Week 2:

MIS 3537: Internet-Enabled Supply Chains

crocs™ Case
crocs™ At Time of Case

- What happened in 2008?
- What happened to Crocs?
• Losses in 2008, 2009
• Recession – market ‘increasingly challenging’
  ◦ Supply Chain restructuring (closed Canada, Brazil factory)  $8.6mm
  ◦ Inventory writedowns ($65.4 mm)
  ◦ Asset impairment (goodwill, excess equipment & tooling) $45.8 mm
crocs™ \[2010+\]

- Back from the ‘dead’
- Survived because of:
  - Strong Brand
  - Distribution
  - Diversity – Geographic, Product Line
Today

stores including:
- online store
- local outlets

key supply chain concepts

current product line

key supply chain concepts
• Reduced revenue & profit guidance last 3 quarters
• Operating losses some quarters
• Challenge to sustain a business for the long term
Break Time
Week 2:

MIS 3537: Internet-Enabled Supply Chains

From the first click to the last mile
Last week...

- Importance of Supply Chains
- Key Supply Chain Concepts
Learning objectives for today

• How the Internet changes supply chain dynamics

• What has not changed because of e-business?
The impact of the Internet

Web-Based Entrants are Making Synchronization and the Associated Benefits Achievable

The Supply Chain Continuum

Scope of impact
- Traditional
- Integrated
- Collaborative
- Web-based entrants

Step 1: Integrate functions of the existing supply chain
- Optimization
- Integration
- Collaboration
- Synchronization

Step 2: Improve collaboration & control with vendors, customers
Step 3: Virtually synchronize the supply chain across players into one logical enterprise
The four key impact areas

- eDesign
- eMediaries
- Web-based collaborative planning
- eFulfillment
eDesign


- Minimize design complexities that later drive supply chain inefficiencies and costs
- Avoid downstream issues in production, logistics and service parts
What is eDesign?

- eDesign = Product innovation on the Web

- Traditional design: Leverage internal capabilities (different teams from same company)

- New-age design: Bring different ideas from different companies together
Why eDesign?

- Shrink product lifecycles through integration and rapid flow of information

- Integrated product design also enables customization of product depending on supplier feedback (more alternatives)

- Fast, cost effective iteration of prototypes for feedback
eDesign at Hewlett Packard

- Traditional approach: Dedicated teams focus on launch dates, features and functionality

- eDesign approach: Multiple internal and external design teams for laser printers

- Modular parts and differentiating components can be assembled at regional distribution centers, not production facilities
More eDesign

- National Semiconductor launched product design portals: customers and suppliers can collaborate on early stage design of circuits

- Yet2.com allows companies to trade intellectual properties

- DuPont R&D produces 400 patents a year; not all are useful to DuPont

- Yet2 matches appropriate companies, netting DuPont millions in licensing fees
eMediaries

- eMediary = a type of online market or exchange

- Three models of eMediation
  - Supplier-centric model
  - Buyer-centric model
  - Hybrid marketplaces
Supplier-centric model

- Sellers provide catalogs online
- Prospective buyers can access these catalogs online and strike deals
- W.W. Grainger is a leading example of a supplier-centric eMarketplace
Buyer-centric model

- Large companies can display their needs online

- Prospective vendors can access these requirements and make bids

BP Amoco uses the buyer-centric model
Hybrid marketplace

- This is the true eMarketplace
- Similar to eBay, but focused on B2B
- Both suppliers and buyers can display their catalogs and requirements online, and deals are made through bids
Comparison

One-to-Many
Buyer or Supplier Centric

Many-to-Many
Network of all, Hybrid
Benefits

- Lower product acquisition costs
  - Competitive bidding process
  - Multiple vendors implies better deals

- Lower procurement transaction costs
  - No paper-based process

- Vendors can be selected from across the globe

- A means to dispose of unused excess inventory
Agentrics -> NeoGrid

- Retail Exchange (esp. Private Label Goods)
- Backbone of Walmart’s ‘Great Value’ brands
- Retailers: fashion, electronics, pharmacy, DIY/Home centers
- Other players: suppliers, manufacturers, distributors
- Functions: Supply chain collaboration / Sync, Data exchange, Transaction Execution, etc.
  - Global partners, Brazilian owned
World Chemical Exchange

• Setup by ChemConnect®

• Global-neutral market for chemical and plastics manufacturers and buyers

• Partners with more than 9000 companies from 150 countries

• Clients include 20 of the world top 25 chemical companies
Others

- EXOSTAR®
  - Aerospace and defense partners
  - Strong Security

- PARTS.com™
  - Automotive industry focused eMarketplace
  - 180 million in inventory (21m unique parts)
  - 34 warehouses; 41 brands

- PlasticsNet™
  - eMarketplace for the plastics industry

- FREE MARKETS
  - ECO products
Collaborative Planning

- Traditional approach
  - Plan the activities inside the company
  - Do not share any details with suppliers or vendors
  - Data owned and manipulated only by the company and its employees
  - Sharing data = Loss of profitability
  - Multiple forecasts up and down the supply chain: different entities operate with different forecast numbers!
Why collaborate?

