

A SURVEY OF THE ACCOUNTING INFORMATION SYSTEMS USED BY THE BANKING INDUSTRY IN ALBANIA

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ABSTRACT

During the last two decades the banking and financial industry in Albania has undergone a major revolution regarding the products it offers as well as its organization and competitiveness. During the same period there has been an immense development of the information and communication technology in the banking industry and consequently an increase in the use of advanced information systems in the collection and processing of financial information by these institutions. Also, the globalization of the markets has increased the need to process the information faster and more efficiently, not only for a prompt decision making, but also to comply to financial supervision requirements and to better understand the market situation. In this paper we analyze how the information systems used by the banks in Albania impact their activities and daily operations. We use a survey to conduct an analysis of strategy matrix of McFarlan and how the banks of Albania position themselves in this matrix. We find out that all the surveyed banks view their information systems as strategic tools through which they adjust their market positioning to gain strategic advantage and product differentiation. The dependency on the information systems is considerably high and it is expected to increase in the near future as the investments for the systems are also expected to increase.

KEYWORDS: bank information system, strategy matrix of McFarlan

JEL Classification Code: M41

Introduction

During the past three decades the financial and banking industry all over the world has been greatly shaped after the changes that have been introduced by the development and implementation of the technological innovations. In Europe particularly, the developments in this specific industry have had other great contributors: the changes in the political, economical and geographical landscape of the continent as of early 1990, with the expansion of the market economy in the Eastern Europe, enhancement of the financial markets, increased competition and the increasing need to create competitive advantage. As a result it was inevitable for the banking industry to lean on the technological innovation in order to increase the competitiveness and facilitate their introduction in new international markets. In Albania the banking industry began to

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consolidate and develop especially after the pyramidal schemes collapse of 1997. In statistical terms the current level of domestic investment in the Albanian banking industry is approximately 10.5%, followed by Turkish and Austrian capital investments account respectively 21.9% and 20.6% of the market and in third rank is Italian capital by 16.9%.¹

The information technology has greatly influenced the globalization of financial markets, increasing and diversifying the financial services offered by banks, as well as improving management and increasing the effectiveness and competitiveness of the financial information. Most banks in Albania are established or operate as subsidiaries of their parent banks and consequently they have implemented the same information management systems as their parent banks. This makes more convenient the information sharing between the two, and facilitates the reporting and financial monitoring by their parents. But, on the other side, these information systems do not fully comply with the nature of financial products and financial markets features in Albania. Implementing the same information system as the parent bank does, may be a sound decision for the first stages when establishing a subsidiary bank, but it is not a wise and efficient way of operating for the future years of activity when the subsidiary or branch needs to adapt faster and more competitively to a new and specific environment.

As in the international financial and banking market, the information technology is also increasing its role and domination in the financial services and industry in Albania. In a certain way the banks are dependent on their information systems to perform successfully and to shape their strategic role and position in the domestic market, in diversifying financial services, offering the possibility of security and faster processing of information for management decision making. Therefore the information systems are considered an important tool that ensure a competitive advantage (or not) in the market.

The structure of an information system of a bank usually consists of an Enterprise Resource Planning System (ERP) in which all the banking transactions of all the branches are recorded, as well as of a deposit database (data warehouse) in which all the financial information could be found and requested (using the query languages). The introduction of electronic banking services has increased the dependence of financial services on information technology because more and more customers are using the Internet or mobile banking to receive banking services as well as to realize various purchases and payments online. It is generally acknowledged that a company which has managed to successfully implement an ERP that fully covers its operations and processes information about its services/products more accurately and in a timely way has more chances to perform better in the market (Shkurti et.al, 2014).

The aim of this paper is to study the role of the information systems on the strategic positioning and strategic decision making of the banking industry in Albania. We aim to find out how the banks of Albania position themselves in the strategy matrix of McFarlan and how do they make use of their information systems to gain competitive advantage and product differentiation in the developed market of financial and banking services in Albania.

