Week 2:

MIS 3537: Internet-Enabled Supply Chains

crocs™ Case

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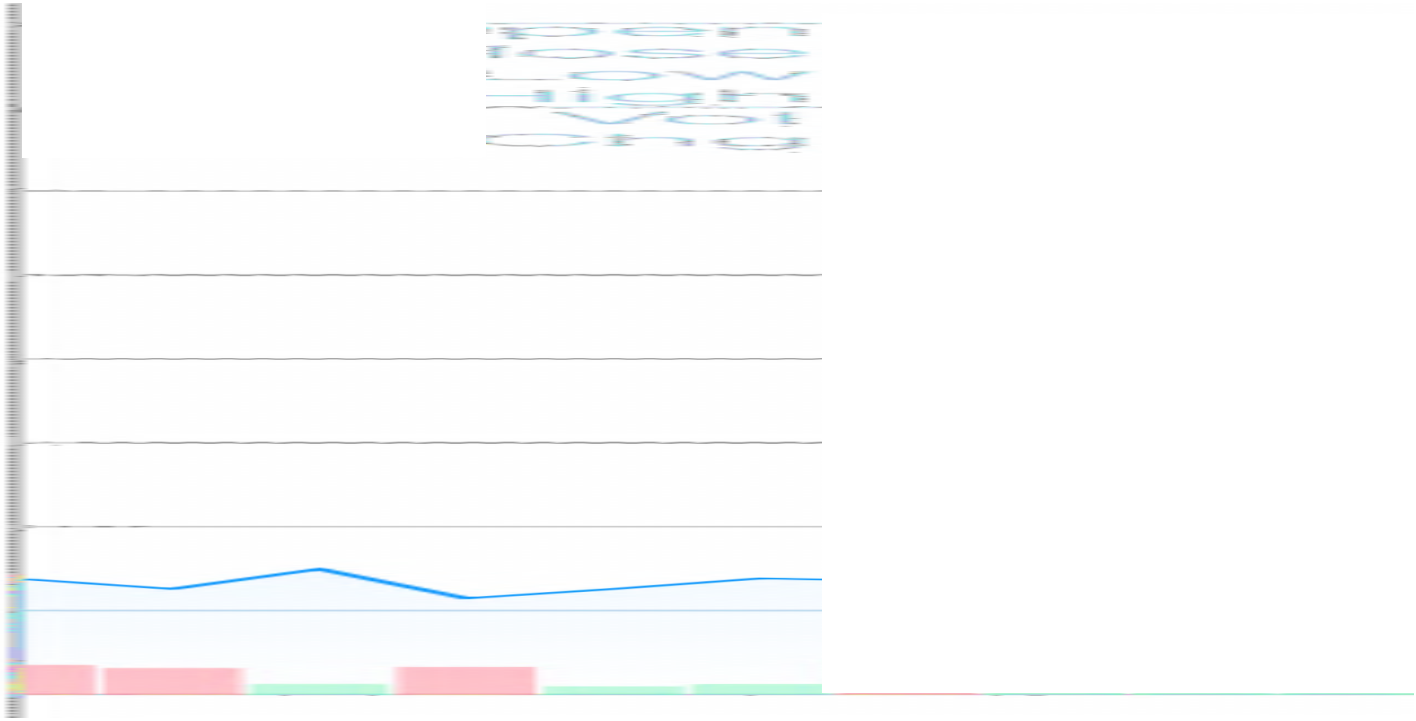
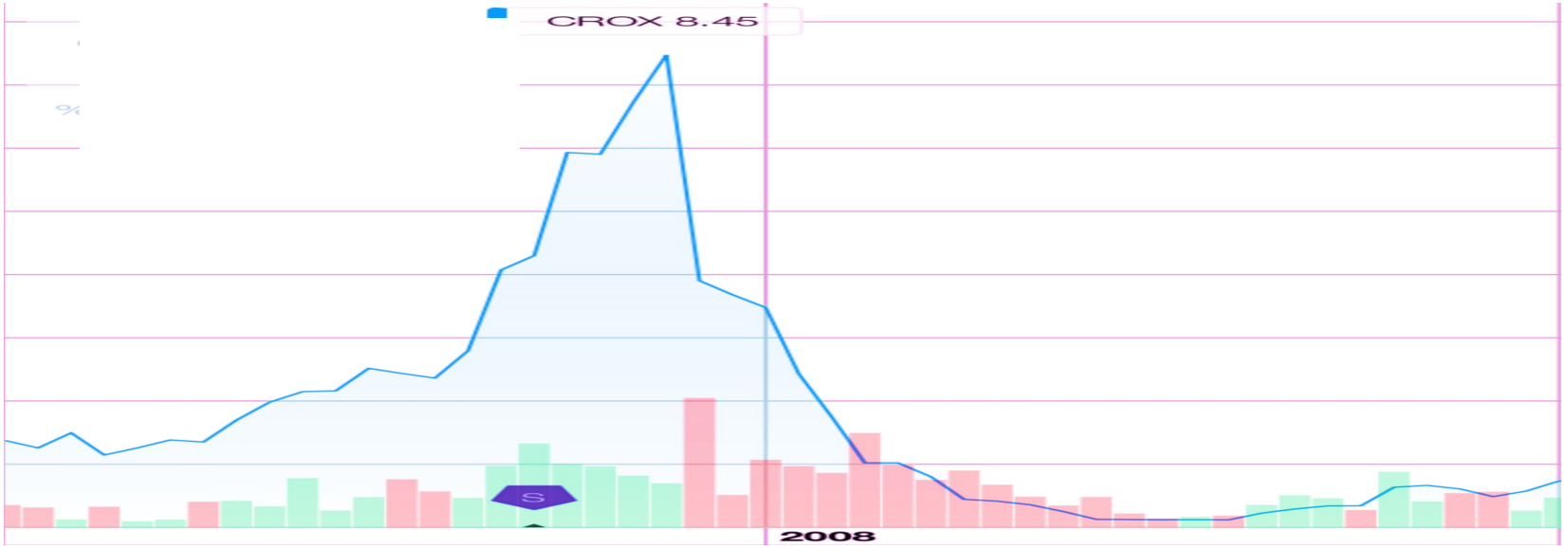
crocs™ At Time of Case



