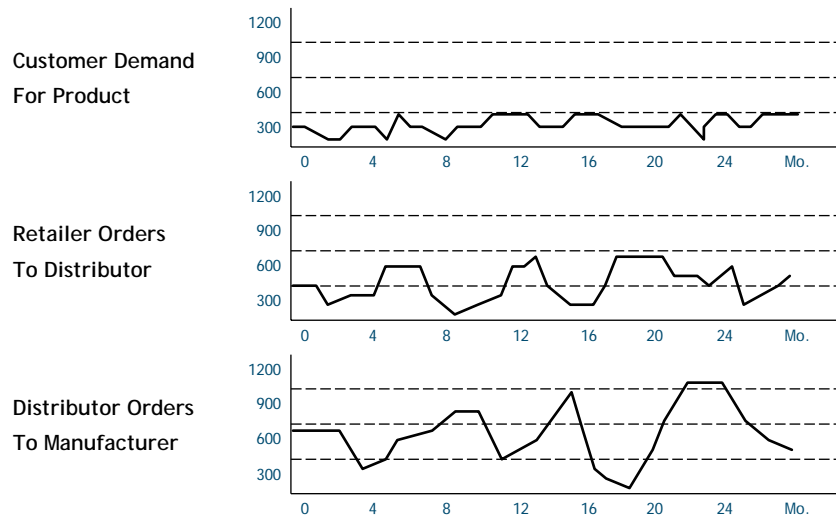
- Market conditions change constantly as prices of raw materials, labor, fuel, and customer demand fluctuate
- Supply chain performance needs constant adjusting to meet these changes
- Some markets require more responsiveness (highly engineered products), other markets require more efficiency (bulk commodities)
- What is right blend of responsiveness and efficiency for markets your company serves?
- *How can you best increase supply chain throughput while simultaneously reducing inventory and operating expenses?*

Supply Chain Operations

- Companies perform operations in one or more of these supply chain activities
- Supply chains must continually improve performance as conditions change
- Collaborative Planning, Forecasting & Replenishment (CPFR) coordinates these operations



The “Bullwhip Effect”



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Why The Bullwhip?

- **Demand Forecasting**
Based on orders received not end user demand
- **Order Batching**
Companies place periodic orders based on EOQ, etc
- **Product Rationing**
Allocation of available supply as % of amount ordered
- **Product Pricing**
Promotional pricing causes distortions in demand
- **Performance Incentives**
Quarterly and yearly quotas and sales bonuses

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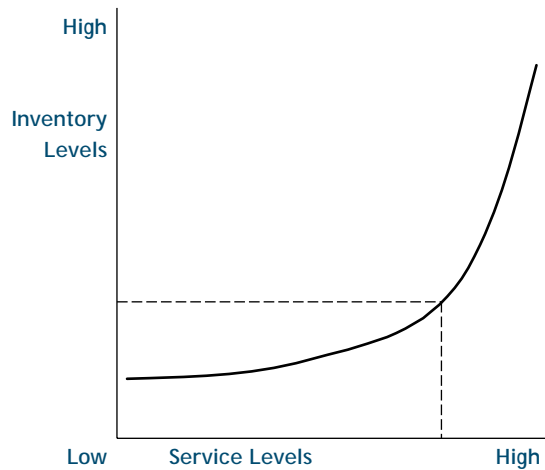
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Data Sharing Reduces Bullwhip

- Company A may have high levels of customer service with low levels of inventory...

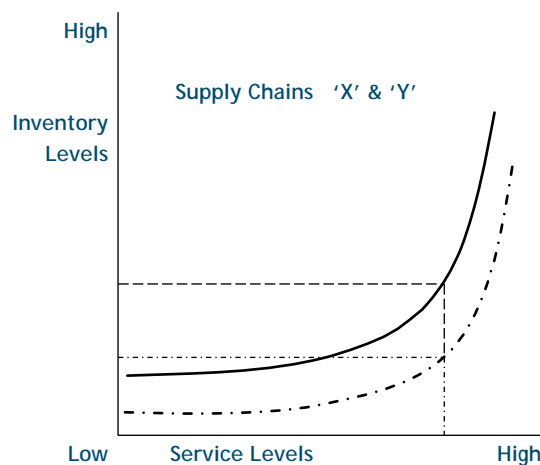
- *But success may be short-lived if its customer is not the end use customer of the supply chain*



Data Sharing Reduces Bullwhip (cont.)

