

Management Information Systems

Lecture 2: Concepts & Terminologies II

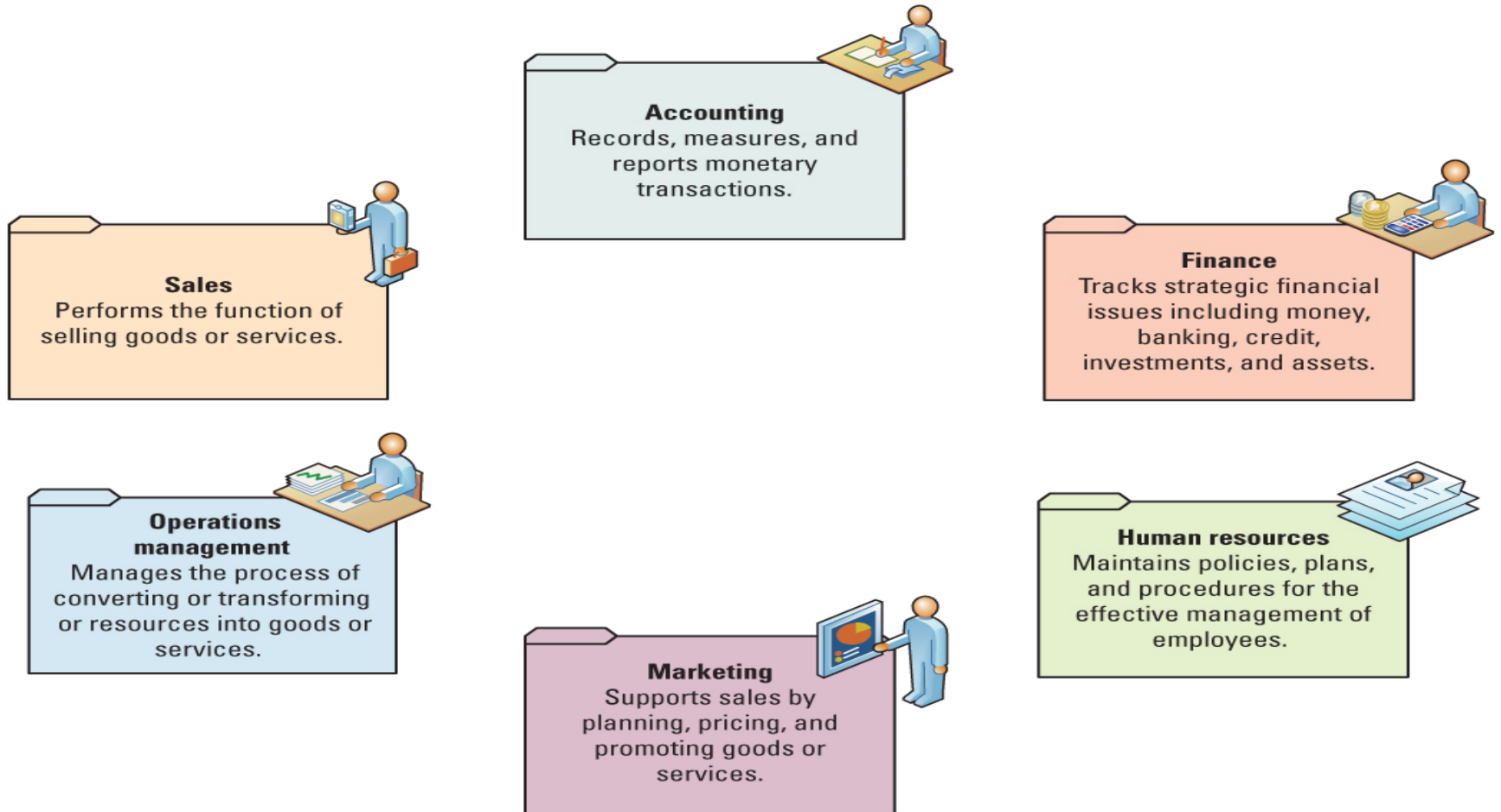
Lecturer: Dr Khaled Sabry

MAIN POINTS

- Departmental Companies and use of MIS
- Evolution of the Web: Web 1.0, Web 2.0 and Web 3.0
- IoT
- M-Business

