Week 11: Disruptive Technologies and Collaboration; International MIS; Information Systems Management
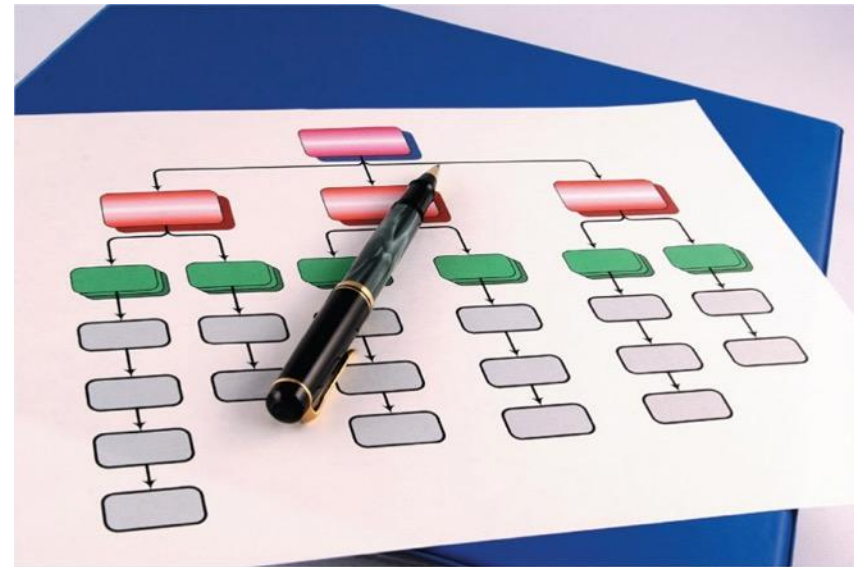
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"My project is partly done in India by another company, how could I work together with their project team efficiently?"

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Source: Tom Mc Nemar/Fotolia

We will discuss impacts from 2 phenomena:
(i) disruptive technologies
(ii) globalization.

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Study Questions / Intended Learning Outcomes

QX1: What is disruptive technology?

QX2: How could we enable collaboration using technologies?

QCE16-1: How does the global economy affect organizations and processes?

QCE16-2: What are the characteristics of international IS components?

QCE16-5: What are the challenges of international IS management?

Q11-3: What are the advantages and disadvantages of outsourcing?

QX1. What is Disruptive Technology?

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Kodak's Digital Imaging Patents Sold For $525 Million

By Tekla Perry
Posted 20 Dec 2012 | 21:43 GMT

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In 1975, Steven Sasson, an electrical engineer at Kodak, became the first person to pick up a digital camera and take a picture. Sasson, an electrical engineer hired to develop electronic controls for film cameras, built a prototype digital camera as part of his experiments with a CCD chip developed by Fairchild

http://spectrum.ieee.org/tech-talk/at-work/innovation/kodaks-digital-imaging-patents-sold-for-525-million/

A photography giant that cannot "move" with the trend. Please note that it has "invented the core technology used in current digital cameras" (Wikipedia)

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REVEALED: Blockbuster LAUGHED at Netflix when they offered to sell for just $50million during a meeting between execs in 2000 - and now the streaming service is worth $130 BILLION

- Netflix co-founder Marc Randolph describes the meeting in his new book
- Founders of the startup met with Blockbuster CEO in September 2000 in Dallas
- Offered to sell Netflix for $50M and run Blockbuster's online rental business
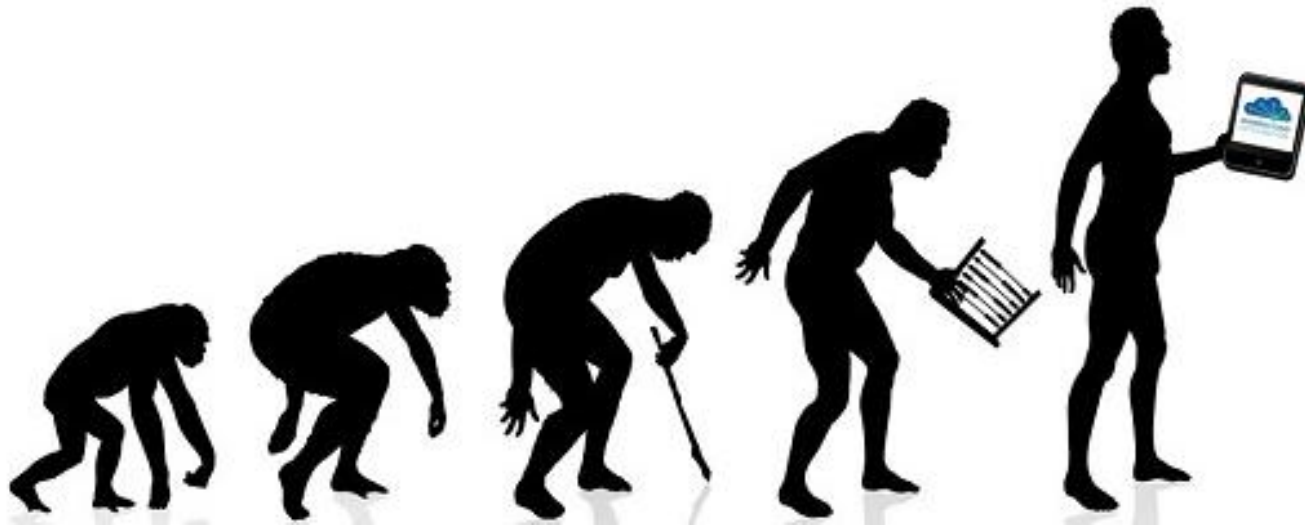- Randolph says Blockbuster
- Netflix is now valued at $13

