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INFORMATION SYSTEMS ENGINEERING

Banco Caja Social: a case study of digital transformation to serve low-income markets

INGENIERÍA EN SISTEMAS DE INFORMACIÓN

Banco Caja Social: un caso práctico de transformación digital para servir a los mercados populares

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Abstract

The following paper presents the research carried out by Banco Caja Social, in relation to its own digital transformation process. The article documents the methodology applied in the project named Ruta transformadora, and the results obtained to date. The methodology presented is based on strategic definitions for each of the specific objectives presented by the Bank. An initial diagnosis of each of the objectives was made, researching both about the Banking sector in Colombia, and making a bibliographic review of the current state of Banking. Subsequently, the characteristics, implementations, and decisions to implement were raised, to rethink the Institution's Operational Model, aligning it with the ultimate purpose of the organization. Therefore, the approach of this model intends to allow access and inclusion of financial value propositions that are relevant and pertinent for the popular sectors. In addition, it was possible to identify the importance of implementing a Multichannel Strategy to achieve the general objective of the Banco Caja Social. Consequently, it was concluded that the Bank's IT, based on its operating model, should focus on the following aspects: enhance customer management capabilities, automate business processes, and promote the incorporation of a multi-channel management strategy. The advance of the General Objective of the Bank is currently at 62%.

Keywords: Banco Caja Social, Channel Optimization, Digital Transformation, Multichannel Strategy, Operating Model.

Resumen

Este trabajo presenta el Proyecto de investigación e innovación tecnológica realizado por el "Banco Caja Social", en relación con su propio proceso de transformación digital. El artículo documenta la metodología aplicada en el proyecto "Ruta Transformadora" y los resultados obtenidos hasta el momento. La metodología parte de definiciones estratégicas en cada uno de los objetivos específicos planteados por el Banco. Se hizo un diagnóstico inicial de cada uno de los objetivos, analizando el sector Bancario a nivel Nacional, y haciendo una revisión bibliográfica del estado de la Banca en la actualidad. Se plantearon las características, implementaciones y decisiones a tomar, con el fin de replantear el Modelo Operativo de la institución. Así, el planteamiento de dicho modelo permite el acceso e inclusión a propuestas de valor financieras que sean relevantes y pertinentes para los sectores populares. Se logró identificar la importancia de implementar una Estrategia Multicanal para poder cumplir con el Objetivo general del "Banco Caja Social". Se concluyó que las TI del Banco, basado en su modelo operativo, deben enfocarse en los siguientes aspectos: potencializar capacidades de gestión de clientes, automatizar procesos de negocios, y promover la incorporación de una Estrategia de gestión multicanal. El avance del proyecto se encuentra en la actualidad en un 62%.

Palabras clave: Banco Caja Social, Estrategia Multicanal, Modelo Operativo, Optimización de canales, Transformación Digital.

1. Introduction

This paper presents the Research Technological Innovation Project carried out by Banco Caja Social allowing it to conceive its own digital transformation process. The purpose of this article is to document the methodology applied in the Transformative Route project and the results obtained in order to contribute to the advancement of the industry with a reference case. This reference case determines the real impacts of digital transformation efforts in a Bank in order to serve the low-income markets in Colombia. The article will carry out a brief contextualization; and then, it will advance with the conceptual definitions, methodology and the main results of the project. Finally, the conclusions are presented.

1.1 The context of the Bank, its starting point and origin of innovation

With 109 years of history working towards a just, productive, solidary and peaceful society; Fundación Grupo Social stands out for having a genuine interest in working for the common good, guiding its approach to the historically marginalized sectors in Colombia ⁽¹⁾. Among the companies that are part of this foundation, Banco

Caja Social stands out. Banco Caja Social has always oriented its approach to the provisioning of financial services for the lower-income segments of the Colombian population (low-income sectors, micro-entrepreneurs, and small and medium-sized companies, among others).

