

# Designing a virtual banking business model in Iran with a scenario planning approach in the horizon of 1415

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**Abstract**

The present study was conducted with the aim of designing a virtual banking business model in Iran with a scenario approach using a mixed method. The research data was collected in the qualitative part by interviews with 30 people, and in the quantitative part by a questionnaire from 100 specialist and experts in the banking industry. In order to achieve the research goal, meta-analysis, Delphi, cross-effects analysis, scenario building and scenario analysis, and group hierarchical analysis methods were used. The result of meta-analysis and screening has selected 66 macro trends, and then the result of cross-effects has selected macro trends driving the future of virtual banking. Finally, the components of the virtual banking business model are presented based on compatible scenarios by considering the average of the computational weights in 4 scenarios as follows: Among the proposed values of the proposed business model for virtual banking, respectively "electronic banking" and "international trade facilitation"; among the key resources, respectively, "banking systems" and "human capital"; among the cost structure criteria, respectively, "banking systems and web services development costs" and "human resources investment costs"; among the revenue stream criteria, respectively, "brand/reputation" and "income from providing various financial services"; among the communication channel criteria, respectively, "banking web services" and "customer club"; and among the customer area criteria of the proposed business model for virtual banking, respectively, "retail real customers" and "small legal customers" rank first and second.

**Keywords:**

Virtual banking,  
Banking systems,  
Customer club,  
International trade,  
Human capital

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## Extended Abstract

### Introduction

Considering the increasing advances in technology and the move towards the fourth digital age, the speed of change in organizations' business models has accelerated. These developments in the financial and economic fields have also been very significant, and have affected the banking industry. The entry of new players into the banking industry has greatly increased competition in the design and provision of financial and banking services and products. On the other hand, given the rapid growth of new technologies, it cannot be expected that a bank can move at the technological frontier and meet all customer needs. Also, with changing technology and customer expectations, new opportunities have been presented to banks, but limitations such as banks' business models and non-agile structures and processes cannot meet customer expectations and partnerships with creative newcomers, and it is practically impossible to use them. Potential market opportunities; therefore, fundamental changes in the business model of banks are inevitable for the convergence of banks' businesses with new competitors (Esfidani et al., 2021). Accordingly, the virtual banking strategy has been proposed as a key strategy to meet this necessity of banks. However, applicable research in the field of virtual banking in Iran has been neglected to develop the business model of banks. Due to the lack of studies and the lack of reliable and documented scientific support, banks use new approaches with great caution. Therefore, by identifying the strategic factors affecting the future of virtual banking and analyzing their mutual effects, the present study has attempted to identify the most important scenarios for the virtual industry in Iran in the horizon of 2036.

### Theoretical Framework

#### Commercialization

Anysiadou (2023) conducted a study with the aim of examining the actual attitude and behavior of Greek consumers towards virtual bank cards and showing whether experimental economics can encourage these banking products or not. In this study, the theoretical principles of econometric analysis were carried out through multilevel models and bivariate statistical tests. The results of this study show that demographic characteristics such as age, along with the level of consumer risk perception, play an important role in the adoption of virtual banking cards; such that the youngest consumers are positive about using virtual banking cards, while older people are pessimistic about them.

Babaki Rad (2021) used Schwartz's scenario-based method in a study to identify digital banking service scenarios. In this study, thematic analysis methods, the analytical matrix of the network of effects, uncertainty, and narrative were used; and the scenario method was used as a workflow connection loop. By scanning the macro and micro environments at three levels of "social behavior", "business environment" and "organizational environment"; 50 variables (driving forces and key factors) have been identified as inputs to the network of effects and uncertainty. Based on this, four scenarios including technological domination, technological obsession, tragedy of technologists and technological ostracism have been proposed by the researcher. In the following, the researcher describes the characteristics of the banking system based on these scenarios.

Coskun-Setirek & Tanrikulu (2021) in the research create a process model for rebuilding a business model based on digital innovations. For this purpose, in this study, models and cases in the Business Model Innovation (BMI) literature were reviewed and empirical data were collected using semi-structured interviews to complete and validate the model. Then, by analyzing the collected data, a method for reconstructing the business model based on digital innovations has been developed.

