ISOM 2010: Digital Economy (3)

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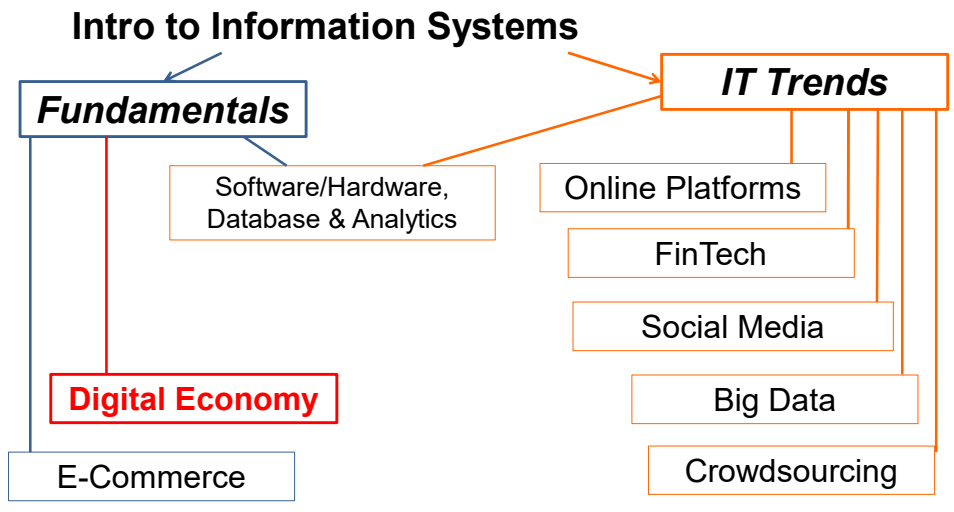
Concept Map



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Network Effects

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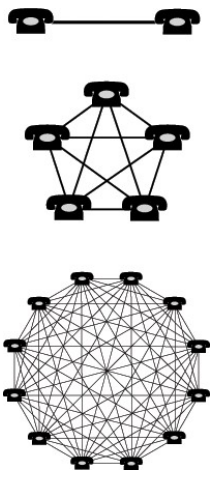
Network Effects

- The value of any product or service grows as other users consume it
  - User base (critical mass) is the key
  - The more people own phones, the more valuable the phone is to each owner

http://en.wikipedia.org/wiki/Network_effect



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Metcalfe's Law or Network Effect

- Metcalfe's Law states that the value of a network grows with the square of the number of users.

$$\text{VALUE} = (\text{USERS})^2$$

Social networking sites like Facebook and LinkedIn derive value from their users. It's the network!

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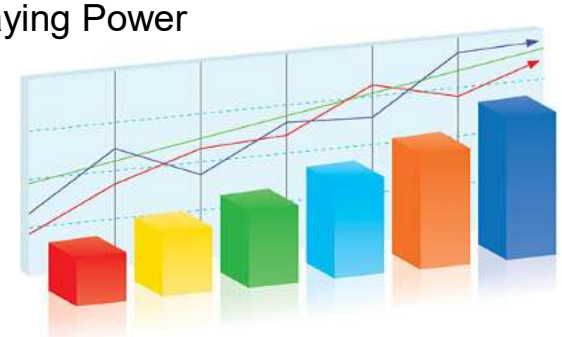
Why Are Network Effects So Desirable?

- Network effects create the following value for companies who can create them:
  - Exchange Value
  - Complementary Benefits
  - Staying Power



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Value Creation: Exchange Value

- Every product or service subject to network effects fosters some kind of exchange
  - The more people with an Xbox, the more people to play with
  - Exchange value refers to the size of network you can connect with

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Positive Feedback Loops

- IM (instant messenger) is 1-sided market, as IM users attract other IM users
- Games are a 2-sided market, as users also attract game developers

2-sided markets have more positive feedback loops, as an increase in the number of users on one side of the market (console owners) creates a rise in the other side (game developers)

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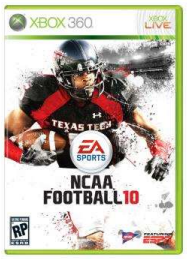
Value Creation: Complementary Benefits

- Products and services that add value to the product to provide complementary benefits



Want to play this game? Better have an Xbox, since it's not available for Wii!

