The University of Melbourne
Department of Information Systems

Individual Assignment Cover Sheet

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ISYS90048 Information Technology Infrastructure

Assignment A01

The Case Study of Hospital Information Support System (HISS)

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1. Introduction

This report intends to analyze the HISS case based on IT governance. The first question to be addressed is the framework chosen to analyze the case. The framework chosen should ensure that the IT service analyzed could be used effectively and efficiently. ITIL framework will be used to analyze the evidences due to its widely successful rate for IT service management worldwide. In particular, ITIL v3 is the one to be used. The analysis then will be generated as findings/assessment. Some recommendations will be described in order to address the issues, based on the best practice according to the framework. The recommendations will be made only for those which is does not conform findings. There is no other framework besides ITIL will be used in this report.

1.1 Report Objectives

The report will analyze the HISS project in a public hospital, where the project objective is to provide an IT service to electronically transferring order and reporting the results from the wards to the hospital support services. The analysis about this project will use ITIL framework. The evidences will be collected from the article and analyze against the best practice based on the framework. Some recommendations then will be generated, which are relevant to the ICT infrastructure used in this project.

2. Background

This report describes the pilot project of Hospital Information Support System (HISS) in a government hospital in February 1989. This system intends to provide both healthcare officials and managers in the hospital with a real-time operational service. The information gathered about this project is collected from the ward, the laboratory, and implementation team. This project was over budget and considered as the least successful among other five similar projects in UK.

3. Analysis

In part, evidences found from the article will be analyzed, using an IT framework. Processes within the framework will be used as guidance, and the analysis would be made by comparing the evidence with activity suggested by the framework. The analysis made, which could be both positive and negative, will be classified into three categories: conform, does not conform, and partially conform.

3.1 Choice of Framework

ITIL framework is used to analyze the case in this report. There are five cores in ITIL: service strategy, service design, service transition, service operation, and continual service improvement. Moreover, there are several reasons in choosing ITIL as a framework in this case:

- ITIL is adopted worldwide for IT service management and gives practical services guidance for business, therefore make it more productive, efficient, and effective.

- ITIL helps people in organization to be more competent and capable thus increasing their productivity.
- ITIL framework is adaptive with the changing world of technology.
- Ameliorate customer's satisfaction with IT services.

3.2 Detailed Analysis

Guidelines / Criteria	Evidence	Assessment / Findings
1. Strategy Management for IT Services should asses the capability of service vendor and their offering in order to deliver best service to costumer. To do the assessment, some activity can be done, such as: asses the service provider's values in the market, identify the deliverables, and implement the strategic action.	**Evidence 1:** "Delta had been chosen by default (as no other software company believed the HISS project to be deliverable)" - Page 1, par. 1	**Finding 1:** Refer to the evidence, Delta is chosen by default. The management did not asses its capability in delivering the good quality service, thus not appropriate with the criteria in strategy management for IT services. **(does not conform)**
2. Service Portfolio Management focus on how to manage the service portfolio in order to ensure that the service provider will provide the services that is align with organization's strategic plan. The service portfolio contains services list to be delivered by service provider to the costumer.	**Evidence 2:** "Delta had been chosen by default (as no other software company believed the HISS project to be deliverable)" – Page 1, par. 1	**Finding 2:** In this case, service portfolio manager did not evaluating the service portfolio when make a decision about the service provider. **(does not conform)**
3. Demand Management has an objective to ensure that the services delivered by the service provider are eligible with customer's demand. In this process, there are necessary to interpret, predict, and affecting costumer's demand.	**Evidence 3a:** "Delta had been chosen by default (as no other software company believed the HISS project to be deliverable)" Page 1, par 1	**Finding 3a:** In choosing Delta as the service provider, the management team did not considering Delta's track record in fulfilling customer's demand in their past experience.
	Evidence 3b: "the initial pilot failed to reveal all the technical issues that it was supposed to" – page 6, par. 7 "Once the system went live it very soon became apparent that neither the ward staff nor the laboratory staff were satisfied with it, and that little substantive use of the system was being made…..those who have to grapple with the unfriendly user-interface software that Delta has	**Finding 3b:** From these evidences, it can be conclude that Delta was unable to meet the demand from the organization through their new implemented system

