STRATEGIES FOR CORE STABLISHMENT IN IRANIAN BANKING INDUSTRIES

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Abstract

Today's modern banking calls for delivering quality service and it is considered an effective strategy for success and survival in the competitive environment.
Thirty public and private major Iranian banks are working in different fields of business areas and offering various deals to their customers.
Spite of Iran Central Bank (ICB) which over rules Iranian bank industry regulations. Doing best, Banks for their competitive job requires proper Information Technology infrastructure.
Inadequate ICB constraints put limits to bank's industry. Therefore, push banks to spend lots of money to invent different methods for facing those constraints and limitations to survive in competitive market.
Therefore, major banks for cooperation with international monetary system, individually or some together established a third company. Some purchased a new core banking platform using foreign developed software.
This research has taken place in a well-known large private Iranian bank to overcome above mentioned problems. Expecting come up with either developing or purchasing core banking system able to support banking Open API.
Delphi method was used to establish the validity of the proposed methods. The result showed combination of second and third method is the best. First alternative was eliminated because of cost, lack of internal experts and high dependency.

Keywords
Core Banking, Banking Technology, Private Banks

1. INTRODUCTION

Information Technology (IT) in the banking industry is not a cost center but is a catalyst for value creation and competitive advantage. IT developments in the field of big data, mobile, social networking and cloud computing, is the starting point of modern banking. The development and strengthening of information technology in the banking industry through innovation and creativity in this area is directly related to investments and costs. So, according to international organizations, banks spend 5.4% of their revenues for their IT, achieved 24% benefit. Which is an indication of the importance of this issue? The IT average cost in the global financial sector is 5% of their revenue. But, banking industry in 2013 and 2014 has spent 6.2 and 6.3% of their revenue on IT and is increasing yearly.Based on this study, we focused on the implementation of centralized banking product (core banking) for private banks in Iran in the form of joint venture and consortium through a third party. So, the result of it covers not only financial risk management, but risks associated with launching Core Banking. Therefore, cost cuts should be receive, modern, fast and with minimum cost and comparable with the global trend products and services will be achieved.

2. SUBJECT AND PROCEDURE

In this paper, Core Banking's top companies domestically and internationally with open architecture were investigated. The Iranian banks' advantages and disadvantages for their selected approaches were examined. Study information sheets and questionnaires were used for collecting related data through library studies and for data collection companies. Questionnaire's validity and reliability were analyzed from the point of view of 15 private banking expert. After this step, first validity check, then the questionnaires were approved by 36 of the top managers in the field of Iranian banks having sort of core banking. Scientific journals, books, databases and other bodies such as the Internet published reports were reviewed. Required organizations data such as the monetary and banking institutions as well as through correspondence with Bank experts were collected. Those data were classified, compared and analyzed. Using those collected advantages and disadvantages through comparative tables, the validity of the proposed method evaluated using Delphi method and finalized.

3. REVIEW OF CORE BANKING SYSTEMS IN THE WORLD

3.1. Common standards

Still, many banks are working on discrete set of heterogeneous systems and applications base method. In other words, their current system is restoration of the old system using the new technology. As a result, the cost of setting up and maintaining to an acceptable level of integrating non-standard legacy systems (heterogeneous) and methods, will increase up to several times.
With the development of universal banking services, banks need international standards structured model more than ever. Such as:
Standard BIAN: that is based on service-oriented architecture
Standard IFW: used to modernize processes and banking systems

3.2. Common Looking at the evolution of Core banking in the world

The operational core banking system for the first time found their way into the market on mid-1970s. This system has been developed and were run on mainframe for number of banks' investment and management. On 1980s, systems of "packaged solutions" entered the market by software development companies, but their ability were limited for working at large environments.