The organization conceives the realization of productive, sustainable, and value-generating activities from a point of view oriented to the common good (2). In recent years, Banco Caja Social acknowledged that it was necessary to transform its operating model. Below are some of the limitations found by the Bank in relation to its previous operating one (3): the percentage of online transactions of Banco Caja Social corresponds to 15% of total transactions, a low percentage compared to other leading Banks analyzed in Colombia. Bancolombia, example, handles 52% of its total transactions online. Similarly, in contrast to the Banks studied, Banco Caja Social presented the second highest percentage of Branch transactions with 29% of all transactions; these being 63.4 times higher than the value of an online transaction. On the other hand, the profitability of the key segment of the Bank (the low-income informal segment), which constitutes 34% of all clients, is only 8% of the total profitability.

Based on this initial diagnosis, the institution carried out a more in-depth analysis of different aspects, the results of which are shown in Table 1 (3). Thus, they implemented a digital transformation strategy through a program of projects that made it possible to redesign the supply of Banking services by using Information and Communication Technologies (ICT). The steps to design and implement this digital strategy were: (i) the initial market research with the support of a consulting firm: (ii) the initial diagnosis of the Bank in relation to its competitive interest and strategic direction, (iii) the definition of the digital transformation strategy, and (iv) the establishment of an organizational scheme.

1.2 Conceptual definitions

According to Bulgărea ⁽⁴⁾, there are 5 types of distribution channels in retail Banks today. At this point, it is relevant to introduce the concept of Multichannel Strategy and differentiate it from the concept of Multichannel Marketing Strategies. As stated by Gurău ⁽⁵⁾, a Multichannel

Strategy starts from the idea of offering benefits through different channels that allow the customer to integrate with the Bank's contact points. In comparison, a Multichannel Marketing Strategy is strictly guided by Marketing orientation. In a globalized world and a digital economy, talking about a flexible multichannel strategy is essential in order to respond to the demands of the local and global market ⁽⁶⁾.

On the other hand, in a guided analysis of the priorities of the Banking sector for the year 2020, PwC revealed the following needs to develop channels and services ⁽⁷⁾: (i) to develop a customer-focused business model, (ii) to optimize distribution, (iii) to simplify the operating model and the business, (iv) to take advantage of information, (v) to promote innovation and (vi) to manage risks in a practical way. It should be taken into account that migrating to digital channels implies changing the attitudes and habits that users have in traditional Banking ⁽⁸⁾. Therefore, it is essential for Banks to establish a clear strategy in line

Table 1. The findings of Banco Caja Social's analysis regarding the limitations of its current operating model

Type of Channel	Results Found					
Branches	80% of current transactions (cash and service) can be migrated to alternative channels that are cheaper for the Bank; duplication of functions between the service advisor and the assistant manager					
External Sales Force	Low commercial productivity compared to other Banks in the region (2 products per day in the market versus 0.78 to 1.24 in the Bank); High dispersion in sales productivity levels (0.62 products sold more per day among more productive vs. less productive consultants); There is no geographic division or coordination with the offices and daily routines are inefficient					
Banking Correspondent	Low channel utilization (3% of total transactions versus 6% of the Colombian market); limited functionalities (does not have withdrawal functionality); little known by the clients (75% of the clients say they do not know about channel); prices poorly aligned among correspondent providers					
Call Center	Operator occupancy level is below best practices (60% vs. 87%)					
ATM	Low channel utilization vs. other Banks in the market. On average, 4.2 thousand transactions are carried out per ATM in the Bank versus 4.9 in the Colombian market.					
Digital	Low use of digital channels (3.6% versus the Competition's 12.3% to 20.2%)					

with this and completely transform their Information and Communication Technology (ICT) infrastructure ⁽⁹⁾.

Next, the types of distribution channels exposed by Bulgărea ⁽⁴⁾ are mentioned: (i) the branches, which are characterized by allowing face-to-face interaction between the Bank and the customer ⁽¹⁰⁾. (ii) the Banking correspondents, who when carrying out technological innovation projects such as the one presented in this article, are integrated into the deployment which allows expanding the democratization of a Banking entity to the territories.

