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**A Master's Thesis Submitted in Partial Fulfillment of the Requirements for the
Master's Degree in Organizational Management**

**An Analysis of the Role of Digitalization in Optimizing the Consumer
Credit Granting Process**

The Case study: General Society Algeria

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Abstract

This study analyzes the influence of digitalization on optimizing the consumer credit granting process at General Society Algeria through interviews, direct observation, document analysis, and chronometric measurements conducted across four pilot agencies. The objective was to evaluate how digitalization reduces processing delays and improves operational efficiency.

The findings show significant improvements across all studied processes, with substantial reductions in processing time for both the Account Opening Process and the Consumer Credit Granting Process as digitalization progressed from the legacy model toward the projected Full Digital model. The largest gains were observed in CRM processing, ticket creation, and disbursement phases through automation and system integration. The mobile credit channel also achieved a marked reduction in processing time, confirming SGA as the only bank in Algeria currently offering consumer credit through a mobile application. The transformation further reduced manual interventions, increased automation, minimized data-entry errors, eliminated paper-based processing, and significantly improved operational productivity.

The study also highlights the future role of artificial intelligence in credit scoring, intelligent document processing, and Back-Office automation, while identifying persistent technical, cultural, and regulatory limitations that still affect the achievement of a fully digital process. Detailed processing times and improvement rates are presented in the Results chapter.

Keywords: Digitalization, Consumer Credit, Process Optimization, Operational Efficiency, Banking Sector.

Résumé

Cette étude analyse l'influence de la digitalisation sur l'optimisation du processus d'octroi de crédit à la consommation au sein de Société Générale Algérie, à travers des entretiens, une observation directe, une analyse documentaire et des mesures chronométriques réalisées dans quatre agences pilotes. L'objectif était d'évaluer dans quelle mesure la digitalisation permet de réduire les délais de traitement et d'améliorer l'efficacité opérationnelle.

Les résultats montrent des améliorations significatives pour l'ensemble des processus étudiés, avec une réduction substantielle des délais de traitement du processus d'ouverture de compte et du processus d'octroi de crédit à la consommation à mesure que la digitalisation progresse vers le modèle entièrement digital projeté. Les gains les plus importants ont été observés au niveau du traitement CRM, de la création des tickets et de la phase de déblocage des fonds, grâce à l'automatisation et à l'intégration des systèmes. Le canal mobile de crédit à la consommation a également permis de réduire fortement le délai de traitement par rapport au modèle en agence, confirmant que SGA est actuellement la seule banque en Algérie à proposer le crédit à la consommation via une application mobile. Cette transformation a aussi permis de réduire les interventions manuelles, d'augmenter le taux d'automatisation, de limiter les erreurs de saisie, de supprimer le traitement papier et d'améliorer sensiblement la productivité opérationnelle.

L'étude met également en lumière le rôle futur de l'intelligence artificielle dans le scoring de crédit, le traitement intelligent des documents et l'automatisation du back-office, tout en identifiant des limites techniques, culturelles et réglementaires persistantes qui freinent encore l'atteinte d'un processus entièrement digital. Les taux de réduction des délais et les données chiffrées détaillées sont présentés dans le chapitre des résultats.

Mots-clés : Digitalisation, Crédit à la consommation, Optimisation des processus, Efficacité opérationnelle, Secteur bancaire.

الملخص

تهدف هذه الدراسة إلى تحليل أثر الرقمنة في تحسين عملية منح القروض الاستهلاكية على مستوى بنك سوسيتيه جنرال الجزائر، وذلك بالاعتماد على المقابلات، والملاحظة المباشرة، وتحليل الوثائق، والقياسات الزمنية (الكرونومترية) التي أُجريت عبر أربع وكالات نموذجية. وتمثل الهدف الرئيس للدراسة في تقييم مدى إسهام الرقمنة في تقليص آجال معالجة الطلبات وتحسين الكفاءة التشغيلية.

أظهرت نتائج الدراسة تحقيق تحسينات ملحوظة في جميع العمليات محل الدراسة، حيث سُجل انخفاض كبير في الزمن اللازم لكل من عملية فتح الحساب وعملية منح القروض الاستهلاكية مع تطور مستوى الرقمنة، بدءًا من النموذج التقليدي وصولاً إلى نموذج الرقمنة الكاملة المتوقع. وتمثلت أبرز المكاسب في تحسين مراحل معالجة بيانات العملاء عبر نظام إدارة علاقات العملاء، وإنشاء الطلبات، وصرف القروض، وذلك بفضل الأتمتة وتكامل الأنظمة المعلوماتية. كما حققت قناة القروض عبر الهاتف المحمول انخفاضًا ملحوظًا في زمن المعالجة، مما يؤكد أن بنك سوسيتيه جنرال الجزائر يعد حاليًا البنك الوحيد في الجزائر الذي يوفر خدمة القروض الاستهلاكية من خلال تطبيق للهاتف المحمول. وأسهم هذا التحول أيضًا في تقليص التدخلات اليدوية، وزيادة مستوى الأتمتة، والحد من أخطاء إدخال البيانات، والاستغناء عن المعالجة الورقية، وتحسين الإنتاجية التشغيلية بشكل ملحوظ.