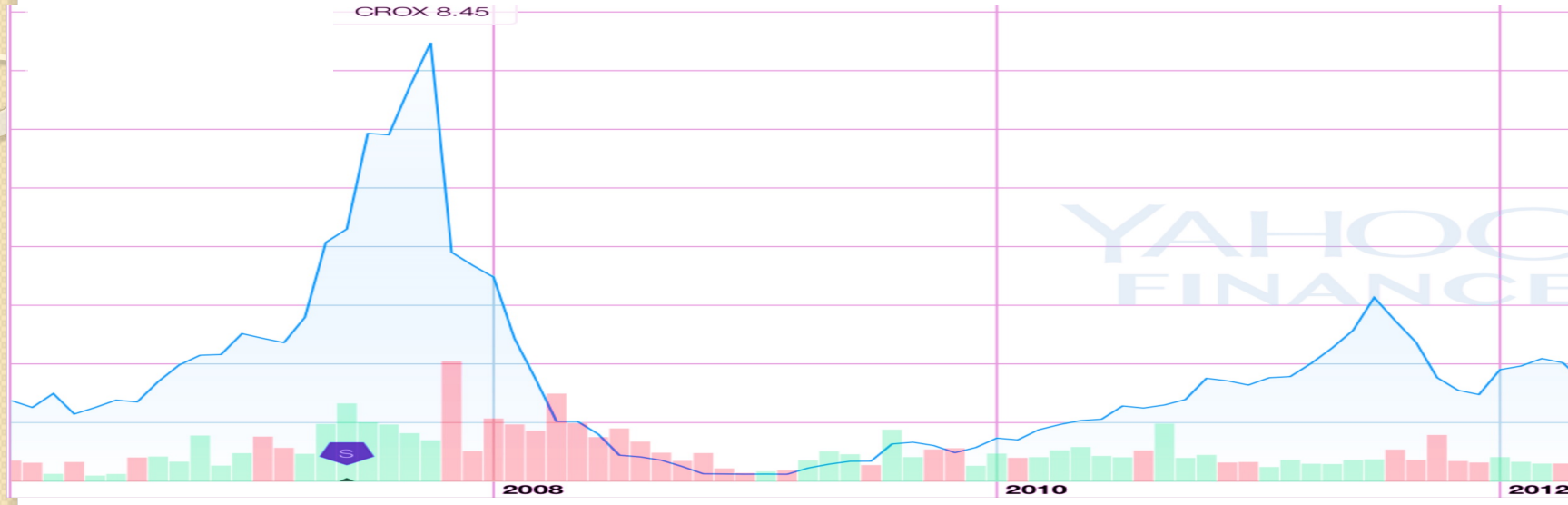
- What happened in 2008?
- What happened to Crocs?

