

A modern office hallway with large glass windows and two business professionals walking and talking. The woman on the left is wearing a striped shirt and black pants, holding a white folder. The man on the right is wearing a dark suit and a purple turtleneck, holding a silver folder. They are walking towards the right side of the frame. The hallway has a carpeted floor and a high ceiling with exposed ductwork and pendant lights. The glass windows on the left reflect the interior of the office, showing desks and chairs.

LEADERSHIP MOMENT

*Leaders must be close enough to relate to others,
but far enough ahead to motivate
them..j.maxwell*

Objectives & Reminders

Objectives for today

1. *Introduce E-business/Digital business*
2. *What is a Network Effect*
3. *Simulation of a one-sided network effect*

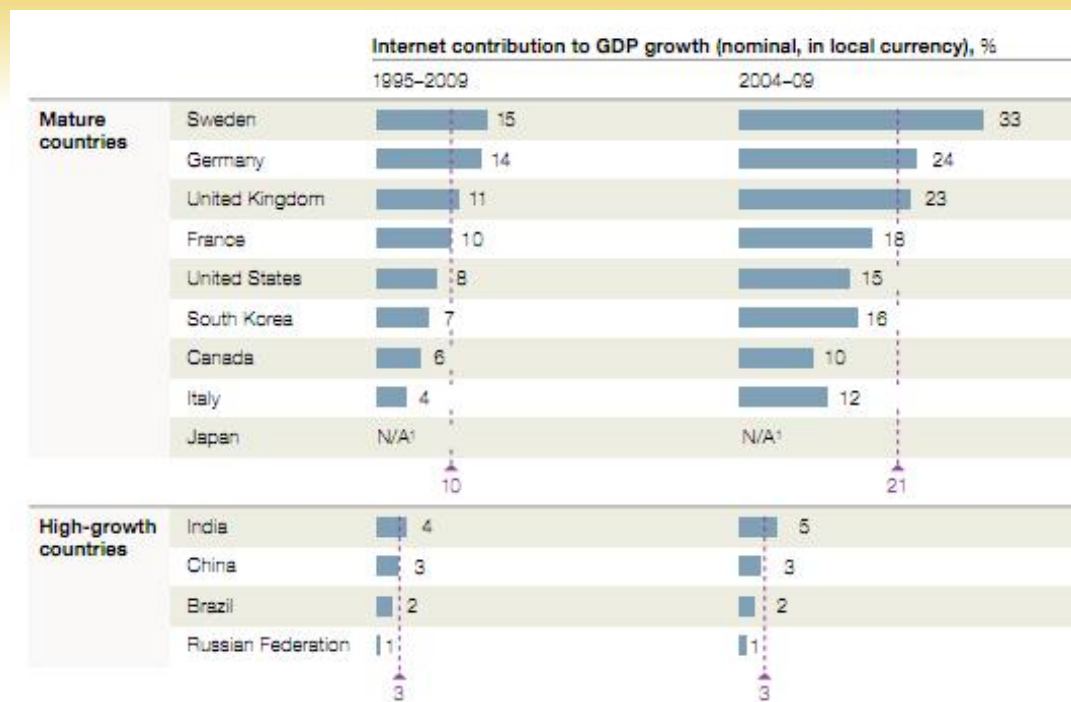
Reminders:

- ⦿ Form groups –
- ⦿ SCRATCH (3) – group submission
- ⦿ Market basket – individual submission
- ⦿ Kickstarter (5) – group submission
- ⦿ Lab Jan 16
- ⦿ Lab Jan 23
- ⦿ SCRATCH due by Jan 23 @ 23:55
- ⦿ Lab Feb 6
- ⦿ Lab Feb 13
- ⦿ Market Basket due by Feb 14th @ 23:55
- ⦿ Midterm – Feb 27th @ 6:30
- ⦿ Lab Mar 6
- ⦿ Lab Mar 13
- ⦿ Quiz Mar 31
- ⦿ FINAL project Update due by Mar 6th @ 23:55
- ⦿ FINAL Project due by Apr 7 @ 23:55
- ⦿ Final Presentations Apr 7 & 9
- ⦿ FINAL exam - TBD

E-BUSINESS DIGITAL BUSINESS

Your tasks:
To understand E-Commerce initiatives

IMPACT OF THE INTERNET



¹ Negative growth due to deflation.