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الكلمات المفتاحية: الرقمنة، القروض الاستهلاكية، تحسين العمليات، الكفاءة التشغيلية، القطاع المصرفي.

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List of Abbreviations

Abbreviation	Meaning
AI	Artificial Intelligence
AML	Anti-Money Laundering
AOP	Account Opening Process
API	Application Programming Interface
AXA	Insurance Partner / AXA Insurance
BO	Back Office
BPMN	Business Process Model and Notation
CDC	Customer Development Consultant / Customer Advisor
CNAS	Caisse Nationale des Assurances Sociales
CRM	Customer Relationship Management
CRR	Client Relationship Representative / Client Relationship Manager
DPO	Digital Process Office
DSI	Information Systems Department
EDM	Electronic Document Management
IDP	Intelligent Document Processing
IT	Information Technology
KYC	Know Your Customer
ML	Machine Learning
NLP	Natural Language Processing
OCP	Operational Credit Process
OCR	Optical Character Recognition
OTP	One-Time Password

PPO	Personal Loan/Product Process Officer
RA	Responsible of the Agency
RIB	Relevé d'Identité Bancaire (Bank Account Details)
RPA	Robotic Process Automation
SGA	Société Générale Algérie
SIOP	Solution and Integration Operations Pole
SMG	Synchronisation Management Gateway
STP	Straight-Through Processing

GENERAL INTRODUCTION

GENERAL INTRODUCTION

Digital transformation has progressively become a central concern in the banking sector, driven by increasing demands for speed, service quality, and competitiveness. Traditionally based on manual procedures and conventional practices, the process of granting credit to individuals is currently undergoing a significant transition toward more digitalized models.

Indeed, credit granting represents a core activity for banking institutions, both from an economic and a relational perspective. However, this process is often characterized by a sequence of complex steps involving multiple stakeholders, which can result in relatively long processing times. These constraints may negatively influence both the bank's overall performance and customer satisfaction.

In this context, digitalization emerges as a key lever for improving processing efficiency, reducing delays, and optimizing the overall functioning of the process. It goes beyond the simple dematerialization of documents and includes task automation as well as the enhancement of information flows.

This study is conducted within this framework and aims to analyze the influence of digitalization on the processing of the credit granting process for individuals at general society, with a particular focus on reducing delays and improving operational efficiency.

1. Choice of the Subject and Motivation

The choice of this topic is motivated by the growing importance of digital transformation in the banking sector, where improving operational performance has become a strategic priority.

From the outset, particular interest was given to process optimization, especially in the field of credit, where processing speed is a critical performance factor. This area offers a relevant context for analyzing improvement mechanisms and proposing suitable solutions.

Moreover, this topic provides an opportunity to apply quantitative and analytical tools in order to measure process performance and assess the influence of digital transformation.

2. Objectives of the Study

The main objective of this study is to assess the influence of digitalization on the processing of the credit granting process for individuals, particularly in terms of reducing delays and improving operational efficiency.

To achieve this objective, several sub-objectives have been identified. These include evaluating the current functioning of the process, measuring the processing times of its various stages, identifying existing inefficiencies, and analyzing the improvements brought about by digitalization.

In addition, the study aims to propose practical and relevant recommendations to optimize the process under consideration.

3. Research Problem

In an increasingly dynamic banking environment, the efficiency of operational processes represents a major challenge for financial institutions. The credit granting process for individuals, due to its complexity and the multiplicity of its stages, may lead to significant processing delays and limited efficiency.

Therefore, the following research question arises:

How does digitalization enable the optimization of the processing of the credit granting process for individuals at Société Générale, in terms of reducing delays and enhancing operational efficiency?

To address this question, several sub-questions guide this study:

- How can the most time-consuming stages of the process be identified?
- What improvements does digitalization bring in terms of reducing delays?
- How can the operational efficiency of the digitalized process be measured?
- What performance gains can be achieved overall?

4. Adopted Methodology

To conduct this study, a qualitative case study approach was adopted in order to obtain an in-depth and contextualised understanding of the consumer credit granting process within General Society Algeria. This methodological approach makes it possible to analyse the process within its real organisational environment while examining the operational role of digitalisation on workflow efficiency, process organisation, and customer experience.