- Planning done in conjunction with:
  - Suppliers
  - Customers
  - Channel partners

- Share crucial information
  - Relevant sales data
  - Material availability

- Benefits
  - Single forecast shared by all participants
  - Increased **trust** levels
  - Broader Optimization
Other key factors & benefits

- Open standards for the web (e.g. XML)
  - Everybody talks the same language

- Broader information sharing
  - Expand from supplier and customer to supplier’s supplier and customer’s customer
  - Broader optimization

- Internet becomes a shared data repository
  - Easy for third-party to manage data in SC
  - Single version of the ‘truth’
Online marketplace for buyers and sellers of transportation services

Trading partners able to share, view and execute decisions based on real-time information: collaborative (c-) commerce

2001: Closed

- Good exchange but nobody came
- Reality: B2B c-commerce must start with enterprise’s relationships with partners - trust
eFulfillment

- Contrary to its name, eFulfillment does not reside on the Web.

- It refers to the ability to match the physical on-the-ground capability of the company to match the speed of the data on the virtual supply chain.
As a Customer What do you Expect from a Supply Chain?

- ________________________________
- ________________________________
- ________________________________
- ________________________________
- ________________________________
- ________________________________
- ________________________________
- ________________________________
Why is it crucial?

Gaps in Supply Chain Infrastructure are Resulting in Poor Performance and Disappointed Customers

Andersen Consulting Online Retailer Study

- 480 product orders attempted in a seven day period
- 25% of orders could not be completed online
- Average days receive an order = 5.2
- Only 25% of retailers met their delivery commitment

Bar chart showing:
- Leading e-tailer
- Upstart e-tailer
- Retailer
- Catalog

- Stock status provided
- Delivery date provided
- On-time or early delivery

Fox School of Business
TEMPLE UNIVERSITY
Why is it crucial? (contd.)

- Study of 100 online retailers
  - 25% of orders could not be completed online
  - 75% of retailers did not meet delivery commitment!

- More importantly
  - E-tailers (online-only) were able to meet delivery commitments 75% of the time (average)
  - Traditional retailers with online presence could meet only 25% of delivery commitments
  - What causes this disparity?
Possible answers

- “We cannot solve our problems with the same thinking we used when we created them.” – Albert Einstein

- Traditional retailers with online operations were probably not organized to deal with online operations

- Online retailers had integrated their entire chain much better, thus leading to better levels of service
Learning objectives for today

- How the Internet changes supply chain dynamics
- What has not changed because of e-business?
What has not changed?

- Radical? transformation, yes! But certain principles still hold
  - Only “total cost” matters
  - Trade-offs are forever
  - Uncertainty will remain
  - Continuous Change a Necessity
“Total cost”

- Recall from lecture 1
  - Material costs (e.g. raw materials)
  - Manufacturing costs (e.g. labor, machine costs)
  - Warehouse costs (e.g. storage, depreciation)
  - Transportation costs
  - Planning costs (e.g. labor, I/T)
  - …

- **Total cost** = sum of all costs incurred in the supply chain
Only “total cost” matters

- In any supply chain
  - You cannot minimize just one cost without adversely affecting other costs
- The customer pays for the final product!
- The goal, therefore, is to minimize the total cost, by optimizing across the chain, and not just at one point
“Total cost”

- Common stumbling block: Sub-optimization
  - Outcome less than best possible (Optimal)
  - Result of different groups / segments / departments of Supply Chain each attempting to reach a solution that is optimal for them
Tradeoffs are forever

- You cannot have “fast response” with “zero inventory”

- In fact, if you can do both, you are probably not managing efficiently, i.e. you’re off the “efficient frontier”

- Most often, a tradeoff will involve multiple terms, not just two
Managing tradeoffs

- When a tradeoff occurs, consider:
  - The fixed cost of production
  - Inventory levels
  - Speed of service
  - Reliability of service
  - Number of options offered

- By varying one or more of the above, the total cost can be minimized
Uncertainty will remain

- Main benefit of an integrated supply chain
  - information moves faster
    - Faster information = Shorter period of uncertainty
    - POS data, inventory status, and production schedules are shared quickly

- Long Term decisions made with uncertain, often limited or conflicting information
Some buffers will be needed

- Faster information sharing does not eliminate all uncertainty

- To manage uncertainty, some buffers are still required: inventory, excess capacity and wait time

- Remember: information can travel rapidly; physical flow is not as fast
Continuous Change

- Required / Not an Option
  - Competition
  - Technology

- Is a Process
  - Never a straight line

- Needs to be managed
  - Define the Goal
  - People
Next week...

- Zappos.com Case
- Electronic Markets
GM’s TradeXchange

- Partnered with CommerceOne to develop its own online marketplace – TradeXchange
- Suppliers can use custom-designed, Web-enabled applications to conduct real-time processing
- Simultaneous interactions with multiple entities – purchasing, finance, production control, engineering, logistics
- Expected savings for GM: $400 million/year

Launched 2000 – disbanded by 2004
TradeMatrix®

- Open digital community developed by i2 Technologies
- Customers, partners, suppliers and service providers gather to make decisions about
  - Dynamic trading
  - Electronic procurement
  - Spot buying
  - Order fulfillment
  - Logistics services
  - Product design

2016: i2 now part of JDA / Red Prairie. No sign this service still active.