FIT3019 – Information Systems Management

Semester 2, 2010

Assignment #2 Sample Solutions

Question 1

Case Study-Healing with Outsourcing

(a)

The main asset that the Perot system brought to the business partnership with Harvard Pilgrim for reliably handing claim-processing systems is their Amysis System Specialists.

The CIO, Gutierrez, preferred to outsource to the Perot System rather than the other larger companies, because

- Harvard Pilgrim used a health-care management system called Amisys, and Perot System has more Amisys System specialists than any other company in the world, so it can supply better services to solve the problems.
- Harvard Pilgrim had also hired consultants who come from Perot System, so they understood the customers' need better than other companies. On the other hand, Gutierrez found no time to make "Request for Proposal". So, Perot System was best choice for them.

(b)

Outsourcing has several disadvantages like loss of control, loss of experienced employees, risks of losing a competitive advantage. Gutierrez outsourced the supporting infrastructure of claim-processing, not the innovation dealing with new technologies. He needed experienced people, because,

- Harvard Pilgrim should have some level of control and expertise so that it did not become fully dependable to the Perot System.
- Data warehouse is a strategic and managerial asset of the business. Data mining techniques can be applied to data warehouse to learn about business performances and relationships with customers and business partners, which is unique to the Harvard Pilgrim. So, Gutierrez kept data warehouse experts with him for ensuring the progress of the business.
- E-commerce strategy integrates a number of core functions of Harvard Pilgrim, which was driven by the business objectives and needs. This strategy is involved in fundamental business changes with the changing new technology and provides possible future business models. So, Gutierrez could realize he would need his own experts in E-commerce strategy for obtaining competitive advantages.
- Gutierrez did not really on outsourcing the security policies because it protects critical and sensitive data during transmission, storage, and processing. The risks of the business highly depend on these critical and sensitive data.
- With the advances of technology, company's goals and requirements are changing. The success of the business depends on how quickly the company can adopt with the

changing world. So, Gutierrez had experts with him to handle technology process reengineering by them.

(c)

When Harvard Pilgrim was experiencing unprecedented loss, Gutierrez was brought in to solve the problem effectively in a crisis situation when the IT and claim processing department were constantly blaming each other for mishandling their responsibilities. After 2-weeks discussion, Gutierrez came to the decision of outsourcing the infrastructure (both IT department and claim processing). To handle driving innovation of the business and dealing with the outsource company; Gutierrez with his 40 people group was highly involved in all that the Perot system team did. This involvement maintained a higher level focus through project and management teams to achieve best possible outcome for the company.

Yes, even if outsourcing all the IS areas, CIO still have the following responsibilities-
- For monitoring the outsourced functionalities, outsource management teams should be formed comprising of people from the both organizations. CIO maintain relationship with external service providers and resolves the conflicts, monitor the change processes, and ensure that service level agreements are met.
- Whether or not activities of a company outsourced, CIO's responsibility includes to work with top management for updating business up-to-date, creating future vision and selling it, fostering change, shaping IT portfolio, etc.

(d)

Perot Systems had the expertise for handling claim processing under the management software Amysis. So, it can provide better services Harvard Pilgrim even if the employees remain the same:
- The Perot Systems had the ability to resolve the constant blaming to each other among the IT department and claim processing systems by setting up some proper guidelines.
- Amysis experts of Perot Systems could provide training to the existing employees of Harvard Pilgrim to help them effectively managing the claims.
- Perot Systems had the claim processing and technical expertise to improve and upgrade the existing systems.
- The Perot Systems executives were highly disciplined. Although the military-style approach of Perot Systems resulting a clash, the employees of Harvard Pilgrim tolerated different cultural practices by Perot System, who practised drug testing on staffs, paid off as the outsourcing deal prove beneficial.
- Harvard Pilgrim did not invest heavily in technology to accomplish the improvement.

(any of the 3 points above)

(e)

The Harvard Pilgrim made two types of outsourcing:

a) IT Outsourcing
- Daily maintenance and management of IT infrastructure—hardware, software, and telecommunications—of Harvard Pilgrim was outsourced to Perot Systems.
- Most IS staff became the employees of Perot Systems at stay at their desks.

b) Business processing Outsourcing

- The major business activity, claim processing, was outsourced to Perot Systems.
- The original business processes is changed to fit with processes of Perot System.
- Most claim processing IS staff became employees of Perot System.