The study is primarily based on qualitative research methods, including semi-structured interviews conducted with key operational actors involved in the process, direct observations

carried out in real working conditions, documentary analysis of confidential internal files and operational procedures, and process mapping analysis. These methods were used to identify operational inefficiencies, understand workflow constraints, analyse organisational practices, and evaluate the perceptions of employees regarding the digital transformation process.

In addition, chronometric measurements of the different operational steps were integrated as analytical support tools within the case study in order to evaluate processing times and compare the legacy process with the current and projected digital workflows. This operational analysis also included projections related to potential performance gains expected from full digitalisation initiatives. The objective of this chronometric approach was not to establish a purely quantitative statistical study, but rather to strengthen the qualitative interpretation of the case study through concrete operational indicators related to process performance and workflow optimisation.

5. Structure of the Document

It is then structured into **three main chapters**.

The first chapter presents the theoretical and conceptual framework, including a literature review, an overview of the credit granting process for individuals, and the digitalization of this process.

The second chapter is dedicated to the presentation of Société Générale as well as the research methodology.

The third chapter presents the results of the study, their analysis, and the recommendations proposed to improve the process.

CHAPTER 1 : THEORETICAL FRAMEWORK AND LITERATURE REVIEW

Introduction

The banking sector is currently undergoing a profound transformation driven by the rapid expansion of digital technologies, evolving customer expectations, and increasing competitive pressures. Understanding the theoretical foundations of this transformation is essential before examining its practical manifestations within a specific institutional context.

This chapter aims to establish the conceptual and academic framework upon which the empirical analysis of this dissertation is built. It is structured around three complementary sections. The first section presents a review of the existing literature, examining key studies on digital strategy in banking, credit process optimization, the influence of e-banking on traditional practices, the adoption of digitalization within Algerian banks, and the role of automation technologies. The second section provides a comprehensive overview of bank credit — its historical development, its typologies, its risk management mechanisms, and its particular importance for individual borrowers. The third section focuses specifically on the concept of digitalization in banking, exploring its definition, its evolution, the digital tools that support credit processes, and its operational and managerial influences.

Together, these three sections provide a solid theoretical foundation for understanding how digitalization can serve as a strategic lever for optimizing the consumer credit granting process the central question examined throughout this study.

Section 1 : Literature Review

This section explores how banking is evolving through digital integration and optimized credit processes. By examining global case studies and technologies like AI and RPA, it highlights improvements in efficiency and stability. Lastly it addresses the technical and human challenges banks face during implementation.

1.1 Digital Strategy in Banking

Digital banking is still a hot topic in science and has been extensively studied in theory and research. This chapter summarizes the key findings of a few significant research that are pertinent. “The banks have clearly understood one thing; they do not need a digital strategy... but digital in their strategies.” (Lamirault, 2017, p. 51) This quote explains the importance of integrating digital tools and technologies as a central and essential part of banks’ strategies, rather than merely using them as a simple complementary function .

1.2 Credit Granting Process

Back in 2014, Ntiamoah and some colleagues did a study in Ghana, looking at how a commercial bank handles giving out loans. They wanted to see if the way banks do things with credit affects how they manage risks and how well they perform overall. They used both qualitative and quantitative methods, gathering information from about 30 to 50 employees involved in credit operations through surveys and interviews. What they found was that when banks have a good system for giving out loans, it really helps them control risks, means fewer people default on their loans, and makes their loan portfolio better. The study pointed out that having clear, structured rules for credit is key to keeping a bank stable financially and improving how it does business. (Ntiamoah, Egyiri, Fiaklou, & Siaw, 2014)

Similarly, a study from the IEOM Society in 2024 focused on making the credit granting process better using Lean management and Business Process Management techniques. This research took a process-focused analytical approach, using the bank's own internal data instead of a typical statistical sample. The goal was to spot what wasn't working well and make the workflow more efficient. The results showed that by redesigning the process, they could cut processing time by about 16% and make operations smoother. This study really highlights that optimizing processes is important for cutting down delays and making service delivery better in banks. (Gratelly, Geronimo, & Salazar, 2024)

In another piece of research, available through CORE, they looked at how decisions are made when granting credit. This conceptual study aimed to make credit decisions simpler and more efficient. The research tackled the problem of how complicated and slow traditional credit approval systems can be. Using a qualitative and analytical approach, the study showed that decision-making processes are often slow and don't work well because there aren't standard procedures. The findings suggest that making things simpler and using structured frameworks for decisions can significantly improve how good and how fast credit decisions are.

