

INFORMATION SYSTEMS OUTSOURCING VERSUS SYSTEMS DEVELOPMENT: A COMPARATIVE STUDY OF THE PREFERRED CHOICES OF THE DIFFERENT BANKS IN NAKURU TOWN

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Abstract

Information systems outsourcing and Information systems development are two options available to most banks operating at this age of technology. Outsourcing may not be a new thing in organizations. In the ancient Roman Empire, tax collection was outsourced. With the emergence of highly developed technology, organizations have the option to use their own experts; systems analysts, systems designers and programmers and systems administrators, who are regularly trained to keep pace with the dynamic technology or make an arrangement with an external entity for the provision of goods and services to supplement or replace internal efforts. This study sought to find out why the cases are different: to reveal the general underlying difference which generates or allows such a variation. The target population in this study was banks operating in Nakuru Town, Kenya. The research instruments were questionnaires that were administered to a sample frame consisting of systems users (employees), experts and the managers. Interview schedules were also used. Chi square method of data analysis was used. Like cases are treated alike, and different cases are treated differently; the extent of difference determined how differently the two cases were treated. The findings of the study indicate that Information Systems outsourcing is favoured by a majority of banks in Kenya and this is informed by the availability of competent providers of this core business and the tremendous cost of staff training and retention.

Key words: Information, systems, outsourcing, programmers, designers, analysts

1 Introduction

1.1 Information Systems Development

Information Systems Development (ISD) is “a change process taken with respect to object systems in a set of environments by a development group using *tools* and an organized collection of techniques collectively referred to as a “method” to achieve or maintain some objectives” (Welke 1981; Lytinen 1987). ISD is understood to include development of both manual and computerized parts of an object system. An IS can therefore include both manual and computer-supported parts. The scope of this research dealt with Computer Based Information Systems (CBIS) development in the banking sector in Kenya.

To manage this, a number of system development life cycle (SDLC) models have been created: waterfall, fountain, spiral, build and fix, rapid prototyping, incremental, and synchronize and stabilize. The oldest of these, and the best known, is the waterfall: a sequence of stages in which the output of each stage becomes the input for the next. These stages can be characterized and divided up in different ways, including the following:

- (i) Project planning, feasibility study: Establishes a high-level view of the intended project and determines its goals.
- (ii) Systems analysis, requirements definition: Refines project goals into defined functions and operation of the intended application. Analyzes end-user information needs.
- (iii) Systems design: Describes desired features and operations in detail, including screen layouts, business rules, process diagrams, pseudocode and other documentation.
- (iv) Implementation: The real code is written here.
- (v) Integration and testing: Brings all the pieces together into a special testing environment, then checks for errors, bugs and interoperability.
- (vi) Acceptance, installation, deployment: The final stage of initial development, where the software is put into production and runs actual business.
- (vii) Maintenance: What happens during the rest of the software's life: changes, correction, additions, moves to a different computing platform and more. This, the least glamorous and perhaps most important step of all, goes on seemingly forever.

The waterfall is a methodology commonly used, under the reference Systems Development Life Cycle (SDLC) and it describes the process for building information systems, intended to develop information systems in a very deliberate, structured and methodical way, reiterating each stage of the life cycle. The systems development life cycle, according to Elliott and Strachan and Radford (2004), "originated in the 1960's, to develop large scale functional business systems in an age of large scale business conglomerates. Information systems activities revolved around heavy data processing and number crunching routines

1.2 Information Systems (IS) Outsourcing

Information systems (IS) outsourcing on the means that the physical and/or human resources related to an organisation's information technologies (IT) are going to be provided and/or managed by an external specialised supplier. This has been applied by many other organisations in Kenya even in non technical areas as cleaning or staff transport. In all, the situation can be temporary or permanent. IS outsourcing can be traced back to 1963 when Ross Perot and his company electronic data systems (EDS) signed an agreement with Blue Cross for the handling of its data processing services (Hirschheim and Dibbern, 2002, p. 5). IS outsourcing became popular in the 1990s, after the spread of the success achieved by Eastman Kodak with the outsourcing of its IS (Loh and Venkatraman, 1992). The major areas of outsourcing according to Fish and Seydel (2006) are applications development, applications

management, data center operations, PC acquisition, PC maintenance, systems development, systems maintenance, telecommunications/LAN, and IT project management.

Outsourcing has spread further from its initial start in software development to include the full complement of IS activities. Computer Economics, Inc. (2008) found significant use in the following activities: application development, application maintenance, web site or e-commerce systems, disaster recovery services, data centre operations, data network operations, voice network operations, help desk, IS security, desktop support, and database administration. This covers virtually the entire array of information and telecommunications services.

1.3 The Banking Industry

As the banks continue to compete and reshape as a result of the economic and industry activities around the world, many of them are dealing with large-scale systems integration, conversions and upgrades. The major focus on improving the bottom line and driving earnings to profitability through cost reduction, as well as continued industry consolidation and reorganization, means putting IS systems in place that can be most competitive. As this level of systems integration is massive, the banking industry can choose to outsource or develop to utilize repeatable processes and avoid massive hiring. But as institutions determine if outsourcing or developing is the right fit and evaluate other available options, bank executives should be cognisant of trends in IS like price, suppliers (vendors) and application software.

