

Solutions – Chapter 2

Ethical and Societal Issues

The New Corporate Mantra: Social and Environmental Responsibility

Discussion Questions

1. E-billing allows companies to streamline the billing process, getting invoices to customers more quickly. It reduces the time required for manual billing, and it saves paper and postage, which is especially important because many businesses are looking for ways to reduce their use of paper. It's a move that is good for the environment and good for the corporate budget. Not only does eliminating the use of paper save trees, but it also reduces carbon emissions by eliminating the need to drive vehicles that deliver the paper.
2. Answers will vary. Some companies may not have the expertise to provide e-documents and it may also be cheaper to outsource than to hire staff.

Critical Thinking Questions

1. Student responses will vary. A few students may argue that some services will always require the use of paper.
2. Answers may vary.

Information Systems @ Work

Aldra Manages Workflow to Support Customization

Discussion Questions

1. Aldra found that the complexities of building its high-quality products were causing confusion in the order processing system and delays in manufacturing, leading to missed deadlines. Order specifications were sometimes incomplete or incorrect, and correcting orders is time consuming. Lack of coordination among departments resulted in additional errors that occasionally resulted in costly idle time on the production line. The lack of coordination also led to errors in calculating manufacturing costs, which reduced profits.
2. Aldra purchased information systems from Infor Corporation that allowed the company to better coordinate efforts across departments. Using the software,

Aldra now models its critical core processes (workflows) and then uses the models to improve communication across the value chain. The models define the specific employees involved in the various stages of the process. The system then generates daily activities for each employee displayed in a particular area on the computer desktop. As activities approach their deadline, they are moved to the top of the list.

Critical Thinking Questions

1. Responses will vary.
2. Responses will vary.

Review Questions

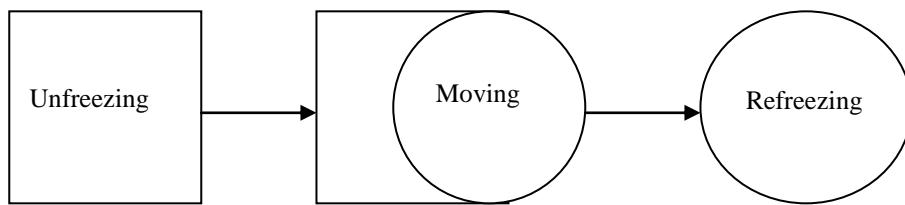
1. A value chain is a series (chain) of events that includes inbound logistics, warehouse and storage, production, finished product storage, outbound logistics, marketing and sales, and customer service. A supply chain is a network of suppliers, distributors, and retailers that participate in the production of a product.
2. Customer relationship management (CRM) programs help companies of all sizes manage all aspects of customer encounters, including marketing and advertising, sales, customer service after the sale, and programs to retain loyal customers.
3. An information system can indirectly add value by summarizing the feedback from value-added processes for use by management and other organizational employees. The monitoring and control capabilities of an IS are excellent support features. A more contemporary view of the IS function holds that this system is an integral part of the value-adding processes and is key to providing input collection, product transformation, and output creation. In this way, an IS system can become a direct, strategic tool used to accomplish organizational goals and objectives.
4. Reengineering is the radical redesign of business processes, organizational structures, information systems, and values of the organization to achieve a breakthrough in business results. Sometimes called process redesign, reengineering can reduce product delivery time, increase product and service quality, enhance customer satisfaction, and increase revenues and profits through challenging the fundamental assumptions of how a business process is done. Reengineering involves strong, broad actions to achieve major goals and is often driven by outsiders or upper management. Information system changes can be key components of reengineering. Another change mechanism, continuous improvement, is routine action taken to constantly and incrementally improve specific tasks. Workers direct this effort and rely on the outputs of an information system to assist in measurement.

5. User satisfaction is what a user thinks and feels about a product and its quality.
6. Reengineering is radical redesign of business processes, organizational structures, information systems, and values of the organization to achieve a breakthrough in business results. Continuous improvement is constantly seeking ways to improve business processes to add value to products and services.
7. Technology diffusion measures how widely technology is spread throughout an organization. Technology infusion looks at the extent to which technology is deeply integrated into an area or department.
8. Quality is the ability of a product or service to meet or exceed the expectations of a customer. The intent of management to create quality goods or services is often operationalized through a commitment to a total quality management (TQM) approach to business. This means a collection of approaches, tools, and techniques are used throughout the firm to foster higher levels of quality. Key components in this approach are recognition of customer needs, employee empowerment, having a vision for quality, and developing a reward system. Six Sigma is a statistical term that means products and services will meet quality standards 99.9997% of the time. In a normal distribution curve used in statistics, six standard deviations (Six Sigma) is 99.9997% of the area under the curve.
9. Organizational change is the process used by both profit and nonprofit organizations to plan, implement, and handle change. Organizational learning is a concept by which organizations adapt to new conditions or alter their practices over time.