Furthermore, a study published by Springer in 2019 developed a model for making credit granting decisions. This research used a quantitative, model-based approach, working with banking data sets and analytical tools. The goal was to make credit decisions more open, consistent, and efficient. The results showed that when you use structured decision models, it helps with coordination, reduces risk, and makes decisions more reliable. (Schotten & Morais, 2019)

The study emphasizes that analytical tools are important for making credit evaluation processes stronger. Additionally, a study done in Ethiopia looked at how a bank managed its credit. The main point of the research was to figure out how credit management affects a bank's financial performance. They used a quantitative method, giving out surveys to about 50 to 100 people, including employees and customers. The results showed that good credit management leads to fewer defaults and makes the bank perform better overall. The study stressed that properly evaluating and monitoring credit is important for keeping a bank financially stable.

Similarly, research done in Kenya examined the connection between credit management practices and how well loans perform. Using a quantitative approach and data from over 100 banking professionals, the study aimed to see how credit processes influence the quality of loans. The results clearly showed a strong link between efficient credit management and better loan performance. The study highlights that properly monitoring and evaluating credit operations is really important for reducing bad loans and increasing profits. (Mburu, Mwangi, & Muathe, 2020)

Finally, a study in the Global Economic Perspectives Journal looked at how banks give out credit. This qualitative analytical research wanted to understand how banks check and approve credit applications. The study revealed that banks use a mix of financial analysis, credit scoring, and guarantees to evaluate borrowers. The findings point out that giving out credit is a

structured and thorough process meant to minimize risk and make sure the bank stays financially sound. (Journal, 2021)

1.3 Influence of E-Banking on Traditional Banking

In India, Shilpan's study examined how ebanking affected conventional banking services. Based on a theoretical analysis of the features, benefits, drawbacks, and influences of online banking, it employed a descriptive and analytical methodology. According to the survey, branch visits are decreased and transactions are enhanced by electronic services including online payments, transfers, and real-time account checks. Because ebanking offers financial services "anytime, anywhere," traditional banks are being forced to reconsider their business strategies in order to stay relevant in the digital age. Additionally, the study emphasizes how ebanking improves consumer satisfaction and convenience. Consumers don't have to wait in line to finish transactions. Banks can provide more flexible services while lowering operating costs. In general, the study highlights the increasing significance of digital technologies in contemporary banking.

Ndlovu and Sigola (2013) investigated the benefits and dangers of online banking for Zimbabwe's commercial banks. They posed a crucial query: in a certain economic setting, what are the advantages and risks of online banking? A quantitative cross-sectional study was employed. Employees from the operations, IT, and e-banking divisions were interviewed and questionnaires were used to gather data from 13 institutions.

The study looked at a number of factors, including risks (such fraud and infrastructural constraints) and benefits (including accessibility, cost savings, and financial inclusion). The findings demonstrated that e-banking increases access to banking services, reduces bank expenses, and facilitates the integration of more individuals into the financial system. (Ndlovu & Sigola, 2013). However, the study also discovered difficulties. E-banking's effectiveness is restricted by poor internet access, and there are serious security issues, such as fraud. E-banking, according to the authors, is the provision of banking services via electronic channels. In order to increase client reach and enhance service quality, modern banks are transitioning to a multichannel approach that combines traditional branches with digital platforms.

Overall, the study indicates that e-banking can be advantageous to both banks and customers, but success depends on careful technological and security management.

1.4 Adoption of Digitalization in Algerian Banks

Bouacheria Kebir Ibtissem and Salhi Tarik's (2022) study focuses on Algerian state banks' adoption of digitalization. The authors used a questionnaire distributed to public banks to conduct a quantitative analysis in order to address this question. According to the findings, banks have begun to progressively incorporate digital tools into their services, such as bank cards, ATMs, and e-banking, in order to enhance client access and facilitate transactions. However, there is still little use of more sophisticated technologies like blockchain and big data. Better customer service, enhanced internal operations, and increased competitiveness are just a few advantages of digitalization. A lack of digital culture, inadequate technical infrastructure, a lack of digital specialists, and budgetary constraints are among the challenges identified by the study. In conclusion, despite significant advancements, the Algerian banking industry still confronts obstacles to completely modernize and reap the rewards of digital technology. (Bouacheria Kebir & Salhi, 2022)

1.5 New Technologies for Automating Financial Processes

In recent years, financial institutions have invested a lot in automation technologies to make their work faster, more reliable, and cheaper. One important technology is Robotic Process Automation (RPA). RPA helps to do repetitive tasks automatically, like bank reconciliation, data entry, or invoice processing. (Ghosh, 2022) Artificial Intelligence (AI) is also changing how financial data is analyzed and used. AI can help detect fraud, predict financial flows, and support strategic decisions (Kraus, 2021) Another technology is Intelligent Document Processing (IDP). IDP and smart automation platforms use AI, machine learning, and natural language processing to read and process unstructured documents, like invoices, contracts, or bank statements (Nguyen, 2024) Banks are able to process information more quickly and precisely because to these developments. Additionally, they assist banks in making better financial judgments and adhering and regulations

1.6 Objectives and Benefits of Automation

Financial process automation mainly aims to improve operational performance, reduce human errors, and free time for higher-value tasks. Recent studies show important productivity gains. (Sharma & Singh, 2023) found that using RPA and AI in accounting processes can reduce transaction processing time by 30–50%, while also improving the traceability of operations.