	devised." – page 3, par. 6	
	Evidence 3c: "With the basic generic ORR system complete Delta then commenced a data collection phase in order to discover precisely how the haematology laboratory and specialist ward functioned and the nature of the information exchange processes which linked them. As a refined version of the ORR system was developed so it was explained to a user group, which consisted of relevant hospital personnel (doctors, nurses and speciality managers)" – page 5, par. 4	**Finding 3c:** This evidence shows that Delta does an approach to gather user's demand by data collection.
	Evidence 3d: "Contact between us and the project team through regular review meetings, reinforced by almost daily ad hoc communications, led to the solution or partial resolution of all these difficulties over a period of nine months: the software interface was made more reliable, the sample bag was redesigned and one of the light pens was replaced by what we considered to be a more reliable (laser gun) technology." – page 3, par 6	**Finding 3d:** This evidence shows that Delta does an approach to interpret customer demand by communicating their needs through some meetings and as the result, there are some improvement done in the system and its infrastructure. **(partially conform)**
4. Business Relationship Management has an objective to maintain a positive relationship with customer (http://wiki.en.it-processmaps.com, 2013). In this process, manager should identify what customer needs and meet those needs.	**Evidence 4:** "The development of the system was extremely problematic, with the project team refusing to acknowledge our requirements or listen to our suggestions." – page 3, par 6	**Finding 4:** from this evidence, it is clear that the developer did not listen to their requirements or suggestion thus they have bad relationship. Therefore, it can be conclude that the business and relationship management process does not conform in this case. **(does not conform)**
5. Project Management is an approach to coordinating resources to meet the objectives of the IT implementation which appropriate with the cost, quality, and time estimation based on user requirement. This process also has responsibility to resolve conflict.	**Evidence 5a:** "After several delays the pilot went live" – page 1, par 2	**Finding 5a:** this evidence shows that project planning as one sub-process in project management is not execute well. Therefore, the pilot project went below schedule. **(does not conform)**
	Evidence 5b: "the initial pilot failed to reveal all the technical issues that it was supposed to"	**Finding 5b:** Project control as one of the sub-processes in project management is not

		executed well in this implementation, where they supposed to monitor all the activity within the system and prevent the failure. **(does not conform)**
6. Application Development is the activity to ensure the availability of IT services, including its applications and systems.	**Evidence 6a:** "…not only was the system slow, but it was often impossible to move the cursor or to change screens." – page 1, par. 2	**Finding 6a:** Application development process should ensure that the system implemented supposed to be available for user to use, but based on the evidence, the application was imperfect, thus affecting its availability. **(does not conform)**
	Evidence 6b: "software interface that linked the laboratory system ('labsys') to HISS was not functioning properly: test requests input on the ward sometimes failed to register in the laboratory, and the system would occasionally not accept test results" – page 3, par. 6	**Finding 6b:** The evidence shows the failure in the system, therefore indicating the unavailable of the system. **(does not conform)**
	Evidence 6c: "This meant that a separate major software development task had to be undertaken to produce an interface package that would allow the Delta ORR system and UNIX database to communicate with the labsys. A clause in the contract with Delta specifically stated that all interface software was our responsibility and we thus recruited our own software developers to undertake this and other interface tasks" – page 5, par.5	**Finding 6c:** This evidence shows the positive actions taken by implementation team to create interface software to ensure that the current system can communicate with the new systems. **(conform)**
7. Release and Deployment Management aims to plan, schedule and control the movement of releases to test and live environments (http://wiki.en.it-processmaps.com, 2013)	**Evidence 7a:** "…the system was fundamentally unworkable, and the pilot was soon suspended for ten days so that alterations could be made." – page 1, par. 2	**Finding 7a:** Release management supposed to give support before and during the deployment process, ensure that the process can function smoothly and error-free. **(does not conform)**
	Evidence 7b: "Our clinical nurse specialist, who as the most senior nurse was to have most to do with the pilot, was a little nervous as the training she had	**Finding 7b:** This evidence shows that based on one of the sub process in release and deployment management module, which is release

	received had been on a system different from that being implemented in haematology." – page 1, par 2 "Only doctors are allowed to accept test results, and they are not prepared to log-in, trawl through between one and three screens of information per patient, and then engage a further lengthy procedure to show that they have accepted the test results." – page 2, par. 5	deployment, the training for user which is essential is not adequate. Therefore, the users have not feel ready enough to work with this new system. **(does not conform)**
	Evidence 7c: "Our clinical nurse specialist, who as the most senior nurse was to have most to do with the pilot, was a little nervous as the training she had received had been on a system different from that being implemented in haematology." – page 1, par 2. "Only doctors are allowed to accept test results, and they are not prepared to log-in, trawl through between one and three screens of information per patient, and then engage a further lengthy procedure to show that they have accepted the test results" – page 2, par. 5	**Finding 7c:** On the release and deployment management, there is a release deployment process, which one of its objectives is to do user training. From the evidence, it can be conclude that the users have not get the adequate training to prepare them in using the system. **(does not conform)**
8. Service Validation and Testing purpose is to ensure that the IT service will meet user requirements and the IT operations can handle the new system.	**Evidence 8:** "…not only was the system slow, but it was often impossible to move the cursor or to change screens." – page 1, par 2 "software interface that linked the laboratory system ('labsys') to HISS was not functioning properly: test requests input on the ward sometimes failed to register in the laboratory, and the system would occasionally not accept test results" – page 3, par 6	**Finding 8:** Before launching a new system, developer should do the initial testing to ensure that there is no problem occurred in the system. This evidence shows that the developer did not do proper testing before launch the system. **(does not conform)**
9. Incident Management is the approach to managing the incident lifecycle.	**Evidence 9:** "…the project team's helpdesk did their best to proffer useful advice…" – page 1, par. 2	**Finding 9:** This evidence shows that the team did managing the incident during the implementation well, thus this is appropriate with the incident management process. **(conform)**