Source: Organisation for Economic Co-operation and Development (OECD) national accounts, McKinsey analysis

ECommerce AND eBUSINESS

⊙ **Electronic Commerce (eCommerce)**

- ⊙ An **online exchange of value**
- ⊙ The process of **distributing, buying, selling, marketing, and servicing products and services over computer networks** such as the Internet

⊙ **Electronic Business (eBusiness)**

- ⊙ The **use of Internet technologies and other advanced IT** to enable and support business processes and operations
- ⊙ eCommerce activities – part of an eBusiness strategy



CATEGORIZING eCOMMERCE INITIATIVES

- ◎ Categorizing ventures by **transaction type**
 - ◎ Business-to-Consumer (B2C)
 - ◎ Business-to-Business (B2B)
 - ◎ Consumer-to-Consumer (C2C)
 - ◎ Consumer-to-Business (C2B)
 - ◎ eGovernment

- ◎ Categorizing ventures by **company structure**
 - ◎ Bricks and mortar
 - ◎ Bricks and clicks
 - ◎ Pure play

BUSINESS-TO-CONSUMER (B2C)

- ⦿ **B2C** transactions involve a **for-profit organization** on one side and the **end consumers** on the other
- ⦿ Examples:
 - ⦿ Amazon.com
 - ⦿ Newegg.com
 - ⦿ Edmunds.com
- ⦿ The most visible kind of eCommerce.



BUSINESS-TO-BUSINESS (B2B)

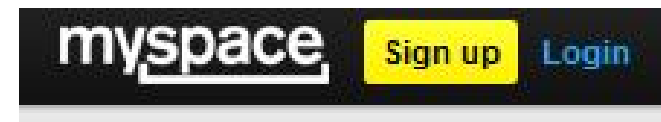
- ◎ **B2B** transactions - two or more **business entities** take part in the transaction.
- ◎ The transactions can range from one-time interactions to unique and highly tailored relationships between two firms.
- ◎ Example:
 - Premier Pages of Dell.com – for business customers
 - Amazon -cloud computing services for businesses / interactions with book publishers

E-BUSINESS WEBSITES

- ⦿ cNET
- ⦿ Mashable
- ⦿ Wired
- ⦿ TechCrunch
- ⦿ Zdnet
- ⦿ Webpronews

CONSUMER-TO-CONSUMER (C2C)

- © Consumer-to-consumer transactions: Enable individual consumers to interact and transact directly



WEBSITES

List of websites

Site	Domain	Alexa traffic rank	Top one million domains listing	Type	
Google	google.com	1	4,533,883	Search	
Facebook	facebook.com	2	8,190,877	Social Networking	
YouTube	youtube.com	3	3,637,788	Video-Sharing	
Yahoo!	yahoo.com	4	1,888,093	Search	
Baidu	baidu.com	5	325,710	Search	
Wikipedia	wikipedia.org	6	2,154,423	Reference	
Windows Live	live.com	7	149,315	Portal	
Amazon.com	amazon.com	8	1,177,136	Commerce	
Tencent QQ	qq.com	9	472,087	Instant Messaging	
Twitter	twitter.com	10	6,183,107	Microblogging / Instant Messaging / Social Media	
Taobao	taobao.com	11	185,399	Commerce	
Blogspot	blogspot.com	12	30,878	Blogging	
Google India	google.co.in	13	47,760	Search	
LinkedIn	linkedin.com	14	1,454,069	Social Networking	
Yahoo! Japan	yahoo.co.jp	15	153,463	Search	
Sina Corp	sina.com.cn	16	206,014	News	
MSN	msn.com	17	448,492	News	
Yandex	yandex.ru	18	320,854	Search	
eBay	ebay.com	19	227,785	Commerce	MANAGEMENT INFORMATION SYSTEMS

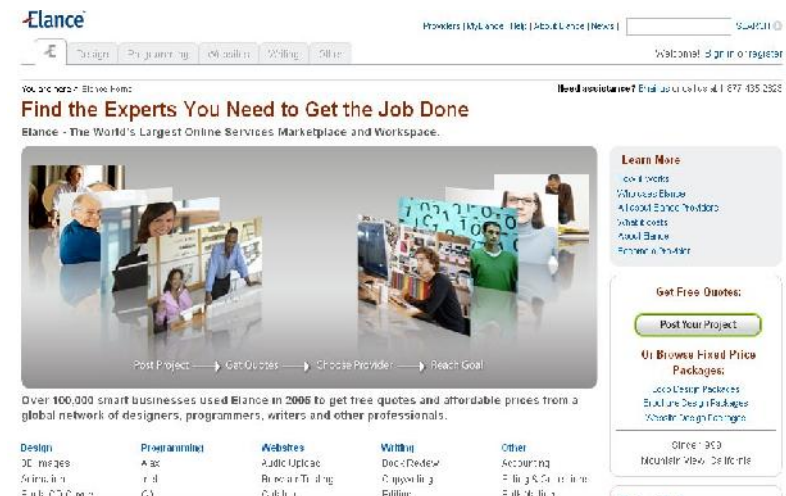
CONSUMER-TO-BUSINESS (C2B)

- ◎ C2B transactions - **individuals** transact with **business organizations** not as buyers of goods and services, but **as suppliers**.