crocs™ 2008 - 2009



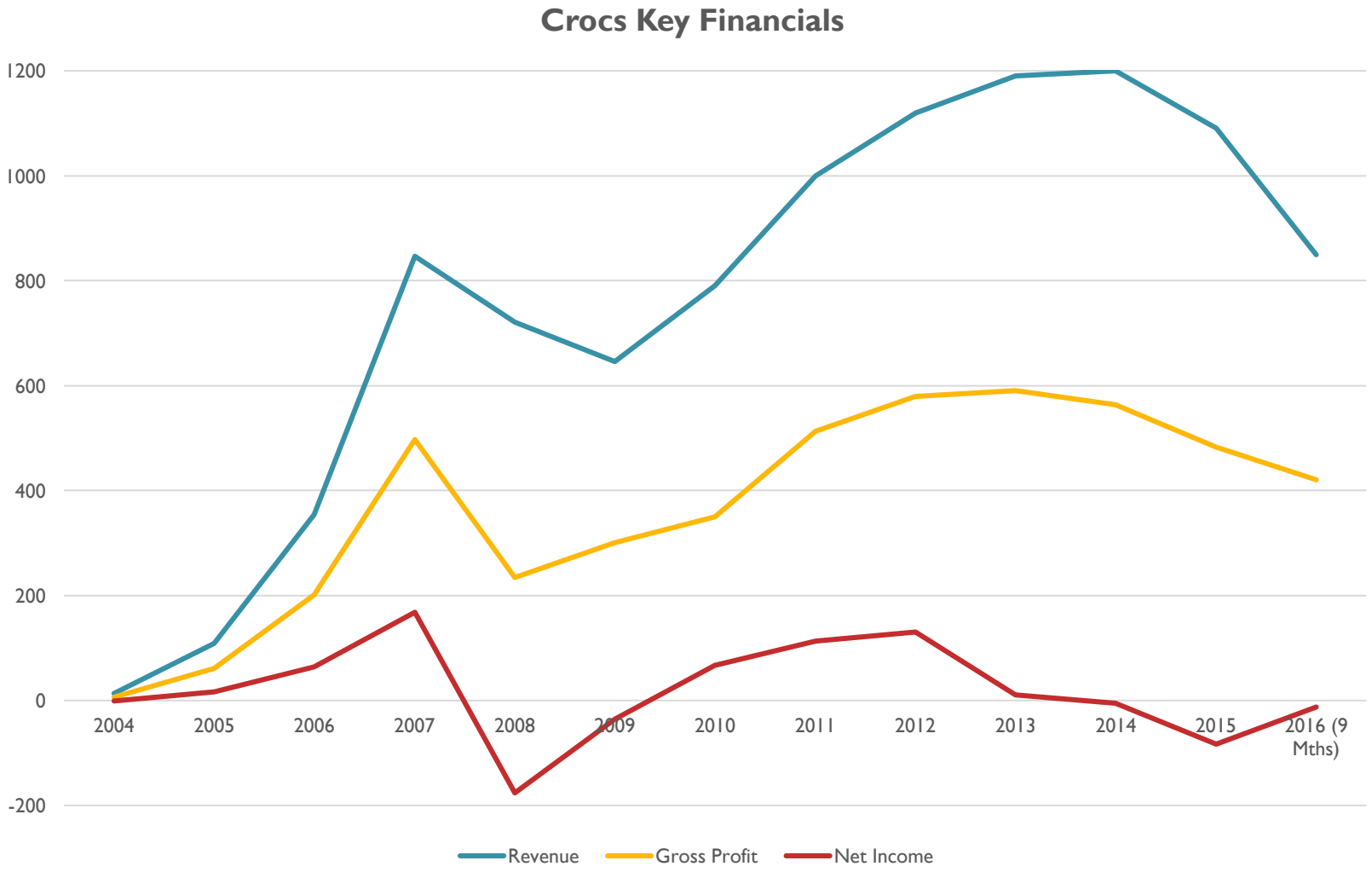
- Losses in 2008, 2009
- Recession – market 'increasingly challenging'
  - Supply Chain restructuring (closed Canada, Brazil factory) $8. 6mm
  - Inventory writedowns ($65.4 mm)
  - Cut ~ 1/3 of workforce
  - Shelved unprofitable lines of apparel, high-end women's shoes

crocs™ 2010+



- Back from the 'dead'
- Survived because of:
  - Strong Brand
  - Distribution – including own stores
  - Diversity – Geographic, Product Line (boots, sneakers, …)

crocs™ Key Financials



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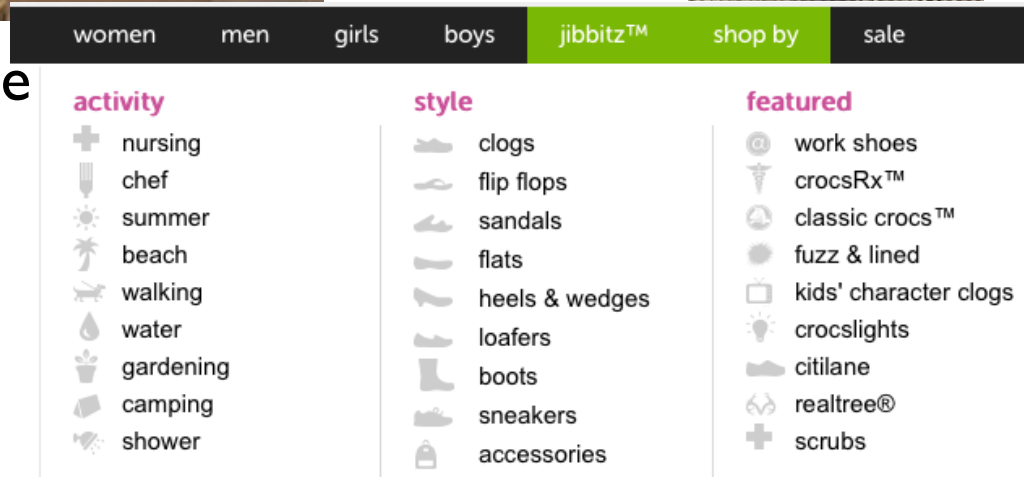
crocs™ Today

