**Chapter 4a - Review Questions**

1. **What are the five questions typically used in fact-finding? What additional question can be asked during this process?**

* The five questions typically used in fact-finding are who, what, where, when and how. The other main question to ask during this process is why:
  1. Who – Who is responsible for completing a task?
  2. What – What task is being completed?
  3. Where – Where is this task performed?
  4. When – When is this task usually accomplished?
  5. How – How is the task done?
  6. Why – Why are these things done the way they are currently? This question allows you to go back through the other 5 questions (who, what, where, when, how) and determine if there needs to be changes to the current system or if things are being accomplished in the best possible way currently.

1. **What is a systems requirement, and how are systems requirements classified?**

* A system requirement is a feature or characteristic that must be included in a system to satisfy certain business needs/requirements and still be acceptable to the end users. They usually fall into five different categories – outputs, inputs, processes, performance and controls.

a.Outputs – Reports or takeaways that the system has to produce at certain intervals.

b. Inputs – Data that is being entered into the system (by keyboard, scanner, etc.).

c. Processes – Calculations or checks generated by the system, interface between different systems within the business, etc.

d. Performance – Parameters the system must meet to be considered acceptable (number of users that can be on at the same time, amount of time required for the system to give a response, etc.).

e. Controls – Security measures to keep the information safe within the system.

1. **What are JAD and RAD, and how do they differ from traditional fact-finding methods? What are their pros and cons?**

a. JAD – Joint Application Development – This fact-finding technique brings users into the development process as active participants. Unlike traditional fact-finding methods, users are asked to give input into developing a system from the beginning and throughout the entire process. Participation in the development process tends to build ownership feelings and support for the new system by those involved. The drawbacks are that this process is more expensive than traditional methods and if the group is too large, the process can get bogged down. The end result of this technique is a requirements model.

b.RAD – Rapid Application Development – Like the JAD technique, RAD uses a group approach to fact-finding. The process is sped up and produces working models throughout that allow users to test the system for usability and make suggestions for improvement. There is a four phase lifecycle (requirements planning, user design, construction, and cutover) that mirrors the traditional SDLC phases. The big advantage of this technique is that systems are able to be designed more quickly and costs are significantly lower. RAD emphasizes the mechanics of the system itself rather than the long-term strategic goals of the company, which could cause a lower-quality, less consistent system to be designed. The end result of this technique is the actual system itself.

1. **What are some internal and external factors that affect systems projects?**

* Total Cost of Ownership (TCO) is a measurement of what a system is going to cost the company in both direct and indirect expenses. This takes into account not only known expenses such as payroll of the developers creating the system, but also unknown expenses down the road such as user support or productivity loss should the system go down. This is important because a system that may seem like it would be more cost effective initially could end up costing the company quite a bit more than expected in the long run.

1. **Provide examples of closed-ended, open-ended, and range-of-response questions.**

* Closed-ended, Open-ended and Range-of-Response questions:

a. Closed-ended questions – limit or restrict a response. These are used to get more specific information or to verify facts. Some examples would be “How often do you run the sales reports?”, “How many people are trained on the order-entry process?”

b.Open-ended questions – encourage spontaneous or unstructured responses. These are used to help understand a larger process or to illicit the opinion of the people you are interviewing. Some examples of these would be “What types of additional features would you like to see in the new system?”, “What has customer feedback been regarding the current system?”

c.Range-of-response questions – closed-ended questions that ask for the person to evaluate something with limited choices or on a numeric scale. This makes it easier to tabulate the information and determine what the results mean. Some examples of these would be “On a scale of 1 to 10, with 1 being the lowest and 10 being the highest, how would you rate the system’s ability to respond to user’s questions in a timely manner?”, “Would you say that customers have complained about the system being down during peak usage times rarely, sometimes, frequently?”

