

A PERFORMANCE EVALUATION OF IMPACT OF INFORMATION TECHNOLOGY ON NIGERIAN BANKS

Adegbaju Abiola Ayopo and Iyoha Francis Odianonsen
College of Business and Social Science
Covenant University, Canaanland, Ota, Ogun State, Nigeria.

ABSTRACT

The banking sector of the economy has realised that banking requires prompt delivery of services, efficiency and automation of banking operations. This has prompted many Banks in Nigeria to invest huge sums of money in Information Technology to enhance their performance and offer comprehensive nation-wide services to their customers. This paper is a research to determine if the information technology employed by banks is performing to expectation. A survey was conducted amongst banks in Nigeria. A Likert format questionnaire instrument, which was a hybrid, adapted from Ron Weber IT performance Evaluation technique was designed and administered among bank staff in 34 banks within Lagos metropolis to ascertain the status of huge investment on IT in their banks. The questionnaire was analysed using simple percentage and Chi square statistical techniques. It was found that the information technology employed by Nigerian Banks have been performing to expectation, but with occasional downtime.

Keywords: *Information Technology, Microcomputers, Programming Language, Kilobytes, Infrastructure, Computerization, Telecommunication, Information Superhighway, Internet.*

INTRODUCTION

The advent of information technology has brought about enormous changes, challenging how organizations are structured and how businesses are run. This led to such financial innovation of credit cards, smart cards, electronic transfers in the payment system of banks. This innovation according to Agene (2000) has "transformed the world into global village linked with electronic impulses." Yet, information technology is not static: it is continually evolving, breaking new barriers, defining new horizons, and bringing new dimension to our lifestyle. Information technology, in a simple definition, is a systematised body of tools, techniques and infrastructure for generating, collecting, storing, processing and transmitting data and information. (Woherem: 2000: 95). Information technology is relevant especially in banks. According to Ezegozie (2001), the relevance of information technology finds expression "in competitive rivalry, customer acquisition/retention, products/services, cost reduction and alliances/mergers" The early use of the computer was in routine data processing especially in information storage and retrieval. During the late 1950s and throughout the 1960s, business data were processed through punched card equipment, electronic accounting machines, and massive mainframe computers with far lower capabilities than today's microcomputers. The data processing function, then, was the responsibility of the electronic data processing (EDP) department. The 1970s saw the advent of the primitive multi-user networks as terminal got connected to the massive mainframes. It was also the beginning of database management systems that came as a response to the challenges posed by large volumes of business data. This was the foundation era of Information technology systems (IS), Management Information Systems (MIS), and Decision Support Systems (DSS). All processes were centrally handled using applications software that was developed with the third generation of programming languages. The next decade witnessed the fusion of telecommunication and networking technologies for business deployment. This ushered in distributed data processing, office information systems (OIS), and personal computers (PCs). Prominent among the goals of business enterprises at this time was improvement in the quality of products and services. Hence, investment in total quality management (TQM) characterised the strategy of the leading organisations of the 1980s. Many organisations leveraged on the availability of current technologies to deliver quality products and services and also to enhance their competitive positions. In the 1990s, advances in technology made possible many innovations in programming languages that even the most optimistic of technology enthusiasts would have thought impossible only a few years earlier. Perhaps the greatest IT innovation of today is the 'Information Superhighway'. With the full integration of telecommunications and computer technology have come new but distinct technologies such as the internet, Group ware and multimedia. As we move into the

A Performance Evaluation of Impact of Information Technology on Nigerian Banks

millennium, the new competitive weapon is networks and the velocity of data through the Internet and extranets, and round the world through the Internet.