- Stores including:
  - Online Store
  - Local outlets

Recent:

- Current Product Line
- 2017: "Come As You Are" campaign with entertainment stars



crocs™ Today

- 2016: Volatile year – mixed earnings, stock price
- Q1 optimism, declining sales Q2, Q3
- Improving inventory Mgmt helpful to increase gross margin erosion?
- Aggressive young competitors (e.g. Under Armour)
- Amazon Sales (discounts, what is incentive to pay full price in store)

Break Time

Week 2:

MIS 3537: Internet-Enabled Supply Chains

How Does the Internet (Information Technology) Affect the Supply Chain?

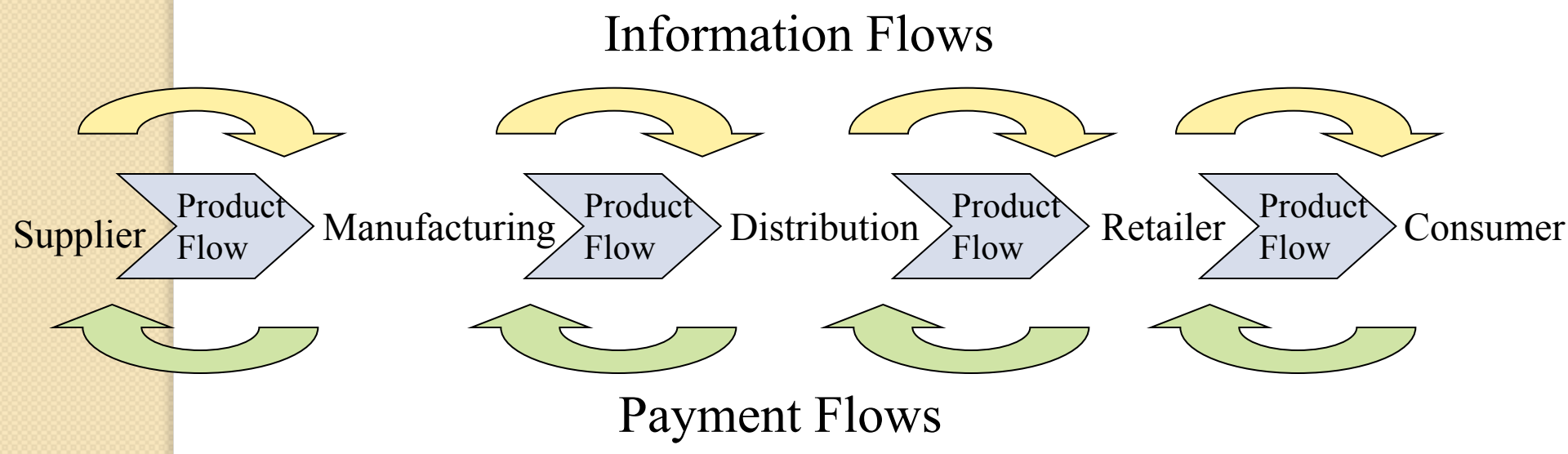
Last week…

- Importance of Supply Chains
- Key Supply Chain Concepts

Concept of Supply Chain

Complex network of relationships that organisations maintain with trading partners to source, manufacture and deliver their products

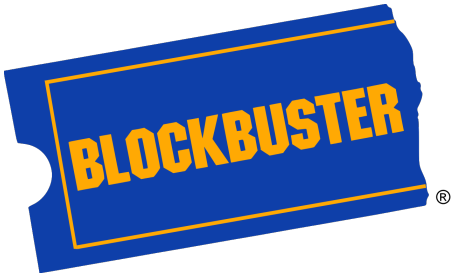
- includes material, information and financial flows as shown below



Learning objectives for today

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

What do these Companies have in Common?