Other research highlights the influence of automation on data quality and regulatory compliance. (Fernandez & Aman, 2018) say that automation can significantly reduce errors, which makes financial statements more reliable and improves transparency of financial flows. Automation also helps standardize procedures and centralize information, making internal and external audits easier (Zhang, 2022)

In summary, automation tools allow financial services to move from manual processing to proactive and analytical performance management

1.7 Challenges of Implementing Automation

Even with benefits, implementing automation technologies has major technical, human, and organizational challenges. One main problem is integrating these tools into old and fragmented information systems, especially in large financial institutions. (Rodriguez, 2021) note that complex IT architectures sometimes limit smooth deployment, requiring major adaptations or technology investments.

Also, automation changes professional roles, requires better digital skills, and careful change management. (Bhandari, 2022) point out that many automation projects fail because staff do not adopt the changes, often due to poor communication, lack of training, or missing support strategies.

Governance, cybersecurity, and ethics issues especially in handling sensitive data also add challenges. A global and proactive approach is needed to manage these changes successfully.(Alkhouli, 2024)

Section 2: The Process of Granting Bank Credit to Individuals

This section explores the evolution and mechanics of the banking sector, tracing its journey from ancient financial practices to the modern digital era. It provides a detailed analysis of bank credit as a primary driver of economic growth, with a specific focus on the development and regulation of the Algerian banking system. Finally, it examines the characteristics, processes, and risk management strategies associated with retail credit, highlighting its critical role in financing individual and household needs.

2.1 General Overview and Historical Development of Banks

2.1.1 General Overview of Banks

Banks are considered fundamental institutions within the economic system, playing a crucial role in financing economic activities and facilitating financial transactions. A bank can be defined as an economic enterprise that mobilizes human, material, and financial resources in order to generate profit through operations conducted with various economic agents (Bieton & Bollo, 1995). From an economic perspective, banks act as financial intermediaries that collect funds from agents with surplus capacity, such as households, and allocate them to agents with financing needs, such as businesses and governments. (Mishkin, 2016) This intermediation function contributes to the efficient allocation of resources and supports economic growth.

Over time, banking activities have undergone significant evolution. The first forms of banking appeared in ancient civilizations, particularly in Mesopotamia, where temples performed basic financial operations such as deposit collection and lending. (Kindleberger, 1993) During the Middle Ages, the development of trade led to the emergence of money changers, whose activities contributed to the structuring of early banking practices. The term “bank” itself originates from the Italian word “banca,” referring to the bench used by these money changers (De Roover, 1948). The Renaissance period marked a major turning point in the development of modern banking, with the emergence of public banks, financial markets, and more organized financial systems. The creation of central banks later introduced mechanisms for regulating money supply and supporting economic stability (Capie, 2010). In the 20th century, the banking sector experienced profound transformations, particularly following the 1929 financial crisis, which highlighted the importance of financial regulation and the role of central banks as lenders of last resort (Bernanke, 2013). These developments were further reinforced by financial liberalization and technological progress.

Today, banks have expanded their activities beyond traditional functions. They offer a wide range of financial services, including credit provision, payment systems, investment services, and digital banking solutions. This evolution reflects the increasing complexity and diversification of banking operations within a globalized and technologically advanced environment (Freixas & Rochet, 2008).

2.1.2 Historical Development of Banks

This subsection traces the evolution of banking from ancient religious practices to modern global systems, highlighting key regulatory milestones and financial crises. It specifically examines the Algerian banking trajectory from post-independence nationalization and centralized planning to its current transition toward a digital modernization.

- **Banking in Ancient Times**

Banking as a financial practice originated around 3000 BCE in Mesopotamia, recognized as one of the earliest centers of civilization (Kindleberger, 1993, p. op.cit). In this context, temples functioned as proto-banking institutions by receiving deposits and issuing loans, with priests and priestesses serving as intermediaries who managed monetary assets and facilitated economic exchanges. In the city-states of ancient Greece, the presence of distinct local currencies necessitated the services of money changers, who operated primarily in communal areas such as marketplaces to enable currency conversion and support commercial activity. The evolution of banking continued in ancient Rome, where financial operations became increasingly systematized and were regulated within formal legal frameworks that governed fiscal transactions (De Roover, 1948).

