The Impact of Information and Communication Technology on the Performance of Libyan Banks

Khaled A. Saeed
School of Accounting and Finance
Leeds Metropolitan University
Khaleda_s@yahoo.com

Roberta Bampton
School of Accounting, Finance and Economics, Leeds Metropolitan University

Abstract:

The utilisation of a new technology became widespread in both developed and developing economies especially in the banking sector in the recent years. However Libya was still using traditional methods in commercial banking systems. This paper aims to demonstrate, through research, the possibility of the transformation of Libyan commercial banks from the traditional style of work to the modern style based on the idea of electronic banking, by recognizing the reality of the banks in Libya and the availability of the basic requirements for a shift towards modern banks. This paper relies on previous studies on the use of ICT within the banking sector, and the focus is on getting opinions on what was perceived as one of the main factors, that is, ICT, which can affect the performance and efficiency of commercial banks and the impact of banking reforms on the banking sector in Libya since 2005. The paper is presented from a practitioner's perspective, using raw data gathered from interviews with seventeen of Libyan employees working at a variety of top levels within the five largest commercial banks operating in Libya. The results confirmed the level of using ICT is low in Libyan commercial banks; in addition an analysis revealed that poor state infrastructure, especially within the fields of telecommunications and electricity, causes unattractive performance within Libyan commercial banking operation and government intervention was the main reason behind the lack implementation of ICT.

Keywords: ICT adoption, Technology Use, Communication, Performance of Libyan commercial banks

1. *Theoretical Background*

"Today, information and communication technology (ICT) has become the heart of the banking sector, while banking industry is the heart of every robust economy." (Abubakar and Tasmin, 2012, p. 80).

Recently, the world has witnessed a great development and a rapid change in the global banking environment as the circumstances obligated the banking industry to reconsider its structure, laying down strategies and the means used to achieve them in a world where the concepts became different and diversified and the competition turned out to be the foundation on both the domestic and international arena (LFB, 2010).

Business organisations and especially the banking sector are operating in an environment characterised by a complex and competitive climate (Agbolade, 2011). In most developed countries, technology is a central element to deal with challenges in modern banking, such as lowering costs and enabling efficiency improvements. Certainly, most banks worldwide are highly successful at utilising ICT to provide efficient banking services to their customers (Elgahwash and Freeman, 2011). Using the techniques of electronic banking such as home banking services via the internet, which exceeds the dimensions of space and time, automated teller machines (ATMs) etc, to provide banking services that achieve advantages for both banks and customers in the provision of banking products and services are increasingly seen in the banking industry which can thus be easily automated and digitalized (Porter and Miller, 1985). This initiated a radical change in the latest style of banking business in a way that is threatening the traditional form of banks (Twati and Gammack, 2006). Technological advances are the most important variables which have contributed to the radical shift in the patterns of the banking business in the era of globalisation; technology has focused the keen interest of banks to intensify attempts to take advantage of the latest information technologies, communications and computers, and to adapt efficiently in order to invent banking services and the development of novel methods of submission (Aliyu and Tasmin, 2012).

ICT has specifically resulted in a total alteration of the norms on the performance of the banks and on the provision of client facilities in the banking sector, also the ICT advancement has a considerable impact on the advancement of additionally accommodating and user friendly banking facilities (Aliyu and Tasmin, 2012). Electronic banking structure has tuned into the key technology-driven change in carrying out financial operations. Nonetheless banks have invested substantially in electronic and communication structures and users have also verified the electronic banking structure as helpful and convenient (Oni and Ayo, 2010). Indeed, internet banking as an important part of a new technology has presented a competitive advantage via cost reduction, and better satisfaction, trust and loyalty of clients. Evans and Sawyer (2009) identified that the internet has given banks the ability to communicate with customers in a personalised way without the need for face to face interaction, thus saving communications costs. In reality, it has led to an increase in service efficiency of banks, with lower costs of operations towards customers, thus reducing costs and improving profit margins for banks (Mastoori, 2009; Xu, et al., 2009; Ahmed, et al., 2009). Thus, commercial banks consider the adoption of ICT as a means to increase the banks' efficiency and performance as well as quality of service. In this context, Ho and Mallick (2006 p. 1) cited that *"It is believed that IT can improve bank's performance in two ways: IT can reduce operational cost (cost effect), and facilitate transactions among customers within the same network (network effect)*."