- Company A may be part of Supply Chain X which has to hold more inventory than Supply Chain Y to deliver similar levels of customer service.

- *Bullwhip distortions drive up inventory*

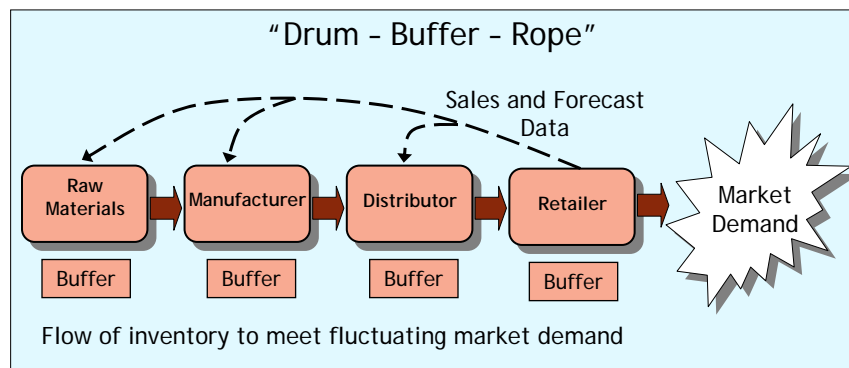


PART 2

Moving Toward Responsiveness

“Responsiveness Trumps Efficiency”

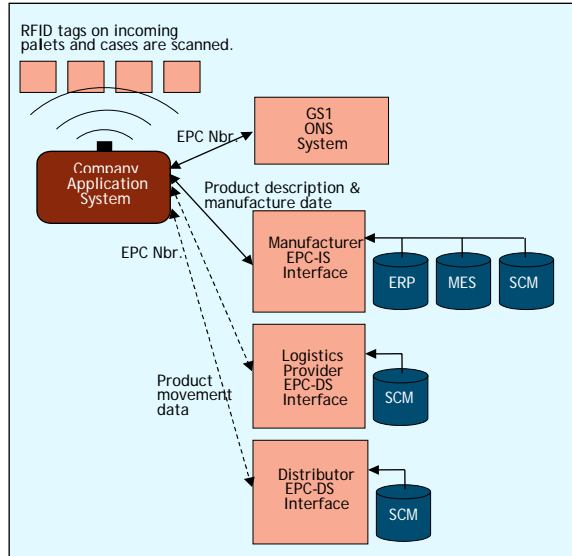
Responsive Supply Chain



- Market demand sets **drum** beat or tempo of supply chain
- Manage uncertainty with **buffer** of either inventory or production capacity
- Reduce uncertainty and keep buffers low by sharing sales and forecast data
- Data is **rope** that ties supply chain together

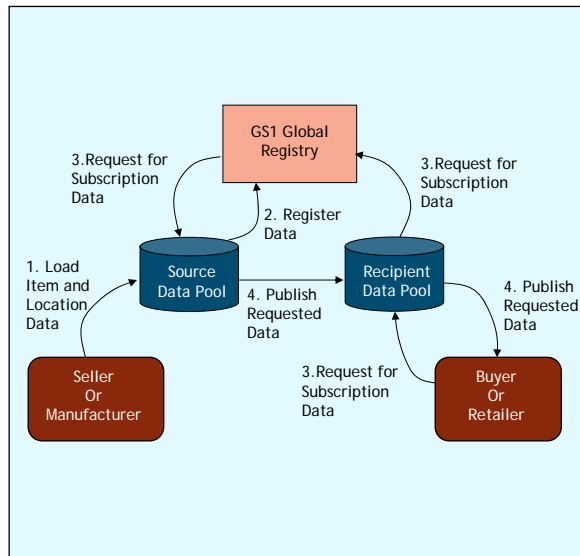
RFID & EPC Global Network

- Company receiving system sends scanned EPC numbers to GS1 and gets web address of manufacturers
- Manufacturer systems send back product description and manufacture date
- Company may contact other companies who handled the product as it moved through supply chain