**Different departments/functions in a
company**

The Challenge: Departmental Companies

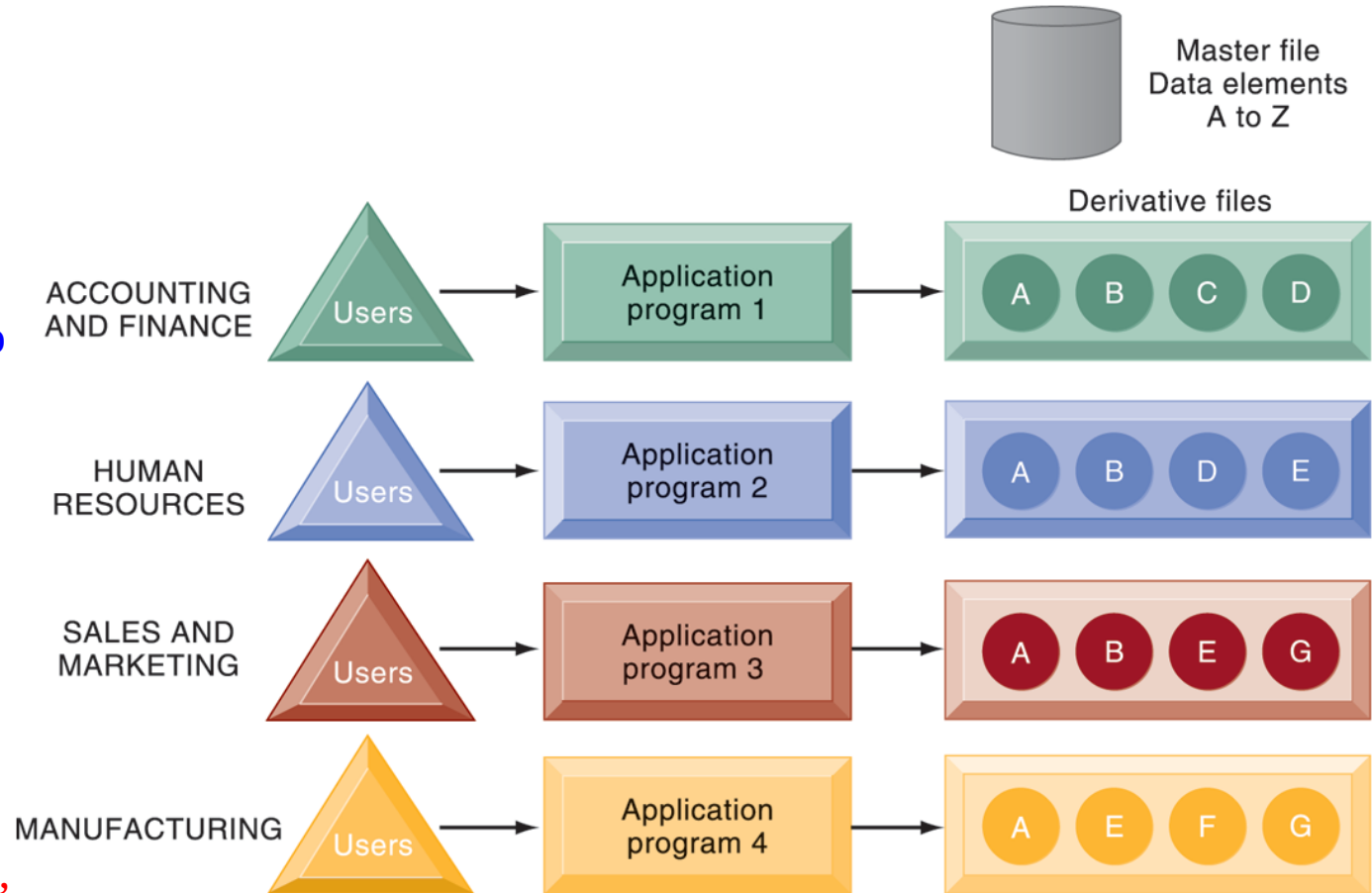


Common Departments Working *Independently/ In Isolation*

Issues with working *Independently...*

-The isolation between different departments in a corporation encourages each one to develop different separate data and applications.

-This leads to inefficiency, *data redundancy*, *inconsistency*, *processing inflexibility*, and *wasted storage resources*.

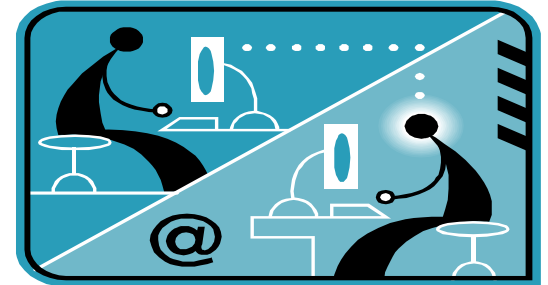


Source: Laudon and Laudon (2016)

What is Management Information Systems (MIS)?

