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Central Bank of the Islamic Republic of Iran

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Identifying the infrastructure and implementation tools of the digital experimental platform

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The scope of the report

Identifying the infrastructure and implementation tools of the **Digital Experience Platforms (DXP)** in banks to streamline operational processes is one of the requirements pursued in recent years in large banks in developed countries. Although in recent years, the ecosystem of the country's banking and financial sector has undergone dramatic changes with the introduction of new financial technologies (Fintech), these changes are currently only visible in the payment systems sector and have not yet reached the digitalization of banking processes. Financial institutions have mainly based their services on receiving commissions, information asymmetries in the market, and providing the required financial resources according to the available capital. The major effect of digitizing banking processes is that, in addition to **End to End Digitalization**, it also speeds up the presentation and availability of information freely to managers, analysts, and banking supervisors. By presenting the basic features of the digital platform in the next generation of banks, this report has identified the basic tools of the transition to the next generation of banking, such as the use of **Artificial Intelligence (AI)**, **Machine Learning (ML)**, etc. in four basic phases. Also, due to the fact that the first step in the experimental digitalization platform is digitization, the important banking sample process has been implemented for the banking product, i.e., internal letter of credit.

In his book *Digital bank: strategies to launch or become a digital bank*, **Chris Skinner** outlines strategies for launching or becoming a digital bank, which he intends to call the book "Data Wars" because he knows the future of banking competition is all about data. According to him, this issue is still present, and only some banks that have not entered this field will realize this issue and enter the field in the near future (Skinner, 2014). **John Reed**, the CEO of Citibank in the 1980s, said banking was just "bits" and "bytes." It was said when the banks had neither telephone communication centers nor internet banking; The branch was the only way for the bank to communicate with customers, and even at that time, the importance of data collection and processing was clear. Nevertheless, technological developments have led to a new look at the whole of banking processes.



Before entering the topic of digitalization (or digitalisation), it is necessary to define it and determine the difference with other concepts. In this discussion, the important difference between digitalization and digitization is noticeable.

Digitization: is a process in which the conversion of other digital and numeric formats to digital format is described. Such as converting the analog audio signal to digital format. In banking, if information technology is limited to scanning and storing documents in digital format, we have digitization.

Digitalization: metamorphosis or transcendence beyond digitization. In digitalization, the organization seeks to end-to-end automation of internal processes throughout its network to improve its performance; Therefore, in digital transformation, the organization seeks to promote more effective results by improving the customer experience. The agility of operational processes, the speed with which information is provided, and its open accessibility to managers, analysts, and banking supervisors are among the digitalization results.

Digital Banking: A banking activity in which all processes are digitized to change stakeholders' experience, or all processes are created that way from the beginning.

Virtual Banking: A type of banking in which the bank provides micro-banking services in an electronic platform such as the Internet (and without going to a branch); Therefore, this banking business style leads to the use of new financial technologies and a new kind of customer experience.

The distinguishing feature of digital banking and virtual banking is that in digital banking, all banking processes in branches and headquarters are fully automated and digitalized, but virtual banking only emphasizes the provision of online services without branches. In digital banking, digitalization is considered for all banking businesses, not just micro-banking. Thus, it can be said that virtual banking is a part of digital banking.

The main claim of digital banks is that the current conventional or traditional banking is not **customer-centric**; in other words, the current banking business is not focused on creating a positive experience for customers by providing maximum banking services / products.

This report identifies the important tools of the digital experimental platform and the fact that for important banking products, the digitization of processes in the banking network has not been done; this work has been implemented for sample products. The purpose of digitizing domestic documentary credits as a banking product has been to provide a structure to automate this product's processes to reduce its challenges due to the recent problems in 2012-2013 in the banking network.



The basis for the development and implementation of banking processes' digital infrastructure is the transition of **process-based organizations** and their systems to the digital economy. The digital economy can be implemented when it has ten main **Enablers** or platforms (Gupta and Tham, 2019). These ten main enablers are: Reliable digital identity, trusted digital data hub, customer satisfaction architecture, public infrastructure for the digital economy, scale computing, open architecture, digital literacy and entrepreneurial growth, empirical and experimental data policy (sandbox).