By KEITH GRIFFITH FOR DAILYMAIL
PUBLISHED: 23:59 BST, 17 Septemb
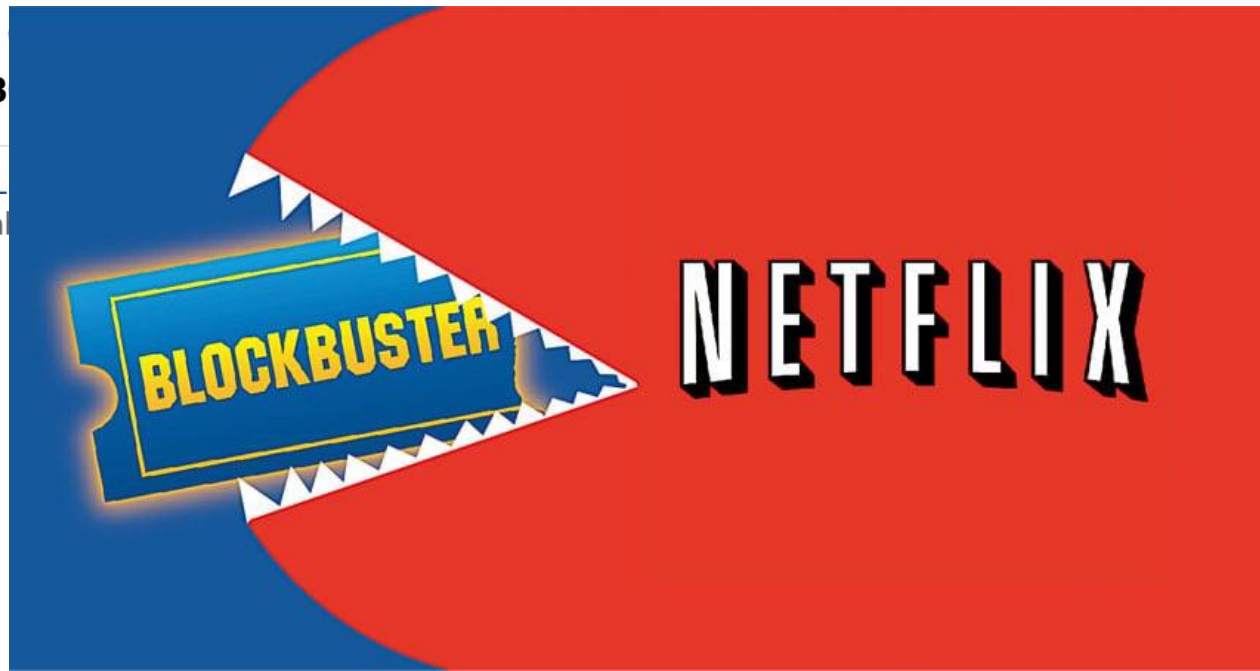
QX1: What is Disruptive Technology?

- <u>Digital Darwinism</u>

- Implies that organizations which cannot adapt to the new demands placed on them for surviving in the <u>information age</u> are doomed to extinction

QX1: What is Disruptive Technology?

- **Digital Darwinism**

- Implies that organizations which cannot adapt to the new demands placed on them for surviving in the <u>information age</u> are doomed to extinction

Any examples?
banks? accounting firms? marketing firms? HR agencies?

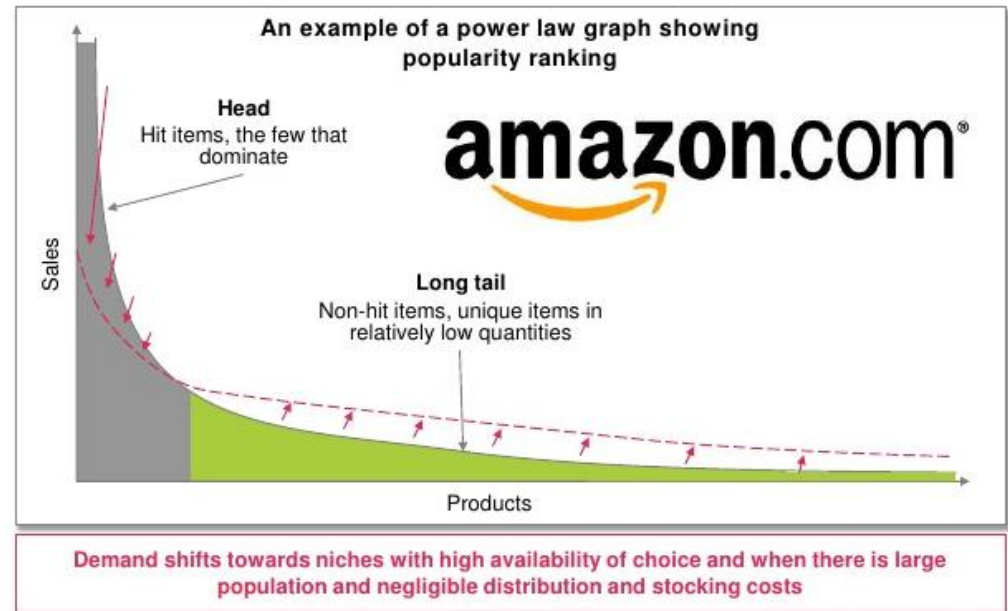# QX1: What is Disruptive Technology?

