

# Introduction to Management of Information Technologies

January 13, 2016

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## LEARNING OUTCOMES

- Compare management information systems (MIS) and information technology (IT)
- Explain the difference between data and information
- Describe the relationships among people, information technology, and information
- Analyze the role of IT in business

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## WHAT IS THE ROLE OF INFORMATION TECHNOLOGY IN BUSINESS?

- Information technology is everywhere in business
- Understanding & knowledge about IT are key to understanding business and to business operations.



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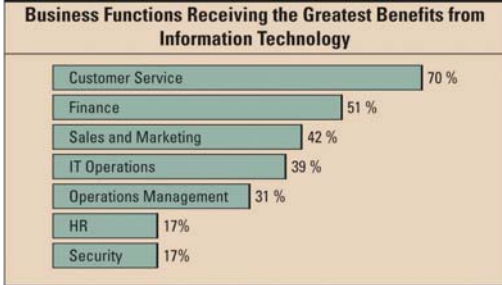
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### Information Technology's Impact on Business Operations

Figure 1 (source CIO Magazine)



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### PTP

- People
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- Technology
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- Policies/Procedures/Processes
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### Information Technology's Impact on Business Operations (cont.)

Figure 2 (source CIO Magazine)



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## The World is Flat – Thomas Friedman

### □ Thomas Friedman's 10 Forces That Flattened the World

1. Fall of the Berlin Wall
2. **Netscape IPO**
3. **Workflow software** (protocols SMTP, HTML, ... that allow work to flow)
4. **Open-sourcing**
5. Outsourcing
6. Offshoring
7. Supply-chaining
8. Insourcing
9. **Informing**  
Power searching allowed everyone to use the Internet as a "personal supply chain of knowledge"
10. **Wireless**

MIT Lecture (1:15:00) : <http://video.mit.edu/watch/the-world-is-flat-9145/>

MIT Lecture (0:47:00. Start @ 0:8:00) : <http://video.mit.edu/watch/the-world-is-flat-30-9321/>

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## Technologies & business functions



### • Click-to-talk

- also known as **click-to-call**, **click-to-chat** and **click-to-text**.
- form of Web-based communication in which a person clicks an object (e.g., button, image or text) to request an immediate connection with another person in real-time either by phone call, instant messaging, or text.
- typically used in eBusiness to assist online store visitors in selecting products.

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## Technologies & business functions (cont.)

### • Call Center

- Is centralized office set by large organizations in order to receive and transmit a large volume of requests by phone.
- Is, typically, operated by a company to administer incoming **product support** or **information inquiries** from consumers.
- Is also used for outgoing calls for **telemarketing** and **debt collection**.



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## Technologies & business functions (cont.)

- **Call Scripting tools**
  - Refer to application software typically **used by call center employees** to help provide accurate answers to customers and react appropriately to their inquiries.
  - Are, typically, **connected to the corporate database**, which allows pulling off the needed data to be used in assisting callers.
- **Benefits of Call Scripting include:**
  - agents can be guided through calls in a predictable way
  - uniformity in the way call center employees handle cases.
  - reduced errors and complaints, increased effectiveness

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## Technologies & business functions (cont.)

- **Supply Chain Management (SCM) Systems**
  - Refer to a **category of IS** that support the activities related to business supply chain.
  - Supply chain involves: (a) materials flow from suppliers, (b) transformation of materials and production processes, (c) distribution of products to customers
- **Typical activities supported:**
  - Procurement / purchase of supplies
  - Tracking orders from suppliers
  - Handling customers orders
  - Invoicing
  - Tracking customers orders



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## Technologies & business functions (cont.)

- **Customer Relationship Management (CRM) Systems**
  - Refer to a **category of IS** that support the activities related to managing and nurturing a company's interactions with customers, clients, and sales prospects.
  - Help increase organizational effort by multiple departments like marketing, sales, support division, and customer service to improve customer relations
  - **Goals:** (1) find, attract, and win new clients – (2) nurture and maintain existing customers – (3) entice former customers back into the fold
- **Typical activities supported:**
  - Managing Sales teams
  - Tracing potential customers
  - Running MKT campaigns
  - Analyzing sales




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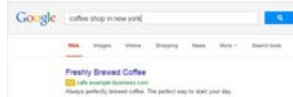
## Technologies & business functions (cont.)