INFORMATION TECHNOLOGY IN BANKING

Application of information technology in banking has evolved along similar lines to the general evolution of information technology. The first attempt to automate the manual processes of banks was done through mechanisation. This is the process of using electromechanically devices, such as note counters and accounting calculators, to effect speed processing of basic banking transactions, like computation and counting of currency notes. About a decade after the Second World War, the computer finally left the exclusive domain of the military and research institutions and gradually found its way into commerce. These were the mainframe computers with their propriety operating systems and software called 'number crunchers.' Banks such as Citibank, American Express and Bank of America used the mainframe for back office (batch processing) functions using punched card equipment and electronic accounting systems. Apart from the general ledgers and accounting functions, other processes remained largely manual. This trend continued throughout the 1960's. In Nigeria, there was no officially available information on the state of computerization in banks at that time. Multi-users networks was introduced in 1970s, which made possible for terminals to be connected to mainframes and minicomputers within a radius of usually short distance around a building. Since the terminals had no intelligence of their own, all processing was done on the computer. It was called a centralised system. Banks started to process transaction online without having to go through the cumbersome punched card process. In the late 1970s, banks such as the United Bank for Africa and the Standard Bank introduced the IBM 370 series of computers, linked with line printers. The 1980s witnessed the advent of telecommunication and networking, and banks began to deploy information systems through local, metropolitan and wide area networks (LANs, MANs and WANs). Many Nigerian banks adopted the use of PCs with only floppy drives. Later came PCs with 5 or 10-megabyte hard disks and 32 to 512 kilobytes of RAM. Initially, banks were sceptical on the performance of these machines compared to the big mainframes. They were used mostly for word processing and spreadsheet operations. With a little increase in the hard disk and RAM capabilities of the PCs, the mainframe-based banks began to deploy PCs to their low-end branches. These were essentially developed banking applications, using BASIC (Beginners All-purpose Symbolic Instruction Code) or dBase III software. With the success of PCs in their low-end branches, banks started using PCs for their critical applications and in their high-end branches. Thus, stand-alone banking applications began to emerge. By 1984, the advent of networking in Nigeria boosted the PC market. It can be said that the critical success factor of PCs was networking. Networking in Nigerian banks was boosted with the introduction of Novell Netware into the local market. In 1986, Societe General Bank of Nigeria (SGBN) introduced online, real-time banking in Nigeria but this was limited to their five branches in Lagos. Many of the new generation banks followed this lead with the introduction of integrated banking applications, delivered through a WAN in a real-time, online mode. With this innovation Customer could go to any branch of their bank in the country to transact their normal banking business, and it would seem as if they never left their home branch. It also led to a reduction in waiting time. Today, almost all the banks in the country have implemented, or are seeking to implement a WAN and real-time online banking. Also, banks are realising that it is not enough to merely implement a WAN to help in running their integrated banking applications, but that networks (LANs and WANs) can also carry other applications. It can be used for intra-communication, group work, extra-communication and of gaining access to the rest of the world. 1990s provided the opportunity to keep technology through system integration and open systems. Moreover, the trend towards globalisation has left business enterprises with little choice. Banks were major actors in this era as a large proportion of world expenditure on IT was related to financial services. Banks began to reappraise their strategies, their business processes, their human resources, and their technology infrastructure. While Nigerian banks have recently begun to show their presence on the Internet on readiness for Internet banking, our European counterparts now routinely render services through the Internet. And the benefits of the Internet technology are now being applied locally within the organisation under the name intranet. Business process Reengineering (BPR) has emerged as a corporate process audit tool for the establishment of efficient services standards of the 1990s. (Adeyeri & Woherem 2000:96) The introduction of information technology into banking operations is quite auspicious. According to Okafor (2000) "Information Technology in banking will produce level playing field as competitive advantages are dismantled. There will thus be heightened emphasis on new technologies for speed and efficiency in transaction services." The present study, therefore, attempts an investigation into performance evaluation of information technology on Nigerian banks. The rest part of this paper is

divided into four sections. Section II presents an exploration of related literature on the subject matter. It highlights the Information Technology and Modern Banking Practices. Section III discusses the methodology adopted in the study. Section IV discussed and analysed the result obtained while section V presents the recommendations and conclusion.

LITERATURE REVIEW

THE POWER OF INFORMATION TECHNOLOGY TODAY

Information Technology can be described as the technology of gathering, analysing, manipulating, storing, and communicating data. This is made possible with the use of computers and telecommunications. According to Adeyeri and Woherem (1993: 94) "Information Technology comprises computing and telecommunication technologies. It is the merging of the two technologies, especially their organisational and management aspects, that help in fashioning IT for organisational use." The world we live in is changing dramatically in terms of the way we see, work, socialize, learn, shop and conduct business due to the widespread and increasing use of IT. Frenzel (1996) writes that:

Information Technology (IT) is radically altering the balance of power between institutions, government, and the people by broadly disseminating important information. Power bases dependent on information are being built, transformed, and destroyed as critical information virtually flows around the globe without restriction. Information technology has altered the way many people do their jobs, and has changed the nature of work in industrialized nations: The practice of management has been greatly affected, and aspiring managers must be fluent in new management trends and technique in order to succeed.