Outsourcing of IS services has grown significantly over many years, reaching \$150 billion industry in 2004 (Hall and Liedtka, 2005). The industry continues to grow, rising 8.1 percent in 2008 (Gartner, 2007).

2 Research Strategy

The target population of this study was all banks in Kenya and the sample population was all the banks in Nakuru town. Nakuru town comprises of 25 banks (cf 3.0). The sample population was arrived at through purposive sampling. The researchers being residents of Nakuru town have knowledge of the banks found in the town. In each of the banks one respondent who is a systems administrator was selected through purposive sampling. Therefore 25 respondents were drawn to constitute the sample. The researchers visited the banks and requested the bank managers to introduce them to the systems administrator. The questionnaire was then given to the systems administrators to fill in. Filled questionnaires were collected after three days.

3 Results

The data obtained in the study have been analysed using the SPSS 14.0 software for Windows. Bank employees interviewed represent the knowledge workers whose contribution in either acquisition or development of systems is significant. (See Table 1):

Table 1: Licensed commercial banks in Nakuru

ABC Bank (Kenya)	Commercial Bank of Africa	Equity Bank	Standard Chartered Kenya
Bank of Africa	Consolidated Bank of Kenya	Trans National Bank Kenya	K-Rep Bank
Bank of Baroda	Cooperative Bank of Kenya	Fina Bank	I&M Bank
Bank of India	National Bank of Kenya	First Community Bank	Chase Bank (Kenya)
Barclays Bank	Credit Bank	Family Bank	Ecobank
CFC Stanbic Bank	Kenya Commercial Bank	NIC Bank	Jamii Bora Bank
Diamond Trust bank			

Source: Wikipedia

Table 2: Who Maintains Computer Hardware in the bank?

	Value	Count	Percent	
Valid Values	1	Internal technician	16	64.0%
	2	External technician	9	36.0%

From Table 2 above out of the 25 banks in Nakuru, 9 only would engage the services of external personnel to maintain their computer hardware. The rest of the banks (16) preferred internal technicians. The security and the access of the systems was given as the main reason for the choice of internal technicians. Cost of the maintenance did not seem to be an issue at this particular stage. Table 3 explains why permanent staff for hardware maintenance is a plausible option. 52% of the population would do the maintenance weekly as compared to those that would do it "as and when need arises" who are a paltry 8.0%.

On matters of software acquisition (table 4), the option between outsourcing and development by the banks was more inclined to one area, 86% would outsource this service from vendors because of lower cost that they offer (52%) and availability of programmers (20%). Those who prefer developing their systems internally cited the ability of the end users to understand their requirements and therefore develop systems that would meet the specific needs of the bank.

The research sought to find out the frequency of software maintenance in (table 6) and the results plus the explanation seem to borrow from what informs hardware and therefore the need to have systems users who have an understanding of the software they use. 84% of the population maintains their software daily, in real-time, while a small population of 12% and 4% do so in a weekly and a monthly basis respectively. There were no particular reasons for the latter other than the confidence that that their systems are very secure. The research could not establish the validity of this self assurance.

Table 3: Interval of Maintenance

		Value	Count	Percent
N	Valid	25		
	Missing	0		
Central Tendency and Dispersion	Mean	1.76		
Labelled Values	1	Weekly	13	52.0%
	2	Bi-monthly	7	28.0%
	3	once Monthly	3	12.0%
	4	As and when needed	2	8.0%

Table 4: Method of Software acquisition

Value	Count	Percent
Internal Development	4	16.0%
External Procurement	21	84.0%

Table 5: Reasons explaining the choice in table 4

		Value	Count	Percent
Central Tendency and Dispersion	Mean	1.76		
Labelled Values	1	Lower cost	13	52.0%
	2	Availability of programmers	5	20.0%
	3	Understanding of Internal Systems Requirements	7	28.0%

Table 6: Frequency of Software Maintenance

		Value	Count	Percent
Central Tendency and Dispersion	Mean	1.20		
Labelled Values	1	Daily (Real-Time)	21	84.0%
	2	Weekly	3	12.0%
	3	Monthly	1	4.0%

4 Summary and Conclusions

Information Systems outsourcing and information systems development is one of the key areas in banking at this age of information technology. Outsourcing is also widespread in other areas of many organizations, many Kenyan banks are keen on outsourcing technology in areas of hardware acquisition, software programming and to an extent, maintenance. Every respondent to the questionnaire agreed that Information Systems is the key area of the business that the management is very keen on and will not shy away from investing resources on it. This of course is realistic on the face of enormous competition posed by mushrooming banks and microfinance institutions.

The reasons given by these banks for outsourcing include, the lower cost of acquisition as compared to development where qualified personnel take a critical role from systems analysis to systems implementation, in this regard, the vendor takes responsibility in case of system failure or malfunction. There is the availability of programmers, in other words, the banks have a large number of vendors to choose from. This allows them to go for the best provider. The user's understanding of the banks' objectives is what informed those who were opposed to outsourcing.

A closer scrutiny of the farresults indicates a trend, and depending on some firm characteristics, the big banks in terms of customer base and asset base, have a greater preference for outsourcing to systems development. However, the large banks among those interviewed, with more IS staff, are the ones that have embraced systems acquisition through outsourcing.

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