- Ultimate business disruptor

Image source:
http://threenorwegians.com
/review-business-model-
generation/

Long tail: Case Amazon

An example of a power law graph showing popularity ranking

Head
Hit items, the few that dominate

Sales

Long tail
Non-hit items, unique items in relatively low quantities

Products

Demand shifts towards niches with high availability of choice and when there is large population and negligible distribution and stocking costs

Reference: Anderson, C. (2006).
The Long Tail: Why the Future of Business is Selling Less of More

Unit Sales

Most popular products
(offered by most retailers)

The long tail
(demand exists, even though products
aren't popular enough for stores to carry them)

Products Offered

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QX1: What is Disruptive Technology?

- Ultimate business disruptor

Will these items impact your future career? Any other emerging disruptive technology will have potential to impact your career too?

How do companies use new (disruptive) technologies in supporting (global) team work?

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# QX2: How could we enable collaboration using technologies?

- Collaboration inside the organization
  - Collaboration system

  - Set of tools that supports the work of teams or groups by facilitating the sharing and flow of information

  - E.g. scheduling meetings, sharing knowledge, communicating

Could be a module in ERP / standard function in ERP / a separate system to enable collaboration in a company.

Collaboration Inside the Organization

https://products.office.com/en/microsoft-teams/group-chat-software
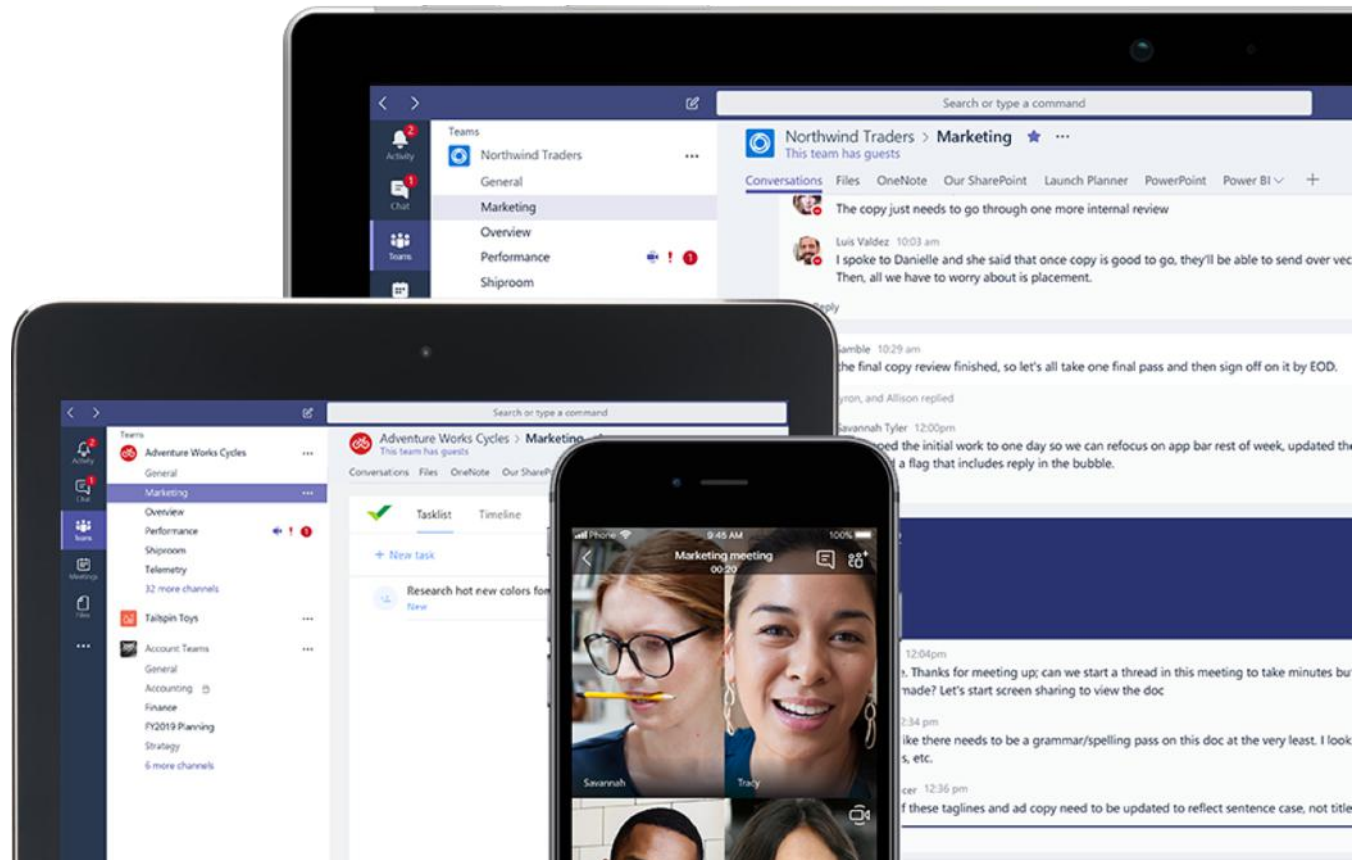
Collaboration Inside the Organization