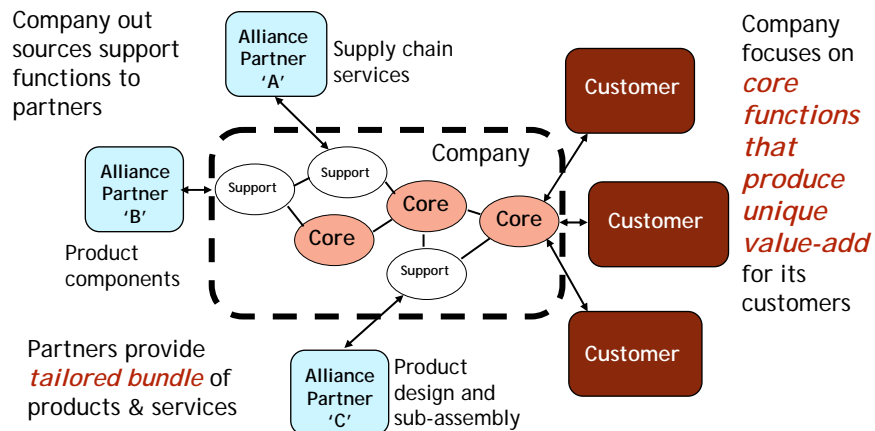


GDSN – Global Data Synchronisation Network

1. Seller or manufacturer uploads item and location data to a GS1 data pool
2. Data pool registers data with GS1 global registry
3. Buyer or retailer subscribes to a data pool and requests item data
4. Data pool sends requested item data



Company and Supply Chain Partners



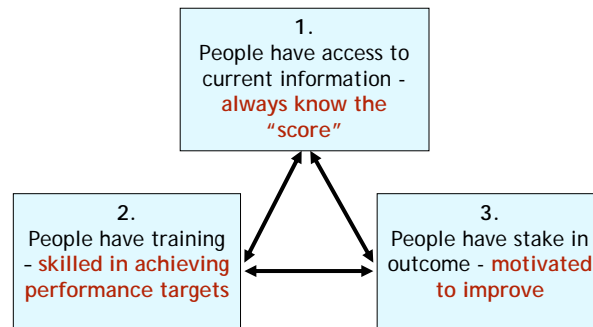
Characteristics of Strategic Alliances

1. Delivery of a customized blend of products and services to meet a specific set of business needs
2. Coordination of inter-company operations so as to achieve predefined performance targets
3. Longer term, 3 to 5 year, contract time frames for the alliance partners to work together
4. Prospects for mutually profitable business growth over the life of the contract

Strategic supply chain alliances have these four characteristics, without them, relationship is not strategic

Strengthening Supply Chain Alliances

Supply chain alliance is strengthened when three interrelated conditions are present:

