ICT SERVICE MANAGEMENT

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(9u00 – 13u00, open book)

Question 1

The Power of a Web Server

A very simple model for the behavior of a web server gives the following expression for the response time *R* in function of the arrival rate (which is in this case also the throughput) *X:*

$$R = \frac{S}{1 - SX}$$

where S is the *speed* of the web server.

Questions

a. *Determine the power of the web server in the case that the Business value of the throughput and the response time are equally important, and find the value of X for which the power is optimal ?*

b. *Perform the same analysis if the Business value of the throughput is estimated to be 10 times worth the Business value of the response time. Discuss the results.*

Question 2

The perceived value of a CRM system

The idea behind Customer Relationship Management (**CRM**) seems simple enough: to centralize and share throughout the firm information about customers in order to maximize sales and profitability. For a variety of reasons – most having to do with implementation issues – achieving these objectives proves difficult.

Consider the case of Wallace, Welch & Willingham (WWW ☺), a Florida-based insurance company. The firm decided to purchase a contemporary CRM system after its existing patchwork of file cards and accounting packages failed to produce a coherent view of the customer. The job of implementing went to the IT Director, ms. Kirstin Johnson. The firm has two lines of business: commercial and residential insurance, and a 20-persons sales force. Each of the sales reps kept their own customer information on index cards, and sale information was placed on their personal spreadsheets and then uploaded to an accounting application when sales were finally booked and payments received. Sales erps were paid on commission and received a percentage of the annual insurance revenue.

When sales people left the firm, they took very often the customer information with them, or just left it in their desks. The sales manager would assign a few sale reps to search through the empty desks of departed employees to find potential "workable leads".

In the search for a vendor, Johnson faced two barriers: finding the right vendor and understanding the costs before committing to a single vendor. She spent several weeks interviewing CRM users in other firms to identify which vendors were most respected.

Cost was another matter: it was painfully difficult to figure out how much licensing a system would really cost in day-to-day use. There were per-seat models, pay-for-use models, and hosted "on demand" solutions where you paid by the month depending on how much your sales force uses the system. She inally went for the "on demand" solution, because it did not involve installing any new software and hardware at WWW, and seemed the least expensive way to go. The main vendors were Sage CRM SalesLogix and salesforce.com Ultimately, she chose SalesLogix because it allowed her a choice: she could start with an on-demand, online model and then later install the system on in-house servers if that became less expensive and more suitable.

Getting buy-in from the sales force was the most difficult barrier to implementation. For starters, she shut down the ability of sales people to use the accounting system for entering customer information, and forced them to enter customer data and establish files for all their customers on the SalesLogix system. If sales people did not file their customer prospecting information on the new system, it was assumed they were not doing their jobs, and this would show up in bi-annual performance reviews. Her logic was "if there's no driving force behind the system, people can just ignore it."

Staff resistance spring up immediately. Sales reps worried their information would be lost on another firm's Web site; they felt the system could not handle all the information they wanted to put it in; many felt the system would "blow-up" someday if SalesLogix went out of business, or was purchased by another firm. The firm's largest revenue producing rep refused to use the new system. Instead, he printed out customer notes using a word processor and distributed them to other sales reps. He

created some kind of his own paper-based CRM! When other reps saw this, they asked “Why should I use the new system ?” Everyone wanted to continue doing their own thing…

Recognizing that sales reps don’t like to take orders from the IT department, and that sales reps in many firms are the major producers of revenue that no one wants to disturb, Johnson called out to the sales manager for help. The sales manager was sympathetic, and told the rebellion rep to either use the SalesLogix system or face severe consequences. After that, the leading revenue-producing sales rep started usig the system, and in fact became its champion supporter.

After a year of training and educating, the implementation effort finally achieved its ambition of centralizing customer information, and creating a platform where the information could be shared, and where it was protected from (potentially high) turnover in the sales force. Customer information was, for the first time, information that belonged to the firm, not the sales reps. This in itself was quite a revolution.