In addition, they expand the coverage of the entities, strengthen the service offer they provide and take the service directly to the client. (iii) the automatic teller machines (ATMs), the purpose of which is to promote self-service, guarantee an efficient service and reduce the Bank's operating costs (11). (iv) telephone Banking, which is based on keyboard response technologies and voice recognition connected to the Bank's automated systems (12). (v) mobile Banking, characterized by its immediacy and scope, essential to meeting the objective of the globalization of Banking services (9). Users demand that more and more services be available through this channel with immediate and autonomous responses (13). (vi) internet Banking, whose limitation is due to user concerns regarding the security and reliability of the transactions (14). Therefore, it is necessary to identify accessible formats that allow this type of online service and educate users in the adoption of new habits and practices related to new digital channels (15).

1.3. Renovation of operating models and service models

In order to build a competitive advantage, a Bank must innovate when creating operating models. These must be aligned with the strategic objectives of the organization. In creating operating models, IT data is critical. More and more Banks are turning their approach towards an open architecture, surrendering control of IT data and redesigning their processes, relegating the internal data system to external providers.

That said, the transformation of an operating model starts from the implementation of actions in five different areas (16): (i) the structure, (ii) the roles and responsibilities, (iii) the governance for decision-making, (iv) the forms of work and (v), the Bank's capabilities. Likewise, according to Bain & Company (16), and as shown in Table 2 (16), for the near future, there are five critical areas to which a Bank should pay special attention. The renovation of the operating model goes hand in hand with the development of the aforementioned channels and with redesigning of the service model they provide

Table 2. Focus areas for designing future Bank operating models

Area	Characteristic			
Consumer focus	Provide a complete consumer experience			
External expert partners	Improve efficiency in the market			
Agility	Accelerate time to market			
Technology design	Accelerate and migrate towards IT change			
Evolution of labor force	Renovate work talent for future needs			

1.4.BPM as a tool for transforming the operating model

Known as Business Process Management, BPM is the set of methods, tools and techniques that make business processes flexible and fast-running. It allows the operational and business processes to be aligned with business objectives and strategies by implementing information technologies and management tools (18). BPM

has three elements that allow it to achieve this goal ⁽¹⁸⁾: (i) agility in the automation of processes, (ii) transparency and (iii) effectiveness. Similarly, in the implementation of BPM, Banks must overcome four main challenges which are described and organized in Table 3 ⁽¹³⁾.

Table 3. Principal challenges for Banks when implementing BPM

Challenge	Description			
type				
Human processes	Understand how human processes work, how they perform their tasks and how they work in processes outside the system implemented by the Bank			
System processes	Identify the interaction between humans and systems. When the processes contained in a single system are identified, these processes can be represented to avoid the costs of changing the system. Interfaces between two or more systems can be involved. There can be processes that require interfaces with external systems.			
Business rules engines	It involves complex calculations associated with Banking operations and the implementation of the central Banking system			
Business activity monitoring	A combination of business processes that allow you to compare daily activities with company standards, analyze trends in user data, and collect information in the form of data			

2. Methodology of the Transformative Route Project

Banco Caja Social designed an innovative and organizational project called Ruta Transformadora (Transformative Route) to establish its own transformation strategy in which digital solutions play a fundamental role. It is important to highlight that this project was accepted and qualified by Colciencias as an

"innovation project" under resolution 1728 of 2018 (19).

2.1 General and specific objectives of the technological innovation

General objective: to develop the channel architecture for Banco Caja Social by strengthening IT capabilities, improving channel productivity, transforming the operating model and optimizing the sufficiency margin and service levels in order to allow access and inclusion of financial value propositions that are relevant and pertinent to lower-income sectors

Specific objectives: (i) to develop an optimal channel platform by enabling new functionalities and enhancing existing ones in the Bank's physical and digital channels to improve the transactional mix and the offer of value to customers and users, (ii) to design, implement and test an optimization model for the multichannel coverage of the territory, through the use of geographic information systems (GIS) and statistics, aimed at satisfying the current and future demand of customers and users, (iii) to align the organizational model in order to adapt, appropriate and disseminate the technological components that guarantee the Bank's multi-channel strategy; and (iv), to carry out technological developments that support the transformation of Banco Caja Social's operating model aimed at improving customer service levels, aligning with target markets, supporting multi-channels and optimizing efficiency.

