Information Systems in Organizations

Lecturer:

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Text for this session


- Chapters: 1 and 2
- Class website: www.vivafrica.info
STUDENT LEARNING OBJECTIVES

• How are information systems transforming business and what is their relationship to globalization?

• Why are information systems so essential for running and managing a business today?

• What exactly is an information system? How does it work? What are its people, organization, and technology components?
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Osei Kwame Prempeh: One Year Rememberanc...

Journeying over many seas and through many countries we came dear Nana Kwame to this pitiful leave-taking the last gestures by your graveside the futility of words over your quiet remains.

Welcome

Funeral planning is something most of us will have to do at one point in our lives, but how do you do it? Are you getting good value for your money? What do you really need? What do you have to do? Send us your funeral information for publication. It's FREE!!

Funerals In Ghana

Funeralsinghana.com is a FREE consumer information and education resource on funeral planning, financing funerals, funeral products, services, funeral newspaper online obituaries, videos, photos, tit-bits and more. Accessing information here is actually FREE!!

The Editor of The Spectator, Mr. Merari Alomele, is dead.

WHAT A SHOCK

Alor, as he was affectionately called, was the author of the popular ‘Sikaman Palava’ column – which won him
Globalization Challenges and Opportunities: A Flattened World

- Internet and global communications have greatly reduced economic and cultural advantages of developed countries.
  - Drastic reduction of costs of operating and transacting on global scale
  - Competition for jobs, markets, resources, ideas
  - Dependence on imports and exports
  - Requires new understandings of skills, markets, opportunities
Business Drivers of Information Systems

- Businesses invest in IT to achieve six important business objectives.
  1. Operational excellence
  2. New products, services, and business models
  3. Customer and supplier intimacy
  4. Improved decision making
  5. Competitive advantage
  6. Survival
Operational Excellence:

• Improved efficiency results in higher profits.

• Information systems and technologies help improve efficiency and productivity.
  • Example: University Application Process
    • Automating Manual Processes
    • Applying Online
New Products, Services, and Business Models:

- Information systems and technologies enable firms to create new products, services, and business models.
  - **Business model**: how a company produces, delivers, and sells its products and services
- Example: Music industry
  - Drastic changes in business models in recent years
  - Apple: Successful innovations—iPod, iPhone, and so on
Music Industry and Internet
Customer and Supplier Intimacy:

- Customers who are served well become repeat customers who purchase more.
- Close relationships with suppliers result in lower costs.
  - Cliq from Expresso and Fidelity Bank use facebook to extend customer service
Auntie Muni (Best Waakye Joint in Ghana)

Public Figure · Labone, Accra

Wall

Auntie Muni (Best Waakye... · Everyone (Most Recent)

Share: 💬 Post 📷 Photo ⚡ Link 🎥 Video

Write something...

Auntie Muni (Best Waakye Joint in Ghana) shared Kobbi Blaq's album: THE WAAKYE EXPERIENCE YOU MISSED.

THE WAAKYE EXPERIENCE YOU MISSED
By: Kobbi Blaq
Photos: 120

Like · Comment · Share · December 20, 2011 at 3:40pm · 📳

Auntie Muni (Best Waakye Joint in Ghana)
GET READY GHANA FOR YOUR MOST ANTICIPATED OUTDOOR EVENT VODAFONE AND STAR BEER PRESENTS TO YOU THE FACEBOOK WAAKYE PARTY JOIN US ON SUNDAY 18TH DEC 2011 AT THE AVIATION SOCIAL CENTRE COME MEET, GREET AND WITNESS THE OFFICIAL LAUNCH OF THE NEW VODAFONE FACEBOOK PHONE. MARK YOUR CALENDERS SYNC YOUR WATCHES PING!!! BROADCAST TWEET UPDATE...JUST DO ALL YOU GOTTA DO.....! IT'S THE 18TH OF DEC AT THE AVIATION SOCIAL CENTRE

Like · Comment · Share · December 9, 2011 at 11:32am · 📳

9 people like this.

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Cobby Richboy Maestro don't venture
December 14, 2011 at 12:15am · 😎
Improved Decision Making:

- If managers rely on forecasts, best guesses, and luck, they will misallocate employees, services, and inventory.
- Real-time data improves ability of managers to make decisions.
  - Market Women and Mobile Phones
Competitive Advantage:

- Often results from achieving previous business objectives
- Advantages over competitors:
  - Charging less for superior products, better performance, and better response to suppliers and customers
- Amazon and Traditional Book Sellers
- Apple and Quality Consumer Enchanting Products
Survival:

- Businesses may need to invest in information systems out of necessity; simply the cost of doing business.
- Keeping up with competitors
  - Introduction of ATMs in Banking Industry
What is an information system?
What is Information System?