## Research Methodology

The present research is a mixed type and based on quantitative and qualitative methods. In this research, first, the indicators affecting virtual banking were identified with a meta-analysis approach, and then screening was carried out using expert opinions and Delphi analysis. This research was conducted in Iran as a survey using interview and questionnaire tools. Since the data collection tools are interviews and questionnaires, it is necessary to check its validity before distribution. For this purpose, the CVI reliability index was examined and confirmed during each stage. Then, the Cronbach's alpha method was used to estimate the reliability of the questionnaire, and its reliability was confirmed. In this research, cross-sectional analysis was used to identify the main macro trends of virtual banking. After identifying the key trends, scenarios were allocated for each, and these scenarios were analyzed in the Scenario Wizard software. In this research, the Group Analytic Hierarchy Process (GAHP) method was used to identify and determine the virtual banking business model.

## Research Findings

Based on the results, the agreement coefficient and Cronbach's alpha coefficient for all research variables are greater than 0.7. Therefore, there is a high agreement between experts on the relevance of the identified variables. Also, according to the calculated Cronbach's alpha coefficient, the questionnaire has the necessary reliability. The result of the meta-analysis led to the identification of 106 criteria as macro trends affecting banking in the political and legal, technological, economic, socio-cultural, institutional, environmental and banking dimensions, which after screening the number of criteria was reduced to 66 criteria. Then, according to the number of variables; based on the average scores assigned to each macro trend by the experts, 30 important macro trends (with a higher average score) were determined. Then, based on the analysis of cross-effects, out of all 30 macro trends, 7 driving macro trends were identified in the MICMAC software; the evolution of which can affect the prediction of the future of virtual banking. These drivers include "use of macro data, artificial intelligence, the Internet of Things, advanced analytics", "transformation in payment methods", "increasing trust in e-commerce and payment systems" and "widespread use of remote presence such as using mobile phones", "Demographic and generational changes", "improving the customer's digital experience and providing personalized and tailored services" and "growth in investment in security and reducing cyber risks" are considered to be the main and key drivers of Iran's virtual banking in the 2027 horizon.

After identifying the driving and key variables affecting the future of virtual banking, it is necessary to scenario-draw the status of each of these variables in the 2027 horizon. For this purpose, three states have been considered for each macro-trend: 1- Low change and transformation, 2- Medium change and transformation, and 3- Severe change and transformation. Experts are then asked to predict the impact of each macro-trend on other macro-trends using numbers from negative 3 to positive 3 on the horizon of 2027, considering each of these three situations.

In the first scenario of the future of virtual banking, "macro data, artificial intelligence, Internet of Things, advanced analytics, etc." at a broad level, as well as the extent of "transformation in payment methods", "improvement in trust in e-commerce and payment systems", "use of remote banking services", "improvement of customer digital experience" and "provision of personalized and tailored services" and "growth of investment in security and reduction of cyber risks" in the future of virtual banking will be moderate, and "demographic and generational shifts" will be limited.

In the second scenario of the future of virtual banking, “macro data, artificial intelligence, Internet of Things, advanced analytics, etc.,” at the medium level, as well as the extent of “evolution in payment methods,” “improvement in trust in e-commerce and payment systems,” “use of remote banking services,” “improvement of the customer digital experience and provision of personalized and tailored services,” “growth in investment in security and reduction of cyber risks,” and “changes in "Demographic and generational" will be in the middle of the future of virtual banking.

In the third scenario of the future of virtual banking, “macro data, artificial intelligence, Internet of Things, advanced analytics, etc.,” at a broad level, as well as the extent of “transformation in payment methods,” “improvement in trust in e-commerce and payment systems,” “use of remote banking services,” “improvement of the customer digital experience and provision of personalized and tailored services,” “growth in investment in security and reduction of cyber risks,” and “Demographic and generational changes” will moderate the future of virtual banking.

In the fourth scenario of the future of virtual banking, "use of macro data, artificial intelligence, Internet of Things, advanced analytics, etc.," "changes in payment methods," "improvement in trust in e-commerce and payment systems," "use of remote banking services," "improvement of the customer's digital experience and provision of personalized and tailored services," and "growth in investment in security and reduction of cyber risks" on a large scale, and "demographic and Generic changes" will be limited.