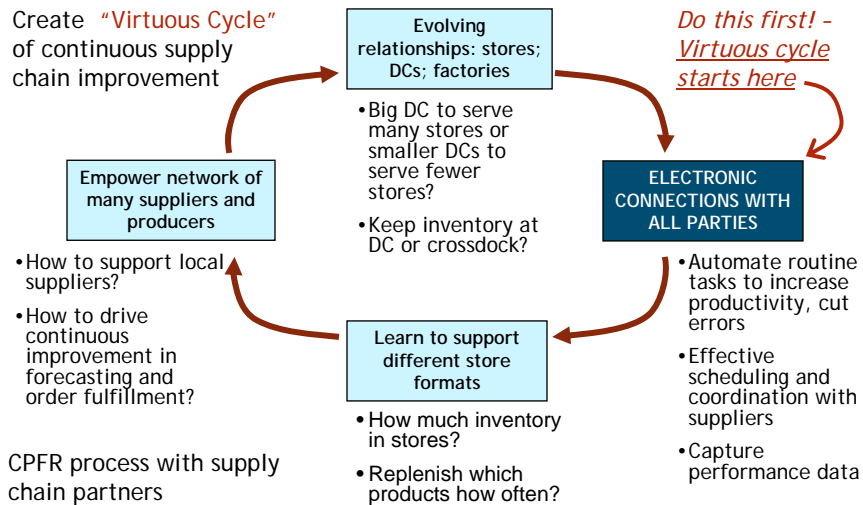


Supply Chain Strategy

- 21st century economy requires supply chain systems that empower decentralized and highly responsive business operating model
 - Use of rigid monolithic supply chain systems cripple competitive advantage gained from responsive operating model
 - Companies using rigid monolithic supply chains optimized for efficiency *find they don't work well in real time economy because of lack of stability and predictability in global markets*
- Adaptive supplier networks are strong competitive advantage
 - Supply chain should accommodate many different supplier systems and different levels of technical sophistication
 - Supply chain systems can support business unit autonomy and flexibility and still provide economies of scale

Supply Chain Strategy (cont.)

Create **"Virtuous Cycle"**
of continuous supply
chain improvement



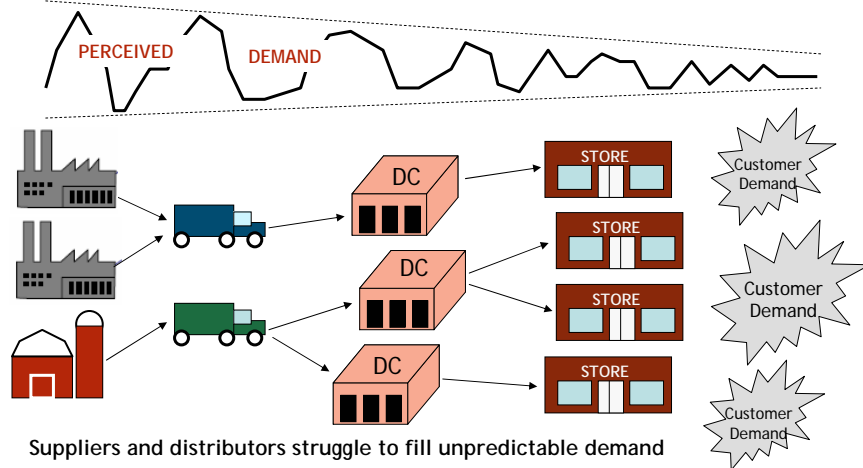
PART 3

Business Case Study

"Promise of the Real-Time Supply Chain"

Supply Chain Opportunities

Biggest challenge to running efficient supply chain is overcoming perceived demand distortion caused by "Bullwhip Effect"