2.2 Market assessment for the proposed innovation

In 2017, the Bank reviewed the figures reported by the Financial Superintendence of Colombia. This analysis corresponds to the Bank's position in 2017, at which time these figures were analyzed. Based on these data, Banco Caja Social carried out the market study and the subsequent project proposal. Even so, it is important to consider the SIC (Superintendence of Industry and Commerce) operations report for 2019, as some figures have changed.

The main changes are detailed hereafter as shown in Table 4, the percentage of total Banking operations carried out over the internet decreased between 2017 and 2018 by 26%, and for 2019 it decreased by 1 additional percentage point ⁽²⁰⁾. In contrast, mobile phone operations increased from 6% in 2017, to 38% in 2018 and subsequently to 44% in 2019 ⁽²⁰⁾. In the position of Banco Caja Social vis-à-vis its competitors, the Bank has maintained the positions previously presented ⁽²⁰⁾.

On the other hand, in relation to the total number of each specific channel implemented, the Bank presents the following modifications: (i) ninth of a total of 43 entities in branches, (ii) seventh of a total of 33 entities in ATMs, (iii) fifteenth of a total of 27 entities in Banking correspondents, (iv) tenth of a total of 36 entities in the number of internet operations, and (v) seventh of a total of 24 entities in the number of mobile telephone operations (20).

Table 4. Percentage share No. of Monetary and Non-Monetary Operations per Channel 2016-2019

% Total number of operations - monetary and non-								
monetary per channel								
Channel	2016	2017	2018	2019				
Mobile telephones	4	6	38	44				
Internet	47	47	21	20				
ATMs	15	15	13	11				
Dataphones	10	10	10	9				
Branches	13	11	9	7				
Bank Correspondents	4	4	5	5				
Automatic debit	2	2	2	2				
ACH	2	2	2	1				
Audio Response	2	2	1	1				
Total	100	100	100	100				

2.3. Strategic Definitions: Methodology

2.3.1. Objective 1

The aim was to develop and strengthen the functionalities of different Bank channels. Thus, the Bank intended to implement developments in channels such as branches, Bank correspondents, door-to-door sales force, and digital initiatives. In order to achieve this purpose, Banco Caja Social made an initial diagnosis. After the analysis regarding its strategic and competitive position, the Bank generated the following components:

(i) An understanding of current channel strategy trends, (ii) An approach to the Colombian customer's channel preference, (iii) An analysis of the competitive environment, (iv) Emphasis on the initial state of the Bank's infrastructure and channel efficiency, (v) Analysis of the Bank's current business model, (vi) Information collected from the Bank's customer database, and (vii) The definition of guidelines for the Bank's channel architecture. The implementation of a channel architecture development based on the Multichannel Strategy, then, began.

In parallel, in order to design and develop the relevant initiatives per channel, based on the transformation plan, and the governance and investment processes, the following artifacts were developed: (i) a detailed description of the macro initiatives to be implemented, (ii) a proposal of channels, (iii) the expected impact for the initiatives, (iv) a roadmap to implement the identified initiatives, and (v) the guidelines for the governance model and implementation of the initiatives.

Similarly, once the steps described above had been carried out, initiatives per channel were implemented:

• Banking Correspondents: (i) the definition of the channel's role within the

Multichannel Strategy, (ii) the definition of the channel's set of services, (iii) the construction of the management model, and (iv) an approximation to the number of necessary correspondents over time.