(f)

I agree with the first statement, because IT is a large industry which demands the business executives to learn the detail technology to achieve competitive edge. Many executives don't have time to learn about new technology and apply them in business. In most cases, IT staff does not have sufficient combined expertise on business and IT to promote the business. Moreover, managing IT by the IT staff the executives need to put more attention on it, which ultimately de-track them from the business goals. So, the executives can outsource IT operations to the ESPs, who are experts in managing these technologies. Moreover, Outsourcing has the following benefits:
- No investment is needed.
- Improve IT efficiency.
- Reduced Operational costs.
- Share risks.
- Improve IS flexibility, and so on.

The disadvantages of outsourcing can be minimized, where IS department works as a broker for monitoring the outsourcing and handling driving innovation.

[Total   30 marks]

Question 2

There are various approached to integrate the system in a large organization. Discuss the differences in among these approaches. For each approach, search the Internet for an example of an organization which has used that approach to integrate its systems. Discuss why this organization uses that integration approach instead of the other two approaches.

Sample answer
Three main approaches to integration are:
- DBMS

- ERP system

- Middleware

Differences among these three approaches are:

	DBMS	ERP	Middleware
View	Data	Application	A third-party
Way of integration	System integrated through a common database	Applications are specifically designed to communicate each other	applications communicate with each other through third-party translation software
Application	A number of	A single vendor	A number of sources

Source	sources		

Example of above organizations:
There are many case studies available on Internet for each integration approaches.
Students can choose any case study as long as they specify for the specific approaches
were applicable for the company and identify the advantage and disadvantage of each
approaches for selection reason.

Integration approach	Organization name	Reason for choosing the approach
DBMS	Xerox – Implemented oracle/Unix to share HR information	**Advantage of DBMS:** • Data is consolidated to a single database • Be able to use existing application **Disadvantage of DBMS:** • Each application must write individual communication link with database • No process standardization **Reasons Xerox choose DBMS approach:** • Consolidation of HR information was the focus • DBMS approach allow to share information easily with different department/companies • No requirement for enterprise wide application integration
ERP	Colgate-Palmolive – Implemented SAP to improve productivity	**Advantage of ERP:** • Integrate business department and functions across organization. • Good consolidation of data • Provide streamlined and standardized process **Disadvantage of ERP:** • Large size and complex • Process are predefined – org. need to change to fit EP process **Reasons Colgate-Palmolive choose ERP approach:** • Wished to abandon legacy decentralized structure – the existing structures were too expensive to coordinate, slow to respond to market changes and constrained company growth • Aimed to have integrated business environment with standardized business processes • Other two methods will still be used for non-standardized legacy systems and processes
Middleware	Immuno Laboratories – Implemented middleware to connect between CRM system and newly purchased system	**Advantage of Middleware:** • Be able to use existing applications • Need to coordinate one communication layer between applications **Disadvantage of Middleware:** • No enterprise application integration • No process standardization **Reasons Immuno Laboratories chose Middleware approach:** • Wanted to keep using existing systems but wanted to pass

		the data between systems in the organization
		• Data from existing CRM system need to feed newly purchased system

Question 3

a) Read the article "When Failure Is not an Option" on the following URL:
    http://www.cio.com.au/index.php/id;421113260;fp;4;fpid;16

   Discuss in what ways AG Edwards manages their IT projects similar to the ones suggested in your prescribed text. Discuss if there are any management techniques used by AG Edwards that are not covered by the ones n your prescribed text.

                                                                                    [7 marks]

**The following steps suggested by AG Edwards are also discussed as part of the tip –
'***Foster discipline, planning, documentation and management***' in the prescribed text:**

- **5) Communicate new methodologies** to business users, and make sure they're on board with new processes and procedures. If they don't adopt them, you won't be successful.

- **7) Monitor and report on the progress of projects** to hold people accountable for completing projects successfully.

- **8) Encourage project managers to communicate better and more frequently** with project sponsors and stakeholders by evaluating them on the business value their projects provide rather than solely on whether their projects are completed on time and within budget.