10. The following table summarizes the basic organizational structures:

Organizational Structure	Definition
Traditional	Major department heads report to a president or top-level manager
Flat	Lower-level employees are empowered to make decisions and solve problems without needing permission from mid-level managers
Project	Centered on major products or services
Team	Centered on teams or work groups
Multidimensional	Incorporates a combination of several structures

11. The change model has three basic components--unfreezing, moving, and refreezing. Unfreezing is the process of ceasing old habits and creating a climate receptive to change. Moving is learning new behaviors. Refreezing is the process of making the new behaviors a normal, accepted part of the job.



12. Downsizing is the planned reduction of a workforce used to reduce costs. It is sometimes called rightsizing. Outsourcing, on the other hand, is contracting with outside professional services to meet business needs. This means that organizational resources are focused on the primary business activity. Professionals handle secondary functions with more expertise in a particular area. In theory, the workforce is not reduced but instead reallocated.
13. Organizations employ various strategies to achieve a competitive advantage. Among these are the forming of alliances with other companies, developing a niche market, maintaining competitive costs, and creating product differentiation.
14. Traditional approaches to finding a job in the information systems area include attending on-campus visits from recruiters and referrals from professors, friends, and family members. Many colleges and universities have excellent programs to help students develop résumés and conduct job interviews. Developing an online résumé can be critical to finding a good job. Many companies accept résumés only online and use software to search for keywords and skills used to screen job candidates. Note that students who use the Internet and other nontraditional sources to find IS jobs have more opportunities to land a job.
15. Productivity is a measure of the output achieved divided by the input required ($\text{Productivity} [\text{in percent}] = [\text{Output}/\text{Input}] \times 100$). Companies can best use productivity measurements by well-managing, training, and motivating employees to use the IS in a way that delivers measurable gains in output.
16. On-demand computing, also called on-demand business and utility computing, involves rapidly responding to an organization's varying workflow. On-demand computing is an advantage to organizations because instead of the business purchasing hardware, software, and database systems, the organization only pays a fee for the systems it needs at peak times. The approach can save money because the organization does not pay for systems that it doesn't routinely need. On-demand computing also allows the organization's IS staff to concentrate on more-strategic issues.
17. The total cost of ownership (TCO) is a measurement of the total cost of owning computer equipment including desktop computers, networks, and large computers.

18. The role of the chief information officer (CIO) is to employ an IS department's equipment and personnel to help the organization attain its goals.

Discussion Questions

1. Firms are seeing widespread growth in positions related to the Internet. Among these are Webmaster (manages Web site related issues), network specialists, hardware and Webserver specialists, marketing and e-commerce specialists, programmers, graphic artists, and content developers.
2. One possible answer:

Raw materials	Used CDs from students
Inbound logistics	Prepaid shipping envelopes
Warehouse and storage	Storage room/containers and inventory system
Process control system	Ability to provide quotes to buyers and sellers of CDs and process payments
Customer service	Phone/email support and ordering, tracking of orders
Marketing and sales	Marketing plan
Retrieval system	Ability to locate CDs in inventory for outbound shipping
Outbound logistics	Ability to send/track CDs sold

3. Student answers will vary based on their career choice.
4. Today, the trend is to reduce the number of management levels, or layers, in the traditional organizational structure. This type of structure, often called a flat organizational structure, empowers employees at lower levels to make decisions and solve problems without needing permission from midlevel managers. Empowerment gives employees and their managers more responsibility and authority to make decisions, take action, and have more control over their jobs.
5. You can determine the actual usage of an information system by the amount of technology diffusion and infusion. Technology diffusion is a measure of how widely technology is spread throughout an organization. An organization in which computers and information systems are located in most departments and areas has a high level of technology diffusion. Some online merchants such as Amazon.com have a high diffusion and use computer systems to perform most of their business functions, including marketing, purchasing, and billing. Technology infusion, on the other hand, is the extent to which technology permeates an area or department. In other words, it is a measure of how deeply embedded technology is in an area of the organization. Some architectural firms, for example, use computers in all aspects of designing a building, from drafting to final blueprints.