Several researchers established that ICT channels have a profitable effect on the banks that just have internet start-ups compared to the traditional banks (Kamath, et. al., 2003; Jayamaha, 2008). Agbolade (2011) and Uppal (2011) assert that ICT was a key aspect that influences profitability of banks. A study by Furst, et. al., (2002) found that federally chartered banks in USA had positive level of profitability and this attributed to use ICT. Agbolade (2011) reveals that a positive correlation between ICT and Nigerian banks' profitability. Indeed, Internet banking as an important part of a new technology has presented competitive advantage via cost reduction, better satisfaction, trust and loyalty of clients. Evans and Sawyer (2009) identified that the Internet has given banks the ability to communicate with customers in a personalised way without the need for face to face, saving communications costs with generation of revenues when communications occur through emails and live chats. Rajput and Gupta (2011) illustrated that the association linking ICT and the banks' performance and efficiency have positive results. The most significant impact of ICT on the banking system might be seen on the payments system, in which traditional method (paper-based payments) have switched to modern technique (electronic-based payments) (DeYoung, et. al., 2004). This was evident in developed and developing economies as there was a dramatic reduction in costs by using advanced electronic payments (Berger, 2003; Frank and Oluwafemi, 2012).

In addition, another advantages of banking technology is that it provide excellent banking services which meet the needs and comfort of the customer, it allows customers to request bank services such as checking their balances, withdrawing money at any time during 24 hours 7 days, transferring money, etc. It is indisputable that the new technology (computerised system), is characterised by its high speed, accuracy and ease of operation. The scientific and technological development witnessed in the banking arena, alongside the consequent widespread use of e-banking channels and the shift towards e-banking in developed countries, has made it necessary for developing countries, including Libya to work in earnest to shift toward modern banking systems if they want to retain their presence in the competitive market and continue to develop.

2. *ICT in Libyan Commercial Banks*

According to Farazi, et. al., (2011) the banking sector in Libya has been predominantly dominated by the public sector which controlled the bulk of its financial activities which makes Libya's financial system is outdated and highly centralised. However, Libya since 2005 started to reform its banking system, since the highly centralised banking system is widely seen as the main obstacle to growth, as well as in response to international pressures to modernise their financial system (BTI, 2012).

The rapid developments witnessed by the new technology and the increased demand for ICT in banking sector, which in turn improve the quality of banking services, became obvious and unavoidable internationally in general and in Libya in particular. Thus it is important to take appropriate steps to help Libyan banks engage in the global economy and stand on an equal footing with international banks through reformulation strategies and policies with a more sophisticated and comprehensive shift towards e-banking, in order to enhance the quality of service and the competitiveness of Libyan banks in both the domestic and international arenas (CBL, 2010).

Commercial banks in Libya are required to take the lead in introducing services and products of modern banking, through the trend towards ICT. This hastened the Central Bank of Libya to establish a National Payments System in 2005 (as a part of the banking reform strategy) in order to provide better services by commercial banks across the country, to speed the banks' financial operations, to increase accuracy and to cut cost.

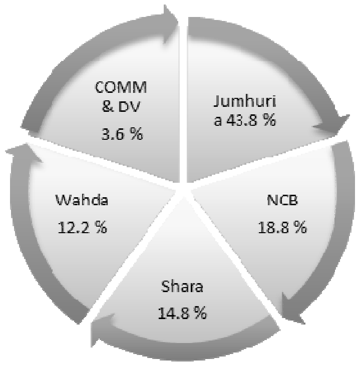
The National Payments System

- Real Time Gross Settlement (RTGS),

- Automated Clearing House (ACH),
- Automated checks Processing (ACP),
- Core Banking System (CBS),
- Automated Teller Machine (ATM) and
- Point of Selling (POS) (CBL, 2010).

Moreover, Libya government introduce private banking ownership and foreign share to promote the use of efficient services to customers, for commercial banks to be as competitive as possible, and to encourage foreign investors to develop the banking system in Libya (Twati and Gammack, 2006). The banking sector in Libya consists of state-owned, private and foreign share banks, and the commercial banks are still dominated by traditional state-owned banks who own the largest part of the total assets of the banking sector in Libya as can be seen in (Figure: 1) which shows the structure of the banking sector in Libya. The majority of Libyan banks suffer from a large number of obstacles preventing them from confronting the changing economic environment, which is witnessing shifts accelerated as a result of globalisation and the trend towards broad restructuring of economies within large programmes of structural adjustment. This can be attributed to the ownership structure of banks in Libya which characterised by the large contribution of the public sector. According to Alwaddan (2005) this kind of ownership has reflected negatively within the banking improvements in Libya.