Technology will provoke what Toffler (1990:2) refers to as a 'powershift,' giving rise to an entirely new 'system for wealth creation' and the distribution of power. Writers like Toffler (1990), Glastonbury and LaMendola (1992), Frenzel (1996), Naisbitt (1994), and Gates (1995), Cited in Woherem (2000) are of the opinion that, in the new millennium, IT would determine the countries that would be leaders and those that would be laggards; those that would be rich and those that would be poor; and those that would be powerful as against those that would be weak. Countries that cannot trade using IT would be sidelined in world commerce and international relations. They would thus become the outcasts of the New World System. Equally, companies that do not have an appropriate IT infrastructure and the promotion of IT use in their operations, management and communication processes would also suffer an existential debacle in the arena of the new era. It is obvious that wealth creation in the 21st century will depend heavily on the instant communication and dissemination of data, information, knowledge, ideas and symbols. From all available evidence, information through the medium of telecommunications is the driving force in this millennium as machine drove change during the industrial revolution. Banks need a sustainable telecommunication infrastructure and policy because IT promotes efficiency and effectiveness both within and outside the bank, which engenders competitive advantage and can lead to greater participation in intra and international business transaction for banks. As earlier mentioned, IT refers to the merging of computing and telecommunication technologies. Today telecommunication is virtually synonymous with IT in popular usage. Personal Computers (PCs) are the ones that are most commonly used today with increasing network, so that people can work together by sharing data, documents, graphics and sharing ideas through electronic mails. The real power of the computer is not appreciated until two or more computers are networked. As Gates (1995: 7) puts it 'the personal computer has already had a huge effects on business. But its greatest impact won't be felt until the PCs inside and outside a company are intimately connected.' Networks facilities available today are in the form of local area network (LAN), wide area network (WAN), and metropolitan area network (MAN). With a network in place in an organisation staffs can work simultaneously on the same document, send and receive mails from the rest of the world, engage in PC – based video-conferencing and call up files in a server. PCs act as an enabling tool for competitive advantage when it is part of network servicing in an organisation, which is connected with the networks of other organisations. With the aid of telecommunication technology one computer can send data to another computer. The main function of telecommunication is to enable the transmission of signals representing voice data, physical data and images between remote locations. The ability of computers to communicate with one another in even very far away location has given rise to Internet and what many call 'information superhighway'. The Internet is not a single network, but a worldwide collection of loosely connected

A Performance Evaluation of Impact of Information Technology on Nigerian Banks

networks that are accessible by individual computer hosts in a variety of ways, including gateways, routers, dial up connections and internet service providers. The Internet is easily accessible to anyone with a computer and a network connection. Individuals and organisations worldwide can reach any point on the network without regard to national or geographical boundaries or time of day. In the view of Sagoe (1999:2)

Internet technology has given rise to new sets of technology that make it possible to transmit information to various types of computers using a standard protocol. The bottom line is that, increase in the power of computing is making tremendous amount of information available and thanks to today's communication technology, just about anybody can hook up with just about anybody else. When you combine the power of today's I.T with the capabilities of today's communication technology virtually anything is achievable.

It is for this reason that Gates (1995: 7) was emphatic that:

Almost every sphere of activity – business, education, and leisure – will be affected and information highway will revolutionise communication even more than it will revolutionise computing. Tens of thousands of businesses in the United State already exchange information via electronic system called Electronic document Interchange, or EDI. It allows companies that have contractual relationship to execute specific type of transactions automatically. Dealings are highly structured – reordering products or checking the status of a shipment.

COMPETITIVE ADVANTAGE THROUGH INFORMATION TECHNOLOGY

Information Technology has become a major tool for prompting competitive advantage for companies and countries, in terms of the number of computers in use, the number of PC network in use and the level of telecommunication infrastructure. Prior to this time, capital, labour and raw materials were regarded as the critical ingredients for efficiency. But today, information has relatively reduced the significance of the other factors of production. Through IT, it is now possible for one country to provide the capital but use labour and raw material of another country regardless of the distance. Countries and organisations can now trade with each other without border restrictions. In order to survive in the highly competitive world of today, in which Banks are struggling to acquire new businesses and financial strength, either to maintain or to improve market share in the international and local terrain, it is important for them to be networked in readiness for the free flow of information which has become the main factor of production. As Gates (1995: 25) puts it:

Conventionally, businesses share information internally by exchanging paperwork, placing telephone calls, and /or gathering around a conference table or white board. Plenty of time and plenty of expensive face-to-face meetings and presentations are required to reach good decisions this way. The potential for inefficiency is enormous. Companies that continue to rely on these methods exclusively risk losing out to competitors who reach decisions faster while devoting fewer resources, and probably fewer layers of management, to process.