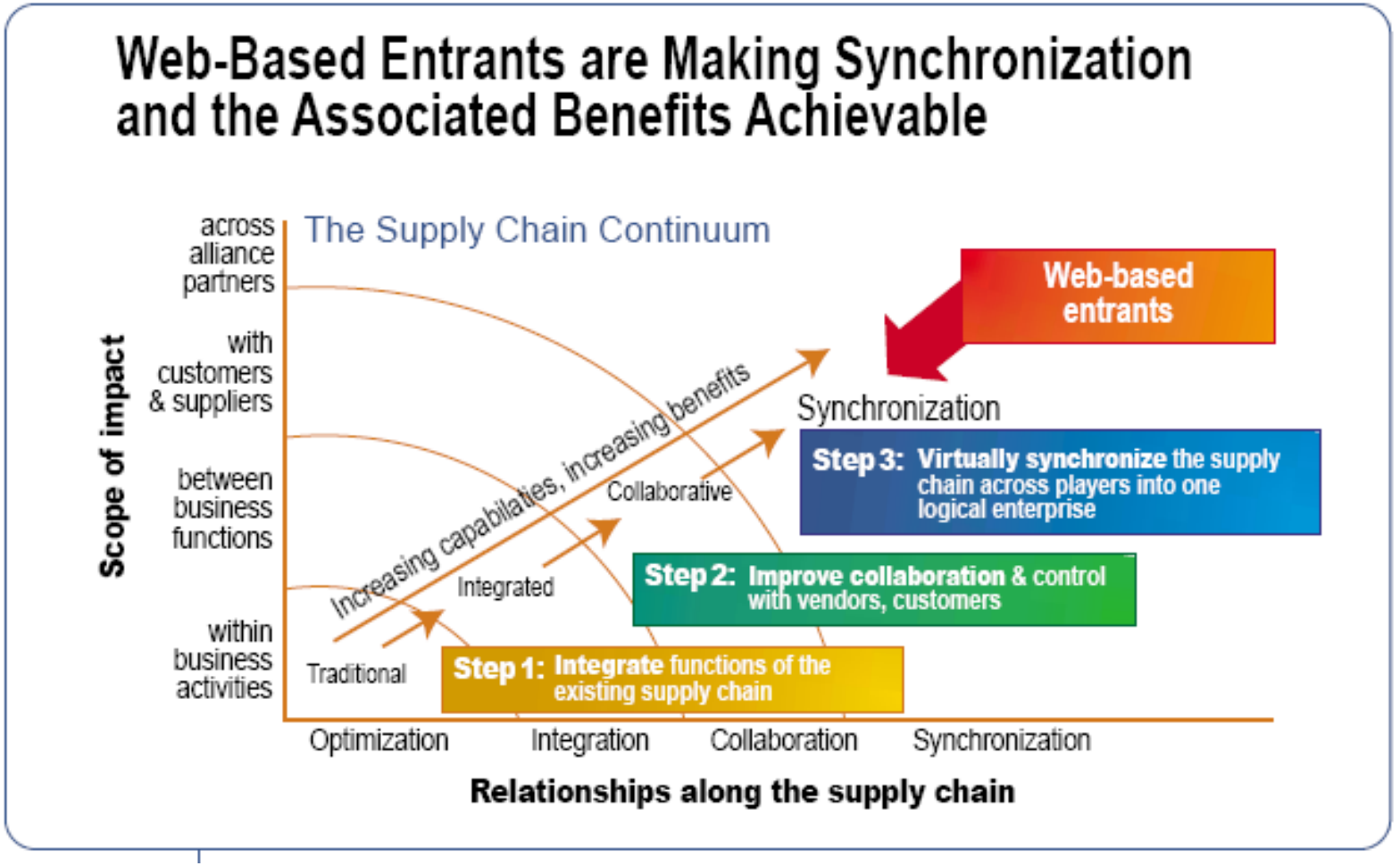
How Does I/T Drive Change?

- Real – time
- Data – different types
- Drive efficiency
- Analyze data -> insights
- Accessible
- Convenience -> different ways of shop, so daily tasks
- Develop insights

How Does I/T Drive Change?

- Hyper-Connectivity
  - Ubiquitous – everywhere?, all the time
  - Fast – removes limitations of physical world
  - Asynchronous -> synchronous
- Physical -> Virtual
- Data
- Super-Computing
  - Real-time
  - Enables high CPU technologies – voice cognition, AI?, …
- Integration?

The impact of the Internet



Four key impact areas

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

eDesign

E- Design Facilitates Real-time, Cross-Company Collaboration and the Design of "Friendly" Products.

- 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 e Design ?