- ◎ Example:

- ◎ eLance.com
(reverse auctions)

[video](#)



REFERENCES

<http://webstudio2u.com/web-site-development/274-b2b-b2c-c2c-c2b.html>

- ⊙ eGovernment - transactions involving **legislative** and **administrative institutions**
- ⊙ eGovernment transaction can occur with individual citizens, businesses or other governments
- ⊙ Example:
 - ⊙ Electronic filing of income tax
 - ⊙ Electronic voting



BRICKS AND MORTAR

- ◎ Bricks and mortar: “Traditional” organizations (or divisions in an organization) that have **physical operations** and **locations** (e.g. stores) and **do not provide their services or products on the Internet**
- ◎ Example: Trader Joe’s, Zara until recently
- ◎ Gradual transition towards “bricks and clicks”



BRICKS AND CLICKS

- ◎ Bricks and clicks (or click and mortar): Organizations that have **hybrid operations** (**both** physical and online)

- ◎ Two approaches



- ◎ Develop independent ventures to take advantage of the opportunities and capital available to online ventures
- ◎ Run the online channel as part of the bricks and mortar operations in a highly integrated fashion
- ◎ Examples: Walmart, Target, Macys, B&N, CVS

PURE PLAY

- ◎ Pure play:

- ◎ Firms with **no physical stores** that provide services **exclusively** through the Internet
 - Could have physical back-end operations

- ◎ Examples:

- ◎ Google, Amazon, Yahoo!, Newegg

◎ The most visible kind of eCommerce is called?

B2C

- ⦿ When two or more **business entities** take part in the transaction, it is called?

B2B



NETWORK EFFECTS / EXTERNALITIES AND TWO-SIDE MARKETS

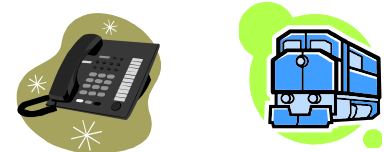
You Task:

To understand network effects and two-side markets

TYPES OF NETWORKS

Physical:

- ⊙ nodes connected by **physical links**
- ⊙ Examples:
 - ⊙ landline telephone and railroad networks



Virtual:

- ⊙ connections between nodes are **intangible** and **invisible**
- ⊙ nodes are usually people
- ⊙ Examples:
 - ⊙ iTunes (developers, users)
 - ⊙ eBay networks (buyers, sellers)
 - ⊙ MS Office and Adobe Acrobat user networks (users)



VIRTUAL NETWORKS

- ⊙ Generally sponsored by an organization or technology that enables it, controls access to it, and manages its evolution.
- ⊙ Value (to users):
 - ⊙ Shared information
 - ⊙ Shared expertise
 - ⊙ Direct function of size (number of nodes)
- ⊙ Example: eBay, Amazon, Apple

NETWORK ECONOMICS: VALUE CREATION

Traditional Goods

- ⊙ **Value in scarcity** of the product category

Networks

- ⊙ **Value in plentitude**, i.e. value is a function of the number of connected nodes



NETWORK ECONOMICS: VALUE CREATION NETWORK EFFECTS / EXTERNALITIES

Networks built around using or providing a product / service

When a new user joins the **installed base** (existing users) of **product A**, if s/he generates:

- value for the existing users of product A *from consuming product A* – **direct network effect (A on A)** (eg: online gamers)
- value for the existing users of another product B *from consuming product B* (potentially in association with product A) – software/products **indirect network effect (A on B)**

NETWORK ECONOMICS: VALUE CREATION NETWORK EFFECTS / EXTERNALITIES

Network Effect: Metcalfe's law

- ⦿ The value/utility of a participant gained from a network is proportional to n^2 , where n is the total number of participants in the network
 - ⦿ Consequently, the value to the company becomes higher, too

Examples:

- ⦿ direct network effects: MS Office Word adopters can collaborate amongst each other
- ⦿ indirect network effects: apps/software titles for iPhone or Xbox help customers derive more value from the hardware

NETWORK ECONOMICS: VALUE CREATION

NETWORK EFFECTS / EXTERNALITIES

Network effects can be:

Positive:

- ⦿ Example: MS Office Word, cell phone networks
- ⦿ For New and Existing Consumers: the product value increases with network size
- ⦿ For Firms: catalyst (accelerator) for adoption – positive reinforcing feedback effect – more sales

Negative:

- ⦿ Example: antivirus software

Hybrid (switch between positive and negative):

