**Chapter 1 - Review Questions**

1. **What is information technology, and why is it important to a business?**

* Information technology (IT) refers to the combination of hardware, software, and services that people use to manage, communicate, and share information. It is very important because the success of the business depends on Information Technology (IT). It is important because it helps them improve profitability and productivity.

1. **Define business profiles, processes, and modeling.**

* A business profile is an overview of a company’s mission, functions, organization, products, services, customers, suppliers, competitors, constraints, and future direction. A business profile is the starting point for the modeling process. A business process is a specific set of transactions, events, and results that can be described and documented. A business process model (BPM) graphically displays one or more business processes, such as handling an airline reservation, filling a product order, or updating a customer account.

1. **Identify the main components of an information system, and describe the system’s stakeholders.**

* An information system has five main components which are: hardware, software, data, processes and people. People who have an interest in an information system are called stakeholders. Stakeholders include the management group responsible for the system, the users (sometimes called end users) inside and outside the company who will interact with the system and IT members such as system analysts, programmers and network administrators who develop and support the system.

1. **Explain the difference between vertical and horizontal systems packages.**

* A horizontal system is a basic system, such as a database, inventory, or payroll program that can be adapted for use in many companies. A vertical system is a system that is designed to meet the specific unique needs of a company or industry.

1. **How do companies use EDI? What are some advantages of using XML?**

* Electronic data Interchange (EDI) enabled computer-to-computer data transfer, usually over private telecommunication lines. Firms used EDI to plan production, adjust inventory levels, or stock up on raw materials using data from another company’s information system. Extensive Markup Language (XML) enabled company-to-company traffic to migrate to the internet, which offered standard protocols, universal availability, and low communication costs. Another advantage of using XML would be that it has flexible data description language that allows web-based communication between different hardware and software environments.

1. **Describe five types of information systems, and give an example of each.**

* In the past, IT managers divided systems into categories based on the user group the system served. Today, a new set of system definitions include: Enterprise computing systems, Transaction processing systems, business support systems, knowledge management systems and user productivity systems.

1. Enterprise computing systems support company-wide operations and data management requirements. For example, Wal-Mart’s inventory control system, Boeing’s production control system, and Hilton Hotels’ reservation system.
2. Transaction processing (TP) systems process data generated by day-to-day business operations. Examples of TP systems include customer order processing, accounts receivable, and warranty claim processing.
3. Business support systems provide job-related information support to users at all levels of a company. For example, analyzing transactional data, generating information needed to manage and control business processes, and providing information that leads to better decision-making. An important feature of a business support system is decision support capability.
4. Knowledge management systems are called expert systems because they simulate human reasoning by combining a knowledge base and inference rules that determine how the knowledge is applied. For example, Toshiba maintains a knowledge management system for its customers and uses. After a user enters a symptom, problem or question, Toshiba’s Knowledge Base searches for a solution and displays the results. This technique is called Fuzzy logic.
5. User Productivity: Companies provide employees at all levels with technology that improves productivity. Examples of user productivity systems include e-mail, voice mail, fax, video and Web conferencing, word processing, automated calendars, database management, spreadsheets, desktop publishing, presentation graphics, company intranets, and high-speed Internet access. User productivity systems also include groupware.
6. **Describe four organizational levels of a typical business and their information requirements**

* A typical business has 4 organizational levels which are: Top Managers, Middle managers and Knowledge workers, Supervisors and team leaders, and operational employees.

1. Top managers develop long-range plans called strategic plans, which define the company’s overall mission and goals. To develop a strategic plan, top managers also need information from outside the company such as economic forecasts, technology trends, competitive threats and governmental issues.
2. Middle managers provide direction, necessary resources, and performance feedback to supervisors and team leaders. They need more detailed information than op managers but somewhat less than supervisors. For example, a middle manager might review a weekly sales summary for a three-state are, whereas a local sales team leader would need a daily report on customer sales at a single location. Knowledge workers provide support for the organization’s basic functions.
3. Supervisors, often called team leaders, oversee operational employees and carry out day-to-day functions. They coordinate operational tasks and people, make necessary decisions, and ensure that the right tools, materials, and training are available. Like other managers, supervisors and team leaders need decision support information, knowledge management systems, and user productivity systems to carry out their responsibilities.
4. Operational employees include users who rely on TP systems to enter and receive data they need to perform their jobs. In many companies, operational users also need information to handle tasks and make decisions that were assigned previously to supervisors. This trend, called empowerment, gives employees more responsibility and accountability. Many companies find that empowerment improves employee motivation and increases customer satisfaction.
5. **Describe the phases of the systems development life cycle, and compare the SDLC waterfall model with the spiral model**.

* The SDLC phases are as follows:

1. Systems Planning Phase – Preliminary investigation to evaluate a problem or opportunity within the business. This usually begins with a formal request to the IT department. Usually a feasibility study would be performed to decide whether to launch a preliminary investigation at all.
2. Systems Analysis Phase – builds a logical model of the new system. This step is where you investigate the business process and determine what the system has to do to satisfy the end users. A system requirements document is the result of this phase, which describes user requirements, costs and benefits and gives alternate strategies for development.
3. Systems Implementation Phase – is where the new system is built. This is where much of the actual work is completed such as writing, testing and installing the systems. This is also the phase where data conversion and employee training takes place. A Systems Evaluation is prepared during this phase to determine if the system works as intended and if the costs and benefits meet prior expectations.
4. Systems Support and Security Phase – is where the IT staff maintains the system, makes improvements to the system and protects the system through different security controls. This is usually the longest phase in the history of a system, as if the system is well designed and able to evolve with the changing needs of the company it can be utilized for many years.
5. The Waterfall Model vs. The Spiral Model – In the Waterfall Model of the SDLC, the result of each phase (Preliminary Investigation Report, System Requirements Doc, etc.) is considered the “end product” for that phase and flows or carries you into the next phase of the process. This continues phase by phase until you have completed the entire project. In the Spiral Model, a series of revisions based on user feedback occurs. There is much more interactivity between developers and users. As the process continues and feedback is shared, things evolve into what will eventually become the end product.
6. **Explain the use of models, prototypes, and CASE tools in the systems development process. Also explain the pros and cons of agile development methods.**

* Models are used to produce a graphical representation of the process that system developers use to analyze, test and modify the process.