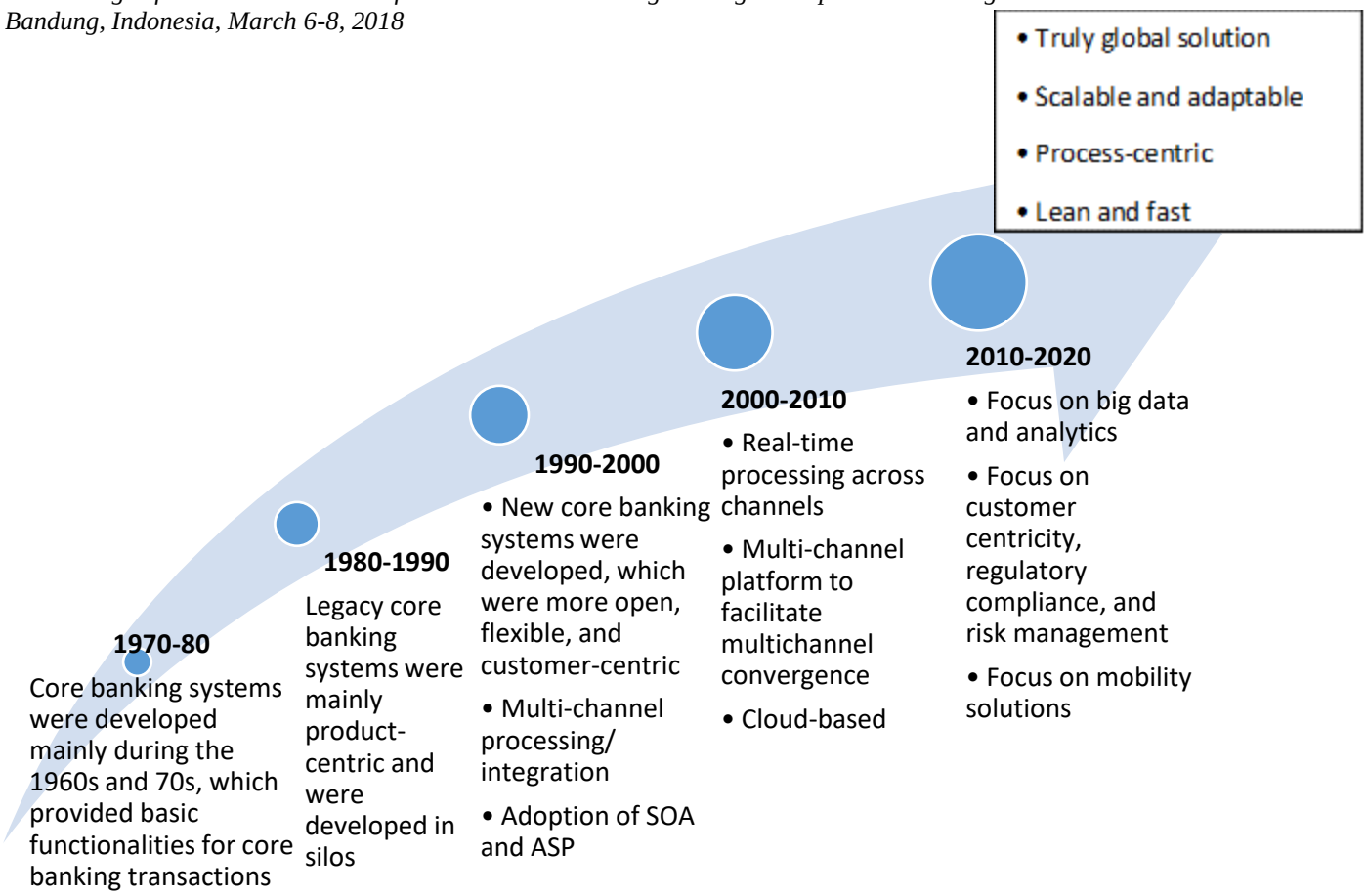

Figure 1: Evolution OF Core Banking Systems in the world

4. review different methods for using core bank system in Iran

4.1. Supply software through Iranian software developer companies

This method is using by most of the banks in Iran. By this method the banks obtain the software license from an Iranian company and supplier is committed to supply software via a contract. The weak points for this method is as follow:

4.1.1. Lack of agility in developing new products:

Shortage of core banking systems provider, each of them are servicing to several banks. On the other hand volume of changes requested by regulatory and needs to have competitive advantages caused a lot of requests are send to this companies and it caused the changes requested by the banks be ready by the company slowly and results dissatisfaction among the manager of banks and customers.

4.1.2. Intellectual property:

Due Since the shortage of core banking companies in Iran, as soon as the plan is presented by the bank, the IT Company deliver it to another bank that has contract to it and cause losing the competitive advantage of the bank.

4.1.3. More supporting charges:

Since the risk of changing core bank in bank is high banks rarely decide changing system, and it caused the IT company request more cost for charging the system. It's not approved by the banks have to pay it.

4.2. Buying the foreign core banking system

By this method core banking system will buy from a foreign company and customize for the bank.

A few banks have used this method. Most of these banks have registered a company or provide an internal department in the bank and planned to train experts on the system. After training it start to customize system based on the needs in the bank. This method has problems as follow:

4.2.1. Cost of customizing:

Since differences between Islamic banking system in Iran and other countries, the foreign systems needs to have a lot of changes, these changes include the infrastructure and products of the system.
On the other hand since the infrastructure changes need the mother company expects it will caused a high value cost and charges.