The design area, thus, has a high level of infusion. Of course, a firm can have a high level of infusion in one part of its operations and a low level of diffusion overall. The architectural firm might use computers in all aspects of design (high infusion in the design area), but not to perform other business functions, including billing, purchasing, and marketing (low diffusion overall). Diffusion and infusion often depend on the technology available now and in the future, the size and type of the organization, and the environmental factors that include the competition, government regulations, suppliers, and so on.

6. The purpose of this question is to encourage students to think about what the forces in Porter's model translate to in the real world. The following table provides guidelines and sample responses for the discussion. A company called New Wave Multimedia Desktop Computer Corporation was selected to illustrate the analysis.

Company: New Wave Multimedia Desktop Computer Corp.

Competitive Force	Strategic Plan's Counter to Competitive Force
Rivalry among existing competitors	Develop new products and new looks to standard products
Threat of new entrants	Develop strategic alliances with software/hardware producers to dissuade new startup companies
Threat of substitute products	Differentiate product line so that fewer substitutes are available: integrate high end speakers, monitors, audio and video components into computer system
Bargaining power of buyers	Develop high quality service reputation and maintain buyer profiles: make buyers desire a relationship with this corporation through high levels of trust and support
Bargaining power of suppliers	Develop long term relationships with suppliers and integrate inventory systems with information technology

7. A strategy which may serve New Wave Multimedia Desktop Computer Corporation well is the development of a niche market. This would help them build and protect their spot as a leading vendor of high-end multimedia computer systems. Students will respond to the discussion with a wide variety of responses. The best approach might be to encourage them to think in terms of strategic alliances, niche markets, competitive cost approaches, and product differentiation used either alone or in combination to protect the 'turf' of their example corporation.

8. The following table highlights points of the discussion:

Method	Definition	Used	Pros	Cons
Productivity	Output/Input	Over time periods	Easy to measure	Narrow and limited in value
ROI	Return on investment	Additional profits due to IS	Easy to quantify	Misses intangibles
NPV	Net present value	Value added by IS	Easy to quantify	Requires some estimation
Earning Growth	Increase in profits	To monitor profits	Easy to obtain	Doesn't tell the 'why'
Market Share	Sales in relation to market	To monitor presence in market	Easy to obtain	Doesn't tell the 'why' and is affected by external factors very strongly.
Customer Awareness / Satisfaction	Customer survey data	Customer self-report	Surveys are easy to use	Collecting data may be tough and self-report surveys are sometimes suspect
Total Cost of Ownership	Costs of IS operation	To learn sum total of all system costs	Meaningful, does limit itself to hardware or software	Hard to determine, misses intangibles

9. The characteristics of the CIO would include virtue, courage, loyalty, honesty, and leadership.

Problem-Solving Exercises

1. Student answers will vary based on their chosen industry and firms.
2. Initial spreadsheet with ROI:

	Year 1	Year 2	Year 3	Year 4	Year 5
Increased Revenue	\$ -	\$ 100.00	\$ 150.00	\$ 200.00	\$ 250.00
Cost Savings	\$ -	\$ 50.00	\$ 50.00	\$ 50.00	\$ 50.00
Depreciation	\$ -	\$ 75.00	\$ 75.00	\$ 75.00	\$ 75.00
Initial Expense	\$ 500.00				
Profit	\$ -	\$ 75.00	\$ 200.00	\$ 375.00	\$ 600.00
ROI	0%	15%	40%	75%	120%

All amounts in thousands.

Additional revenue and cost savings model.

	Year 1	Year 2	Year 3	Year 4	Year 5
Increased Revenue	\$ 50.00	\$ 100.00	\$ 150.00	\$ 200.00	\$ 250.00
Cost Savings	\$ 25.00	\$ 50.00	\$ 50.00	\$ 50.00	\$ 50.00
Depreciation	\$ -	\$ 75.00	\$ 75.00	\$ 75.00	\$ 75.00
Initial Expense	\$ 500.00				
Profit	\$ 75.00	\$ 150.00	\$ 275.00	\$ 450.00	\$ 675.00
ROI	15%	30%	55%	90%	135%

All amounts in thousands.