Defining MIS

A business function/department (like accounting and human resources), which moves information about people, products, and processes across the company to *facilitate decision-making and problem-solving* (Baltzan, 2016)



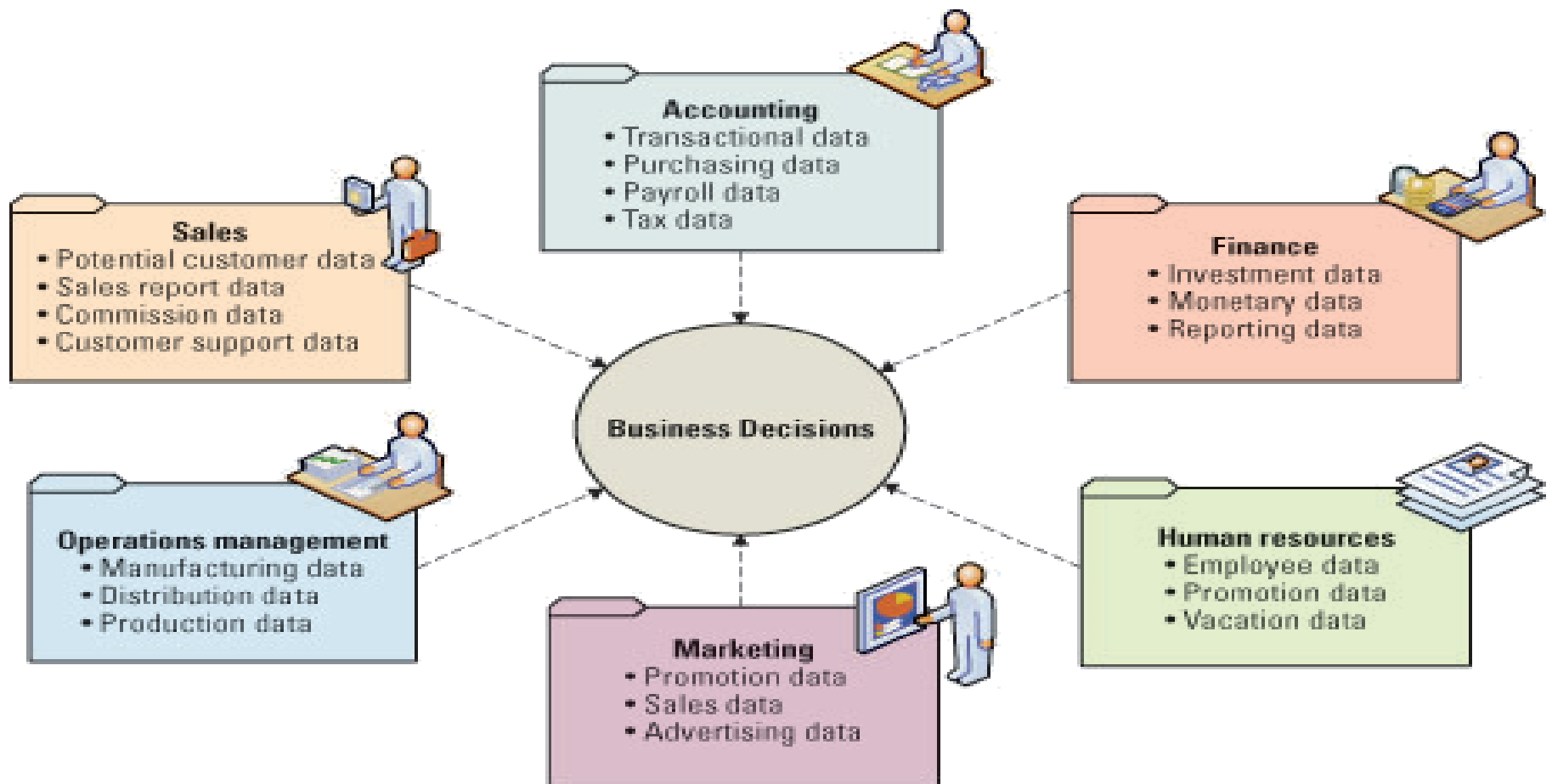
It is also defined as: **The study of information systems in business and management** that looks at all the systems used in business (Laudon and Laudon, 2016)

Defining MIS ...

Also, define a *specific category of information systems* for *middle management* (eg. provides reports on *firm's current performance*, based on operational data and provide answers to routine questions with predefined procedure for answering them)

(Laudon and Laudon, 2016)

Using MIS



**Common Departments Working *Interdependently/ Cross-Functionally* and
*the Integration of Information***

Watch this Video

MIS and Data Processing (3min)

<http://www.youtube.com/watch?v=qiLXJ0lhN2g>

**How are information
technology services *delivered* in
organizations?**

- Information services are usually designed, built, and operated through the **MIS/IS/IT Departments**.
- Departments are assigned the responsibilities of *maintaining the hardware, software, data storage, and networks* that comprise the firm's information technology infrastructure.

Depending on the ***size*** of the organization, and thus its IS department, the department may include:

- *programmers,*
- *systems analysts,*
- *telecommunications,*
- *network specialists,*
- *operations staff,*
- CIO, CKO, CPO, CSO, CTO, etc.



- **Chief information officer (CIO)** – Oversees all uses of IT and ensures the **strategic alignment** of IT with **business goals and objectives**
- **Chief knowledge officer (CKO)** - Responsible for collecting, maintaining, and distributing the **organization's knowledge**
- **Chief privacy officer (CPO)** – Responsible for ensuring the **ethical** and **legal** use of information



- **Chief security officer (CSO)** – Responsible for ensuring the **security** of IT systems
- **Chief technology officer (CTO)** – Responsible for ensuring the **quality and efficiency of IT services** (eg. *throughput**, speed, accuracy, availability, reliability, etc.)