(see section 'SIDEBAR: 8 Steps for Improving Project Management)
The authors of both materials discussed the importance of choosing a good methodology, monitoring and reporting the project progress, and finally encouraging good and regular communications between all project managers and stakeholders.

Although there are similarities in the points the authors have discussed above, there are also differences in their emphasis. For an example, in AG Edwards, besides using a good methodology, emphasis is also put into convincing the business users the importance/usefulness of it, thereby getting their support on it. This is not covered in the above tip in your prescribed text.

There are also techniques for improving project management used in AG Edwards which are additional to those that are suggested in chapter 10 of the prescribed text:

- **Ensure staff know how well or badly the company is performing. They must also realise the impact of that and which are the areas they can improve on.**

   1) Identify current project success rates and publish those metrics to your IT staff so they're aware of shortfalls.

- **Provide training for leaders and staff**

  3) Provide leadership training to all managers to boost their confidence, improve their credibility with the business and prepare them for the challenges that come up over the course of projects.

  4) Train staff in any new project management methodologies you're implementing.

- **Managers in a project are more likely to corporate and excel in their tasks if they have joint responsibility.**

  6) Foster joint accountability between project managers and functional managers by getting them to work together more closely on a daily basis.

You should explain the purpose and importance of each technique. Illustrate with example from the AG Edwards article.

b) It has been suggested that the largest office systems payoffs come from improving effectiveness (doing the right thing) as opposed to improving efficiency (doing things right). Which position do you agree with and why?   [7 marks]

You should agree with the statement.

Provide explanation for your position:
- An office system is usually one with multiple sub-systems/processes interconnected together. E.g. may be various SCM and ERP systems.

- An office system is built based on the business aim, strategy and working procedure of the company at the time the system is built.

- Over time, due to the change in the business environment, the way which the legacy office system is built may not be the best way to meet the business aim. Therefore by improving the efficiency of the legacy system based on the old working procedure, the amount of payoffs/benefits gained by the company may not be as much as that gained by restructuring the entire working procedure, thereby improving the effectiveness of the system.

- For example, a company's business aim may be to maintain high level of customer satisfaction. This company may also have a system that automates the orders made by the customers. In today's business environment, to meet the business aim, improving the efficiency of this system by using more efficient hardware (e.g. processors) or making the its source code more efficient may not give the company the largest payoff. The company may need to restructure the system, like introducing a CRM component into the ordering system to better meet the business aim, thus allowing the company to achieve greater payoff.

Question 4

a) Explain the following three technologies:
- Decision support systems (DSSs)
  (see prescribed text pp 427)
    - Computer-based systems
    - An aid to decision makers
    - Tackle ill-structured problems
    - Though direct interaction (with the decision makers)
    - With data and analysis models

- Executive information systems (EISs)
  (see prescribed text pp 435 - 437)
    - a form of DSS
    - used by executives
    - provides access to (mostly) summary performance data
    - display data/information in user-friendly fashion, e.g. graphics, summarised tables, etc
    - has minimum of analysis for modeling beyond the capability to drill down in summary data to examine components which executives would like to have greatly focus on.

- Expert systems (ESs)   [3 marks]
  (see prescribed text pp 440)
    - A computer-based system
    - Uses technologies (artificial intelligence) which attempt to mimic human senses and emulate certain aspects of human behavior
    - An automated analysis or problem-solving model that deals with problems the way an expert would make use of knowledge to reason out an answer based on characteristics of the problem.

b) Compare and contrast the similarities and differences between these three
   technologies?   [6 marks]

Similarities:
- All 3 are computer-based systems that assist their users in decision making.
- The architectures of the 3 technologies have similar components:
    - *Dialog component/interface* – for the user to interact with the system easily
    - *data component* – stores/organises the data required by the system in some structures in order for this data to be accessed and manipulated easily
    - *model/knowledge component* – stores the models or the expert-emulating algorithms to process the data and to present the results/answers in the user-desired form.