- Knowledge management (systems)
  - o Capturing
  - o Classifying
  - o Evaluating
  - o Retrieving
  - o Sharing
- information assets in a way that provides context for effective decisions and actions

Benefit: enable generalists to do some of the specialists' tasks (using the knowledge captured and stored in the KMS)

→ by using KMS, the cost in HR would be reduced
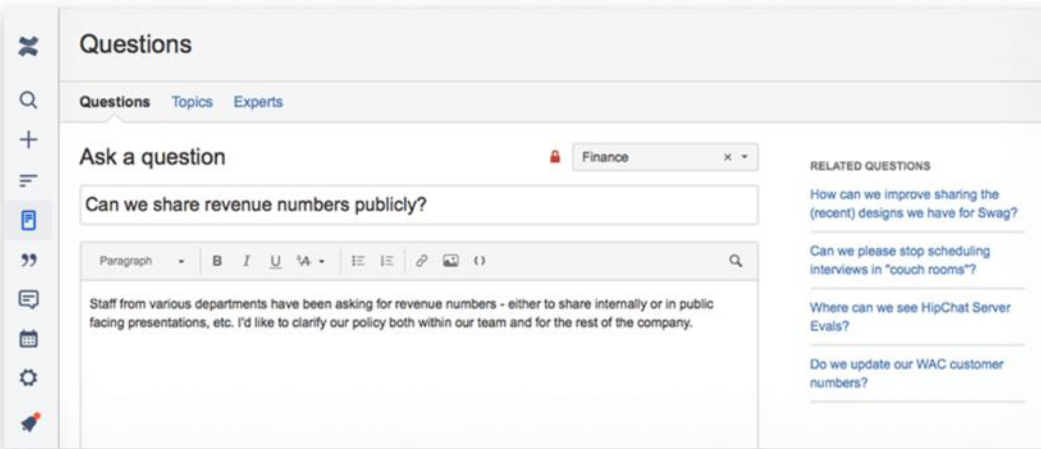
Ask questions

When you can't find the information you need to get work done, it's easy to ask.

Crowdsource answers

Harness the power of the crowd to find answers you need quickly – the best answers rise to the top through voting.

Find information

Stop asking the same questions - the collective knowledge of your whole organization is at your fingertips. Whether it's in a page, blog or a question, you can find it in Confluence.

Identify experts

You'll be surprised at how people will participate to earn points and climb the leaderboard. Top contributors achieve expert status.

https://www.atlassian.com/software/confluence/questions
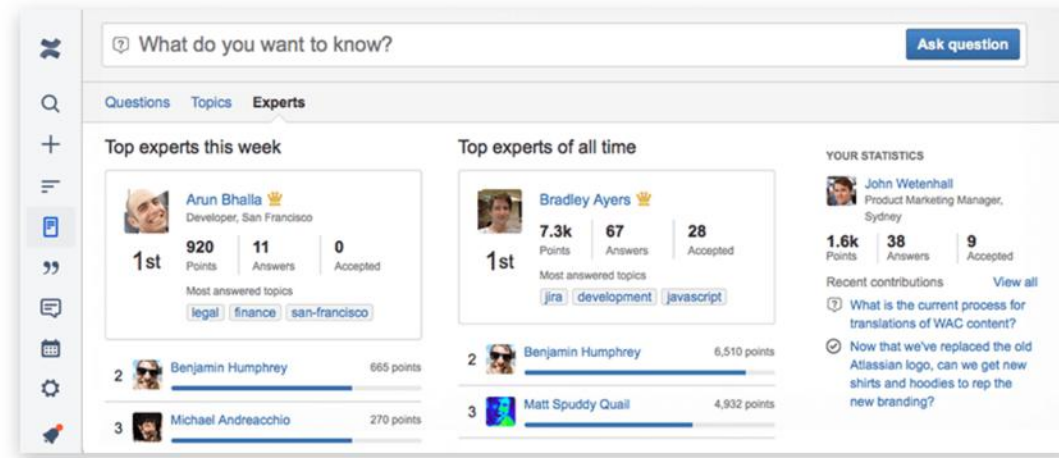
Collaboration Inside the Organization

- Knowledge-based assets fall into two categories
  - Explicit knowledge – Consists of anything that can be documented, archived, and codified, often with the help of IT
    - How to assemble IKEA furniture

Collaboration Inside the Organization

- Knowledge-based assets fall into two categories
  - Tacit knowledge
    - We can know more than we can tell!
    - How do we learn such knowledge?