4.2.2. Shortage of specialist and its charges:

Supporting the infrastructure of the core banking systems needs high quality specialists. These type of experts needs salaries that isn't compatible with internal structure of the banks.
This problem caused the banks cannot hold them and they will migrate to another companies.

4.2.3. Lack of skilled labor and maintenance costs of

Maintenance of infrastructure software for banks require expertise specific, usually rights to this group of people with administrative structures and regular banks do not match and this makes not the group of experts in the bank attracted and always worried about the three migrate them to other companies.

4.3. Generating the internal product:

By this method bank will make a company or an internal department to design and produce core banking systems based on the needs of the bank.
This method has problem as the following:

4.3.1. Need long term to design and develop:

Because Since the software needs to design and develop it spend a lot of time to do it , and this period sometime need tow or tree year for completing .
Actually this method is reinventing the wheel and will result losing money.
Meanwhile with respect to values of changes and products in banking system, caused the core system never arrive to implementing.

4.3.2. High cost of supporting:

In As well as the costs pointed in article no. 1-2 , cost of product is added is added to it and will results a very high expensive.

4.3.3. Shortage of specialists and its charges

Like article no. 3-2

5. The necessity and importance of "open architecture" in Core banking systems

The old core banking systems weaknesses is lack of flexibility, so updating is time consuming and requires huge investment.
Therefore, modern banks need modern core banking systems to improve their operations' efficiency and flexibility.
System modernization through core banking happens via one of two methods, "develop" or "buy".
Logical approach for many banks seeking the open architecture would be deal with new requirements through business change.