¹ According “supervision Annual Report 2014” published by Bank of Albania.
www.bankofalbania.org

The rest of the paper is organized as follows: in the first part we present a brief literature review on the information system used by the financial services industry in general and by banks in particular. In the second part we explore the methodology employed in this paper, whereas in the third part we present the results of the analysis with the second level banks in Albania. In the last section of the paper we summarize our main findings and conclusions.

I – Literature Review

The role of information systems has been increasingly higher in some particular industries like the banking industry or financial markets compared to other sectors like the oil and gas industry. Historically the information technology has started to be an important part of economic development, in the late 1970s and only after the 1990s its role has become more than essential, since the success of the business depends on technology and information management. There have been published a lot of studies about the role the information systems have in the industries and companies that implement them (McFarlan et.al, 1983; Sullivan, 1985; Premkumar and King, 1992). The information technology is especially vital in the banking sector (Papajorgji, 2012), because without it, the financial services would not be as fast, as accurate, or reliable as they are, thus boosting the confidence of the users, which is crucial for the operations in this sector. According to a study conducted in Greece (Santouridis, Trivellas, 2013) on the impact of information systems in its banking system it was concluded that the managing and being able to relying on their information systems was the most important aspect to deal with during large financial markets turbulences.

The dependence of financial institutions on the use of information technology for delivering more competitive products was even more obvious during the late 1990s and early 2000s. According to Rawani and Gupta (2002), who implemented the strategy matrix of McFarlan (1983) in their study, the information systems were already taking an increasingly dominant role in the financial sector processing their daily operations. The banking institutions themselves pointed out at the information systems as one of the primary strategic factors that would contribute to offer low cost and reliable financial transactions. Similar conclusions were drawn in the study of Abulqasem et al (2012) focused on the banking institutions of North African countries. In this study it was emphasized that information systems were providing effective and qualitative information for executives, reflecting their important role for decision making.

Santouridis et.al, (2013), showed that the different applications of the Management Information System (MSI) in banks made it easier for the final user to process information; they could support innovation, creativity, financial landscape modelling and internal control procedures which overall could increase the stability of the internal process of banks.

As previously stated, the information system of bank could be represented as a pyramid where the base stands for the operational systems that offer banking services such as POS, ATM etc. In the central part there are the tactical planning systems; that is the Data Warehouse and at the top of the pyramid, which represents the strategic planning, we see the ERP system. This is a scheme initially proposed by S. Kesharwani (2005).

Strategic matrix is a strategic grid that McFarlan, McKenny and Pyburn (1983) used to express the strategic impact in x axis and in y axis, the future evolution of information systems in organization. This matrix is focused in four crucial roles as are: strategic, turnaround, factory and support. In this way all the businesses can identify the IT position in their company in order to better planning and control of Information Systems. The philosophy of matrix is: firstly you should know where you are than you can plan what you will achieve.

II – Methodology of the study

To realize this study we have collected data through a questionnaire which was intended to determine the strategic role of information systems in commercial banks in Albania. Processing of primary data obtained from the responses of employees of IT department from the banks of the second level is performed by graphic presentations in Microsoft Excel.

The objectives of the study were 16 commercial banks that operate in Albania (table 1). The survey was conducted through interviewing employees and directors of the IT departments in each bank. The questionnaire was sent out to 9 of the banks and we received it back from 8 banks (National Commercial Bank, Raiffeisen Bank, Intesa SanPaolo, Tirana Bank, Alpha bank, Credit Agricole, Fibank and ProCredit Bank) which represents more than 75% in banking sector. The other banks were not included in the study not due to the lack of their importance but because we were not able to have information from them¹.

BANKS	Total Assets	Total Deposits
Raiffeisen Bank	20.9%	21.4%
National Commercial Bank	24.3%	23.0%
Alpha Bank Albania	5.6%	6.1%
Intesa Sanpaolo Bank Albania	11.2%	11.3%
Procredit Bank	2.8%	2.8%
Crédit Agricole Albania	1.9%	1.9%
First Investment Bank	1.2%	1.3%
United Bank of Albania	0.5%	0.4%
Veneto Bank	2.0%	2.0%
Tirana Bank	7.2%	7.3%
International Commercial Bank	0.7%	0.6%

¹ Despite we insisted the questionnaire was for studying purposes only, the other banks' employees were hesitant to complete it, fearing this would be considered disclosure of confidential information by their managers.