An **information system** (IS) is an arrangement of people, processes, and information technology that interact to collect, process, store, and provide as output the information needed to support an organization.

**From the business perspective, an information system** provides a solution to problem, a challenge, an opportunity for an organization and its consists of a combination management, organization and technology.
• **Information system:**
  – Set of interrelated components
  – Collect, process, store, and distribute information
  – Support decision making, coordination, and control
  
  \[ \text{IS} = \text{IT} + \text{People} + \text{Processes} + \text{Structure \\& Policy} \]

• **Information vs. data**
  – Data are streams of raw facts
  – Information is data shaped into meaningful form
What Is an Information System?

- **Information technology**: the hardware and software a business uses to achieve objectives.
- **Information and Communication Technologies (ICTs)**: the IT (hardware and software) and communication technologies (telecommunication devices)
- **Information system**: interrelated components that manage information to:
  - Support decision making and control.
  - Help with analysis, visualization, and product creation.
- **Data**: streams of raw facts.
- **Information**: data shaped into meaningful, useful form.
Raw data from a supermarket checkout counter can be processed and organized to produce meaningful information, such as the total unit sales of dish detergent or the total sales revenue from dish detergent for a specific store or sales territory.

Figure 1-1
What Is an Information System?

• Activities in an information system that produce information:
  • Input
  • Processing
  • Output
  • Feedback

• Sharp distinction between computer and computer program versus information system
An information system contains information about an organization and its surrounding environment. Three basic activities—input, processing, and output—produce the information organizations need. Feedback is output returned to appropriate people or activities in the organization to evaluate and refine the input. Environmental actors, such as customers, suppliers, competitors, stockholders, and regulatory agencies, interact with the organization and its information systems.
Business Processes

- Logically related set of tasks that define how specific business tasks are performed
  - The tasks each employee performs, in what order, and on what schedule
  - E.g., Steps in hiring an employee
- Some processes tied to functional area
  - Sales and marketing: identifying customers
- Some processes are cross-functional
  - Fulfilling customer order
Fulfilling a customer order involves a complex set of steps that requires the close coordination of the sales, accounting, and manufacturing functions.

Figure 2-2
Managing a Business and Firm Hierarchies

- Firms coordinate work of employees by developing hierarchy in which authority is concentrated at top.
  - Senior management
  - Middle management
  - Operational management
  - Knowledge workers
  - Data workers
  - Production or service workers
- Each group has different needs for information.
Business organizations are hierarchies consisting of three principal levels: senior management, middle management, and operational management. Information systems serve each of these levels. Scientists and knowledge workers often work with middle management.

Figure 2-3
Types of Information Systems

1. Executive Support System (ESS)
   - Strategic-Level
     - Plan and Project, Forecast
       - Senior Managers

2. Decision Support Systems (DSS)
   - Management-Level
     - Decision Analysis; Summary Reports
       - Staff Managers & Middle Managers

3. Management Information Systems (MIS)
   - Knowledge-Level
     - Models; Graphics; Documents & Mail
       - Professionals & Clerical Workers

4. Knowledge Work Systems (OS)
   - Operational-Level
     - Sorting; lists; Detailed Reports; Pay Slips
       - Operations Personnel; Supervisors

5. Office Systems (OS)

Systems that Span the Business

SAP ERP:

Human Resource Systems - Leave Request Example

Executive Support Systems – Sales Planning and Forecasting

Visit the class website and click on videos
Types of Business Information Systems

• **Transaction processing systems**
  – Perform and record daily routine transactions necessary to conduct business
    • Examples: sales order entry, payroll, shipping
  – Allow managers to monitor status of operations and relations with external environment
  – Serve operational levels
  – Serve predefined, structured goals and decision making
How MIS Obtain Their Data from TPS

Transaction Processing Systems
- Order file
- Production master file
- Accounting files

Management Information Systems
- Order processing system
- Materials resource planning system
- General ledger system

MIS FILES
- Sales data
- Unit product cost data
- Product change data
- Expense data

MIS

Managers

Reports

Figure 2-6
Types of Business Information Systems

• Management information systems
  – Serve middle management
  – Provide reports on firm’s current performance, based on data from TPS
  – Provide answers to routine questions with predefined procedure for answering them
  – Typically have little analytic capability
This report, showing summarized annual sales data, was produced by the MIS in Figure 2-9.