- 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 e Design

- 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

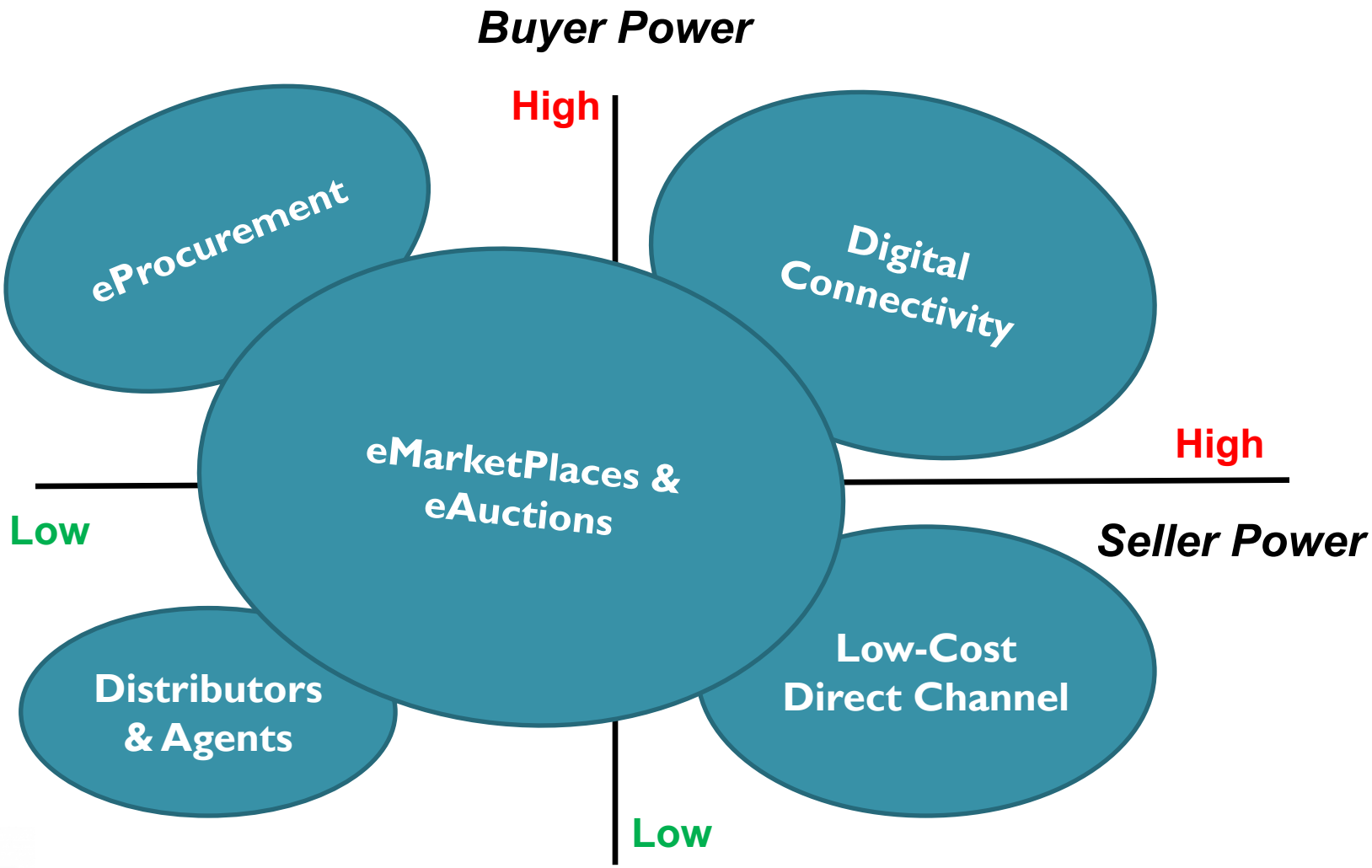
MARKETPLACES – Where Trade Occurs

- Why do we need a marketplace at all?

- A marketplace is a common ground for buyers and sellers

- Neither side has considerably more power than the other

MARKETPLACES – Who has the Power?

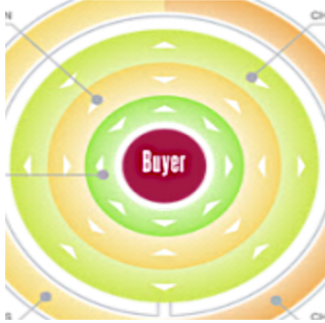


Supplier-centric model

- 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

GRAINGER®
FOR THE ONES WHO GET IT DONE

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

- Business 2 Customer (B2C): eBay, Amazon
- Business 2 Business (B2B)

- Both suppliers and buyers can display their catalogs and requirements online, and deals are made through bids

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

Your Product On-Demand

- 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

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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™ For Every Part of Your Life
  - Automotive industry focused eMarketplace
  - 180 million in inventory (21m unique parts)
  - 34 warehouses; 41 brands
- PlasticsNet℠ A VertMarkets Marketplace for Industry Professionals
  - eMarketplace for the plastics industry
- FREE MARKETS ECO products

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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

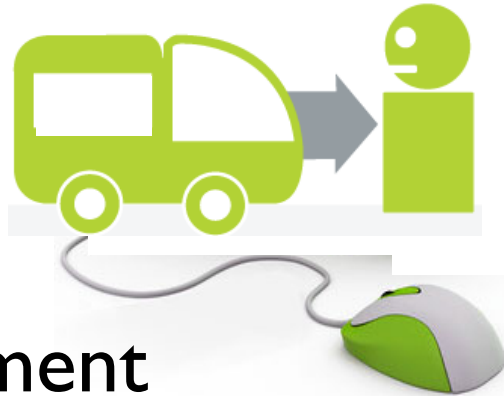
Other key factors & benefits

- 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'

FREIGHTWISE

- 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?