- **Search Engine Optimization (SEO)**

- Internet Marketing tool that increases the visibility of a website in a search engine's unpaid results.
- Optimizing a website may involve editing its content, HTML and associated coding to both increase its relevance to specific keywords and to remove barriers to the indexing activities of search engines

- **Google AdWords**

- Google's advertising service that makes your website appears on top of Google Search results.



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## Technologies & business functions (cont.)

Finance, Accounting, ERP software		
Open Source	Non-web	<a href="#">GnuCash</a> • <a href="#">Grishy</a> • <a href="#">HomeBank</a> • <a href="#">KMyMoney</a> • <a href="#">OpenERP</a> • <a href="#">RCA Open-Source Application</a> • <a href="#">Tryton</a> • <a href="#">TurboCASH</a>
	Web-based	<a href="#">Adempiere</a> • <a href="#">BlueEmp</a> • <a href="#">Compiere</a> • <a href="#">Dolibarr</a> • <a href="#">FrontAccounting</a> • <a href="#">IntarS</a> • <a href="#">LedgerSMB</a> • <a href="#">Openbravo</a> • <a href="#">OpenERP</a> • <a href="#">opentaps</a> • <a href="#">PhreeBooks</a> • <a href="#">webERP</a>
Freeware	<a href="#">BIG4books</a> • <a href="#">Microsoft Office Accounting Express</a> • <a href="#">Outright.com</a>	
Retail	<a href="#">Advanced Business Solutions</a> • <a href="#">AME Accounting Software</a> • <a href="#">C'Gram Software</a> • <a href="#">Efortora Fresh Finance</a> • <a href="#">iBank</a> • <a href="#">Intacct</a> • <a href="#">IRIS Software</a> • <a href="#">Microsoft Dynamics AX</a> • <a href="#">Microsoft Dynamics GP</a> • <a href="#">Microsoft Dynamics NAV</a> • <a href="#">Microsoft Dynamics SL</a> • <a href="#">Microsoft Money</a> • <a href="#">Microsoft Office Accounting Professional</a> • <a href="#">Microsoft Small Business Financials</a> • <a href="#">Moneydance</a> • <a href="#">NetSuite</a> • <a href="#">NewViews</a> • <a href="#">NOSA XP</a> • <a href="#">Open Systems Accounting Software</a> • <a href="#">Pastel Accounting</a> • <a href="#">Peachtree Accounting</a> • <a href="#">QuickBooks</a> • <a href="#">Quicken</a> • <a href="#">SAP Business One</a> • <a href="#">TRAVERSE</a> • <a href="#">Xero Accounting Software</a>	

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## Technologies & business functions (cont.)

- Helping customers find best deals

Web sites	Mobile apps
GasBuddy.com	GasBuddy for smartphone
Pricewatch.com	iGas for iPhone
PriceGrabber.com	PriceGrabber
Mygroceryspy.com	RedLaser – Reads bar code & searches the net for best deal
Nexag.com	GoogleShopper

Do In-Class Exercise 1: Technologies supporting business functions

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### IT and Business Intelligence

- ❑ **Information technology (IT) refers to**
  - a **field** concerned with the use of technology in managing and processing information
  - Computer-based **tools** used to capture, store, protect, process, retrieve, and transmit information
- ❑ **IT is a main part of Business Intelligence**
- ❑ **Business Intelligence**
  - A broad **array of applications and technologies** used to gather, provide access to, and analyze huge amount of data to support decision making. Its use allows discovering trends, patterns, associations, etc.
  - **Information** collected from multiple sources (suppliers, customers, competitors, industry, internal data, etc.) that analyses patterns, trends, relationships for strategic decision making.