10. Problem Management is the approach to managing the problem lifecycle.	**Evidence 10a:** "After several delays the pilot went live" – page 1, par. 2 "…the system was fundamentally unworkable, and the pilot was soon suspended for ten days so that alterations could be made." - – page 1, par. 2	**Finding 10a:** One of the sub processes in problem management is to prevent problem from happening. From the evidence, it can be conclude that problem manager did not do proper risk estimation and prepare mitigation.
	Evidence 10b: "…the project team's helpdesk did their best to proffer useful advice…" – page 1, par. 2	**Finding 10b:** Even though there are many problems occur during the implementation, but the helpdesk team does their best to overcome the problems arise. **(partially conform)**
11. IT Operations Control ensures the availability of IT services and its infrastructures.	**Evidence 11:** "Not only does a single error in the keying-in process result in the printer refusing to react, but it is clear that the bar code labels themselves are too thick for the printer to reliably handle" – page 2, par 1	**Evidence 11:** Printing is one of the activities in the IT operations control. By having failure in printing, there is clear that this process is not well carried out by IT Operations Manager. **(does not conform)**
12. Technical Management offer technical support needed in the system implementation.	**Evidence 12a:** "…the project team's helpdesk did their best to proffer useful advice…" - page 1, par 2.	**Evidence 12a:** This evidence shows that the helpdesk did their best in order to provide support during the implementation.
	Evidence 12b: "We nevertheless recognize that some senior members of our team have not adequately performed, and that their replacement by more competent individuals has not occurred in time to save the HISS project as a whole" – page 6, par. 7	**Evidence 12b:** From the evidence, it is clear that some members are not qualified for this project. **(partially conform)**

4. Key Findings and Recommendations

4.1 Key Findings

4.1.1. The service provider chosen not by its capability and experience.

(Related to evidence and finding no. 1, 2, 3a, 3b, 12b)

Based on Service Strategy process in ITIL framework, this process aims to identify customer's needs and how to meet their needs. To fulfill it, organization may assign a service provider,

which can deliver its services according with users demand. According to evidences 1, 2, 3a, and 3b, the service provider appointed, Delta, were chosen by default. They did not asses Delta's capabilities nor do a deep check on its portfolio. Moreover, their staff consider as unqualified in this project (evidence 13b).

4.1.2. The system developed is unreliable.

(Related to evidence and finding no. 5a, 5b, 6a, 6b, 7a, 8, 10a, 11)

From all the information collected from stakeholders, all of them are assure that this problem did not run well. At first, this system intends to make the process be more efficient, and provide real time information to healthcare officers and managers. But as the project went on, user found that there are a lot of problems occur in this system. Instead of making the targeted process become more efficient, it increases the process time. This condition also gets worse by several technical errors such as: slow system response, slow printing process, and incorrect lab result.

4.1.3. Users do not get enough training to prepare them in using the system.

(Related to evidence and finding no. 7b and 7c)

Before implementing a new system, the user should get proper trainings or preparations to use it. Therefore, they can handle it and still maintain their productivity. In this case, users are not well prepared thus make them nervous in operating the system. As an addition, this condition also encourages them to refuse the new system and believe that this improvement is not necessary.

4.2 Recommendations

Based on the key findings above, here are some recommendations listed respectively:

4.2.1 It is recommended that the managers in the organization should carefully asses the service provider's offer and capability, check their portfolio, and their capacity in order to address the user demands.

Finding the right service provider is a crucial stage since they will handle the system from the beginning until the end. This stage is included in ITIL Service Strategy. Firstly, define the requirement. After that, service providers can be asses based on their offer and capability in meet those requirements. Furthermore, service provider's portfolio also need to be checked to ensure that they their service is appropriate with requirement.

4.2.2 It is recommended that all the stakeholders should monitoring and controlling the service transition stage in order to address any problem that may disrupt the system implementation.

According to ITIL framework, there are several steps in implementing Service Transition process. Firstly, the change manager should prepare the system change to be implemented with the lowest probability of disruption. Secondly, the new system should be introduced to the current system used. After that Project Manager should coordinating all resources needed to deploy the system according to the project plan. The application developer then develops the system that is available in providing the IT services needed. Next step is to release and deploy the system, which the system is supposed to be ensured for error-free before being released. The system released then being tested and verified whether it meets the customer demands. The last step is to share the knowledge about the new system in the organization through a method such as training. All these stages are need to be carefully carried out in order to successfully implement a new system.

4.2.3 It is recommended that user should get sufficient training in order to gain knowledge and readiness to address the new system

During the system deployment, there is a phase where user should get the training. This training is aimed to prepare them in using the new system. As an addition, getting the adequate knowledge about the system will help user in handle it, thus may increasing their capability and productivity in the organization. Moreover, in this stage user can get more knowledge from documentation compiled by the release team.

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