To have worldwide connectivity, it is vital that Banks set up the infrastructure that would facilitate inter and intra-company communications. The free flow of information within and between organisations is essential for competitive advantage. Telecommunications has become an agent of change. It is the major force ushering in the 'global village'. It has become a major factor in democratisation of countries, the deregulation of industries, the privatisation and commercialisation of government parastatals, the networking of groups and companies and development and distribution of information and ideas. Telecommunication is powering the new post-industrial information age. It is making information the major ingredient in production. It is creating a new type of world economy by making the small to be as

powerful as, or even more powerful than the big through access to and the use of appropriate information/knowledge. Woherem (2000:23) describe information technology as:

Infrastructure that every enterprise or country requires participating and competing in the new global economy. All organisations and economies need the infrastructure in order to participate in the global interconnectivity of business and finance of every kind.

The relationship between telecommunication and economic development has been the subject of many international studies. According to Maitland Commission Report, (1984) "an improvement in telecommunications in a country does not arise from economic development: quite the contrary. Economic development is now a function of the level of telecommunications infrastructure possessed by a country. Good telecommunications infrastructure is therefore, a condition for enhancing the economic well being of countries." Organisations around the world need to create strategic alliance, participate in international discussions, establish bigger economic zones, and engage in large volumes trading using the Internet and inter-organisation electronic networks. This is crucial in order to remain in business in the increasingly highly competitive world of business and Banks in particular. Banks that move boldly and in recital with current trend in information world will enjoy economic rewards. Ras-work (1995:13) argues that:

New opportunities are opened. At the same time major threats are in the horizon for those regions and countries that are unable to compete. It is therefore in the interest of all the countries and their enterprises to focus their attention on ways and means of how to take part in the global market.

The availability of a good telecommunications infrastructure, and technologies like the Internet, will permit Nigerian banks and other organisations to do business more efficiently and effectively both nationally and internationally. Companies, such as banks, that depend a great deal more on information than most other enterprises, cannot afford to be slacker with regards to this enabling technology. Connectivity to the emerging 'information superhighway' will take time, space and distance out of the equation of the vital ingredients of communication. Glastonbury and LaMendola (1992:14) commented that: "technological advantage is a major component of the competitive edge, and it has often been demonstrated that new technology can determine the survival of the corporate enterprise."

THE PRESENT STATE OF IT IN THE NIGERIAN BANKING SECTOR

Information Technology has become the nervous system of banks the world over. Nigerian banks will become uncompetitive if they do not have the means to deliver banking services online and in real-time across their branches within the country and abroad; Woherem (1997:8) commented that: 'Nigerian banks since 1980s, have generally performed very well in their investment profile and use of IT systems, compared to the rest of the industrial sector of the economy' However, a lot still needs to be done in the sector to catch up with the rest of the world if Nigerian banks would be relevant in the globalised banking playing field of the 21st century. Based on a study conducted by African Development Consulting group ltd (ADCG) in 1998 Woherem (2000: 38) Concluded that:

Nigerian banks have invested more on IT, have more IT personnel, have more installed base for PCs, LANs and WANs and a better linkage to the Internet than other sector of the Nigerian economy. However, when we take the number of staff in each of the companies into consideration, we realize that it is not true that the banks are doing much better with regard to IT use than industries in the other sectors of the economy. Nigerian banks are still lagging seriously behind the rest of the world because PC per capital ratio is still 0.18.

He finally suggested for Nigerian banks to compete realistically with other banks in the world. Given the rapidly increasing globalisation of business and commerce, they need to invest a lot more on IT both in term of installed base, staffing and training of IT staff, as well as the training of all categories of bank staff to become IT literate.

RESEARCH METHODOLOGY

In carrying out this study, IT performance evaluation technique of functions and processes was adopted as suggested by Ron Weber (1999). A Likert scale questionnaire was drawn from it based on four major perspectives of evaluation, that is, on financial, customer satisfaction, internal process and learning or ability to innovate. A total of one hundred and seventy (170) questionnaires were administered amongst bank staff in thirty-four different banks in Lagos metropolis. The sampled banks were selected using simple random sampling technique. The analysis in this paper was based on 144 questionnaires returned out of the 170 administered. That is 84% of total questionnaire administered. Chi square statistical technique and simple percentages were used to analyse the response.

