INFO-TECH ADOPTION IN BANKS IN YEMEN: 
A CASE STUDY OF YBRD

JAMILA M. A. ALQAATARY*; PROF. DR. M. S. KADAM**

*PH.D STUDENT.
ALLANA INSTITUTE OF MANAGEMENT SCIENCES,
PUNE UNIVERSITY, PUNE, INDIA.

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ABSTRACT
Technological innovation can increase profitability either through enhancing revenues or lowering cost. The impact of information and communication technology (ICT) varies from one country to another. Financial institution in the developed countries are able to align the new information technology much better than developing countries where legacy systems still apply in some developing countries like Yemen, and (ICT) applications are still very costly even though the price of IT is falling. In this paper we examine the general impact of Information Technology (IT) on the banking industry in Yemen and discuss the response of Yemeni banks to these technological developments. Further, we provide a review of how information and communication technology (ICT) within banking practice has developed over the past decades.

Data & Methodology
The paper adopts a theoretical approach and reviews the historical and current deployment of IT in banking industry in Yemen.

Introduction
Today banking sectors have a major role in the economic development of the country and are identified as an instrument of socioeconomic development. The adoption of ICT and the consequent increased productivity and economic growth induced by it has been described as the dawn of a new economy. In the United States, for instance, the astounding high rate of productivity which occurred simultaneously with the rapid diffusion and production of ICT directly led to the term new economy (Daveri F. & Silva O. 2004).

In today’s economic awareness and the globally competitive business world, technology becomes essential to run every business fast and with accuracy. In recent years, technology has become increasingly important to the evolution of banking sector. One of the factors that drove the improvement in the quantum and quality of financial intermediation is more wide spread and more efficient use of IT (D. Subbarao. 2009). Over the last two decades financial institutions have increasingly come to rely on technology to support communication and information processing in all areas of their operations. In Yemen, the advances in technology and the
complexity of the legacy system have made some Yemeni banks to move into new business areas and have replaced the legacy system with new system. The liberalization and globalization necessitated the need for banking sector to adopt the latest techniques of information technology which result in the new delivery channels for bank products and services to cut down cost, increase efficiency and provide better, value added services.

**Literature Review**

It is necessary to give an overview of the past development in respect of effective application of Information Technology in banks. Therefore, a review of previous literature that covers ICT application in regard to revenue aspects in banks is given below. It would be surprising to know that the evidence shows some inconsistencies in concluding the contribution of IT to bank’s profit.

The earlier studies argued that IT did not present a direct positive contribution to economic growth, and there was not much evidence to indicate that ICT has led to economic growth in most of the developing countries. However, along with the potential to improve lives and organizations, IT projects can become risky, costly and unproductive (USGAO. 2000). While some studies disagree to the positive influence of IT to business value and productivity, some of the recent studies have mentioned that information technology led to better economic growth. For instance, Laudon, and Laudon (1991) corroborate the positive impact of information communication technology ICT on the global criteria, especially improving revenue. They studied the entire cash flow of most fortune 500 companies and linked their success to Information System. They concluded that Information Technology directly affects how managers decide, how they plan and what products and services are produced. Similarly, Y. Ukai (2005) in his book, Economic Analysis of Information System Investment in Banking Industry concludes that information technology system in the Japanese banking industry was the optimal system for an economy mainly operated by cash transaction. The author conducts panel data analyses in order to estimate the increase in market value of each bank due to information system investment. As a result of this analysis, it was proved that an additional one dollar of information system assets has a positive effect on increasing the market value of each bank by 12-18 dollars. Shu’s and Strassmann’s (2005) article titled Does information technology provide banks with profit shows that IT investment yields the highest profit margin in the banking industry. Mc Breitenbach, et, al’s study The Impact of Information and Communication Technology on economic growth in South Africa examines if there is any evidence of a positive relationship between ICT and the GDP. Within the limitation presented by time and absence of a comprehensive database, the research finding is in line with earlier empirical works which suggested a positive relationship between ICT and economic growth. Ranee Jayamaha, (2008) Deputy Governor of the Central Bank of Sri Lanka, has indicated the beneficiary service in the banking process. “IT development has undoubtedly brought-in enormous benefits to banks, particularly in terms of productivity increases, cost reduction and increased profitability”. Karen Furst, et, al., (1998) in their paper Technological Innovation in Banking and Payments have focused on the role of technological advancement: “The gains from technological advancements in banking and payments are likely to be substantial, both from the point of view of individual financial institutions and economy wide”.