- **Banking in the Middle Ages**

During the medieval period, banking activities advanced considerably with the emergence of money changers who played a vital role in enabling trade. The word bank derives from the Italian term *banca*, which refers to a wooden bench used by money changers to carry out their transactions (De Roover, 1948) .

At that time, each city or region possessed the authority to issue its own currency, leading to multiple currencies circulating within the same country. This circumstance increased the significance of money changers, who provided currency exchange services in exchange for a fee. The Lombards introduced new financial techniques and made substantial contributions to the progression of banking practices.

- **Banking from the Renaissance to the 19th Century**

The Renaissance period marked a turning point in the development of banking, as the foundations of modern banking systems began to emerge (Capie, 2010). During this period, the first public banks and stock exchanges were established, while private banking institutions expanded across Europe. The introduction of paper money in the 17th century represented a major innovation that transformed financial systems. Central banks, such as the Bank of England, were created to finance governments and regulate the issuance of money, becoming the “bank of banks” in each country (Mishkin, 2016).

- **Banking in the 20th Century**

During the 20th century, the banking sector experienced significant changes driven by economic downturns and advancements in financial systems. The financial crisis of 1929 underscored the critical necessity for regulatory frameworks and the central banks' function in maintaining financial stability (Bernanke B. S., 1983). In the post-World War II period, financial innovations such as bank accounts and credit cards expanded markedly, particularly within the United States and Europe. Furthermore, the financial deregulation measures enacted in the 1980s, coupled with the implementation of floating exchange rate mechanisms, played a pivotal role in the modernization and evolution of banking infrastructures (Freixas & Rochet, 2008).

- **Evolution of the Algerian Banking System**

This subsection maps the Algerian banking sector's journey from its post-colonial foundation to digital integration. It traces the shift from state-controlled nationalization to the market reforms of the 1990s and highlights recent regulatory efforts to modernize the financial landscape in line with global digital standards.

a) Establishment of a National Banking System

After independence in 1962, Algeria established its national banking system and introduced the Algerian dinar. (Arroudj, 2015)The Central Bank of Algeria was created to regulate monetary policy and support economic development (Benachenhou, 1994) .In 1963, the Algerian Development Fund (CAD) was established to finance development projects. In 1964, the National Savings and Provident Fund (CNEP) was created to collect savings and finance housing projects. Between 1966 and 1968, the nationalization of foreign banks led to the creation of public banks such as BNA, CPA, and BEA. (Hassam, 2012)

b) Centralized Planning Period

During the 1970s, the Algerian banking system operated under a centralized model where credit allocation was controlled by the state (CNES, 2005). The banking sector became fully public and specialized by activity.

c) Transition to Market Economy and Liberalization

From 1988, Algeria initiated reforms to move toward a market economy and grant autonomy to bank (Rekiba, 2016). The Law on Money and Credit (1990) liberalized the banking sector and introduced competition (Hassam, 2012)

d) Modern Reforms and Regulation

Reforms in 2001, 2003, and 2010 strengthened regulation, supervision, and risk management in the banking sector. (Arroudj, 2015)

e) Modernization and Digital Transformation

The Algerian banking sector has recently undergone modernization through the adoption of information and communication technologies, including electronic payments and online banking (FMI, 2016).

2.2 Bank Credit

Bank credit constitutes one of the fundamental pillars of the banking activity and plays a central role in the financing of the economy. It represents the main mechanism through which banks transfer financial resources from agents with surplus funds to those in need of financing. In Algeria, as in many developing economies, bank credit remains the dominant source of financing for both enterprises and individuals, especially due to the limited development of financial markets such as the stock exchange and the money market. (Dutailis, 1967)

From an economic perspective, credit can be defined as the provision of financial resources by a creditor to a debtor, with the obligation of repayment at a future date, usually with interest as compensation for the risk incurred and the service rendered (Mishkin, 2016)

This mechanism is essential for economic growth, as it allows businesses to invest, households to consume, and governments to finance public expenditures. Credit therefore contributes to wealth creation and stimulates economic activity through what is commonly referred to as the multiplier effect (Freixas & Rochet, 2008). The concept of credit is based on several fundamental elements that characterize its nature. First, trust constitutes the cornerstone of any credit relationship, as the creditor must rely on the borrower's ability and willingness to repay

the debt. (Rose & Hudgins, 2013) Second, time is an essential dimension since credit always involves a delay between the disbursement of funds and their repayment. Third, risk is inherent to any credit operation, as there is always uncertainty regarding the borrower's solvency. Finally, remuneration, generally in the form of interest, represents the compensation for the risk taken by the lender. (Saunders & Cornett, 2013)

2.2.1 Financing of Operations

Within the domain of corporate finance, enterprises frequently encounter short-term funding requirements caused by temporal discrepancies between their outflows and inflows. Such financial demands often stem from the necessity to finance inventory holdings, support ongoing production cycles, or manage delays in accounts receivable collections. To address these liquidity gaps and uphold operational continuity, firms commonly resort to short-term credit facilities extended by financial institutions (De Coussergues & Bourdeaux, 2002).