National Bank of Greece	3.1%	3.0%
Credit Bank of Albania	0.2%	0.1%
Societe Generale Albania	5.4%	5.5%
Credins Bank	10.2%	10.4%
Union Bank	2.7%	2.8%
TOTALI	100%	100%

Table 1: Commercial Banks in Albania and their relative weight in the banking sector.

Source: Supervision Annual Report, Bank of Albania, 2014.

The questionnaires were mainly sent by email to the staff of the IT departments of the banks. Nevertheless, we tried to be present during the time the banks' personnel was filling them out, so we could avoid any lack of answers or any ambiguity. All completed questionnaires were subsequently processed through Microsoft Excel.

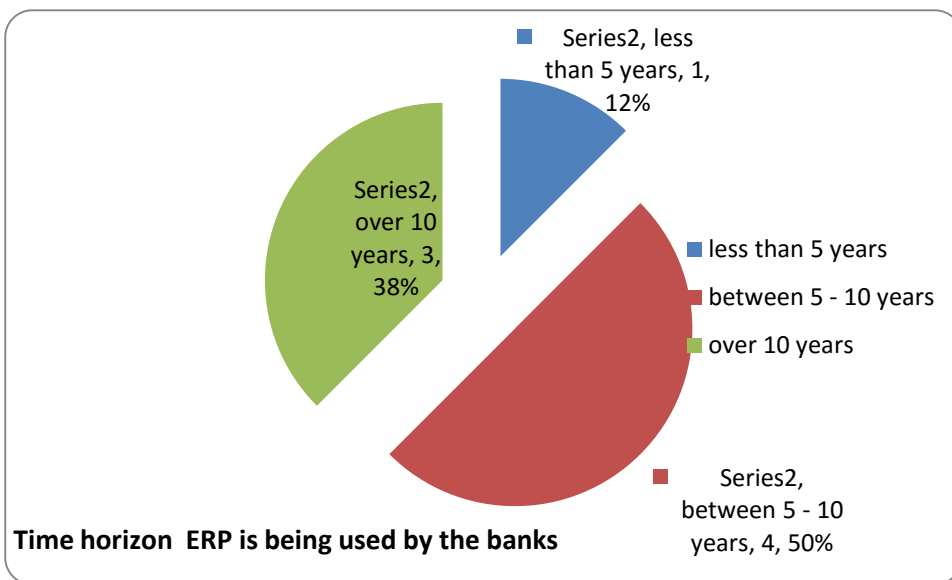
The questionnaire included different kinds of questions, like closed end questions, open questions with comments and multiple alternatives. We tried to collect the views and opinions of the IT managers and staff involved in the everyday processes of the information systems. First we focused on general question and then asked specific questions that we would later use to define the position of the bank in one of the quadrants of the McFarlan matrix of strategies.

The first of the general questions focused on the experience that the interviewed employee had with the information system he was currently working with. We found that 50% of the sample had not more than 3 year working in the current position; 25 % of the sample consisted of employees who had worked from 3 to 5 years and 25 % represented employees who had worked from 5 to 10 years in the current position. None of the employees was working in the current position for more than 10 years. We regard that this distribution represents the dynamics of jobs in the banking industry, where employees often move from one position to the other or from one bank to the other, thus making it difficult to find employees with an experience of more than 10 years.

III – The results of analysis

Trying to position the studied banks in the McFarlan's matrix of strategy we addressed the sample with several questions. Firstly, we researched what kind of ERP system the banks were using. We notice that three of the banks are using the same ERP, Oracle Flexcube - National Commercial Bank (Zarshati, 2011), Alpha Bank Albania and Intesa Sanpaolo Albania. Four of the other banks are each using a distinctive system (Atlantis ERP Financials –Crédit Agricole Albania; Misys BankFusion Midas - Raiffeisen Bank; Quipu Banking System - Procredit Bank; ARIS Business Process Analysis - Tirana Bank) and only one of the banks has a Proprietary system built according to its internal needs and specifications.