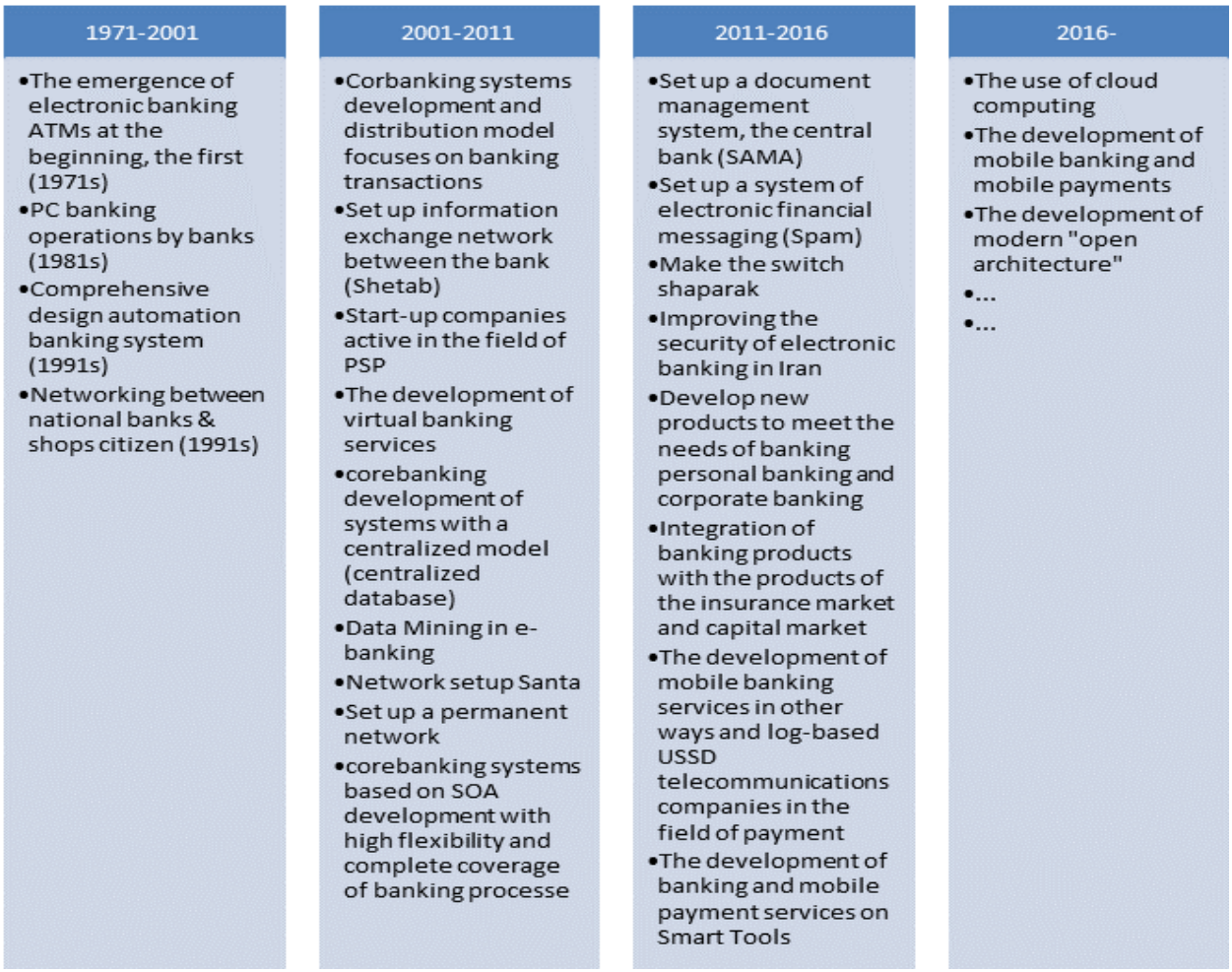

Figure 2: History of e-banking in Iran

6. The amount of money that banks around the world have paid to it

According to research institutions, Celent, Gartner and Forrester, World Bank IT cost have increased from 270 to 490 billion dollars on 2013.
There is a correlation between IT costs and banks profitability. Spend 5.4% of Banks income for IT, resulted 24% bank industry net income and capital increase. Looking at banking industry IT development, rising costs inevitable for coming years.

6.1. IT's costs centres in the banks

- Promoting the macro data (Big Data) capabilities for customer data and databases better analysis.
- More attention to improve risk management and investment efficiency empowerment for the customer needs analysis.
- Increasing investment in technology for digital channels (e.g. internet, mobile and social media).
- evolution in centralized banking system (Core Banking) to provide better services and products in a highly competitive environment and to reduce costs.

According to Boston Consulting Group study, bank in European banks spent 30% of their IT budgets for make change projects and 70% for the ongoing projects between 2003 and 2010.
Based on Mackenzie Consulting Group study on calculated impact of IT spent on 105 banks performance, resulted; IT spending increase will have no direct effect on the efficiency increase.

6.2. The Country's banks spending in Core Banking

To evaluate the IT investment for country banks using Gartner methodology, all public and private banks in Iran selected. But, only 17 banks participated in the survey and responded to assessment documents. Those which owned 65% of total bank assets in the country.

Table 1: Table IT spending in the country's banks (Million Rials)

Year	2013	2014	2015	2016
The cost	5293000	6500000	85000000	11770000

According to Gartner documents, banking industry spend approximately $500 billion yearly over the IT field for 2013 up to 2016. Gartner IT figures includes Software, Hardware cost, access channels and operational costs.

6.2.1. The software costs

Core Banking System cost trend been descending from 2013. So, with trend more limited investment is on the way for Core Banking system on future. With the same manner in general, software spending had decreased substantially from 2013 to 2016, it declined 50%.

Table 2: Table Country bank's software spending as part (%) of their IT total cost

Year	2013	2014	2015	2016
The cost	7.87%	6.71%	6.33%	6.40%

6.2.2. Hardware costs

Hardware costs include the cost of the data center, infrastructure support as well as branches and offices and network centers.

Table 3: Country bank's hardware spending as part (%) of their IT total cost

Year	2013	2014	2015	2016
The cost	46.73%	45.08%	36.28%	35.43%

As shown above, the cost of hardware has decreased from 2013 to 2016 by more than 11%. The ratio is experiencing a downward trend. Despite of declining in hardware costs, data center costs increased, 80%, over those 4 years.

7. Iranian banks Satisfaction assessment for country's IT products and services DEVELOPERS

Customer (Bank industry) satisfaction for developing IT services companies is shown as below. In terms of satisfaction, rating has been between 1 and 5.

Table 4: Table Satisfaction banks of providers of data centre, country (percent)

Service offered	Data Centre	communication networks	Systems Staff	Services Support Systems
Overall Rating	3.89	3.86	3.73	3.90
The number of employer	13	11	28	31

8. PROPOSED method (innovative)

- Starting up a new IT company by few banks (max. 4 banks).
- New company will Supply the new Core Banking system (Developing or Purchasing) for shareholder banks.
- The supplied system has to have the following specifications:
    - Ability to work on cloud infrastructure.
    - Ability to support open API architecture.
    - Ability to support high scale services.
    - Ability to expand independently.
- Following we describe each section:
    - Ability to support cloud infrastructure.