***throughput** - **output** relative to **input**; the amount passing through a system from input to output (especially of a computer program over a period of time

Source: <http://www.thefreedictionary.com/throughput>



- *Each of these officers is responsible for **part** of the organizations operation.*
- *These officers **help to set policy for the firm***

The Role of Information Systems in Business Today

Operational excellence (eg. Walmart's Retail Link system links suppliers to stores for superior replenishment system)

New products, services, and business models (eg. Apple's iPad, Google's Android OS, and Netflix)

Customer and supplier intimacy (eg. Amazon)

The Role of Information Systems in Business Today...

Improved decision making (eg. digital dashboard to provide managers with real-time data on customer complaints, network performance, line outages, and so on)

Competitive advantage (eg. Apple, Walmart, UPS)

Survival (eg. Citibank Automated Teller Machines ..)

The Role of Information Systems in Business Today

How information systems are **transforming business**

- Emerging **mobile digital platform**
- Growing business use of **big data***
- Growth in **cloud computing***

Big data refers to: high-volume, high-velocity and/or high-variety information assets..

Source: <http://www.gartner.com/it-glossary/?s=BIG+DATA>

Cloud computing can be described as a style of **computing** in which scalable and elastic IT-enabled capabilities are delivered as a service using Internet technologies. Source:

<http://www.gartner.com/it-glossary/?s=cloud+computing>

The Role of Information Systems in Business Today...

- **Globalization opportunities**
 - Internet has drastically **reduced costs** of operating on global scale
 - Increases in **foreign trade, outsourcing**
 - Presents both **challenges** and **opportunities**

Web 1.0

- **Web 1.0** – A term to refer to the WWW during its first few years of operation between 1991 and 2003