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In contrast to above references, few of them have indicated their viewpoints as below. In their paper “The Impact of Information Technology on the Banking Industry”, Shirley J. Ho & Sushanta K. Mallick, (2006) predict that banks’ profits can be positively or negatively related to IT expenditure, in the equilibrium. Each bank’s price will decrease with its IT expenditure, but the impact on profits will have to depend on whether its market share increases. In “Information technology adoption and the role of organization readiness”, M. Tarafdra & D. Vaidya (2007), have concluded that NBS lagged behind many other organizations in the industry in its use of IT, and did not obtain competitive advantage from its IS. IT implementation was only to achieve desired level of efficiency and parity with other banks.

**Banking sector in Yemen**

The Yemen Bank for Reconstruction and Development (YBRD) established on 28th October 1962 one month after the revolution as a public shareholding company with 51% of its paid up capital owned by the Government of the Republic of Yemen and the remaining 49% owned by the private sector. The YBRD is the first financial institution established in the country to revive the national economy and promote a uniform system of currency and credit, as well as to provide all types of banking and financial Services and credit facilities to the public. The capital base of the YBRD which was ten million Marya Triza silver Rials\(^1\) at the commencement of operations in 1962. It was strengthened over time and in 1996 has remained at YR 300 Million (S. Al sheebany, 1997).

Throughout its history, the YBRD played an active role in the economy of the country and has successfully implemented great achievement. The YBRD acted some of the central bank activities, when there was no central bank in Yemen. It was responsible for issuing the Rial, the national currency, and for managing the government’s foreign exchange and other financial operations. The YBRD was the only commercial bank in the country until 1970, when it became a member of the International Monetary Fund and then the country established the central bank of Yemen. This way the economy underwent liberalization.

The Bank has contributed effectively in the Economical Development. Today the YBRD consists of around 44 branches, and other offices located throughout the country. The Bank undertakes all banking activities through its head office in Sana'a and branches spread all over the Republic of Yemen. The process at the YBRD was by routine and decision making and policy formulation were centralized. Branches worked with well defined parameters and did not have much scope for making independent decisions, and one of the measurements of the branch's performance was the amount of retail saving or deposit that they were able to generate. During 1972-1982 the YBRD deposits represented about 75% from the total deposits of other commercial banks, that is since the first appearance of foreign banks, and its total loans about 70% from the total loans of commercial banks. The YBRD has financed about 80% of international trade of the country (A. Al Mqtary, 1985).

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\(^1\) It was the circulating currency at that time because there was no national monetary system before the revolution of 26th September 1962
As shown in the figures above the YBRD played vital role in the economic growth of the country and has successfully implemented a great achievements.
The YBRD has contributed hugely to the Yemen economy. The total revenue generated by the YBRD increased from 4.32 billion in 2004 to 6.67 billion in 2009. This translates to an increase in percentage contribution of the YBRD to economic growth 54.35%.

**Overview of IT in banking sector**

The great technological development was the advent of computer, which was invented to speed up data processing easily. The earliest ideas of computer processing extend back to Charles Babbage, an English inventor who designed two different types of steam-powered mechanical computers in the mid 1800s. Charles Babbage's analytical engine was the first programmable calculating machine, even though the analytical machine could never be finished because of the mechanical constraints of that time. In the late 1950s many organizations began to utilize transaction processing systems (TPS) or electronic data processing (EDP) systems to automate routine clerical tasks such as payroll, inventory and billing. The 1960s witnessed the emergence of management information systems (MIS) with the development of database management systems for collecting, organizing, storing and retrieving data. Information Systems emerged as a discipline in the 1960s. It has struggled to define itself, its scope, and its relationship with its neighboring disciplines in the computing and management arenas (Roger Clarke).

The technological revolution in banking actually began when the first automated bookkeeping machines were installed at a few US banks. By 1960s, most banks had taken a significant step to introduce computers into their business. These early computer systems were programmed in machine code and required information to be manually inputted via punched cards. PCS was used whereby transaction data was punched onto cards and could be read automatically. The punched card systems (PCS) were usually used for the statistical calculation. This technical process was the beginning of machine-based processing (Yasuharu Ukai, 2005).
Overview of IT in banks in Yemen

Financial institutions are investing in technology because they anticipate reductions in costs through streamlining transactions processing and eliminating errors, as well as providing better service to their customers and attracting new customers by offering new products and services. In Yemen the first wave of technology in banking began in the latter half of the 70s when the management of YBDR realized that the automation of many aspects of the business was essential to keep pace with economic and technological development. As result the magnetic stripes machines were introduced as starting point of technical process for updating transaction related to saving and current account, general ledger accounts and cash credit where data to be manually inputted. In 27/8/1980 the management appointed a committee to look into various aspects of computerization. In order to frame guidelines of computerization the YBRD reach an agreement with some of consultancy companies for addressing the requirements to place the legacy system into modernization and accordingly this was the first practical step of information system development. (S. Al sheebany, 1997).