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### Management Information Systems (MIS)

- ❑ **MIS**
  - ❑ Is a *business function* and *academic discipline*
    - That deals with the application of information systems and information technology to solve business problems
  - ❑ Can also be seen as a tool for generating and managing information for managers
- ❑ MIS is a business function, similar to Accounting, Finance, Operations, and Human Resources

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### Information Systems

- ❑ **Information Systems** – systems designed for use by organizations in order to transform raw data into information that can help workers do their job and managers make decisions.
- ❑ An information system has the following key components:
  - **People**
  - **Technology**
  - **Policies/Procedures/Processes**



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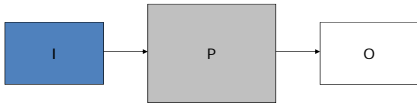
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## Data versus Information

- **Data** = raw facts that represent the characteristics of an event
  - Example 1:
    - Event: High temperature
    - Data: 100° F
  - Example 2:
    - Event: Sale
    - Data: Sale's date, item number, item description, etc.
- **Information** = facts within a given context
  - Information results from transforming data by adding context and meaning to make it more useful.
  - The temperature today at noon in Times Square, NYC was 100° F



**Note:** Info generated by one system may be used as input in another system 19

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## The Value of Information – Information Quality (IQ)

### Characteristics / dimensions of IQ:

- **Accuracy** (Is information correct? Can we rely on it?)
- **Timeliness** (How current is the information?)
- **Accessibility** (Can the information be accessed when needed?)
- **Engagement** (Is the information capable of affecting a decision?)
- **Application** (Is the information relevant to the current context?)
- **Completeness** (Are any of the values missing?)
- **Consistency** (Is aggregate/summary info in agreement w/ detailed info?)
- **Rarity** (Is the information previously known?)

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## Data Quality: What Makes Data Valuable?

### Characteristics / dimensions of DQ:

- **Accuracy / Correctness** (conforming to fact)
- **Timeliness** (How current is it?)
- **Reliability of the data source**

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## IS Quality

### What determines the quality of an IS?

- Data validation
- Rigorous processing
- Ease of use
- Etc.

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## Raw data in a spreadsheet

OrderDate	ProductName	Quantity	Unit Price	Total Sales	Unit Cost	Total Cost	Profit	Customer	SalesRep
04-Jan-10	Mozzarella cheese	81	24	1944	12	972	972	The Station	Debra Farnand
04-Jan-10	Romane lettuce	90	15	1350	14	1260	90	The Station	Roberta Cross
05-Jan-10	Red onions	27	12	324	8	216	108	Jeff's Beeth	Loraine Schultz
06-Jan-10	Romane lettuce	67	15	1005	14	938	67	Smoke House	Roberta Cross
07-Jan-10	Black olives	79	12	948	6	474	474	Flagstaff House	Loraine Schultz
07-Jan-10	Romane lettuce	46	15	690	14	644	46	Two Bits	Loraine Schultz
07-Jan-10	Romane lettuce	52	15	780	14	728	52	Pierce Arrow	Roberta Cross
08-Jan-10	Red onions	39	12	468	8	312	156	Maman's Pasta Palace	Loraine Schultz
09-Jan-10	Romane lettuce	66	15	990	14	924	66	The Gardeners	Loraine Schultz
10-Jan-10	Romane lettuce	56	15	840	14	784	56	Caltrans	Loraine Schultz
10-Jan-10	Pineapple	40	33	1320	26	1040	280	The Station	Loraine Schultz

Rows of data in an Excel spreadsheet.

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## Raw data transformed into Information

OrderDate	Product Name	Quantity	Unit Price	Total Sales	Unit Cost	Total Cost	Profit	Customer	SalesRep
15-Feb-10	Chicken	41	36	1,476	25	1,025	451	Smoke House	Roberta Cross
19-Feb-10	Chicken	50	36	1,800	25	1,250	550	Smoke House	Roberta Cross
03-Mar-10	Chicken	64	36	2,304	25	1,600	704	Pierce Arrow	Roberta Cross
12-Apr-10	Chicken	2	36	72	25	50	22	Laudisio	Roberta Cross
08-Jul-10	Chicken	94	36	3,384	25	2,350	1,034	Pierce Arrow	Roberta Cross
20-Nov-10	Chicken	15	36	540	25	375	165	Two Bits	Roberta Cross
28-Nov-10	Chicken	6	36	216	25	150	66	Laudisio	Roberta Cross
30-Nov-10	Chicken	51	36	1,836	25	1,275	561	Pierce Arrow	Roberta Cross

Data features, such as Autofilter, turn data into information. This view shows all of Roberta Cross's chicken sales.

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## **SUMMARY QUESTIONS**

See Summary Questions 1 posted to the class web site

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