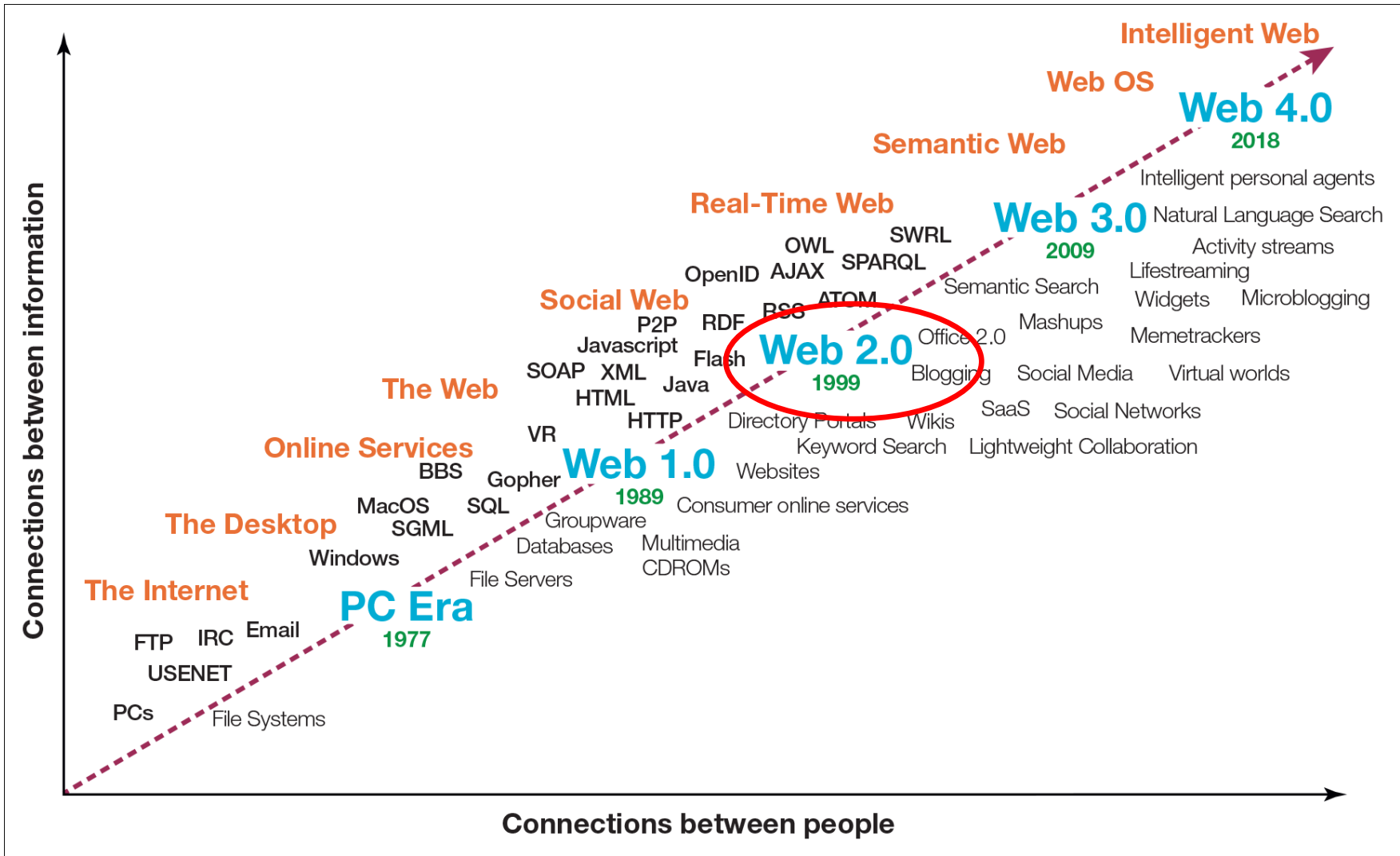


Web 1.0

**Ebusiness
Advantages**

The diagram consists of a dark teal rounded rectangle on the left containing the text 'Ebusiness Advantages'. To its right is a large light blue arrow pointing to the right, which contains a bulleted list of five advantages. The arrow's tail is connected to the right side of the rounded rectangle.

- Expanding global reach
- Opening new markets
- Reducing costs
- Improving operations
- Improving effectiveness



The Web Technology Evolution

- **Web 2.0**
 - *Second-generation services*
 - *Enabling collaboration, sharing information, and creating new services online*
 - **Features**
 - *Interactivity*
 - *Real-time user control*
 - *Social participation (sharing)*
 - *User-generated content*

The Web Technology Evolution....

- **Examples of Web 2.0 services and tools**
 - **Blogs:** informal Web sites created by individuals
 - **Wikis:** collaborative Web sites where visitors can add, delete, or modify content on the site
 - **Social networking sites:** enable users to build communities of friends and share information

Watch this video

- WEB 2.0 The Machine Is Using Us

<http://www.youtube.com/watch?v=6gmP4nk0EOE>

- WEB 2.0 How Stuff Works

<http://computer.howstuffworks.com/web-20.htm>

WEB 2.0: ADVANTAGES OF BUSINESS 2.0

WEB 2.0 BUSINESS 2.0

- **Web 2.0** – The next generation of Internet use – a *more mature, distinctive communications* platform characterized by *three qualities*
 - **Collaboration** (inside and outside organisations)
 - **Sharing**
 - **User contributed contents**





- **User-contributed content (UCC)** – Created and updated by many users for many users (eg *YouTube*, *Wikipedia*, *Reputation systems* – Where buyers post feedback on sellers, etc.)

Watch this video: https://www.youtube.com/watch?v=MrtIvP6B_7s

BUSINESS 2.0 TOOLS FOR COLLABORATING

BLOG

- An online journal that allows users to post their own comments, graphics, and videos
- Popular business examples include Sweet Leaf Tea, Stoneyfield Farm, Nuts about Southwest, Disney Parks

WIKI

- Collaborative website that allows users to add, remove, and change content
- Popular business examples include Wikipedia, National Institute of Health, Intelopedia, LexisNexis, Wiki for Higher Education

MASHUP

- Content from more than one source to create a new product or service
- Examples include Zillow, Infopedia, Trendsmap, SongDNA, ThisWeKnow

Blogs

- **Blog** – Online journal that allows users to post their own comments, graphics, and video



Wikis

- **Wiki** – Collaborative Web page that allows users to add, remove, and change content, which can be easily organization and reorganized as required