Operating credits typically possess maturities of less than one year and correlate directly with the business's operating cycle. These credits are pivotal in sustaining daily business operations by providing essential capital to bridge temporary cash shortages. Financial institutions furnish diverse short-term financing options broadly categorized into direct credits, which entail the actual loan disbursement, and indirect credits, which rely on the bank's endorsement or guarantee (Bernet-Rollande, 2004).

Direct credits, frequently referred to as cash credits, enable immediate access to funds and encompass instruments such as overdrafts, cash facilities, and short-term advances. Specifically, an overdraft permits an enterprise to withdraw amounts exceeding its current account balance within a predefined timeframe, thus offering flexible cash flow management. Similarly, cash facilities serve to mitigate transient liquidity deficits and are typically granted for very brief periods (Dutallis, 1967)

In addition to global credits, banks also offer asset- or transaction-specific credit products. Notable among these are discounting operations, whereby a financial institution purchases commercial paper prior to its maturity in exchange for interest and fees. This arrangement facilitates firms in converting receivables into instant liquidity, thereby enhancing their cash position. Additional specific credit instruments include advances on inventory, invoice financing, and factoring the latter involving the transfer of receivables to a specialized intermediary responsible for their collection and management (Bernet-Rollande, 2004)

2.2.2 Investment Financing

Beyond short-term needs, companies require long-term financing to support their investment projects. Investment financing involves the allocation of substantial financial resources for the acquisition of fixed assets such as machinery, buildings, and infrastructure. These investments are essential for the expansion, modernization, and competitiveness of firms (Mishkin, 2016). Bank credit plays a key role in financing these investments, particularly in economies where access to capital markets is limited. Investment credits are typically classified into medium-term and long-term loans, depending on their duration. Medium-term credits generally range from two to seven years and are used to finance equipment and production tools, while long-term credits exceed seven years and are intended for large-scale projects such as real estate development and infrastructure construction (Freixas & Rochet, 2008).

Given the significant amounts involved and the long repayment periods, these credits present higher risks for banks. To mitigate these risks, banks often require guarantees such as mortgages or collateral, and may also participate in syndicated loans, where several financial institutions share the financing and associated risks (De Coussergues & Bourdeaux, 2002).

Another important form of investment financing is leasing, also known as credit-bail. This technique allows a company to use an asset without immediately purchasing it, while retaining the option to acquire it at the end of the contract. Leasing offers several advantages, including full financing of the investment and preservation of the company's borrowing capacity, although it may involve higher overall costs compared to traditional loans (Filareto-Deghaye & Séverin, E., 2004).

2.2.3 Financing of Foreign Trade

In the context of globalization, international trade has become a major component of economic activity, requiring specific financing mechanisms to address the risks associated with cross-border transactions. Banks play a magic role in facilitating international trade by providing financial instruments that ensure the security of payments between importers and exporters (Brana & Lahet, 2012).

One of the most widely used instruments is the documentary credit, which guarantees payment to the exporter upon presentation of the required documents, while ensuring that the importer receives the goods as agreed. This mechanism reduces the risk of non-payment and enhances trust between trading partners. Another common instrument is documentary collection, which

involves the transmission of commercial documents through banks, with payment being made upon delivery or acceptance of these documents (Mishkin, 2016).

Export enhancing includes several financial instruments aimed at facilitating international trade operations and supporting both exporters and importers. Among these instruments are supplier credit and buyer credit, which provide financing solutions that help secure commercial transactions and improve payment flexibility in international markets. In addition, international factoring allows companies to transfer foreign receivables to specialized financial institutions in exchange for immediate financing, thereby reducing the risk of non-payment and improving cash flow management in international trade activities. (Tran, 2001)

2.2.4 Financing of Individuals

In recent decades, the banking sector has prioritized individual customers as a key client segment, driven by the growth of consumer society and increased demand for goods and services, which expanded household credit offerings (Lazarus, 2009).

Individual credit is classified into short-term credit such as overdrafts, advances, and credit cards—that addresses immediate financial needs with flexible but often high-interest options (Mishkin, 2016), and long-term credit aimed at durable goods acquisition, including mortgages for housing finance (Bernet-Rollande, 2004).

This evolution in consumer credit underscores shifts in banking practices, emphasizing the diversification of financial products and the critical role of credit risk assessment to ensure repayment capacity and maintain financial stability (Freixas & Rochet, 2008).