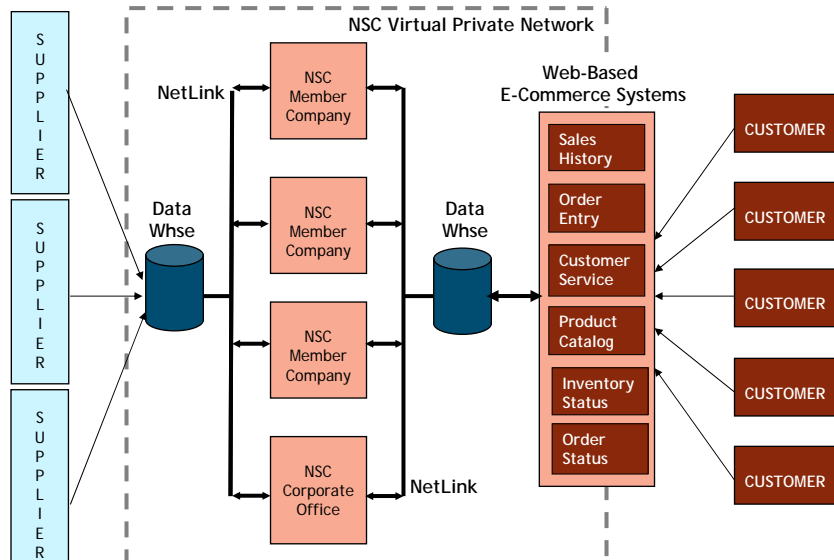
IT Enables Responsiveness

- Maximize leverage of existing systems and infrastructure
- Support for responsive operations is layered on top of existing systems (ERP, CRM, SCM, etc.) as needed:
 - Data Warehouses and Business Intelligence (BI)
 - Business Process Management (BPM)
 - Simulation and Predictive Analytics
- Use parts of old systems in creation of new systems; grow systems iteratively as needs unfold
- **SOA + Virtualization + Cloud + SaaS + Mashups = Responsive**

Keep IT Simple & Flexible

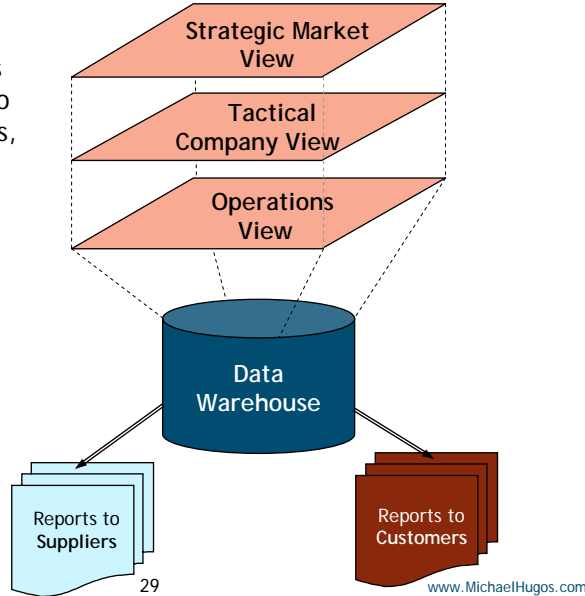
- **ASCII Text Files** - every computer system can read & write these files, great format to exchange data (easy upgrade to XML)
- **Internet & FTP** - these two technologies make data transfer easy and cheap
- **Batch Asynch Interfaces** - batch data transfers every hour, every ½ hour, every 10 minutes...approaches real-time at a fraction of the cost of true real-time
- **Relational Databases** - provide powerful means to store, retrieve, and display data and are easily interfaced to spreadsheets and web pages
- **Web Pages/Email/Spreadsheets** - common user interfaces that everyone can access and operate
- **Cloud Computing/SaaS/Mashups/Agile Development** - build systems with: Low Cap Ex; Variable Cost; Scalable Platform

Network Services' Supply Chain

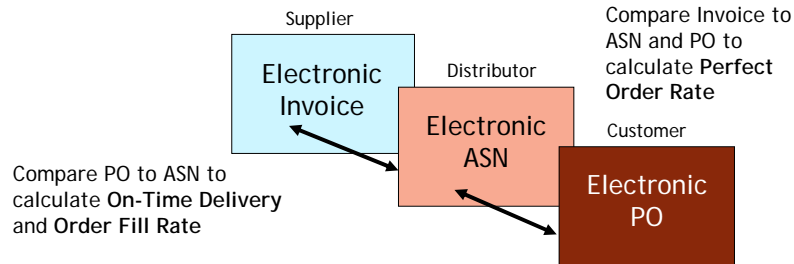


Timely Data Enables Collaboration

Data warehouse provides different views of data to support senior executives, line managers, and staff. It also facilitates sharing of data with customers and suppliers.