HomePod

Made for iPod iPhone iPad

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Value Creation: Staying Power

- Have you heard of Fuzebox, the open-source gaming system?
- Sure, it's less expensive to buy, but will you have any games to play? And will it still be around next year?

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Tipping Points

- When network effects are present, markets may reach a tipping point where network effects become so valuable that one winner emerges.

Microsoft won the desktop operating system battle. Who will win the Smart Phone war?

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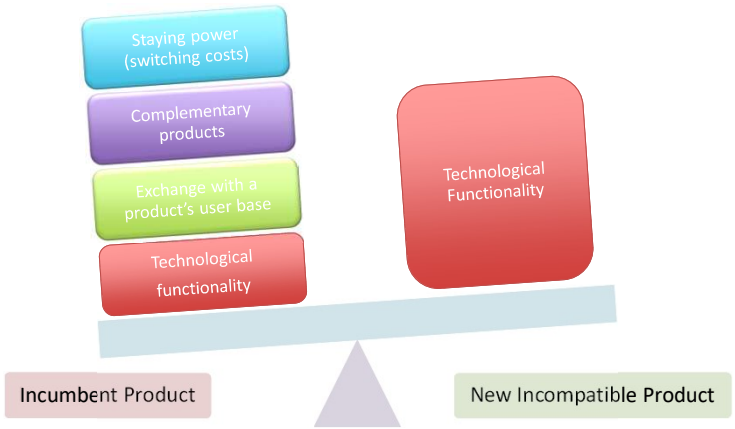
Network Effects Increase Barriers to Entry; New Entrants Must Be VERY Desirable



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Competing in Networked Markets

- Move early
- Subsidize adoption (Uber)
- Redefine the market ("blue ocean strategy")
- Form alliances and partnerships
- Establish distribution channels
- Seed the market with complements
- Maintain backward compatibility
- Use open standards

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Move Early

- Being first-to-market, or moving early, is one strategy to becoming the dominant provider

Microsoft's Zune may be a great music player, but everyone already had an iPod!

Or Be a Fast Follower!

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Subsidize Adoption

- Sometimes it's worth paying customers to adopt your technology and build the size of your network.

FREE development software for STUDENTS!

https://www.dreamspark.com/Default.aspx

Google offered $10 million in developer incentives to create applications for Android phones, hoping to rocket the Android past the iPhone.

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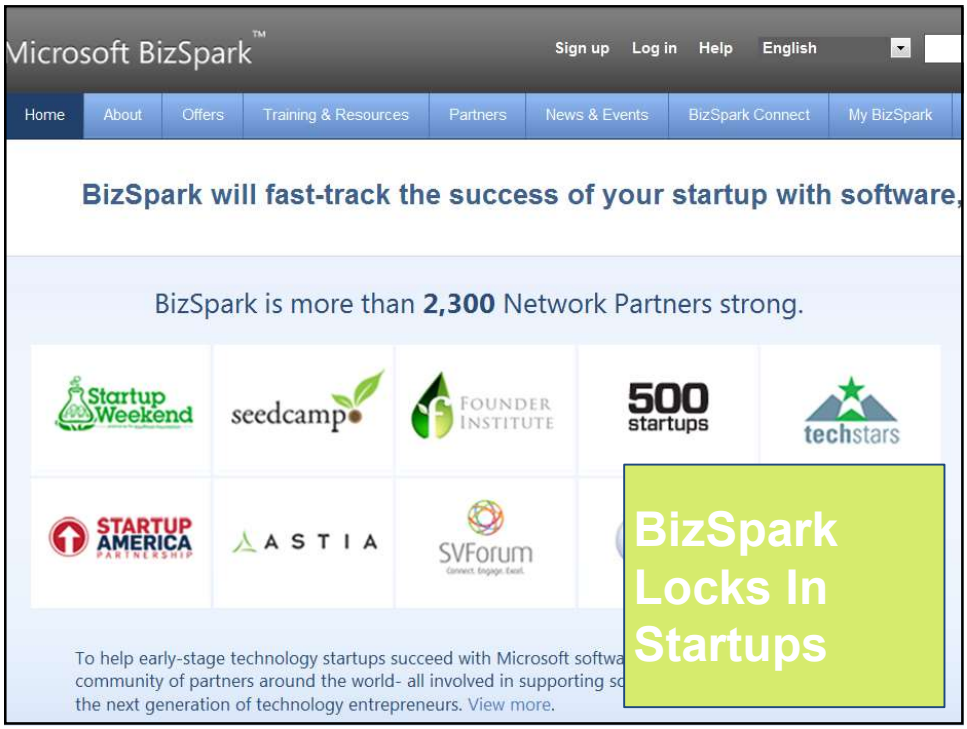