Prototypes are early working versions of an information system. This gives developers an opportunity to test input, output and user interfaces before final decisions are made. In this way, developers are able to see what works or what might work better and move the system toward final design.

Case Tools (Computer-Aided Systems Engineering) – make it easier to design an information system. They provide an overall framework for system development, and can be used in structured analysis as well as object-oriented analysis.

Agile development methods are very flexible and efficient when it comes to dealing with change. It is also very interactive, with lots of team communication throughout the process. This allows for very frequent opportunities to validate the process and data that reduces risk. The drawbacks to this method are that team members require very good communication and technical skills. If documentation and structure are lacking, unnecessary risk factors can be introduced.

1. **What is object-oriented analysis, and how does it differ from structured analysis?**

* Object-oriented analysis combines data and the processes that act on the data into things called objects. Systems analysts use O-O to model real-world business processes and operations. The result is a set of software objects that represent actual people, things, transactions, and events. Using an O-O programming language, a programmer then writes the code that creates the objects. Compared to structured analysis, O-O phases tend to be more interactive. Can use the waterfall model or the model that stresses greater iteration.

**Chapter 1 - Personal Trainer, INC**

1. **Develop a business profile for Personal Trainer, based on the facts provided. List at least three of Personal Trainer’s business processes.**
   * Personal Trainer, Inc. owns and operates fitness centers in a dozen Midwestern cities. The company offers a wide variety of products and services in its various locations including large exercise areas with state of the art equipment, swimming pools, snack bars, sporting goods shops as well as child care provided in certain locations.
   * The company is headquartered in Chicago, IL and led by Cassia Umi, President. They are currently in the process of expanding into the International market, with a location planned for the Toronto area. The new Supercenter will include all of the amenities provided at their other 12 locations as well as plans for a health food store, a teen center and a computer café.
   * Different business processes used by Personal Trainer, Inc. include accounting and payroll functions, sales and membership as well as tracking client results.
2. **Create an organization chart for Personal Trainer using Microsoft Word or a similar program, or you can draw it by hand. In Word 2010 and Word 2007, click the Insert tab on the Ribbon, then Smart Art, then Hierarchy.**
3. **Review the conversation between Susan and Gray. In your opinion, is Gray totally supportive of the new system? Why or why not? Do you agree with the way that Susan responds to Gray’s comments? Why or why not?**
   * Gray is not so sure about implementing the new system. He talked about how the current system has not had any problems and that he didn’t want to reinvent the wheel. Susan did a good job of responding to Gray and I agree with her 100%. She took the conversation to a more assuring direction by stating that she is here to help and by comparing the differences between the functions of the different centers. Susan was able to get Gray to open his mind to new possibilities and agreed to move forward with the new system.
4. **Should Personal Trainer consider any of the following systems: enterprise computing, transaction processing, business support, knowledge management, or user productivity? Why or why not? What opportunities might Personal Trainer have for Web-based B2C transactions in the future? What about B2C?**
   * I believe an Enterprise system would benefit Personal Trainer, Inc. because it will help standardize their data management and operations systems at all locations. A TP system would be beneficial as well; so all locations are inputting data the same way. A standardized Business Support system would be beneficial as well for things like payroll. A knowledge system would be helpful, especially for the web-based operations that are planned. User productivity systems are a must when you are dealing with stores in multiple locations. You absolutely would need a way to communicate quickly and efficiently, as well as share files and data. B2C transactions can be a plus and a great opportunity for growth, especially because we are in the digital age where almost everything is internet based/friendly. Besides the ability to sell virtual training sessions, they could offer different training products for sale through their online store (i.e. weights, workout apparel, etc.). There is also an opportunity for an online presence with their health food store and snack bar. There are also different B2B opportunities available to them. They could sell training packages or membership packages to different companies for their employees. There is also an opportunity for Personal Trainer, Inc. to sell advertising space on their website to different fitness companies or other related businesses.

**Chapter 1 Case in Point: Lisa**

I believe that Lisa should accept the position with Pembroke Boats and create the IT department on her own; besides, the opportunity to plan, create, organize and develop an IT department from scratch doesn’t come along too often. She would be so valuable to Pembroke Boats that she would have a guarantee job as long as she does a good job and keeps it that way because she would be the only one with the IT knowledge. There could be many opportunities for advancement within the company based on her ability to succeed in this endeavor, she can truly make an impact on this company and put her own stamp of success if she does well. The pay is a little less, and she would have a lot more responsibility on her shoulders but the company is not selling or going anywhere.

At Albermarle Express, she would make more money, have less responsibility and the opportunities for advancement would be greater at Albermarle, as promised to her if she does a good job. BUT, the sketchy factor involved here is the rumors hanging over Albermarle that another company might acquire them. Although they are just rumors and have not amounted to anything in the past, the possibility is there. If they were in fact to be acquired by another company, she may not even be guaranteed a job. Any promises made to her by Albermarle Express would not be enforceable under new ownership.

In conclusion, I believe that Lisa should take the job with Pembroke Boars. She can truly take this company to the next level and acquire some impressive experience upon success and growth of the company.