The results of the GAHP analysis showed that among the value proposition criteria, the “electronic banking” criterion in three scenarios (1, 2, and 3) has assigned the highest weight to the virtual banking business model in the horizon of 2027. Also, considering the value proposition criteria in scenario 4, the highest weight has been assigned to the risk management criterion. Also, considering the average of the calculated weights in the 4 scenarios, it can be argued that among the proposed values of the proposed business model for virtual banking; “electronic banking” is ranked first and has the highest weight, followed by “international trade facilitation”, “risk management”, “customized banking and financial services” and “saving time and cost” in the second to fifth ranks.

The results of the GAHP analysis showed that among the key resource criteria, “banking systems” has assigned the highest weight to the virtual banking business model in all scenarios in the horizon of 2027. Also; Considering the average of the calculated weights in the 4 scenarios, it can be argued that among the key resources of the proposed business model for virtual banking; “banking systems” is ranked first and has the highest weight, followed by “human capital”, “social acceptance and legitimacy”, “customer-centric organizational culture” and “bank capital and credit lines” in the second to fifth ranks.

The results of the GAHP analysis showed that among the cost structure criteria, "the cost of developing banking systems and web services" has assigned the highest weight to the virtual banking business model in all scenarios in the 2027 horizon. Also, considering the average of the calculated weights in the 4 scenarios, it can be argued that among the cost structure criteria of the proposed business model for virtual banking, the “cost of developing banking systems and web services” is in the first place and has been assigned the highest weight, followed by the “cost of investing in human resources”, “cost of purchasing products designed by developers”, “cost of equipment and office supplies” and “cost of purchasing or "renting of property and chattels" are ranked second to fifth.

The results of the GAHP analysis showed that, considering the average of the calculated weights in the 4 scenarios, it can be argued that among the revenue stream criteria of the proposed business model for virtual banking; "brand/reputation" is in the first place of importance and has been assigned the most weight, followed by "income from providing

financial services", "income from foreign exchange activities", "income from providing facilities" and "attracting cheap resources" in the second to fifth places, "Income from partnerships" and investments and "Commissions received from various fee-based services" are ranked sixth and seventh.

The results of the GAHP analysis showed that among the communication channel criteria; "Web banking services" has assigned the highest weight to the virtual banking business model in all scenarios in the horizon of 2027. Also, considering the average calculated weights in the 4 scenarios, it can be argued that among the communication channel criteria of the proposed business model for virtual banking; "banking services" is ranked first and has the highest weight, followed by "customer portal", "customer relationship managers" and "corporate banking departments" in the second to fourth ranks.

The results of the GAHP analysis showed that among the customer domain criteria; "real retail customers" has assigned the highest weight to the virtual banking business model in all scenarios in the 2027 horizon. Also, considering the average of the calculated weights in the 4 scenarios, it can be argued that among the customer domain criteria of the proposed business model for virtual banking; "small real customers" are ranked first and assigned the highest weight, followed by "small legal customers", "large real customers with high average accounts" and "large legal customers."

### Conclusions

Given that the results showed that in the virtual banking business model in the horizon of 2027; electronic banking, facilitating international trade and improving risk management play a key and pivotal role in the field of value propositions, it is suggested that banks improve physical infrastructure. International trade and risk management be paid attention in order to keep pace with future developments pay attention to human capital in the fields of electronics. Given that the results showed that in the virtual banking business model in the horizon of 2027; greater use of banking systems and improving human capital will be key banking resources, it is suggested that banks quickly update their banking systems in accordance with electronics, and increase the advancements and skills of their employees by providing practical training in the field of electronics and virtual banking. According to the results, the virtual banking business model in the horizon of 2027 tends to promote brand and reputation in the field of revenue flow. It is suggested that banks design and implement accurate, practical and diverse programs to improve their brand image. Based on the results, the virtual banking business model in the 2027 horizon is mainly focused on real and retail customers, so it is suggested that banks upgrade their systems and services based on the needs of real retail customers. It is suggested that future studies examine the factors affecting each of the dimensions and criteria identified in virtual banking in order to provide more precise solutions for the development of the Iranian banking industry in the 2027 horizon.