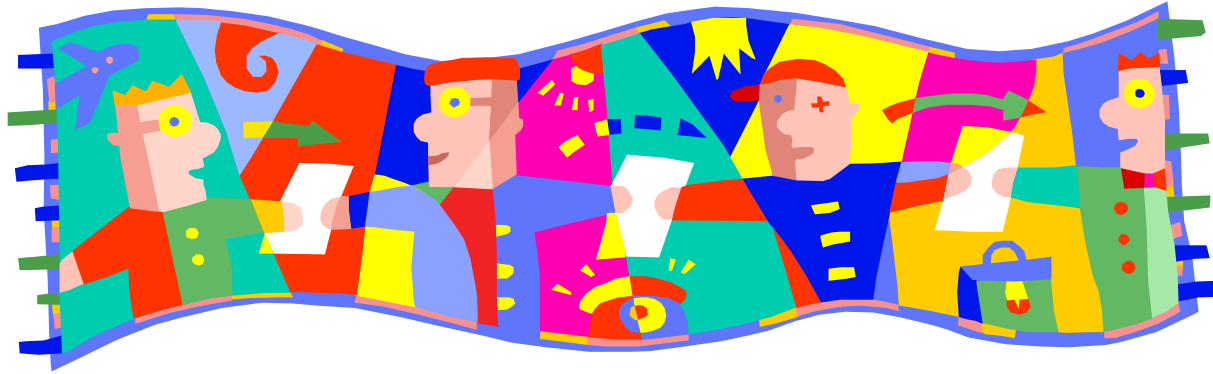


Mashups

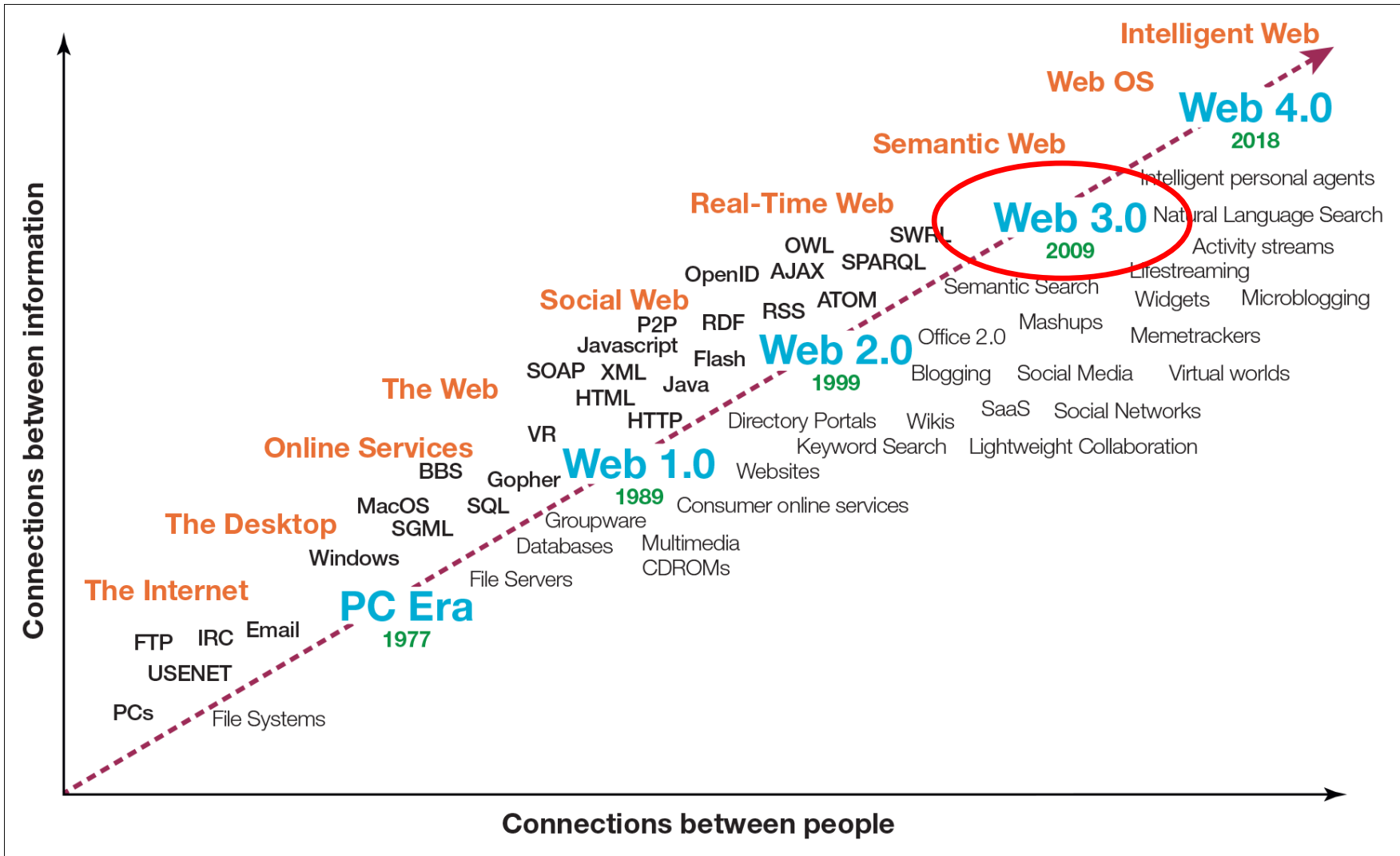


- **Mashup** – Website or Web application that uses content from more than one source to create a completely new product or service

Networking Communities With Business 2.0



- **Social media** – *Websites that rely on user participation and user-contributed content (LinkedIn, Facebook, etc)*



The Web Technology Evolution....