Collaboration Inside the Organization

Example: Knitting and Biking

How to capture such knowledge and store them in knowledge management system?

Collaboration Outside the Organization:
Video conferencing

- A set of interactive telecommunication technologies that

- Allows two or more locations to interact

- Via two-way video and audio transmissions simultaneously

The keyword here is "interactive".

Collaboration Outside the Organization: Web Conferencing

- Blends audio, video, and document-sharing technologies to disseminate information

Latest Meetings

Council meeting
2020/03/25 11:00:00 AM Chamber

Meeting of Public Works Subcommittee
2020/03/25 8:30:00 AM
Conference Room 1

Meeting of Finance Committee
2020/03/20 3:15:00 PM
Conference Room 1

Special House Committee meeting
2020/03/20 2:30:00 PM
Conference Room 1

Meeting of Panel on Transport
2020/03/20 10:45:00 AM
Conference Room 1

Meeting of Panel on Health Services
2020/03/20 10:45:00 AM
Conference Room 2

http://webcast.legco.gov.hk/public/en-us

The keyword here is "disseminate".

Why Kodak fails?

Video: https://www.youtube.com/watch?v=n0Xod5pK3Uk

UReply Q1

Based on the video, why did once-giants like Kodak or Blockbuster fail? Is it simply because they did not innovate?

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We've seen disruptive technologies' impact towards business.
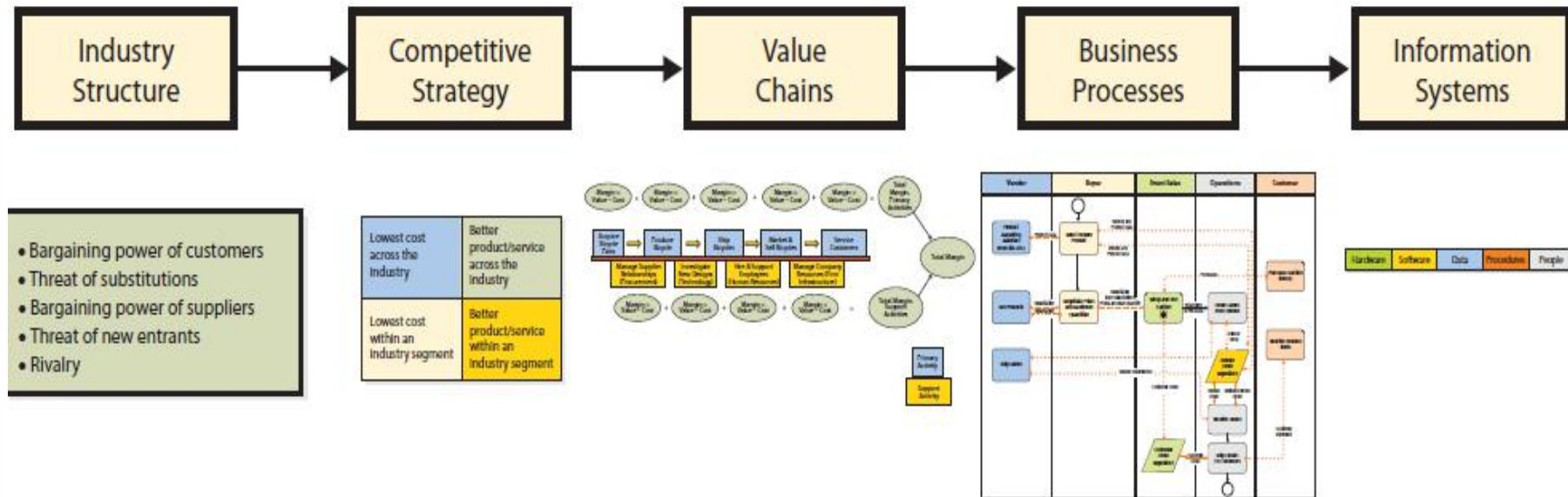
How about globalization's impact?

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QCE15-1: How Does the Global Economy Impact Organizations and Processes?

- N. American and European economies integrated
- Plentiful, cheap telecommunications
- Booming economies: India, China, Brazil
- EU- and U.S.-based companies find greatest opportunities outside own na
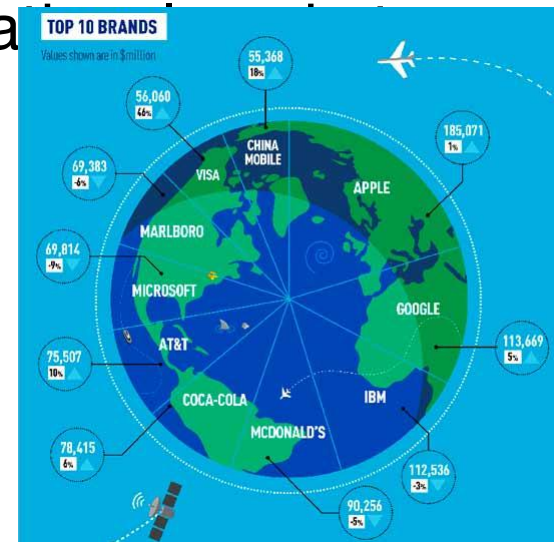
Impact towards companies (large and small)?