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Redefine the Market

- The iPod wasn't the first MP3 player, but Apple redefined the market by combining a user-friendly device with the iTunes store

The iPod redefined the personal music segment and dominated the industry

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Form Alliances and Partnerships

- Partnering with complementary companies can boost product acceptance and enhance your network effects
- Citibank had first NYC ATM system; competitors formed NYCE alliance

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Zara: Fast Fashion from Savvy Systems

Case Study 1

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Zara Versus Gap: Key Measures

	Gap	Zara
Revenue	$14.5 billion	$14.7 billion
Net Income	$967 million	$1.68 billion
Number of Stores	3,149	4,359
Number of Countries	6	73
Biggest Brand	Gap	Zara
Number of Other Brands	4	7
Based in	San Francisco, USA	Arteixo (near La Coruña), Spain
First Store Opened	1969	1975

Rohwedder, *Zara Grows as Retail Rivals Struggle,* WSJ, 3/26/09

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What does this mean?

Inventory = Death

How does Zara manage inventory differently than GAP?

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Compare the Shopping Experiences

Zara

- Changes inventory constantly
- Creates "fashion of the moment"
- Store employees ask shoppers for their opinions
- Buy it or it's gone

Gap

- Stable inventory
- Designs created for each season
- Fashion driven by high profile in-house designers
- If they're out of stock, just come back next week

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Information Systems and Manufacturing

Zara

- In-house designers create knock-offs of latest designs
- Company controlled factories can change design, color quickly
- Distribution systems are tightly controlled

GAP

- NY designers create seasonal collections
- Manufacturing is outsourced to produce large quantities at low prices
- Unsold products placed on seasonal clearance

Information systems allow Zara to manufacture differently

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What Is Information?

- Knowledge derived from data
- Data presented in meaningful context
- Data processed by summing, ordering, averaging, grouping, comparing, or other similar operations

- A difference that makes a difference

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Zara Wins with *Information*

- Profound **vertical integration**
- Technology-orchestrated supplier coordination
- Just-in-time manufacturing
- Finely tuned logistics
- ***RESULT$***
  - ***10x unique products***
  - ***12x turnaround speed***