- **Web 3.0: The “Semantic Web”**

- *Semantic Web – A component of Web 3.0 that describes things in a way that **computers can understand***
- ***Increased communication** and synchronization with computing devices, communities*
- ***Internet of Things (IoT)** A world in which interconnected , internet enabled devices, or things, can collect and share data without human intervention*
- ***Increased cloud computing, mobile computing***

WEB 3.0

- **Web 3.0** – Based on “**intelligent**” Web applications *using natural language processing, machine-based learning and reasoning*, and intelligence applications



Transforming the Web into a Database

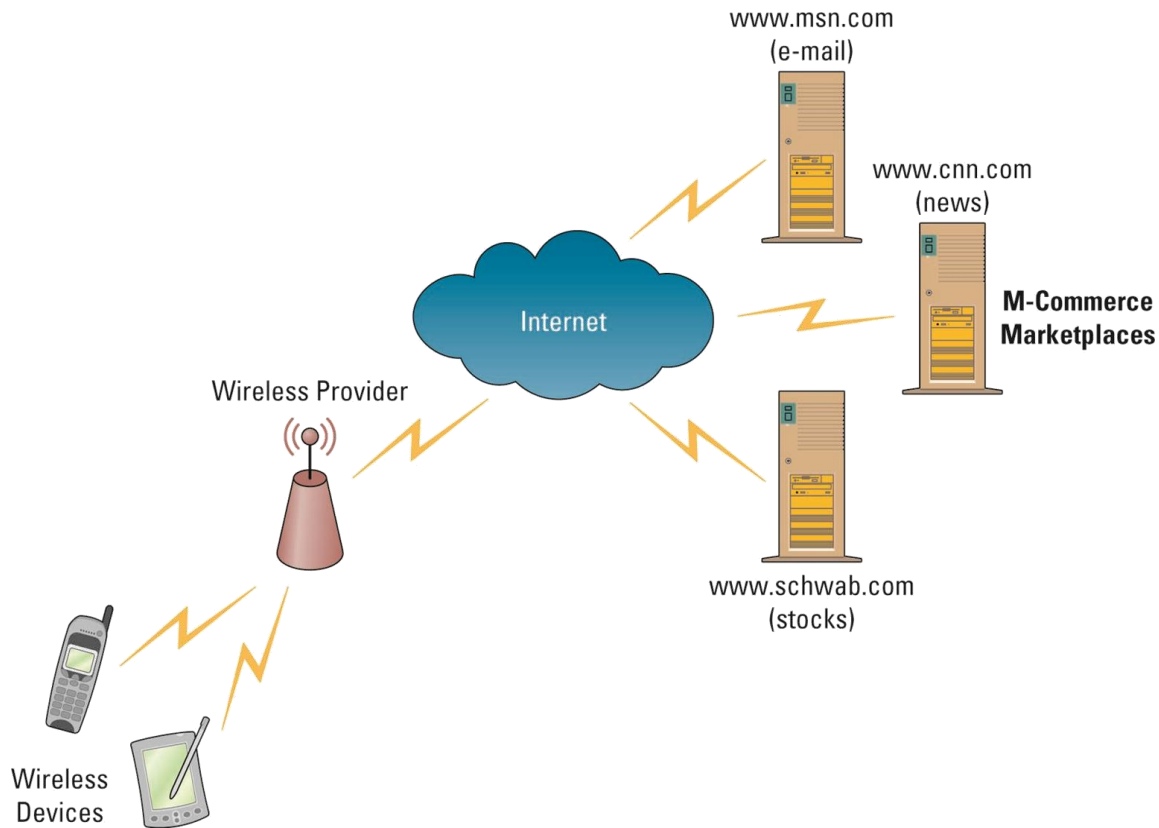
- The first step toward a **Web 3.0** is the emergence of the data-driven Web as structured data records are published to the Web in formats that are reusable and able to be queried remotely. **The data-driven Web** is the first step on the path toward the full semantic Web. In the data-driven Web phase, the focus is *on making structured data available using databases.*

Artificial Intelligence

- The full semantic Web stage will widen the scope such that both *structured data* and even what is traditionally thought of as *unstructured* or *semistructured* content (such as Web pages, documents, email, etc.) will be widely available in common formats.
- An Evolutionary Path to **Artificial Intelligence: Web 3.0** has also been used to describe an evolutionary path for the Web that leads to artificial intelligence