- Branches: (i) the design of the choreography tool based on user interfaces and required algorithms, (ii) the development of an application to optimize customer service in terms of service time, level of service and complexity of transactions per branch, and (ii) the validation, verification and acceptance of the requirements by users.
- Digital Channel:
 - O Phase 1: Templates and gap analysis: initial prototypes of the services and transactions required by the bank were delivered based on their corresponding analysis of the Bank's strategic objectives. The scope and scenarios that the digital solution would reach were defined.
 - **Phase 2:** Construction and Transition: implementation of the Digital Banking solution using the Worldwide Project Management Method (WWPMM) for comprehensive project management. proposed methodology aligned with the approach of the PMI (Project Management Institute) and the government established for the project. Template update activities were carried out for all transactions, cross-sectional documents and use cases. following stages that constitute this phase were also planned (shown in Figure 1).

2.3.2 Objective 2

This initiative is aimed at efficient coverage of the territories through the supply of channels. It is divided into 4 phases:

- 1. Analysis and design phase: The following characteristics were established to comply with the design of the operating model: (i) consideration of the population segments of the projected Colombian population, (ii) the use of projection bases for population growth from DANE 2005-2020, the 2007 Income and Expenditure Survey (EIG) and the Large Integrated Household Survey (GEIH), consideration of the internal methodology developed by the organization to carry out the regional analysis, (iv) bear in mind the current influence of the Bank in territories, and (v) consult zone managers on the trajectory of the specific territory.
- 2. **Development phase:** it is essential to have demographic and socioeconomic information on the different geographic areas to define the levels of resources to be used focusing on the particular needs and contexts of the client (21). Therefore, geographic information systems (GIS) were used to achieve efficient channel coverage in the different territories. We proceeded with the implementation of a statistical model based on the coverage for each specific territory, in order, based on the define results, adjust and the implementation of the channels per territory.
- 3. Deployment phase: once the detailed location of the channels has been defined in a pilot territory, the necessary infrastructure will be deployed to provide coverage and service to customers.
- 4. Validation phase: Once the channel infrastructure deployed, was its performance was monitored based on the following criteria: **(i)** Service. (ii) Productivity, (iii) Coverage, and (iv) Transactional mix.

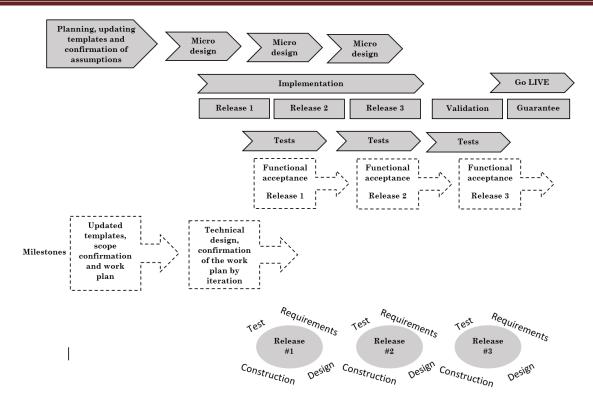


Figure 1. Stages that make up phase 2 of the digital channel

2.3.3 Objective 3

To achieve this objective, the following initiatives were proposed: (i) organizational transformation in the branches: redesigning roles the branches, implementing motivation mechanisms, and training the staff on the new operating model, (ii) optimization of the management model of correspondent: implementing and applying the correspondent management model according to the market presented criteria previously, and (iii) organizational development for the door-to-door sale model: the number of advisers needed was estimated, roles and functions of the advisers were defined and their level of specialization necessary to implement the respective training.

2.3.4 Objective 4

To implement the operating model, the Bank proposed 11 initiatives (5 functional for the execution and 6 transversal support programs).

These are shown in Figure 2. The work fronts are in charge of defining the implementation of the changes and the rhythm of the model according to the objectives outlined in Figure 3. These also execute a series of initiatives sequentially, in accordance with their focus and priorities, as shown in Figure 4. Finally, the support fronts provide a methodological guide in specialized content, as shown in Figure 5. The implementation of the model is carried out for the origination and opening, maintenance and central operation processes.