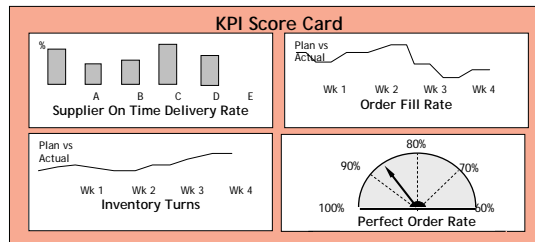


Dashboards & Alerts

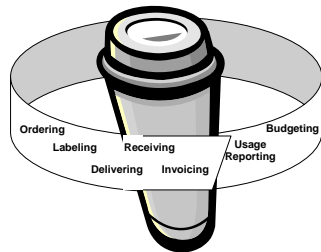


Display KPI score cards through dashboards on company web site.

Set customer service alerts for quick response.



Case Study: The Value-Added Paper Cup



Surround commodity items with tailored blanket of value added services

“Never sell a naked commodity”

Every product has two components



Actual Item or Service
(commodity, easily copied, low margin)

Information Component
(tailored to each customer to achieve desired results)

Case Study: Tao of Supply Chains

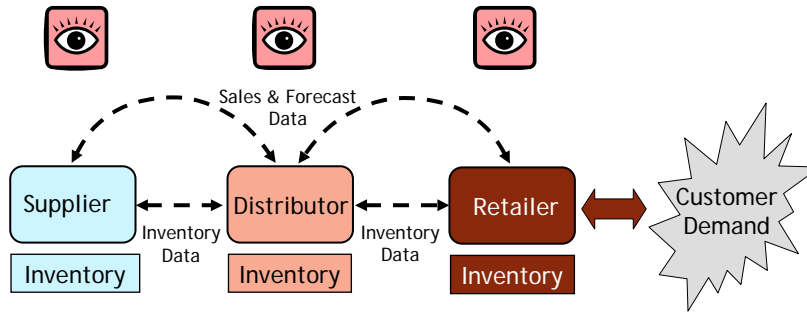
- Big customer wanted to reduce excess inventory
- Customer, suppliers, and Network members all use different ERP systems
- We had 90 days and could not spend a lot of \$\$\$
- How to operate in an agile, real-time world?

What would you do?

- *Decline to start a project that could not succeed*
- *Say you would try but make no firm commitments*
- *Deliver 80% solution that solves most important problems*

Case Study: Tao of Supply Chains (cont.)

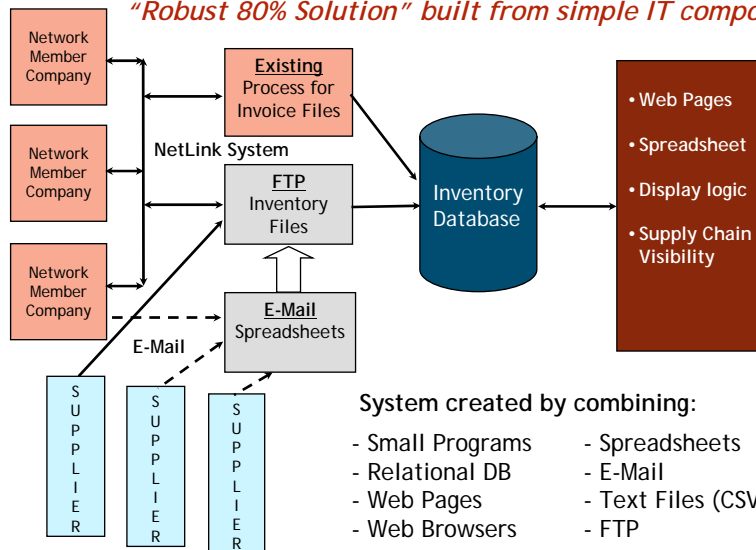
If everyone can see sales, forecasts and inventory in supply chain; they can coordinate to produce and deliver products when and where needed to meet customer demand (*this is most important problem*).



Synchronized supply chains "increase throughput while simultaneously reducing inventory and operating costs."