Figure: 1 Percentage share of total Libyan banking assets



Source: CBL, 2010

The most important characteristic of Libyan banks is that works systems remain traditional and lack the use of technology and the application of modern banking systems and programmes which would enable them to compete on both internal and external stages (Abukhzam and Lee, 2010). The use of ICT means enhance of diversity in banking provided, and thus an improvement in overall efficiency and performance (Robinson, 2000). There are several basic requirements for ICT which must be met; these include a sound technical infrastructure, efficiency of the employees, and interaction with technical developments. These requirements are not and cannot be isolated from the built telecommunications and information technology infrastructure of any country, to ensure the e-banking successful and to ensure secure access to the information. Despite acknowledging the e-banking technology benefits in banking services, Libya has not adopted adequate modern innovation within their commercial banks (Abukhzam and Lee, 2010).

3. *Methodology*

It is anticipated that the reforms, financial liberalization and market-oriented policies implemented in Libya over the last decade have increased ICT level in its financial sector especially commercial banks, which will subsequently lead to the generation of higher levels of efficiency and performance in the Libyan banking sector. Identifying the level of ICT on Libyan commercial banks and its impact on performance was the aim of this study.

The population of this study can be defined as the largest commercial banks in Libya. Management attitudes and perceptions about the ICT in Libyan commercial banks were gathered via semi-structured interviews. The sample included a wide variety of different viewpoints of seventeen research participants. These participants were selected in order to reflect the attitudes and opinions of individuals at different levels of the Libyan banking sector's hierarchy. This should provide a balanced insight into recent ICT developments and the main obstacles facing Libyan commercial banks in implementing such technique.

By answering the questions posed by the study, the researcher will provide a clear picture of the state of the ICT level in Libyan commercial banking system. This picture will give an indication of the hurdles faced by the banks in implementing ICT and might also aid a change to current policies and the implementation of further reforms in the future.

4. Results

The new developments in information technology have had an extensive influence on the financial services industry in general and on the banking sector specifically. The banking sector is at the forefront of service sectors affected by trends in the global economy, particularly in the field of communications and information revolution by the very nature of its activities. This was highlighted by most of the interviewees during the course of this study.

The participants focused on the significant role of the use of technology and its positive impact on bank performance and efficiency. Many interviewees commented that as a result of the development of ICT worldwide, there has been a major impact on the development of more flexible and accessible banking services. They stated that the use of Automated Teller Machines (ATM) could save time, cost and effort. They pointed out that Libyan banks are suffering from overcrowding at the end of each month because of workers in state sectors who need to withdraw their salaries. This exhausts the workers in the bank and affects the performance of the bank. As a consequence there is a need for an increase in the number of cashiers and overtime hours, thus leading to increased costs in the bank. Another interviewee who is deputy general manager from state bank acknowledged positive influences of technology on banking transactions, the work of cashiers, productivity and bank services delivery, including internet banking applications which greatly accelerate banking transactions as well as making efficiency savings in both labour and costs. In a similar vein, another interviewee from state bank added that banks who had embraced ICT had also cut down their running costs. Deputy Manager from foreign partner bank indicated that performance and efficiency of Libyan commercial banks in areas such as customer service delivery and transaction costs had been significantly adversely affected by the slow pace at which modern technology was being introduced to the Libyan banking system. The only exceptional case was pointed out by interviewee from a private bank who stated that, the enhanced ICT systems utilised by the private banking sector meant that they were able to provide a continuous service throughout the Libyan conflict in 2011, ensuring their valued customers could continue their business and enabling the bank to enhance its reputation.

Some interviewees drew attention to the high levels of competition experienced by the banking sector in Libya during the reforms period. This has resulted from the entry of new participants in the sector, both local and foreign, along with the implementation of new banking regulations, which force Libyan banks to embrace ICT in order to participate in a competitive environment both locally and internationally.