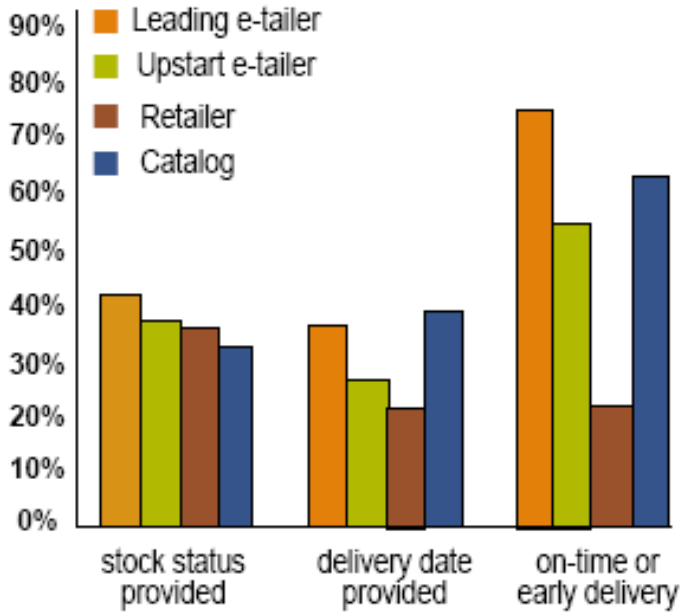
- Get what ordered
- Reliable – get it when promised
- Arrives in good condition – quality
- Visibility – track shipment,
- Options – payment
- No shipping fees – low cost
- Accessability – get here quickly

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



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

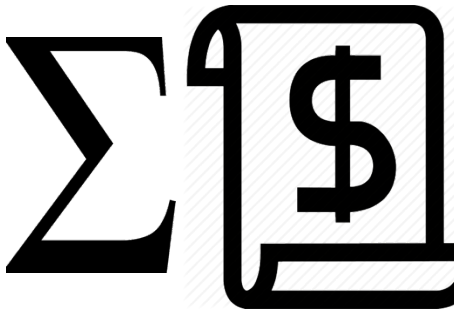
Learning objectives for today

- 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

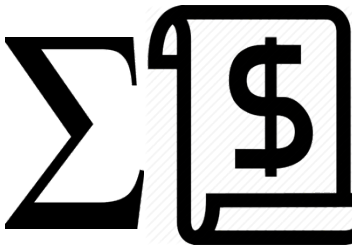
"Total cost"



- 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

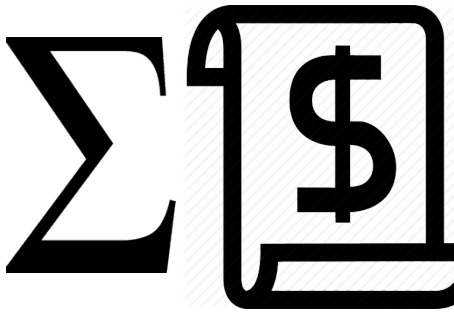
Only "total cost" matters



- 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"



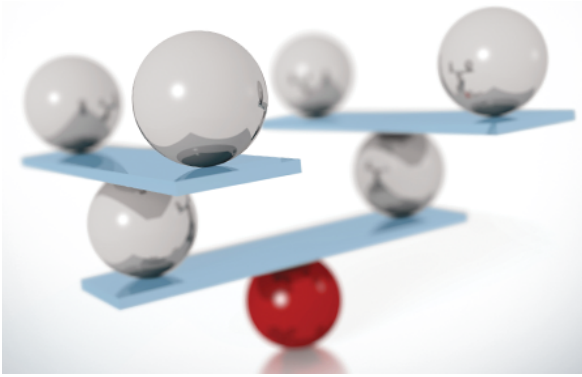
- Common stumbling block: Sub-optimization
  - Outcome less than best possible (Optimal)
  - Result of different groups / segments / departments of Supply Chain each attempting to reach a solution that is optimal for them

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



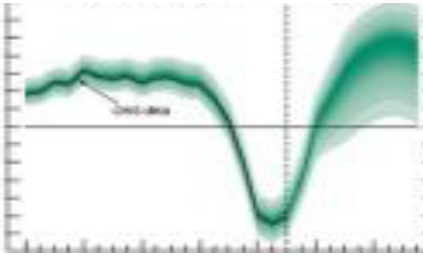
- By varying one or more of the above, the total cost can be minimized