This cloud infrastructure will be deployed by shareholders and can provide the clued services as follows:

- Software As a Services (SAS)

Software will deliver to the shareholders and the customers don't need to have software experts to support the infrastructure.

- Infrastructure As a services (IAS)

Network infrastructure and connections to shareholder's branches will provide and supported and will deliver exclusively.
Also, required hardware, back-ups as well as optimizing usage, will be provided by this new company.

- The software that will be provided for the shareholder banks are as follows:
    - Core banking system, includes deposit, lending, so on. Company is committed to keep data and information confidential.
    - Providing competitive advantages, open API architecture web services. Company is committed to provide web services for the shareholder banks based on their exclusive structure.
    - Shareholder banks internal structure and services, to support their competitive advantages through an internal department or establishing a new company to develop new products.
    - Types of these competitive advantages are as follow:
    - Electronic channels like internet, mobile, telephone, …
    - Banks with getting the web services start to produce new products base the electronic channels, due to specialist capacity and investments it can develop new products.
    - ERP software
    - Using open API from the company, shareholder banks can connect their Core Banking systems to their branches through internal ERP and manage it centrally.
    - Other software systems
    - Company develops new software base on the shareholder requirements within bank confidentially.
    - All the developed software will be delivered to shareholder banks for installing on bank and branch hardware's. It will be done through security protocol.

9. CONCLUSION

Electronic services development and virtual services demanded by costumers in one side. On the other side, communication by international monetary systems push Iranian banks toward starting the flexible and reliable Core Banking systems.
Current alternatives for facing said situation are not neither proper nor sufficient. Therefore, innovative solution as establishing new IT Company by few major banks capable of covering shareholder banks

requirements in order to achieve competitive advantage is the best solution. A company to provide confidential Core Banking system and all IT hardware, software and maintenance requirements.

REFERENCES

[1] Jesien Rossi, Mohsen Moazami Goudarzi, H. Jahed, The open architecture systems Core Banking, June 2014.

[2] Department of Electronic Banking Monetary and Banking Research Institute. 2015. analysis of banks in information technology spending, 1rd Edition, the Central Bank of the Islamic Republic of Iran.

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Scientific:

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Tenure Assistance Professor, Amirkabir University of Tech., Tehran, Iran, Since 1990.

Published three books related to Strategic Management, published and presented many papers and articles regarding above mentioned subjects in International magazines, Conferences and Seminars.

Developed and published a competitive model for local companies' and organizations' strategic planning facing country entering WTO (World Trading Organization).

Experiences:

Managing Director, Mabena (Management and Planning for Industry and Energy),

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Director, Pars Engineering Management Research Center

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Ahmad Jafari

Ahmad jafari is an expert in Industrial Engineering. He has earned his M.S. and B.S degree from Iran science and Technology University. He has researched about different type of production planning

and expanded the MRPII system as MIS system and installed it in one of the biggest automotive manufacture in IRAN (Saipa Diesel).

He also has certified in ISO 9000 (Quality Assurance Management Systems) and expert to implementing it in manufacture companies. Today he is working as a CEO in IT department in Parsian Bank (one of the biggest private bank in Iran). He has studied and researched in different type of banking systems and has been manager of implementing tow big bang core banking system in Parsian Bank.

Jafari has been board manager of Shaparak Co. Shaparak is one of the governance company that is regulator of P.O.S and payment system in Iran and manage by Iran Central Bank.

He is Vice Chairman of the Board in Parsian Data Processing Co. and Parsian E-commerce Co. Jafari has studied deeply on different solution for installing and managing IT Banking system in IRAN.

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Nader Nematpour

Nader Nematpour is currently a fulltime Directore of Business Planning in Parsian Bank Data Processing Group Co of Iran. Mr Nematpour hols a Bachlor of Science degree in Industrial Management From Tehran Jonob University and Master of Science degree in Industrial Engineering and Management Systems from Amirkabir University of Technology (Tehran Polytechnic), Iran and DBA in Doctorate of Strategic Business Administration and Management of Iran University of Industries and Mines,Tehran. He has published journal and conference papers Such as (CIE43-44-45-46). He is a Certified Management Consultant (EFQM & ISO) with over 20 years of experience in working with closely-held businesses (Model 45 assessment).

He has taught courses in Strategy Management, Dashboard management and Enterprise Architecture and Project Control and Leadership Management for engineers.Mr.Nematpour served as Member of the Institute for Productivity & Human Resource Development Tehran Iran.