Figure 2-7

<table>
<thead>
<tr>
<th>PRODUCT CODE</th>
<th>PRODUCT DESCRIPTION</th>
<th>SALES REGION</th>
<th>ACTUAL SALES</th>
<th>PLANNED</th>
<th>ACTUAL versus PLANNED</th>
</tr>
</thead>
<tbody>
<tr>
<td>4469</td>
<td>Carpet Cleaner</td>
<td>Northeast</td>
<td>4,066,700</td>
<td>4,800,000</td>
<td>0.85</td>
</tr>
<tr>
<td></td>
<td></td>
<td>South</td>
<td>3,778,112</td>
<td>3,750,000</td>
<td>1.01</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Midwest</td>
<td>4,867,001</td>
<td>4,600,000</td>
<td>1.06</td>
</tr>
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<td></td>
<td>West</td>
<td>4,003,440</td>
<td>4,400,000</td>
<td>0.91</td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td></td>
<td>16,715,253</td>
<td>17,550,000</td>
<td>0.95</td>
</tr>
<tr>
<td>5674</td>
<td>Room Freshener</td>
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<tr>
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<td></td>
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<tr>
<td>TOTAL</td>
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<td></td>
<td>18,559,253</td>
<td>17,700,000</td>
<td>1.05</td>
</tr>
</tbody>
</table>
• **Decision support systems**
  – Serve middle management
  – Support nonroutine decision making
    • Example: What is impact on production schedule if December sales doubled?
  – Often use external information as well from TPS and MIS
  – Model driven DSS
    • Voyage-estimating systems
This DSS operates on a powerful PC. It is used daily by managers who must develop bids on shipping contracts.

Figure 2-8
Types of Business Information Systems

• Executive support systems
  – Support senior management
  – Address nonroutine decisions requiring judgment, evaluation, and insight
  – Incorporate data about external events (e.g. new tax laws or competitors) as well as summarized information from internal MIS and DSS
  – Typically use portal with Web interface to present content
  – Example: ESS that provides minute-to-minute view of firm’s financial performance as measured by working capital, accounts receivable, accounts payable, cash flow, and inventory
This system pools data from diverse internal and external sources and makes them available to executives in an easy-to-use form.

Figure 2-9
Systems That Span the Enterprise

• **Enterprise systems**
  - Collects data from different firm functions and stores data in single central data repository
  - Resolves problem of fragmented, redundant data sets and systems
  - Enable:
    - Coordination of daily activities
    - Efficient response to customer orders (production, inventory)
    - Provide valuable information for improving management decision making
Supply Chain Management Systems

- Manage relationships with suppliers, purchasing firms, distributors, and logistics companies.
- Manage shared information about orders, production, inventory levels, and so on.
  - Goal is to move correct amount of product from source to point of consumption as quickly as possible and at lowest cost
- Type of interorganizational system:
  - Automating flow of information across organizational boundaries
Customer Relationship Management Systems

- Help manage relationship with customers.
- Coordinate business processes that deal with customers to optimize revenue and customer satisfaction, and increase sales.
- Combine sales, marketing, and service record data from multiple communication channels to provide unified view of customer, eliminate duplicate efforts.
Knowledge Management Systems

- Intangible knowledge assets
  - Knowledge about producing and delivering products
  - Source of value and advantage for firms
- Knowledge management systems:
  - Help capture, storage, distribute, and apply knowledge so that it can be leveraged for strategic benefit.
  - Include systems for:
    - Managing and distributing documents, graphics, other digital knowledge objects
    - Creating knowledge directories of employees with specialized expertise
    - Distributing knowledge
Systems That Span the Enterprise

• **Intranets:**
  
  • Internal networks built with same tools and standards as Internet
  
  • Used for internal distribution of information to employees
  
  • Typically utilize private portal providing single point of access to several systems
  
  • May connect to company’s transaction systems
Systems That Span the Enterprise

- **Extranets:**
  - Intranets extended to authorized users outside the company
  - Expedite flow of information between firm and its suppliers and customers
  - Can be used to allow different firms to collaborate on product design, marketing, and production
Systems That Span the Enterprise

• **E-business (Electronic business):**
  • Use of digital technology and Internet to execute major business processes in the enterprise
  • Includes **e-commerce** (electronic commerce):
    • Buying and selling of goods over Internet

• **E-government:**
  • The application of Internet and networking technologies to digitally enable government and public sector agencies’ relationships with citizens, businesses, and other arms of government
The Information Systems Function in Business

- **Information systems department:**
  - Formal organizational unit responsible for information technology services
  - Includes programmers, systems analysts, project leaders, information systems managers
  - Often headed by chief information officer (CIO), also includes chief security officer (CSO) and chief knowledge officer (CKO)

- **End-users:**
  - Representatives of other departments, for whom applications are developed
Question

Considering the context of a developing country like Ghana, is the internet a strategic choice for every firm or otherwise, **should every firm do business online?**