**M-business:
Supporting Anywhere Business**

Mobile business

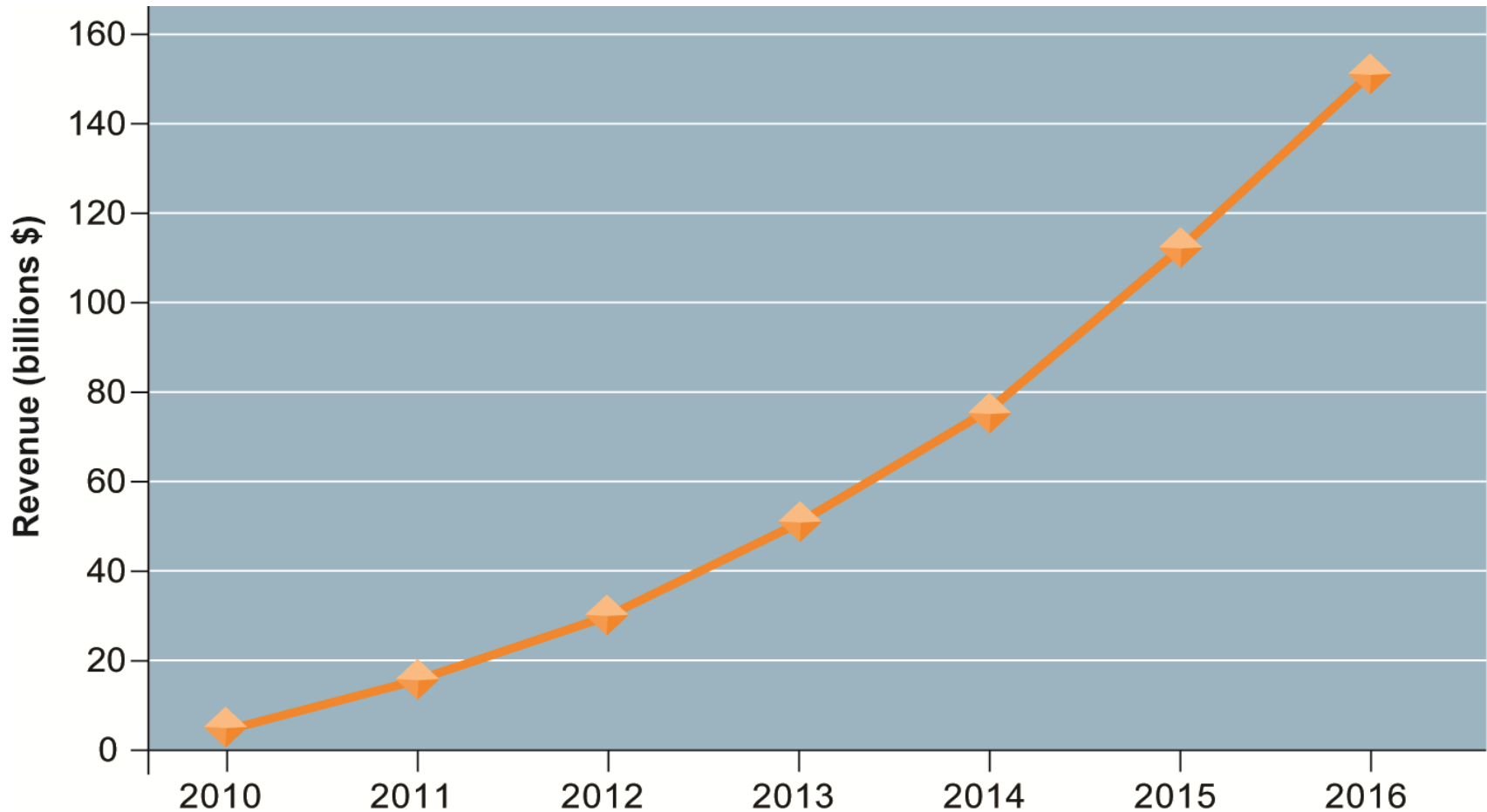


- The ability to purchase goods and services through a *wireless* Internet-enabled device

Mobile E-commerce

- In 2012 is 10% of all e-commerce
- *Fastest growing form of e-commerce*
 - Some areas growing at 50%
- *Four billion mobile phone users* worldwide
- **Main areas of growth**
 - Retail sales at top (Amazon, eBay, etc.)
 - Sales of digital content (music, TV, etc.)
 - Local search for restaurants, museums, stores

Consolidated Mobile Commerce Revenues



Mobile e-commerce is the fastest growing type of B2C e-commerce although it represents only a small part of all e-commerce in 2011.

Tasks

- Read Chapter one of textbook
- Read the case study described in the Interactive Session: Management: *Meet the New Mobile Workers*. What kinds of applications are described in this case study, what business functions do they support and describe some of the benefits of using such applications. See hints below
- Read the case study described in the Interactive Session: Technology: *UPS Competes Globally with Information Technology*. Describe the 3 dimensions of UPS tracking system (management, organization, and technology). See hint below

Mobile Worker Question - Hint

Use of social networking, e-mail, messaging applications to support: collaboration, location-based services, and communications with colleagues....

Communication anytime anywhere will improve efficiency, decision making, availability and access up-to-date information

Managers can monitor their teams' performance.....

UPS Question- Hint

- **Organizational:**

- Procedures for tracking packages and managing inventory and provide information

- **Management:**

- Monitor service levels and costs

- **Technology:**

- Handheld computers, bar-code scanners, networks, desktop computers, and so on

Resources

- Baltzan, P. (2016) *Business Driven Information Systems*. Global Edition, 5th ed McGraw-Hill/NY. ISBN 978-1-259-25176-4
- Laudon K.C. and Laudon J.P. (2014) *Management Information Systems*, Global Edition, 13th ed. Prentice Hall. ISBN-13: 9780273789970
- Laudon K.C. and Laudon J.P. (2016) *Management Information Systems*, Managing the Digital Firm, 14th ed. Prentice Hall.
- Chaffey D. (2015) *Digital Business and E-Commerce Management*, 6/E, Pearson.