QCE15-1: How Does the Global Economy Impact Organizations and Processes?

Industry Structure → Competitive Strategy → Value Chains → Business Processes → Information Systems

- Bargaining power of customers
- Threat of substitutions
- Bargaining power of suppliers
- Threat of new entrants
- Rivalry

QCE15-1: How Does the Global Economy Impact Organizations and Processes?

- Worldwide opportunities; Compete globally
- Internet supports unprecedented market size and product differentiation
- Any or all of value chain activities can be performed anywhere
- Ability to work 24/7 by moving work into other time zones increases productivity
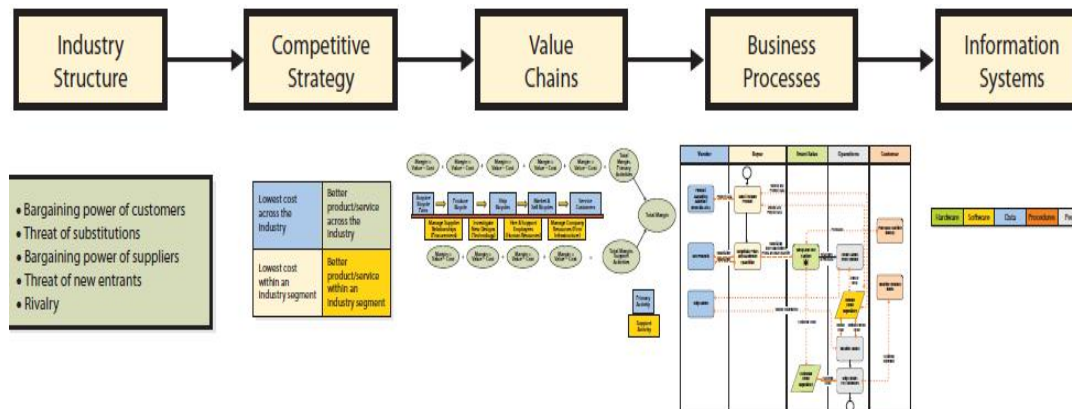
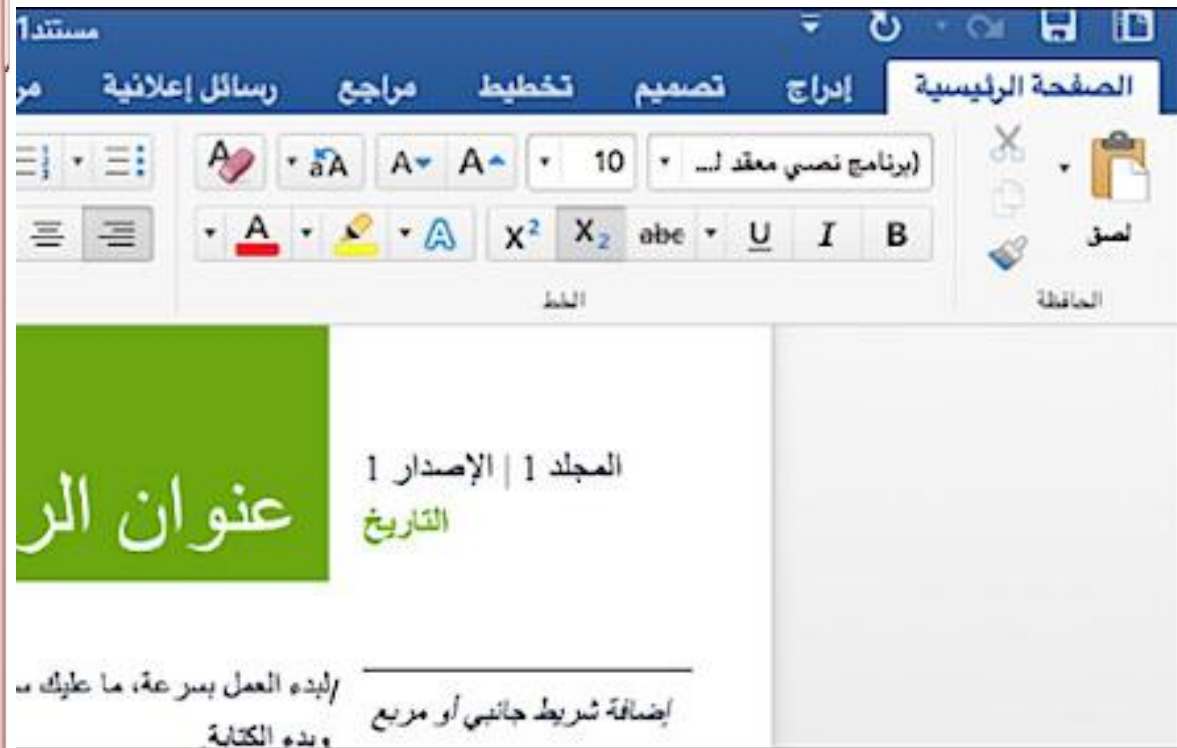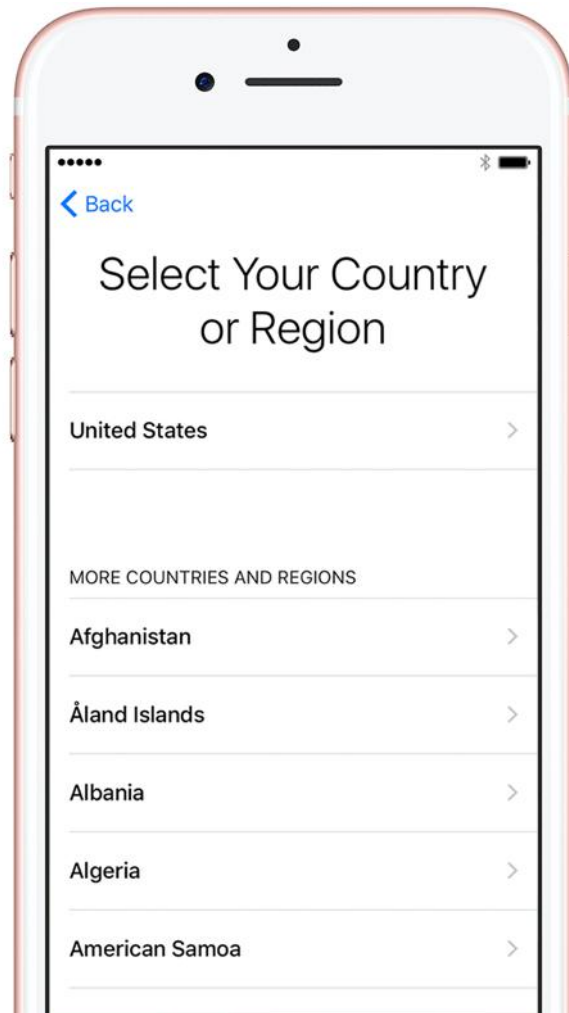# QCE15-2: What Are the Characteristics of International IS Components