As seen in graph 2 the banks have a long period using a certain system, showing a consistency regarding the use of an information system. 88% of the banks have more than 5 years using a specific ERP (This is reflected as National Commercial Bank has implemented its system in the wake of the 2000s also Intesa Sanpaolo Bank Albania has inherited its system since the operation of the American Bank of Albania, while only Raiffeisen Bank is one that has something more than a year has implemented a more advanced system to better meet the needs for collecting extensive use of information by subsidiaries and for a faster processing). We may conclude that the banks¹ in Albania in general have their current ERP systems in use for a considerable period already and this means that these systems are not in their early phases but already matured and delivering consistent results.



Graph 2: Time horizon ERP is being used by the banks.

The next question addressed which were some of the other subsystems or applications that banks use or have implemented, beside their main ERP. Based on the answers given by the interviewed we found that banks really use an extensive array of applications and software to best provide their banking products and applications such as Business Intelligence (QlikView) BankWare, SAP Business Objects.

¹ The National Commercial Bank has implemented its system in the wake of the 2000s; Intesa Sanpaolo Bank Albania has inherited its system since the operation of the American Bank of Albania, while only Raiffeisen Bank has only a little longer than a year that has implemented a more advanced system to better meet the needs for faster collecting and processing information by its subsidiaries.

Next we asked about what kind of structural organization the banks used to operate their IT function, whether it was a separate division spanning several functions of IT, a distinctive sector, or a subunit ordinate to a department. We note that all banks consider their IT function with a very high priority and exercise a lot of control not only to maintain the security of the systems but also to guarantee information security which is critical for their activity. In our survey we found one bank (National Commercial Bank) with a somewhat more complex structure of IT department, where IT and finance functions were grouped in a special sector with one director, and then subdividing in more subordinate units, but reporting to higher level of management.

The other question focused in asking the banks at what extent do they perceive that their bank operations depend on the information systems they use. The respondents could choose among four alternatives, which were formulated so as each one of them could represent one of the dimensions of the strategy matrix of McFarlan (strategic, turnaround, factory, support). All the respondents answered that the banks' information system could be considered closer to: *"considerable dependency of the daily operations on the information system and that this dependency is expected to be increased due to the launch of new products and services in the market"*.

We also asked, what would happen (according to their operations protocol) with the banking operations if a "system shut down" would occur. We present the answers in the table 3:

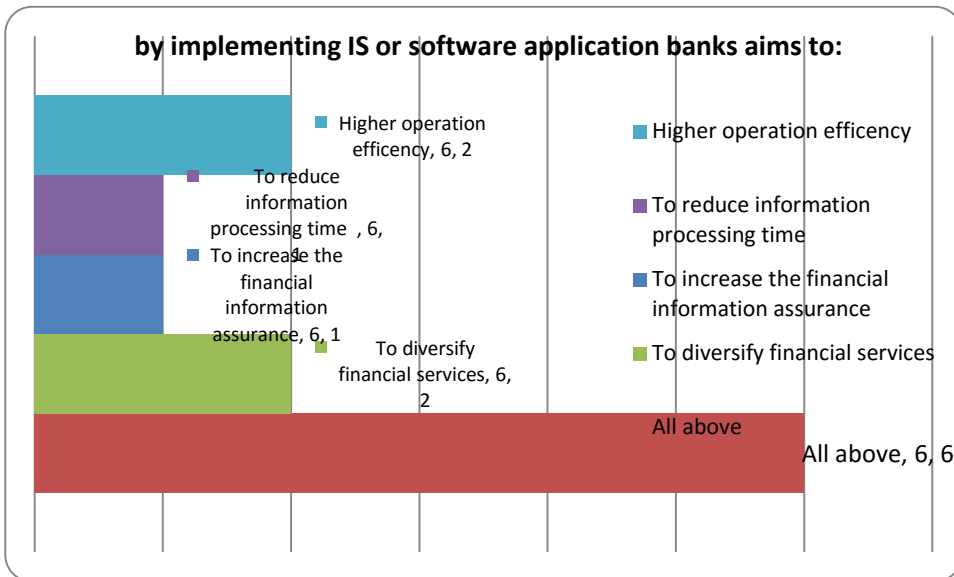
Alternatives:	Percentage
1) Would interrupt all operations in branch and back office.	25%
2) Would interrupt the major part of operations in the specific branch and back office.	50%
3) Would interrupt the major part of operations in the specific branch but would have little impact on the work of the back office.	25%
4) Would interrupt a small part of operations of the whole bank.	0%
5) Would have no impact on the daily operations.	0%
6) other	0%