**Chapter 4a - Personal Trainer, INC**

1. **List the system requirements, with examples for each category. Review the information that Susan gathered, and assume that she will add her own ideas to achieve more effective outputs, inputs, processes, performance, and controls.**

* The system requirements are as follows:

1. Outputs**:**
   * 1. The system must print a membership list monthly, with separate lists generated for new members, full members and limited members. This should also include a report that shows that limited members are consistently purchasing additional services, so that the staff might have an opportunity to upsell to the full membership.
2. A daily, weekly and monthly sales report must be generated for the center managers to track performance.
3. The profitability reports and inactive members report needs to be produced monthly for managers to have the ability to track progress and attempt to reconnect with their clients who have less activity in recent days.
4. A report for tracking trainer activity needs to be generated weekly to determine who is bringing in new clients, selling services, etc.
5. Inputs:
   1. Members must swipe their ID cards into the system to track services being used as well as frequency of visits. This would also allow them to charge items in the center.
   2. Employees must enter their employee number into the system when clocking in for a shift, leaving for lunch, etc. to track payroll hours.
   3. Each trainer must log into the terminal at the beginning and end of a training session to keep track of who is training which clients and who is selling additional services to their clients.
   4. Clients will log into the system remotely through the internet for the ability to access activity and wellness logs and personal coach services.
6. Processes:
7. The accounting system must take the charges made each day in the center and reconcile them with customer credit availability. Credit card information would now need to be attached to membership cards in order to charge in the center.
8. Center management must double check every employee’s time weekly before the payroll department finalizes it.
9. Centers will use the membership list to generate e-mail “blasts” to existing clients, offering new services, special promotions and reminders on a monthly basis.
10. Performance:
11. The system must support up to 6000 users online simultaneously.
12. System response time must not exceed 10 seconds.
13. The system must be operational 7 days a week, 365 days a year.
14. Accounts receivable must generate customer statements by the fourth day of every month.
15. Controls:
16. The system must provide login security at the center as well as through the Internet.
17. Data has to be encrypted to protect credit card information as well as the client’s personal information.
18. Employee records can only be added, changed, or deleted by Human Resources.
19. All transactions must include an audit trail from the start of the transaction until completion.
20. **Are there scalability issues that Susan should consider? What are they?**
    * There are scalability issues that Susan should take into account when considering what system(s) are needed to handle the company’s information. For example, the company is obviously looking to expand as evidenced in its new Toronto location. Trying to determine how many customers will need to be supported several years down the road is a huge consideration. Reporting functions have to be considered as well, since it would appear that more types of reports and the frequency with which they are generated is a desire of all involved. The company is also looking to provide a larger offering of web-based services down the road, which could grow the business even more. Payroll and billing are also areas that could see additional requirements as the company expands.

**Chapter 4a - Case in Point 4.1: NORTH HILLS COLLEGE**

In order to set up a JAD session to help define the requirements for the new system I would invite the Registrar and a few members of the administrative staff so we could have an understanding of how things are handled currently during student registration, a few members of the student support and services team to help with understanding how students utilize the current process as well as what they would like to see in the new system, a few members of the business office for insight on effects of the new system on their department, members of the IT group to explain how the current system works and what equipment or software might be needed to implement the new system, and lastly a cross-section of members from the academic departments to give us a point of view from the instructors on the current system and what issues might surface for them from the implementation of a new system. The agenda of the session would be as follows:

1. Introduce members to one another, discuss the purpose of the session and lay the ground rules, and explain how the information will be recorded and used. – Project Leader.
2. Explain why the project is being done and show support for the new system. – Project Owner.
3. Provide an overview of the current system and what the scope and constraints of the proposed project are. Outline the specific topics and issues to be investigated – Project Leader.
4. Open discussion – review main business processes, tasks, user roles, input and output. Identify specific areas of agreement/disagreement. Break team into smaller groups to study specific issues and assign group leaders. – Project Leader.
5. While in breakout groups, discuss and document all of the system requirements and develop models and prototypes. – Group leaders with IT staff support.
6. Report on results and assigned tasks and topics and present issues that should be discussed by the entire JAD team. – Group Leaders.
7. Review reports from the smaller groups, reach a consensus on the main issues and document all of the topics. – Project Leader.
8. A recap of the overall session is presented. A report is prepared that will be sent to all of the JAD team members. \_ Project Leader.