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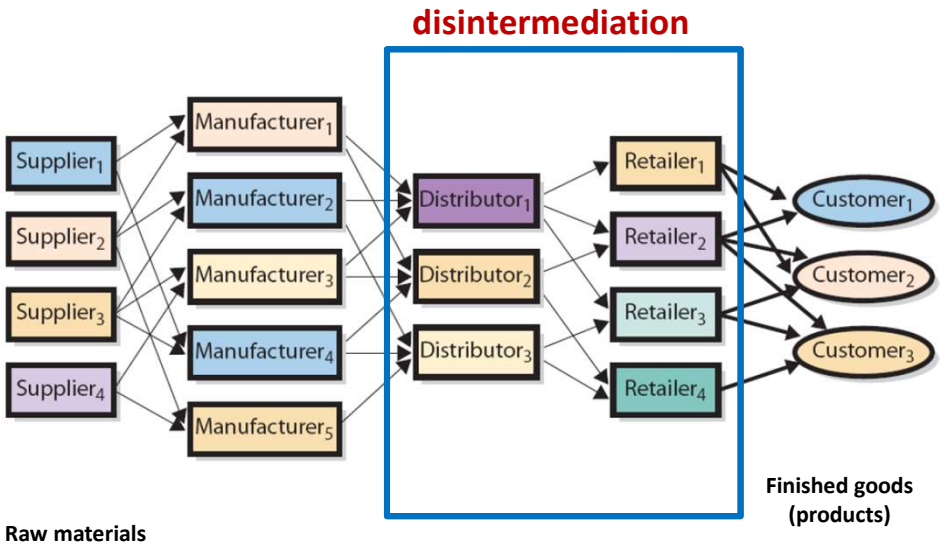
A supply chain is a network



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Supply Chain Management (cont)

- Because of **disintermediation**, not every supply chain has all these organizations
  - Dell, for example, sells directly to customers
    - Both distributor and retailer organizations omitted from Dell's supply chain
  - In other supply chains, manufacturers sell directly to retailers and omit distribution level

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Supply Chain Profitability vs. Organizational Profitability

- **Supply chain profitability** – difference between sum of revenue and sum of costs in supply chain **(P=R-C)**
  - Maximum profit to supply chain *will not* usually occur if each organization maximizes profits in isolation
  - Profitability of supply chain increases if one or more organizations operates at ***less*** than maximum profitability

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Bullwhip Effect

- **Bullwhip effect** – variability in order size and order timing increase at each stage up the supply chain
  - natural dynamic occurs due to multistage nature of supply chain
  - ***not related to erratic consumer demand***
  - reduces overall profitability of supply chain

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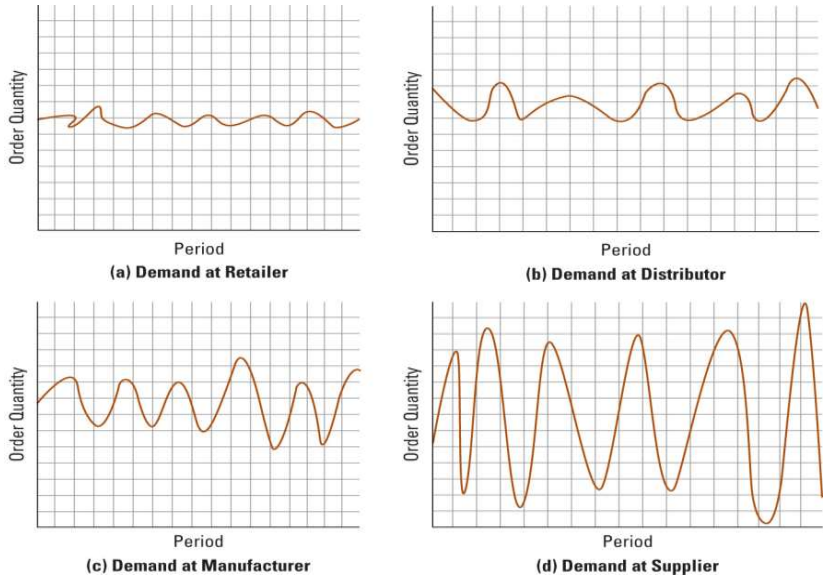
The Bullwhip Effect



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Stop the Bullwhip Effect

- To eliminate the bullwhip effect, let all participants have access to consumer-demand information
- *Interorganizational information systems* are essential to sharing this data between firms

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IS Affect Supply Chain Performance

- Positive impact on supply chain performance
  - Reduces cost of buying and selling
  - Sourcing, buying, settling faster, easier, more effective
  - Reduces bullwhip effect
- Expands supply chain speed
  - Dollar value of goods exchanged in given time period
- Enables suppliers and customers to reduce inventory size and costs
- Improves delivery scheduling
  - Enables just-in-time inventory

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