Uncertainty (Risk) Remains

- 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

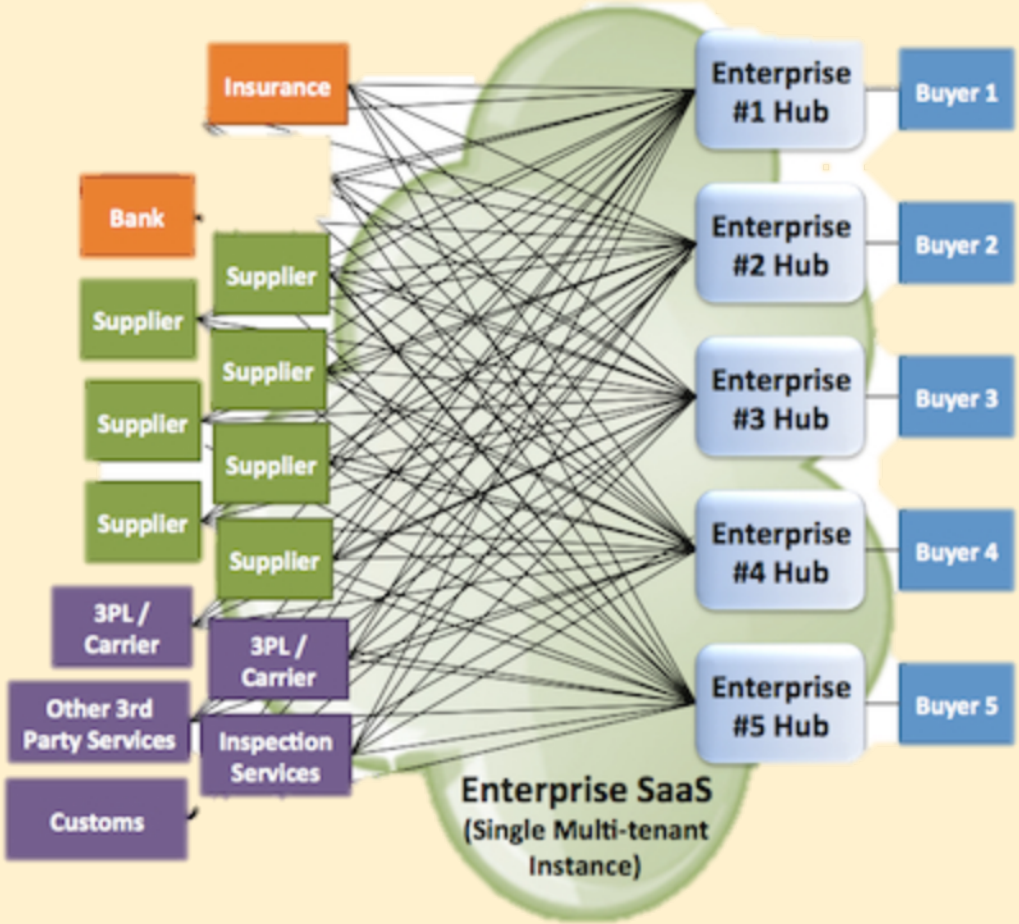
- Needs to be managed
  - Define the Goal
  - People

Next week…

- Zappos.com Case

- Electronic Markets

Comparison

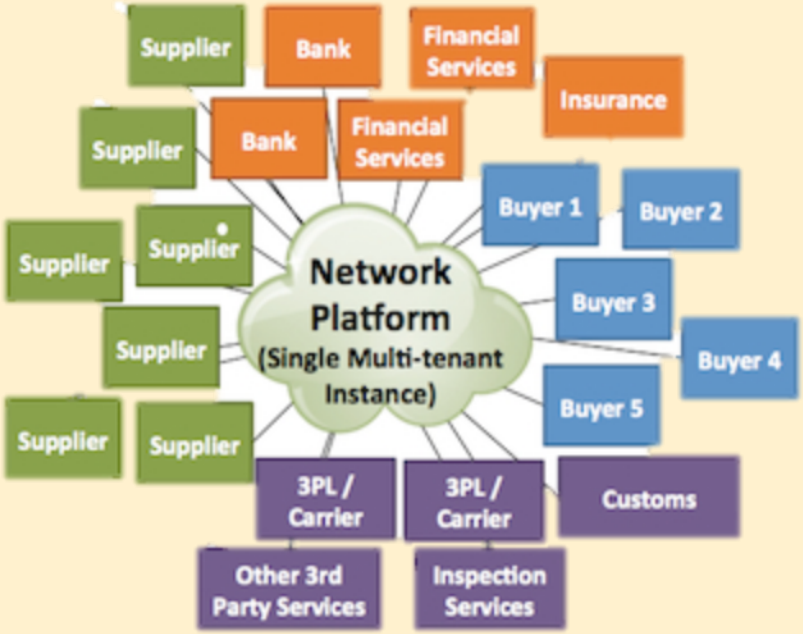


One-to-Many

Buyer or Supplier Centric

Many-to-Many

Network of all, Hybrid



GM's TradeXchange

- Partnered with CommerceOne to develop its own online marketplace – TradeXchange
- Suppliers can used 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

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.