Five-Component Framework

Hardware	Software	Data	Procedures	People

What's Required to Localize Software?

What's Required to Localize Software?

- Translate the user interface, including menu bars and commands.
- Translate, and possibly redesign, labels in forms, reports, and query prompts.
- Translate all documentation and help text.
- Redraw and translate diagrams and examples in help text.
- Translate all error messages.
- Translate text in all message boxes.
- Adjust sorting order for different character set.
- Fix special problems in Asian character sets and in languages that read and write from right to left.
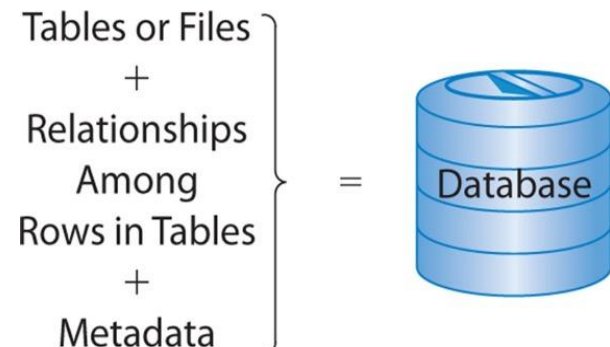
http://www.w3.org/International/questions/qa-scripts

Basically all text in software. Note right-to-left language.

As a project manager, you have to be aware of the language challenges on system related projects, e.g. impact on screen design.

What Are the Problems and Issues of Global Databases?

- Commit to a _____

- Single database not possible for companies using multiple languages

- (if multiple databases are used) Need applications to _____ **and** _____ **data** among separated databases

- Slow data transmission speeds (in some countries) may require _____ **databases** (i.e. make duplicated local copies)

Tables or Files
+
Relationships
Among
Rows in Tables
+
Metadata
} = Database

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QCE15-5: What Are the Challenges of International IS Management?

Knowledge Areas	Challenge
Project integration	Complex integration of results from distributed workgroups. Management of dependencies of tasks from physically and culturally different workgroups.
Scope (requirements)	Need to support multiple versions of underlying business processes. Possibly substantial differences in requirements and procedures.
Time	Development rates vary among cultures and countries.
Cost	Cost of development varies widely among countries. Two members performing the same work in different countries may be paid substantially different rates. Moving work among teams may dramatically change costs.
Quality	Quality standards vary among cultures. Different expectations of quality may result in an inconsistent system.
Human resources	Worker expectations differ. Compensation, rewards, work conditions vary widely.
Communications	Geographic, language, and cultural distance among team members impedes effective communication.
Risk	Development risk is higher. Easy to lose control.
Procurement	Complications of international trade.