The second waves of banking technology was by the end of 1986 when the YBRD introduced automated ledger posting machines in some branches in large cities. This phase of computerization witnessed the use of automated ledger posting machine where stand alone computer was used to carry out functions relating to the savings, term deposits, current, cash credit, and posting up accounts in ledgers where of-line processing system was applied. There was no automatic central consolidation in the bank and all work needed to produce the balance sheet and profit & lost reports was done manually.

By the turn of nineties the networking technologies evolved and banks started using partial branch automation system. The Back office was automated and data entry was performed off-line. By mid 1990s the YBRD upgraded their systems to facilitate real-time processing, and deployed total branch automation. This automated both front office and back office operations of branch where networked with each other with the help of a local area networking (LAN), although the computers within a branch were hooked up together, the branches were still isolated i.e. the computer in one branch was not connected with the computer in the other branch. Also the branch would maintain its own database in this model. The central consolidation to produce bank position reports was performed in a semi automatic way where each branch sends its data through backup tape and data is consolidated automatically in head office after gathering all data tapes of all branches.

On-line Systems

Today’s computer systems are mostly on-line, that is, information is automatically updated and data are exchange on a real time basis. One of the features of this system is availability of the service 24*7. The YBRD management was required to deal with complexity of the customer needs and to develop new products and services for remaining competitive in global and domestic market. In 2009 further development took place when YBRD initiated the concept of anywhere banking by deploying Centralized banking solution where all branches of the bank are connected to a central server housing of the data of the customer of all branches, it is also known as core banking solution (CBS) which is networking of branches, to enables customer to operate their accounts, and avail banking services from any branch of bank.
Concluding and Recommendation

Yemen financial system is not well developed, and suffers from economic backwardness because of several factors such as series of political crises, mismanagement, and corruption. In this research, it is very clear that the YBRD faced many challenges in this new millennium and competitive arena that has led to effective contribution in the socioeconomic development. However, in its use of IT, the YBRD has shown a fair amount of competence in the application of IT, and has a clear vision of how IT could be furthered applied successfully. It is important that YBRD continue to adopt and improve their information technology and electronic banking services. In order to remain competitive, it becomes imperative for bank management to intensify investment in newer technologies to meet the need and expectation of their customers by leveraging process automation to support self-service channel.

The past 25 years have witnessed vast reductions in the cost of information technology. Although information system (IS) expenditure is regarded costly and risky financial institutions are one of the largest investors in IS (Robson, W. 1997). Some previous researches declared that “IT applications in the developing countries is very cumbersome, even though the price of IT is falling it is still very costly”. It is advised that, to strategically use IT, YBRD should be futuristic i.e. have the future in mind when investing in IT, in order to obtain optimal decision on IT investments. Banks in Yemen should cooperate more with one another, especially in the area of IT implementation. For example purchasing and installing communications equipment and automated teller machine (ATM). Since IT applications in the developing countries is still very costly.

The YBRD needs to better apply IT to improve its customer services and products. Deployment the concept of anywhere banking and anytime banking throughout ATMs and internet banking should be made. As mentioned by Ukai, (2005) Planning the application of technological progress to business is a permanent and ongoing subject. The Internet banking and mobile banking are presently in the spotlight as new channels. Multi-channels not only enables banks reduce the load on the back office, rather it also improves customer satisfaction and further revenue. The ATM was introduced as a way to reduce costs of the branch network. Now ATMs offer more services, more locations, and convenience. Creating different channels for access to banking services, such as PC banking, phone banking, ATMs, and the Internet, do maintain bank competitive advantage, customer loyalty and further increase market share. Since the YBRD has the largest number of branches in the country and accordingly large number of customers, it has a good potential to remain at the apex of financial institutions in the country by leveraging IT-based products and services.

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References

Abdulaziz Al Mqtary “money and monetary policy in the Yemeni modern economy”, 1st ed. dar Alhadatha for printing, publication and distribution, Lebanon, Beirut, 1985, p. 83


Keynote Address delivered by Dr. D. Subbarao, Governor, Reserve Bank of India, “Information Technology and Banking – A Continuing Agenda Reserve Bank of India”, on May 18, 2009 at the Banking Technology Awards 2008 of the Institute for Development & Research in Banking Technology, Hyderabad


Robson, W.” Strategic Management and Information Systems”, Pitman, 1997

Roger Clarke,” A retrospective of the information systems discipline in Australia” in Robert Symth, et al” The information systems academic discipline in Australia”, NAU E Press, Australia, 2008, P 47