- ⦿ Example: massive multiplayer online games – positive network effects when congestion is low (no lag), negative otherwise

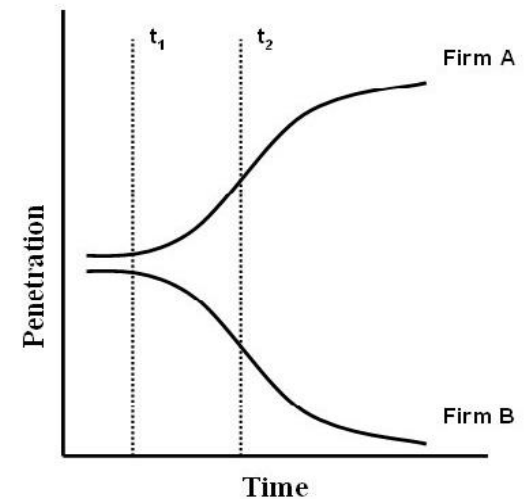
HOW NETWORKS OPERATE

Positive Feedback

- ◎ The self-reinforcing mechanism by which the strong gets stronger and the weaker gets weaker.

Economies of scale

- The stronger gets stronger.
- The weaker gets weaker.



HOW NETWORKS OPERATE

⊙ **Negative Feedback**

- ⊙ The opposite of positive feedback
 - The stronger gets weaker
 - The weaker gets stronger
- ⊙ Past a certain size, the dominant firm encounters difficulties, such as coordination costs and increasing overhead, that limit further growth.

- ⊙ **Positive feedback dynamics** that occur in networks go under the name of network effects, network externalities.

TIPPING POINT AND TIPPY MARKETS

Tippy market:

- ⊙ Subject to **strong positive feedback**
- ⊙ **Tips** in favor of the firm that first reaches critical mass
- ⊙ Winner-take-all outcomes – eBay

Tipping point:

- ⊙ Moment in market evolution when one organization or technology reaches the necessary critical mass (market penetration) to become dominant
- ⊙ Point of no return - winners and losers are defined

TWO-SIDED NETWORKS

- ◎ Single-sided network
 - ◎ Telephone, fax (all participants are similar)
- ◎ Two-sided network
 - ◎ Networks that include **two types** of agents (e.g., buyers and sellers)
 - ◎ The value of the network to one type of agent depends on the number of agents of the other type that participate
 - ◎ Examples:
 - Users of content and suppliers of content (i.e., Adobe PDF files)
 - eBay (the two sides are different – customers and sellers)

NETWORK ECONOMICS: IMPLICATIONS

- ◎ Network effects are associated with:
 - ◎ technology standards
 - ◎ virtual networks
 - ◎ communities of interest
- ◎ **Innovation** and/or **first move** – can be important in markets with strong positive feedback
- ◎ Controlling a dominant network provides sustainable competitive advantage (e.g., iTunes).

- ⦿ When there are sufficient vendors to attract buyers to the Internet, it is called?
- ⦿ Critical Mass



NETWORKING SIMULATION

INTUITION OF THE GAME

- ◎ Two factors can influence the attractiveness of your network:
 - ◎ Price
 - ◎ Network size
- ◎ Assume that the switching cost is so high that once a customer joins the network, he/she becomes captive (can't leave the network)
- ◎ The goal should be to achieve the highest cumulative profits after 6 rounds

- ② Organize into your project groups
- ② Figure out what your strategy is
- ② Play the game

RULES OF THE GAME

- Initially, each group has 15 customers.
- Roughly 100 new potential subscribers will join the market each month. They will be divided according to the relative attractiveness of your message board.
- Each round your company will set a price. This price will be integer dollar amounts \$0 to \$100.
- The average total cost to serve a customer is \$10 in each round for all customers (new and existing).
- Previous customers are captive.
- Any company that has not recovered its costs by round 4 will be declared bankrupt.
- The goal of this simulation is to have the highest cumulative profits after 6 rounds.
- Incentive: Group that profits the most wins and receives 5 points/marks towards any assignment this semester.

DISCUSSION AFTER SIMULATION

- ⊙ What may influence your cumulative profits the most?
 - ⊙ Price offers in the initial rounds
 - ⊙ Network sizes in the initial rounds
 - ⊙ Expectation about other companies' price offers
- ⊙ Best Strategy?
 - ⊙ All depends on expectations of competitors' moves
 - ⊙ Sub-game perfect vs. Final outcome oriented
 - ⊙ Trade-off between price and size
 - Consistent high price
 - Focus on size first, then raise price

In the network economy, the connections are as important as the nodes

1. *Introduce E-business/Digital business*
2. *What is a Network Effect*
3. *Simulation of a one-sided network effect*

DILBERT ON...



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