2.4 Expected results

To work on the transactional mix (migration to less expensive channels), efficiency in current channels and multichannel sales; six initiatives were proposed. These initiatives seek to achieve the previously stated objectives. These initiatives are presented below together with the intended result:

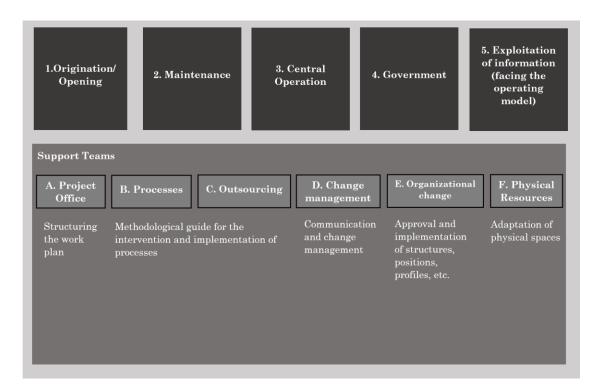


Figure 2. Work fronts for the implementation of the operating model



Figure 3. Objectives of the main work fronts

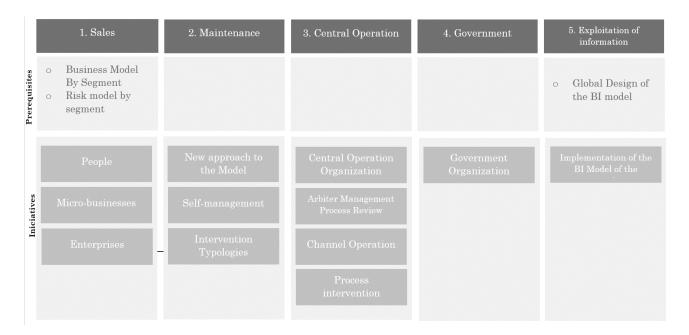


Figure 4. Initiatives per work front

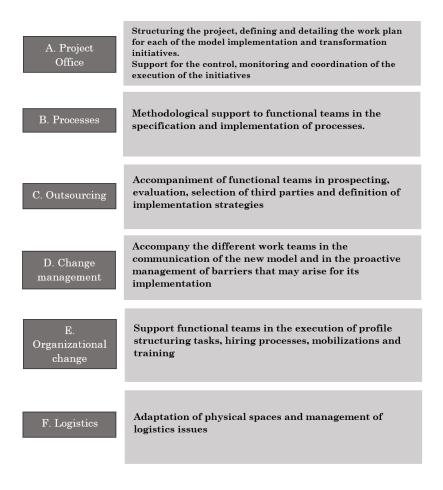


Figure 5. Objectives of the support teams

First of all, the optimization of geographical coverage: it is expected to go from 1000 service points in 2016 to 4000 service points in 2020. In addition, we expect to optimize branch operations: 31 processes have been identified to date that can be optimized. For this, a Commercial and Operational Management Model was implemented. It allowed us to define roles, processes, indicators and responsibilities. In addition, a box choreography model is used to measure the resources required per branch on a monthly basis. Also, the development of the banking correspondent channel was proposed: the correspondent model was redesigned to gain market share in coverage matters, position the bank in target markets and decongest branches. New (transactional) functionalities will be developed in this channel, and also products designed specifically for this type of channel, such as the friendly piggy bank, which is a simplified deposit different from savings accounts, oriented to the mass market.

Likewise, the idea of transaction migration came up. The idea is that 32.5% of branch transactions in 2016 be reduced to 16% by 2020. The digital initiative was also presented: an Omnichannel digital solution (Web-App) will be implemented, which guarantees a consistent experience for users when implementing the different channels proposed by the bank. Likewise, developments such as a public portal, a transactional portal and the mobile solution will be implemented. Finally, the strengthening of the sales force was projected: A multi-product offer will be proposed, where the offer depends on the specific segment of the client to be reached, and thus increase commercial productivity, strengthening the comprehensive offer available to salary earners pertaining to the bank's target market.