But other worries remain for Johnson and the firm. As system use goes up, so do costs, andit has been difficult to put a hard number on the benefits of information integration. For most enterprise implementations, the cost of implementing is typically two to three times the cost of the software and hardware alone. Once initial implementation is achieved, it does not end, but instead there needs to be ongoing training and education effort to explain new features and to ensure real value is produced for the firm. There are also concerns about vendors: what if the chosen vendor is not financially stable and you need to switch to another ? The switching costs of enterprise software can be huge. In the long run, WWW would like to integrate the information in SalesLogix system with the sales information in the older financial system, but there seems to be no inexpensive way to do it…

(Adapted from Beasty C., “Barriers to CRM success”, CRM Magazine 2006; Patton S., “Customer Service: Answering the Call”, CIO Magazine 2006 and Donlan B., “Anatomy of a Successful CRM implementation”, CIOupdate.com 2005)

Questions

a) *Suppose you are the big boss of WWW ? How would you have managed this CRM project at large ?*
b) *What do you think the metrics for CRM success should be in a firm like this ? What are some so-called intangibles that you can invoke to get a clearer view on the actual return of the CRM system ?*
c) *Why were the sales reps reluctant to share customer information with other sales reps. How would you change the sales rep compensation plan to support more effective use of the CRM system ?*

Question 3

Capacity/Performance Evaluation of a Web Server

Consider a Web Server receives 6 requests per second. The maximum number of requests in the server is 3, so all requests that arrive and find three requests being processed are rejected. The measured throughput of the server is dependent on the number of requests in the server, as follows:

Number of requests	***Throughput (requests/sec)***
0	0
1	3
2	6
3	9

Questions

a) Make a drawing of the state transition graph for the behavior of this system.
b) What is the probability of a request being rejected ?
c) What is the effective throughput of this system ?
d) What is the average time that a request spends in this system ?

Question 4

A KBC Question…

Explain clearly the role of ICT-infrastructure in the (Eastern) Europe ICT-Strategy of KBC Banking/Insurance. Match their strategy with the frameworks of Keen and Weil/Broadbent. Indicate some of the major risks that KBC may encounter in rolling out their strategy ?

Question 5

Choosing for outsourcing ?

Bolton Metro is a local authority in the North-West of England. It employs 12000 staff and has a revenue budget of 300 million Euro. It has a central ICT unit of 70 staff managed as a business unit within the finance department. Bolton Metro is politically stable, has a strong tradition of openness and consensus management and a policy to devolve authority away from the centre to the operating departments. By 2005 Bolton Metro found itself with the central ICT unit offering traditional services, based on an IBM mainframe. The departments have their own ICT staff for the development of local systems, and the control of their use of PCs and workstations. The total ICT-budget is about 9 million Euro, with about two-thirds accounted for by the central ICT unit and one-third by the departments.
Paradoxically, whereas the new systems are being built as departmental systems, demand on the exting mainframe systems is still growing.

A 2006 consulting study on the competitiveness of the central ICT unit confirmed that the central ICT unit offered a good-quality service, but was at risk under competitive tendering. This created a situation that was potentially difficult for the council members of Bolton Metro, as their policy is one of no privatization. Soundings of members and staff were taken and a decision reached to explore the potential benefits of outsourcing.

Questions

a. *How do you judge the centralisation/decentralisation policy of Bolton Metro ?*
b. *How feasible is outsourcing, and what areas would you consider advisable for outsourcing in this case ?*
c. *What are the overall risks in outsourcing for Bolton Metro, and how can these risks be covered in the outsourcing contract ?*

Question 6

Version Management for an ICT Service ?

Consider the following list of deltas for a software service, called EORDER. The baseline service was produced with the following makefile

```
EORDER      :   Oform.o     Oprocess.o
                linkit  Oform.o     Oprocess.o      EORDER
Oform.o     :   Oform.c     Odata.h
                compile     Oform.c
Oprocess.o  :   Oprocess.c  Odata.h
                compile     Oprocess.c
```

on a LINUX platform.

Delta1:	Changes for EURO-support in data.h and Oform.c
Delta2:	Correct some defects in Oform.c
Delta3:	Create a Windows Vista variant of EORDER, sharing the same Odata.h
Delta4:	Correct some defects in Oprocess.c for the Windows Vista variant
Delta5:	Include new functionality in Oprocess.c

Develop a clear description of the combined product/version space. Motivate your choice for a product first versus version first or intertwined representation.