Table 3: Course of action if a "system shutdown" would occur in the bank:

Going through the answers given by the specific banks, we may notice that big banks such as the National Commercial Bank, Raiffeisen Bank, Banca Intesa SanPaolo, Tirana Bank have chosen one of the first two alternatives, probably due to the geographical extension of their operations, the integration of several software applications making these banks more dependent on their systems' functionality. Whereas the small banks, such as Bank First Investment or Bank Credit-Agricole Albania that have fewer branches

and that do not offer the full range of products that the large banks do, have not performed a full integration of their software applications and therefore have a lower degree of dependence on their information systems. This argumentation is confirmed also by the answers given for the next question, “whether the costs of maintenance of the information system has increased or not during the recent years”, the largest banks have responded “considerably”. So they spend a lot to maintain their information systems.

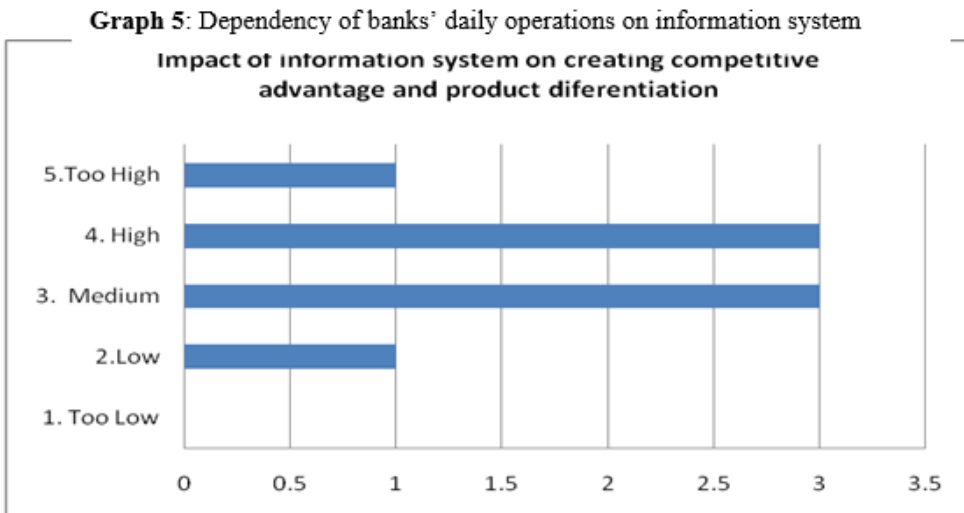
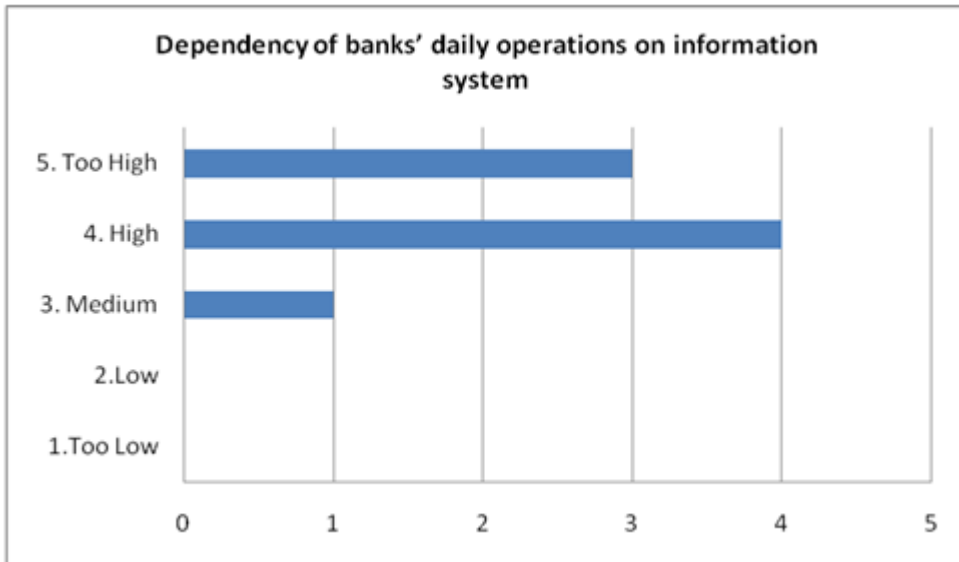
We considered also important to ask the banks what the reason they implemented their current information system was. This was a multiple selection question with more than an option available and we got the results presented in graph 4.