Case Study: Tao of Supply Chains (cont.)

"Robust 80% Solution" built from simple IT components



System created by combining:

- Small Programs
- Relational DB
- Web Pages
- Web Browsers
- Spreadsheets
- E-Mail
- Text Files (CSV)
- FTP

Tao of Supply Chains: Results

- Quickly created new system using existing systems and few new program modules - SOA; SaaS; Agile Development
- Reduced excess inventory from 4% and \$600,000 to 1.3% and less than \$200,000 in first holiday season on higher sales volumes than previous years
- System became basis for further value creation - track roll out of all new non-food items, not just seasonal promotion items
- Signed new multi-year supply contract
- Experimented with value sharing ideas such as if we achieved SLA's in one quarter, we could raise prices a fraction of a percent in following quarter (kept our head in the game...)

Case Study: A Parable About Payables

- Big new customer was showing up on slow pay list
- To get their national contract we came in with good prices for them and tight margins for us
- Needed to run business operations with them very efficiently to make profits we desired
- Customer promised payment in 15 days but their receiving and payables process was slow; sometimes they lost our invoices

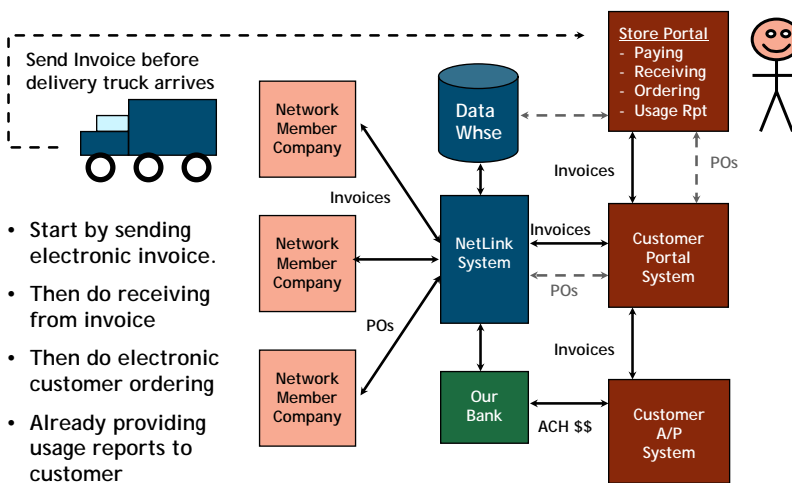
What would you do?

- *Put them on notice - send a letter*
- *Put them on hold - no more product until they pay up*
- *Put up with them - do nothing*
- *Other*

Case Study: A Parable About Payables

- Answer is *"Other"*
- Strengthen relationship with the customer through establishing broad base of working contacts between our two companies
- Who better than IT, Accounting and Supply Chain to do this?
This is how to transition from cost center to profit center
- Controller and I made a visit to customer's HQ and shared ideas on how to improve receiving and payables process

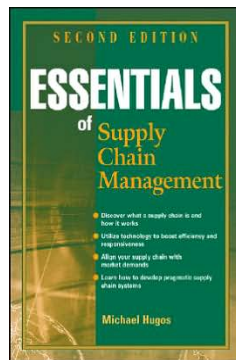
Case Study: A Parable About Payables



Supply Chain Insights

- Use systems to lower operating costs and increase responsiveness to unique customer needs
- Earn higher gross margins by wrapping products with tailored mix of information based value-added services to meet needs of individual customers
- Best practices developed for one customer can attract other customers
- Use Internet dashboards to track performance levels - updated daily so everyone knows the score and knows what to do
- Data about the product (descriptive data and usage data) is almost as valuable as the product itself
- *Profits are made in a 100 small adjustments every week to reduce costs and increase revenue - like compound interest!*

Learn More...



Best selling book worldwide on Supply Chain Management as reported on Amazon.com

Presentation excerpted from my book:

Essentials of Supply Chain Management, 2nd Edition

Published by
John Wiley & Sons, 2006

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