The research has also highlighted that throughout the reforms the introduction of new technology and ICT systems has been hindered by two main issues: out-dated, poorly maintained infrastructure and a workforce with an inherent lack of ICT knowledge. The problems with the infrastructure result in poor network performance and intermittent service, which in turn results in poor customer service and a customer base that is distrustful of the new systems. Where the workforce is concerned, there is great caution over using the new systems, yet there has been little investment in training or, when training has been given, it was inaccessible to the majority of employees due to government intervention, this was highlighted by seniors' management within state-owned banks. A bank manager from state bank suggested that the lack of infrastructure in communication is the major cause of problems for commercial bank. The vast majority of interviewees agreed with this view adding that weak infrastructure in telecommunications and electricity add to the problems faced by the banking system.

The main issue raised by most of the interviewees is the negative impact of government intervention on bank policy as it has resisted and restricted advances in technology and the communications infrastructure due to some political reasons. In addition, some interviewees stressed that the government needs to ensure that it educates Libyans who work in banking sector to know that these technologies would add to the capacity for wealth generation; in addition e-banking techniques would also improve their banking experience. However, certain obstacles were presented when employees in mostly state-owned banks opposed the introduction of technology as they feared job redundancy would set in. This view is consistent with the study conducted in Libya by AbuKhzam and Lee (2010) in which it was observed that the employees were intimidated by the introduction of e-banking systems and were concerned about their lack of skills and capability to use and apply the new technology. There was also great anxiety about the possibility of redundancy and loss of control.

From the study's findings the absence of technology also hampered the chances of these banks to reach out to the public. Performance was further hampered by the lack of communication between the branches, which affected their ability to take major decisions. Libyan commercial banks thus were mostly working as solitary units without proper direction, leadership and goals.

Table 1: A Summary of ICT Factor and its Impact on Libyan Banks' Performance

94% of the interviewees	Government policies and poorly maintained networks are responsible for the lack of progress in ICT.
94% of the interviewees	Strongly agreed that poor state infrastructure, especially within the fields of telecommunications and electricity, causes unattractive performance within Libyan commercial banking operations.
76% of the interviewees	Agreed on the need to improve the quality of customer service delivery, and to reduce transaction cost by causing expenses to fall.
88% of the interviewees	Acknowledge the need for essential technical support and training.

Despite all the socio-political changes following the 2011 conflict, the Libyan infrastructure remains underdeveloped and so the communications network is unable to contend with the new technologies. The rebuilding of a nation is reliant on investment from a wide range of businesses. In turn, these businesses demand a sound banking sector within which they can conduct business transactions. From the point of view of the researcher, the current structures within Libya are insufficient to cope with this undertaking alone so partnerships with foreign banks are essential, providing the arrangements for such partnerships are purely economic, without political interference. Such partnerships do not only bring capital to the Libyan banks, they bring expertise, more-advanced technology and increased opportunities of scale. Yet whilst some banks in Libya are starting to experience the benefits brought by new technology, especially in the private sector, many, predominantly the state-owned banks, are still struggling to manage its introduction. Some participants inferred that this could be ascribed to the inefficacy of banks' employees who largely remain untrained in any new systems or related software and as such are unmotivated and disenfranchised from the changes.

The analysis has found that the banking reforms have affected the structure of the Libyan banking sector, generating some improvements in banking activities during the period under review. Yet there remain many issues that need to be resolved in order to fully transform the Libyan banking sector into a strong, global competitor, among these enhancing the implementation of ICT within banking sector.

Conclusion

It is anticipated that the reforms, financial liberalisation, technology and market-oriented policies implemented in Libya over the last few years will create increased competition in its financial sector. This will subsequently lead to the generation of higher levels of efficiency and performance in the Libyan banking sector. It is quite evident from our study that the majority of Libyan commercial banks still operate under traditional systems, and despite efforts to contribute to the strengthening of this promising sector, those efforts are still below the required level. The potential for a shift towards modern banks in Libya is still suffering from the constraints imposed by the reality of the current banking sector as characterised by poor technology infrastructure, the disruption of their ownership structure and the concentration of shares, the poor use of modern technology, and limited qualified administrative and technical staff that are capable of using the technology efficiently; all these factors contribute to limit Libyan commercial banks ability to compete and survive. Based on the interviewees' opinions, many of the bank clients show little incentive to engage in patterns of modern banking, and this somehow needs to be addressed. Consequently, it has become imperative for the Libyan commercial banks to meet those challenges especially in this time after the recent revolution of 2011. Based on the research findings, the new Libyan government should consider the shortcomings and problems within the banking system environment, with the need to focus on more banking reforms that are essential to accelerate improvement in ICT implementations.