Graph 4: Reasons of implementation of a system or software application by a bank.

The majority of the respondents selected all of the options listed in the interview, what implies that the information systems implementation is a multi-purpose action aiming to increase operations efficiency as well as to reduce the processing time, differentiate the bank in its market and enhance the security of financial information.

The next two question of the survey aimed to find out whether the bank was considered to be highly dependent on its information system and what the role of this information system in creating competitive advantage or differentiating the financial service is. Graph 5 and 6 depicts the results we got for these questions.



After completion of the survey questionnaire we tried to map the responses received in a model of strategies matrix of McFarlan. As explained earlier in this paper, the matrix consists of two dimensions; the vertical dimension is related to the current impact of information systems to banks whereas the horizontal represents the strategic impact in the future. We used the answers of the respondents to locate each of the banks in the matrix, each of the answers as described in detail previously in this study. All the factors that were considered for the two dimensions are listed in the matrix, where each answer has been given a number of points. At the end we added up the scores of the two dimensions and dumped them in the graph 7. Regarding the future aspect all the factors are consider in full correlation with information systems such as e-banking service, dependence on

information system, implementation of new software while the expenses on maintenance or development of existing software as present factor will have a great dependency but not a full correlation.



Graph 7: Strategy matrix for banks in Albania.

IV – Main findings and conclusions

Based on a series of studies and also in the McFarlan matrix model (1983) for determining the strategic role of information systems in the banking sector we conducted a study with the banks in Albania. This is the first kind of study which tries to plot the banks in the McFarlan matrix and which focuses on understanding the relation that banks have with their respective information systems and how the latter are used to strengthen the strategic positioning in the financial market.

Since their early stages, the banks in Albania have implemented advanced ERP to manage their daily operations. This is due to the fact that almost all of the banks have been opened as branches or subsidiaries of foreign banks, and adapted the same systems as their parent companies. Along the time most of the banks adapted their systems to the current conditions of Albanian financial market and to the new products and services they launched, and therefore the systems are in integration of old platforms with new software

applications which were intended to increase the efficiency of operations, reduce the processing time information and enhance the information security.

The strategy matrix of McFarlan pointed out that the banks in Albania had a strategic consideration about their own information systems. Their daily operations were considerably dependent on the technology. Consequently, banks are already using very advanced ERP and other programs which are also used by other international financial institutions. Even in terms of the use of software for financial reporting purposes, the banks have implemented systems which offer them the ease and possibility of reporting more accurately, more quickly, in compliance both with the regulations and standards as required by the Bank of Albania, and by the parent banks and bank executives. Due to these advanced reporting systems, the banks can generate information in real time to ease the supervision and financial control both toward their branches and from the Bank of Albania, ranging from reporting daily liquidity for the Bank of Albania or weekly reports and to financial instruments of running, finishing with periodic reporting of the financial statements.

As closing remarks we may point out several limitations of this study. First, as the survey was directed to the target group of IT employees and managers in banks, we acknowledge that their opinion may not necessary be the official standing of the banks itself. Second, the experience and knowledge of the staff who responded about the information systems and the objectives and strategies of the banks are assumed to be appropriate so for them to be able to respond to this questionnaire.

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