3. A possible job description for a systems analyst follows:

As a Systems Analyst, you will be accountable for providing technical support in a Vehicle Processing Center environment.

Duties:

- *Work with End Users to determine systems and application requirements*
- *Root Cause Analysis as necessary and Documentation of Site Infrastructure*
- *Level 1 & 2 Help Desk support for Incidents & Service Requests*
- *Rollout of Desktop & Laptop Hardware*
- *Troubleshooting Basic Networking – TCP/IP, DHCP, Cisco VPN, Wi-Fi*
- *Support of Mobile (RF Narrowband and GSM) and Tethered (USB) Scanners*

- *Desktop administration including Windows XP & Windows 7, Microsoft Office 2007 and Third Party*
- *Support of Thin Clients, Mobile Phones, Blackberry Devices, Printers, and A/V equipment*

Source: www.monster.com

Team Activities

1. Students should conduct the interviews to determine how professors keep current with the latest teaching and research developments in their field.
2. Students should research a firm that has achieved a competitive advantage and write a brief report describing how the firm was able to achieve its competitive advantage.

Web Exercises

1. Students could research companies listed in Chapter 1 and Chapter 2. Below are a few of the company Web sites mentioned:
 - www.salesforce.com
 - www.facebook.com
 - www.myspace.com
 - www.twitter.com
 - www.MyFleetAtPenske.com
 - www.fedex.com
2. Students should use the Internet to search for information about a company that has excellent or poor product quality in your and write a brief report describing their findings.

Career Exercises

1. Students should submit a report describing the technology related business, including its products and services.
2. Students should pick the five best companies for their careers and describe the quality of the products and services offered by each company.

Case Studies

Case 1: Creativity Moves Up the Value Chain

Discussion Questions

1. In 2007, Creativity found its business model challenged by growing globalization and economic hardships. To save money, some of its customers decided to “do away with the middleman,” and purchase crafting materials directly from the Asian manufacturers. Creativity needed to find new ways to provide value to its customers.
2. The company acquired data about purchase transactions from retailers in craft-related markets and added that data to its data warehouse. Using the Cognos software and Smart Software’s SmartForecast program, Creativity determined a need for more “design-oriented, fashion-oriented” products—especially ones associated with popular U.S. media, such as television shows and celebrities.

Critical Thinking Questions

1. By improving communication between its brands and sharing its research findings, Creativity elevated the corporate awareness of the entire company and created an environment where everyone is working towards common goals. To further communication, CIO Jim Mulholland used Cognos to develop a software dashboard that provides corporate news and information on the desktops of company managers across its brands. These communication improvements help safeguard against duplication of effort. Each brand is aware of what the other brands are experiencing and working on, allowing brands to learn from each other.
2. Creativity and other struggling businesses want to create valuable information from low-cost data to learn how to work more intelligently and efficiently. Integrating data from sources, and elsewhere into data warehouses for analysis allows companies to discover what products are likely to sell, what products return the highest profits, where to cut costs, where to invest for the highest return, and other key information to fuel smart decision making.

Case 2: Media Companies Centralize and Outsource to Survive

Discussion Questions

1. A powerful force driving the change is advertisers’ transition to digital media. Consider as evidence the decision by Pepsi to discontinue its famous Super Bowl commercials so it could invest more heavily in an online marketing campaign. Such transitions of advertising dollars from traditional media to the Internet is dramatically affecting media companies, especially news agencies. News agencies are changing the way they produce the news by centralizing and outsourcing operations to make up for lost revenue.

2. Those in the media industry are outsourcing information system infrastructure and data center operations. The next opportunity for experiencing savings is to outsource content management.

Critical Thinking Questions

1. Student responses will vary. Students may consider cultural differences when using the same language.
2. Student responses will vary.

Questions for Web Case

Altitude Online: Addressing the Needs of the Organization

Discussion Questions

1. By starting from scratch with a unified platform, the system engineers will be able to craft a system that meets currently neglected business needs. The new system can provide state-of-the-art information management practices that give the company a strong competitive advantage.
2. Altitude Online requires industry-specific systems. Those in the online advertising and marketing industry have information system needs that go beyond standard business systems.

Critical Thinking Questions

1. The stakeholders are in twelve locations across the country.
2. Altitude Online could benefit from the expertise of a company like SAP in the following areas: supply chain management, financials, project management, human resource, customer relationship management, and a variety of data services.