The report is divided into five sections. In the first part, we discuss the digital transformation in the banking industry. This section begins with an overview of the importance of digital banking and the basic principles of the digital banking experience. It then introduces the features of the next-generation digital bank and digital experience platform. Finally, the transformation of traditional banks to digital banks is presented. In the second part, the digital economy pillars, including digital identity, a data hub, public infrastructure, scale computing, open architecture, etc., are introduced. In the third section, we digitize banking processes; In this section, the evolution of banking, innovation, and efficiency in the banking industry are considered. In the following, the phases of the digitalization implementation plan are introduced. In the fourth part of the report, a sample banking process is selected, and the theoretical issues presented in the previous sections are presented in a practical way on this process. Finally, in the summary section, a brief summary of the report's main contents is provided.

Policy recommendations resulting from the report

Digital transformation is changing the way traditional banks operate and redefining how traditional banks interact with customers. Banking organizations want to use modern digital technologies to deliver a compelling customer experience across all channels, anytime, anywhere. The new banks are **Native Digital** and offer the first digital banking experience, while the existing banks are transforming and digitizing their business processes.

The published report proposes the basic principles and architecture for the **Digital Experience Platforms (DXP)**. There are several ways to transfer existing web-based platforms to digital experimental platforms. Although we discuss issues related to digital transformation methods in banking, reference architecture applies to other scenarios as well. The importance of digital banking can be examined from two aspects: changes in the demand for banking services in different communication channels and customer satisfaction.

The banking industry has seen significant growth in methods and tools over the past few decades, yet a storm of change is looming. If banks do not keep up with the new developments resulting from information and communication technologies' growth, they will lose in



competition with new businesses. The digital transformation or digitization has started from micro-banking at the customer experience level but will not be limited to this area. Future banks are all-digital banks whose entire processes have been digitized. It is not only the bank's micro customers experience that goes through digital communication channels but all stakeholders, including corporate customers and even bank employees and managers, will be in the new digital experience with the bank.

Meanwhile, building a fully digital bank may be easier than migrating and evolving digitally, but current banks are inevitably evolving. Digitization goes beyond the use of modern technologies. The basic principles of the modern banking experience, in addition to using these technologies, include redesigning the user-centric experience, gathering customer insights, redefining business models, and even an open digital ecosystem.

Examining the leading digital banks provides a good understanding of banking's future, but it is not easy to change this situation. First, all the prerequisites (enablers) of the digital economy must be met. The government and the governing body and oversight bodies in general can play an important role in this regard. Digital Economy Enablers include Reliable Digital Identity, Reliable Digital Data Hub, Customer Satisfaction Architecture, Public Infrastructure for Digital Economy, Residential Data Policies, Scale Computing, Open Architecture, Digital Literacy and Entrepreneurial Growth, Empirical and Experimental Data Policy, and cybersecurity. Traditional banks can enter the digital transformation based on the presence of digital economy enablers. However, they do not have to wait for these enablers to start the digital transformation because the complete digital transformation itself is a big and time-consuming task. The first step in digitalization is to redefine all of a bank's services, products, and procedures. In process digitization, services and products are designed, processes are redesigned, and transformation and finally implementation are considered according to risk management. Identifying the key processes of banks and improving them forms the core of digital transformation. Using models and classifications of international standards can be a good solution.

In this report, in order to show what is known as process redesign, one of the most important and fundamental banking processes that will play an important role in corporate banking in the future has been selected as the sample banking process. Domestic letter of credit is a banking product that has not received much attention in recent banking changes, but to have a fully digital bank; all processes must be digitized. On the other hand, the redesign of this product's processes shows how digitalization can appear in all dimensions of the bank and is not limited to micro-customers and payment services. For example, the process of discounting domestic letters of credit has steps set by the Central Bank of the Islamic Republic of Iran. At present, all stages of this process traditionally occur, but almost all stages can be digitized. At some point in this process, the discount rate is determined. In a digital bank, the discount rate



can be determined by a machine-learning artificial intelligence model, which the optimal rate can be considered according to the maturity time of the internal letter of credit settlement and its characteristics that determine its risk, on the one hand, and on the other hand, with the prediction of the discount supply situation based on rate changes. Thus, it can be seen to what extent processes that seem to have a long way to go with digitalization can be digitized and make significant bank revenues by reducing costs and increasing service speeds.

Given the current state of digital economy infrastructure in the country, it is suggested that the first step of banks in the direction of digital transformation is to review all banking processes to implement the whole digital process.



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