Hypothesis

Ho – Information Technology employed in Nigerian Banks is not performing to expectation

Ha – Information Technology employed in Nigerian Banks is performing to expectation

DISCUSSION OF RESULT

A percentage table was constructed to analyse the response of the respondents to the questionnaire and a Chi Square statistical technique was used to test the hypothesis set. The result revealed that Information Technology employed in Nigerian Banks is performing to expectation. Therefore the null hypothesis was rejected. The results obtained from the research indicate that a large percentage of the respondents agreed that the financial expenditure on IT is justified. They agreed that IT expenses are controlled and within budget and that reasonable contribution is obtained on IT investments. There is also a general consensus that new business opportunities are created as a result of using IT and that solution provided by the use of IT meets business needs. There is efficiency and economic use of resources as a result of IT employed by banks. On Customer Satisfaction, the respondents are also in agreement that the IT employed in Nigeria Banks help to meet customer needs. That as a result of IT employed there is delivery of timely, effective and efficient services to customers, there is a speedy resolution of customer complaint and that there is cooperation among users. On Internal process, the response of the respondent is average. It is obvious from the analysis of results obtained that 33% are neutral about the delivery of the IT in line with business priorities, Most of the respondents felt that IT projects embarked on by most of the banks are just as a result of the move in the sector and they want to be part of it. They do not strongly agree that changes could be made without upsetting the current business operation. Although there are performance metric in place like the service level agreement but it does not mean that problem can be detected before it is too late. Learning or Ability to innovate, a large percentage of the respondents agreed that the system provides support for research and development. IT staff are exposed to relevant trainings and the workforce is able to use IT systems productively and safely and that the system is capable of developing opportunities to answer future challenges.

RECOMMENDATION

Our research has revealed that IT employed by the Nigerian Banks are performing well and it is meeting the current business needs of the Nigerian banking system. But this does not suggest that the Nigerian Banking system can compete favourably with their counterparts abroad. We still have infrastructural deficiency, which is a major disadvantage to the deployment of Information Technology in Nigeria. Operation cost of most banks is high because they have to run generators and the world of Information Technology is very dynamic. The rate of obsolescence is high. Therefore,

1. Banks can come together in-group to invest in equipment that will enhance their technology efficiency.
2. More funds should be budgeted and spent on staff training so that the area of internal processes could be improved upon.
3. The Banks should open up more frontiers of business for themselves, taking advantage of e-banking and improving on their earnings.
4. The Nigerian banks should ensure that they keep abreast in the deployment of appropriate technology, in order to keep satisfying their Customers and meeting business needs without lagging behind.
5. There should be more enlightenment campaign for banks and bank customer so as to get the best out of the use of information technology in Nigeria.

6. There should be more emphasis on the part of the government to invest more on infrastructures such as electricity and telecommunication equipment to help Nigeria banks compete favourable with their counterpart abroad.
7. There should be definite plan on the part of government to formulate appropriate policies that will allow for more foreign direct investment in communication.

CONCLUSION

Nigerian banks' ability to compete realistically with other banks in the world and given the rapidly increasing globalisation of business and commerce, will depend essentially on more Information Technology and training of staff. Although from our analysis it is obvious that what they have installed is performing well but they still need to keep abreast of modern development in IT because the world of Information Technology is a dynamic one.

REFERENCES

1. Agene C.E (2000) "Electronic Banking in Nigeria: Concepts policy issues and supervisory framework." Bullion: Publication of the Central Bank of Nigeria. Volume 24. No. 4. October/December, 2000.
2. Dialku O. (1975), "Commercial Banks as a source of industrial finance in Nigeria" Nigerian Journal of Economics and Social Studies. Vol. 1
3. Ezegogie E (2001), "A Critical Examination of Information Technology Strategic Variables from Developing Countries Perspectives: The case of Banking Industry" Journal of African Business, Vol. 2 No. 3.
4. Frenzel, C. W. (1996) Management of Information Technology. Massachusettes, U.S.A. Boyd & Fraser Publishing Company.
5. Gates, B (1995) The Road Ahead: London: Viking Penguin.
6. Glastobury, B and LaMendola W (1992) The integrity of Intelligence: A bill of rights for the information age. London: St Martin's Press.
7. Ikhida, S. F (1997), Financial Sector Reform and Growth of Capital market in Nigeria" URF Series No. 291, Institute of Developing Economics, Japan.
8. Naisbitt, J (1994) Global Paradox: The bigger the world economy, the more powerful its smallest players: London: Nicholas Brealey Publishing.
9. Okafor L.E (2000), "Review of Contemporary Developments in the Nigerian Banking Sector" Bullion: Publication of the Central Bank of Nigeria. Volume 24. No. 4. October/December, 2000.
10. Ras-Work T (1995) "Telecommunication and the New World Economic Order: The imperative for the regional and global integration of Africa. In going for growth in Nigerian Telecoms. Lagos. Pulse Marketing Communications Limited.
11. Shields, P and Samarajiva, R (1990) Telecommunication, rural development and the Maitland Report. Gazette 1990. 46. pp. 197-212 mathieum@sfu.ca
12. Weber, R (1999) Information System Audit and Control. Upper Saddle River, NJ; U.S.A: Prentice Hall.
13. Woherem E. E (2001) "Information Technology and Competitive Advantage: Issues of government policies and corporate strategy" in Woherem E. E. (ed.) Information Technology in Nigeria Banking System. Ibadan, Nigeria: Spectrum Books Limited.
14. Woherem E. E and Adeyeri D. (2000) "The Telephone and Computer in Banking: Constraints and Challenges in Nigeria." in Woherem E. E. (ed.) Information Technology in The Nigerian Banking System. Ibadan Nigeria: Spectrum Books Limited.
15. Woherem E. E. "The problems and challenges of information technology in the Nigerian Banking industry." In: Telecommunication for Business in Africa. Mgombelo H. R. and Werner (eds) Amsterdam: IOS Press.