Differences:

- DSS can be perceived as a more general terminology for any computer-based system which assists its users in decision-making. EIS and ES each has more specific characteristics of its own and specialised in more specific tasks.
- *Data analysis* – the capabilities to analyse data of EIS and ES is different. The main task of EIS is to summarise the data and present the data into some forms which are easily for the executives to understand. If further analysis is needed by the executives, then EIS can expand areas which are chosen by the executives. For ES, the data analysis capabilities are relatively more advanced.
- *Decision making* – For EIS, the final decision or solution is made by the user. As for ES, depending on the Degree of Expertise, decision may be made by the user or by the system based on the several solutions derived by it.
- Compared to EIS, ES is generally more complex and expensive to implement.

c) For each of these technologies, provide an example of a company that uses that technology and briefly explain how it supports the company in its knowledge-based work.   [4 marks]

Based on the references you have sourced for, the examples of an existing company using each technology may vary.

Question 5

a) Explain the processes of building Human Capital and building Structural Capital.
                                                                                                    [3 marks]
Building Human Capital. Briefly explain how to:
(from pp 532 – 537 of prescribed text)
- Create it
- Capture it
- Absorb it, &
- Reuse it

Building Structual Capital. Briefly explain how to perform:
(from pp 537 – 540 of prescribed text)
- Knowledge organization & categorization
- Knowledge distribution & access

b) Wave is a new tool developed by Google. A video on the demo of this tool is shown on http://googlesystem.blogspot.com/2009/05/google-wave.html.

In comparison to traditional email applications, discuss how Google Wave help in supporting knowledge management in a business organization.   [17 marks]

- Students should briefly explain that knowledge management in a business organization mainly involves creating (1) human capital, (2) structural capital and (3) customer capital. Google Wave could assist in human capital and structural capital

but less in customer capital since this deals brand recognition and it better dealt with through marketing activities and data mining systems.

Human capital
- Students should briefly define what is Human capital – the form of intellectual capital consists of knowledge, skills and innovativeness of employees as well as company values, culture, and philosophy.

- Students should briefly discuss some of the difficulties in building Human capital which Google Wave could help, e.g.:
  - It is difficult to accurately extract tacit knowledge as such knowledge is hard to express.
  - It may be difficult to identify who are the knowledge brokers.

- Students should discuss how Google Wave can assist in solving the difficulties stated in the dot points above:
  - One of the main strategies to extract tacit knowledge is by encouraging less experienced employees to collaborate with more experienced ones on an ongoing basis. Through such collaborations, the less experienced employees can observe and learn from the more experienced ones, thereby enable tacit knowledge to be extracted. Google Wave has several features which are more better for supporting collaboration, which are:
    - It can facilitates communication like instant messaging
    - It enables messaging among more than 2 people
    - It has features that enable private messaging even in team-based collaboration activity
    - It enables very complex concepts to be expressed more easily in comparison to traditional email. This is because besides text, it can easily incorporate the use of images, video, and various types of documents in the communication. It also allows real-time collaboration (i.e. joint editing) on the same document.

  - In terms of Google Wave assisting in dealing with difficulties in identifying who are the knowledge brokers, it enables more possibilities of setting up collaborating teams even if people were based in different venues and countries. Examples of features in Wave that enables this are:
    - It is compatible with PDAs and mobile devices (e.g. iPhones).
    - It supports multiple languages
  Google Wave provides management another avenue to monitor the success of various teams. Through this, management can better identify who are the knowledge brokers.

Structural capital
- Students should briefly define what is structural capital – it is the capabilities embedded in hardware, software, databases, organizational structure, patents and trademarks that support employees as well as relationships with customers.

- Students should briefly discuss some of the difficulties in building structural capital which Google Wave could help, e.g.:
  - It is difficult to properly organize the tacit knowledge (especially the complex concepts/procedures) extracted when building human capital.
  - It is difficult to transfer such knowledge to people who are not part of the team.

- Students should discuss how Google Wave can assist in solving the difficulties stated in the dot points above:
  - Google Wave has several features which allow easier organization of messages captured through communication of collaboration team members:
    - It enables original messages to be broken down more easily.
    - It enables the waves to be organized in various structures, e.g. folders, wiki using tags, etc.
    - Easy tracking of versions of collaborated documents
    - Easy merging of versions of collaborated documents
  - Google Wave has several features which facilitates the transfer/understanding of messages captured through communication of collaboration team members:
    - Playback features of the sequences of communication among team members.
    - Playback features of the sequences of real-time collaboration (i.e. joint editing) of documents among team members.

(*Hint*: McNurlin and Sprague, Chapter 14.)

[Total   20 marks]