It is essential that the banking sector shift towards modern banking services via the internet and modern communication, but in our view, this renovation is a precondition for the modernisation and development of the economy. In addition it is essential that the renovation of institutional frameworks works towards supporting a comprehensive banking system which can continue to provide the latest innovative services.

This study covers a number of issues in regard the relationship between ICT and bank performance and that may open up the way for future studies and research.

References

Abukhzam, M., & Lee, A. (2010). Factors affecting bank staff attitude towards e-banking adoption in Libya. *The Electronic Journal of Information Systems in Developing Countries*, 42 (2), 1-15.

Abubakar, A. A., & Tasmin, R. B. H. (2012). The impact of information and communication technology on banks' performance and customer service delivery in the banking industry. *International Journal of Latest Trends in Finance and Economic Sciences*, 2 (1).

Agbolade, O. K. (2011). Information and communication technology and banks profitability in Nigeria. *Australian Journal of Business and Management Research*, 1(4), 102-107.

Ahmed, W., Qayym, S.K., Ansari, Z.A., & Alam, M. (2009). Issues of Technology: A Study of Pakistani Context in the Banking Sector. *The International Journal of Organization Innovation*, 2(2), 71-84.

Alwaddan, Abubaker, 2005. Banking Reforms and Banking Efficiency in Libyan Commercial Banks: A Non-Parametric Approach. A Ph. D Thesis Submitted To the Newcastle Business School Northumbria University.

Berger, A. N. (2003). The economic effects of technological progress: evidence from the banking industry. *Journal of Money, Credit, Banking*, 35 (2), 141-176.

BTI, (2012). Libya Country Report. Retrieved from http:// www.bti-project.org

CBL, Central Bank of Libya (2010). Annual report. Retrieved from http:// www.cbl.gov.ly

DeYoung, R., Hunter, W. C. & Udell, G. F. (2004). The past, present and probable future for community banks. *Journal of Financial Service Research*, 25 (2-3), 85-133.

Evans, N., & Sawyer, J. (2009). Internet Usage in Small Businesses in Regional South Australia: Service Learning Opportunities for a Local University. Education in Rural Australia, 19 (1), 15-33.

Farazi, S., Feyen, E. & Rocha, R. (2011). Bank Ownership and Performance in the Middle East and North Africa Region. *Policy Research Working Paper 5620. The World Bank* (2011).

Frank, I., & Oluwafemi, J (2012). Impact of Information Technology on Nigeria Banking Industry: a case Study of Skye Bank.

Furst, K., Lang, W. W., & Nolle, D. E. (2002). Internet banking. *Journal of Financial Services Research*, 22(1-2), 95-117.

Ho, S. J., & Mallick, S. K. (2006). The Impact of Information Technology on the Banking Industry: *Theory and Empirics*. Queen Mary, University of London, UK.

Mastoori, Y. 2009. Reasons Barring Customers from Using Internet Banking in Iran: An Integrated Approach Based on Means-ends Chains and Segmentation, Masters Thesis, Sweden: Lulea University of Technology.

Oni, A. A., & Ayo, C. K. (2010). An empirical investigation of the level of users' acceptance of e-banking in Nigeria. *Journal of Internet Banking and Commerce*, 15(1), 1-13.

Porter, M.E., & Millar, V.E. (1985). How Information Gives You Competitive Advantage. *Harvard Business Review*, 63(4). 149.

Rajput, N., & Gupta, M. (2011). Impact of IT on Indian Commercial Banking Industry: DEA Analysis. *Global Journal of Enterprise Information System*, 3 (1), 17-31.

Robinson, G. (2000). Bank to the Future, *Internet Magazine*, April 1st.

Twati, J. M., & Gammack, J. G. (2006). The impact of organisational culture innovation on the adoption of IS/IT: the case of Libya. *Journal of enterprise information management*, 19 (2), 175-191.

Xu, B., Shao, B., Lin, Z., & Shi, Y. 2009. Enterprise Adoption of Internet Banking in China. *Journal of Global Information Technology Management*, 12 (3), 7.