A Performance Evaluation of Impact of Information Technology on Nigerian Banks

Table 1
OBSERVED RESPONSES

Questions	Strongly agree	Agree	Indifference	Disagree	Strongly disagree	Observed
1. Internal Process						
IT are delivered in line with business priorities	22	78	48	34	12	446
Changes could be made without upsetting the current business operations.	15	59	38	20	12	477
The new system worked properly when implemented	21	89	24	6	4	553
Structure exists to obtain feedback from users and customers.	60	45	35	2	2	591
There are performance metrics to monitor downtime in place	46	54	34	8	2	566
Problem can be detected before it is too late.	20	22	50	34	18	424
2. Customer Satisfaction						
The business is a preferred supplier of product and services	36	50	28	15	15	509
There is delivery of timely, effective and efficient services to customers	52	41	38	10	3	561
There is speedy resolution of customer complaints	75	39	24	6	0	615
There are user partnerships. That is, cooperation among users	69	56	12	4	3	616
3. Learning or Ability to innovate:						
The system provides support for research and development	27	39	55	12	6	486
IT Staff were exposed to relevant trainings	34	67	23	20	0	547
The workforce is able to use IT systems productively and safely	41	45	46	12	0	547
The system is capable of developing opportunities to answer future challenges.	23	44	70	3	4	511
4. Financial						
IT expenses are controlled, within budget?	35	70	28	8	3	558
Reasonable contribution is obtained on IT investments	28	68	38	4	6	540
New business opportunities are created	70	50	10	8	6	602
Solutions provided by IT will meet business needs.	20	48	50	15	11	483
There is efficiency and economic use of resources	49	63	28	2	2	587
TOTAL OBSERVED						10,219

TABLE 2 **PERCENTAGES OF SCORES OBTAINED**

Questions	Strongly agree	Agree	Indifference	Disagree	Strongly disagree
	%	%	%	%	%
1. Internal Process					
IT are delivered in line with business priorities	15	19	33	24	9
Changes could be made without upsetting the current business operations.	11	14	26	14	8
The new system worked properly when implemented	15	62	17	4	2
Structure exists to obtain feedback from users and customers.	42	31	24	2	1
There are performance metrics in place	32	38	24	5	1
Problem can be detected before it is too late.	14	15	35	24	12
2. Customer satisfaction					
The business is a preferred supplier of product and services	25	35	19	11	10
There is delivery of timely, effective and efficient services to customers	36	28	26	7	3
There is speedy resolution of customer complaints	52	27	17	4	1
There are user partnerships. That is, cooperation among users	50	39	8	2	1
3. Learning or Ability to innovate:					
The system provides support for research and development	19	28	40	8	5
IT Staff were exposed to relevant trainings	24	47	16	13	-
The workforce is able to use IT systems productively and safely	28	31	33	8	-
The system is capable of developing opportunities to answer future challenges.	16	30	49	2	3
4. Financial					
IT expenses are controlled, within budget?	24	49	19	6	2
Reasonable contribution is obtained on IT investments	20	47	26	3	4
New business opportunities are created	49	34	7	6	4
Solutions provided by IT will meet business needs.	14	33	35	11	7
There is efficiency and economic use of resources	34	44	19	1.5	1.5