2.5 Transformation of Banco Caja Social's operating model

The operating model was built based on three concepts: (i) excellence in customer experience, (ii) efficiency and optimization of organizational processes, and (iii) strategic management and on-going improvement. For the transformation of the model, six fundamental changes were introduced in the Operating Model: (i) customer orientation, (ii) simplification and automation of processes, (iii) rethinking of the questions complaints and claims management model, (iv) mechanisms, governance management, incentives and operational intelligence, (v) exploitation of information oriented toward operational excellence and service, and (vi) IT support and capabilities focused on managing the multi-channel strategy. Regarding sales processes, the Bank made the following changes: (i) orientation to the segment and not to the product, (ii) exploitation of its own and thirdparty information to simplify processes towards the client, (iii) optimization of loan policies, (iv) redesigning of interaction processes with the client, the channel and the operation, (v) automation and digitization of processes, (vi) simplification of procedures, and (vii) guaranteeing high quality output of the processes so as not to affect the operation of the products.

3. Results achieved so far

Compliance with the general objective is 62% by 2019. The progress of the project, the products, channels and the implemented operating model have strengthened the bank's IT capabilities. In addition, the transformation of the operating model, together with the development of the multichannel strategy, allowed us to increase the levels of service and understanding towards the client. Regarding the first specific Objective, progress was for 2019 at 65%. The Full Time Equivalent (FTE) assigned to cash was decreased from 1006 to 933, while customer service and satisfaction improved from 87.2 to 89.6 compared to 2018. Also noteworthy is the consolidation of 2,300 banking correspondents

300 municipalities nationwide, in nearly increasing transaction rates in deposits, withdrawals and loan payments to 40% compared to 27% in 2018. The new Banco Caja Social website was consolidated improving the user experience and the Bank's value offer. Finally, two pilot plans for innovative solutions were started: (i) Mi ahorro mi Crédito /(My savings, my Credit) to contribute to the client's financial health and (ii), Solución amiga (Friendly solution) focused on low-income and informal clients being able to save and acquire small loans digitally. The fulfillment of the second objective was in 2019 at 75%. It went from 2,850 service points in December of 2018 to 3,304 in December of 2019. At the same time, in 2019 the Caldas branch in Antioquia was opened, the Santa Isabel Calle Segunda branch in Bogotá was replaced by the El Edén Shopping Center branch. ATMs were expanded by 27 machines, and 4 multifunctional machines were relocated to carry out transactions. In contrast, 56% progress was made on the third objective. The processes are being transformed by implementing IT components aligning them with organizational model. Likewise, consolidation of the multichannel culture continues from the Bank's employees as well as its target markets. Similarly, 52% of the entire fourth objective was met. The renovated consumer loan origination processes have been implemented, without using physical documents. This allowed response times to be within hours rather than days, thanks to implementation. In the same way, the housing loan process was carried out at the first moment in the branches.

4. Conclusions

Research and successful cases related to digital transformation show some common points and key lessons in this process. First, it is essential to define a single strategy shared by the entire organization. In this regard, the governance

model is key in order to meet the objectives and establish projects and their respective measurement. In addition, the development of digital transformation projects in the financial sector requires having the correct technological infrastructure, which acts as a scaffolding for the development of initiatives.

For that purpose, the Multichannel Strategy is one of the key points addressed when performing digital transformation in banking. The strategic definitions made in this strategy and in the other decisions of a Bank have an impact on the business, operation and service models. Therefore, a comprehensive review of them should be done.

On the other hand, the internal culture of the bank is a definitive factor for the changes to be carried out successfully and to be sustainable over time. Each bank must define how to handle its human talent, which is a vital part of the transformation processes. Similarly, given that customer behaviors and trends are constantly changing, it is essential to carry out on-going research to adjust the established path and validate the relevance of the defined strategy. The articulation with the national innovation system is also essential in order to align the technological innovation processes with the needs expressed nationwide.

Finally, the focus on the impact of the technological innovation processes on the Bank's organizational culture allowed carrying out a project that adapted to the ultimate purpose of the organization as well as to the growing needs of the banking sector of implementing a digital solution. The development of new technological skills by the Bank's staff, derived from the adoption of new technologies, and the diffusion technological appropriation and of innovations created by the bank by its clients was key for the bank to adopt the project. This permitted the creation and education of a multichannel culture to the entire Banco Caja Social community.

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