Global project management is difficult:
Multiple system versions + varied team member background + different culture + different legal system
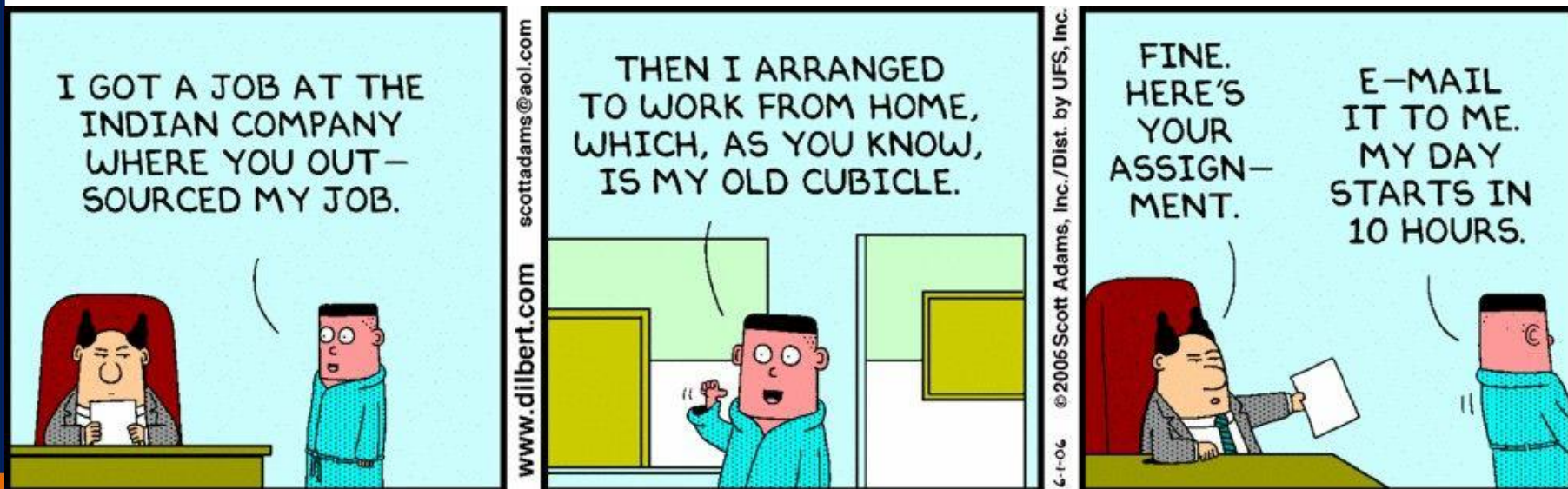
e.g. an experienced project manager knows what should be outsourced to India / Guangzhou, and what should be done in HK, and knows how to coordinate different parties.

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What if the "international team" is
not employed by your company?

International **Outsourcing**

- Outsourcing

International **Outsourcing**

- India
  - Large, well-educated, English-speaking, labor cost 70-80% less than in US

- China and other countries

- Rely on modern telephone technology and Internet

- Customer support and other functions operational 24/7

From USA's viewpoint.
How to enable 24/7 customer service?

# Q11-3: What are the advantages and disadvantages of outsourcing?

- Management advantages
  - Obtain expertise.
  - Avoid management problems.
  - Free management time.

- Cost reduction
  - Obtain part-time services.
  - Gain economies of scale.

- Risk reduction
  - Cap financial exposure.
  - Improve quality.
  - Reduce implementation risk.

IS Costs

Risk without outsourcing → Risk with outsourcing
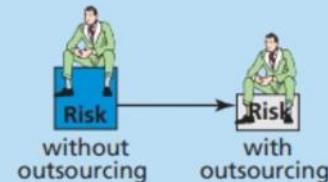
Your changed role → quality control, risk management, contract management

Risks of Outsourcing

Risks of Outsourcing

- Loss of control
  - Vendor in driver's seat.
  - Technology direction.
  - Potential loss of intellectual capital.
  - Product fixes, enhancements in wrong priority.
  - Vendor management, direction, or identity changes.
  - CIO superfluous?

- Benefits outweighed by long-term costs
  - High unit cost, forever.
  - Paying for someone else's mismanagement.
  - In time, outsource vendor is *de facto* sole source.
  - May not get what you pay for but don't know it.

- No easy exit
  - Critical knowledge in minds of vendors, not employees.
  - Expensive and risky to change vendors.

? ? ?
"Who?" "What?"
"Where?" "How?"

Outsourcing
Costs
Benefits

Outsourcing
Where's the EXIT?

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Why is this lecture valuable to you?

- This lecture prepares you to become a business consultant to advice your clients on global business management

- You need to know how to define and manage disruptive technologies, facilitate collaboration among global teams, and evaluate global business practices like international outsourcing

Week 11 Recap

QX1: What is disruptive technology?

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References and Disclaimer

- Ch. 11, CE. 15
- Reference book: Business Driven Technology, 5th Edition, Chapters 13 and 15

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