2.2.5 Credit Risk and Management

Credit risk represents one of the most significant challenges faced by banks in their lending activities. It refers to the possibility that a borrower may fail to meet their contractual obligations, particularly the repayment of the principal and interest within the agreed time frame. This risk is inherent to all credit operations, as uncertainty always exists regarding the future financial situation of the borrower (Mishkin, 2016).

In the discipline of finance and banking, ensuring systemic stability and profitability necessitates stringent credit risk management protocols. These begin with a comprehensive borrower creditworthiness assessment, encompassing financial status, income reliability, repayment ability, and prior credit records, enabling risk evaluation for loan decisions (Altman & Saunders, 1998).

Credit scoring, a prevalent method in credit risk evaluation, employs statistical models integrating quantitative and qualitative indicators such as income, employment, existing debt, and behavioral factors to estimate default probability. This approach enhances the objectivity and efficiency of credit assessments, particularly for individual borrowers (Thomas, Crook, & Edelman, 2017).

Banks also mitigate lending risk through guarantees and collateral, which include real guarantees like mortgages and pledges, as well as personal guarantees such as sureties; these mechanisms facilitate partial or full loan recovery upon borrower default, thus limiting losses (Bessis, 2015). Additionally, credit portfolio diversification across various sectors, geographies, and borrower profiles reduces exposure to idiosyncratic risks, thereby promoting banking system stability and robustness (Freixas & Rochet, 2008).

2.2.6 The Role of Bank Credit in Economic Development

Bank credit plays a fundamental role in promoting economic development by facilitating investment, consumption, and innovation. By providing financial resources to businesses, banks enable them to expand their activities, invest in new technologies, and create employment opportunities. This, in turn, contributes to economic growth and improves the overall standard of living (Levine, 2005)

In the case of households, access to credit allows individuals to finance major expenditures such as housing, education, and durable goods. This access not only improves living conditions but also stimulates demand within the economy, thereby supporting production and economic activity. Consumer credit, in particular, has become a key driver of economic growth in modern economies (Mishkin, 2016)

Moreover, bank credit plays an important role in supporting small and medium-sized enterprises, which are often considered the backbone of the economy. Due to their limited access to financial markets, these enterprises rely heavily on bank financing to fund their operations and growth. By providing credit to these enterprises, banks contribute to entrepreneurship, innovation, and job creationz(Beck, Demirgüç-Kunt & Levine, 2005).

However, excessive or poorly managed credit expansion may lead to financial instability and economic crises. The global financial crisis of 2008 highlighted the risks associated with excessive lending and inadequate risk management practices. This underscores the importance

of maintaining a balance between credit expansion and financial stability (Bernanke B. S., 2013).

2.3 Credit to Individuals (Retail Credit)

Bank credit granted to individuals has experienced significant development in recent decades, particularly with the rise of consumer society and the diversification of financial needs. This type of credit is intended to finance the personal needs of households, whether for consumption or for the acquisition of durable goods such as housing or vehicles. It allows individuals to improve their standard of living by accessing goods and services that they could not acquire immediately with their available financial resources (Mishkin, 2016)

Historical Development of Credit to Individuals

The development of credit for individuals in Algeria began progressively during the 1990s, when Algerian banks started introducing financial products specifically designed for private customers. Before this period, individual clients were largely neglected by banking institutions due to the prevailing economic system, socio-cultural factors, and household consumption habits that favored savings rather than borrowing. The gradual evolution of the banking sector and the growing demand for consumer financing contributed to the expansion of personal credit services and the diversification of banking products offered to individuals. (Kias, Belkacem, S., & Chaib, R., 2016)

- **Before 1986**

During this period, banks were organized as instruments of planning and did not have the initiative in granting credit. Each bank was specialized in a specific sector. Credit to individuals was limited to housing financing, which was the monopoly of the National Savings and Provident Fund, offering mortgage loans at preferential rates to savings account holders. However, the lack of housing limited the financing interventions of this institution, and most of the savings collected were used to finance public housing.

- **Between 1986 and 1991**

The banking law of 1986 removed sectoral specialization, but banks were unable to diversify their products due to the lack of supervision and the economic crisis caused by the fall in oil prices. The law on money and credit of 1990 established a legal framework for reforms, but did not immediately lead to the introduction of products for individuals. It was only towards the end of the 1990s that banks began to take interest in this segment.

- **From 1991 to the Present Day**

The launch of credit to individuals in Algeria took place for the first time between 1998 and 1999, marking a major transformation in the banking sector. Agreements were signed between banks and insurance companies to introduce consumer credit. This initiative was motivated by the decline in purchasing power, the decrease in demand for durable goods, and the difficulties faced by companies in selling their production . (Kias, Belkacem, S., & Chaib, R., 2016)

At the same time, mortgage credit was introduced by several banks, including CPA, BEA, and BNA. Additional reforms were implemented to support housing, including the creation of specialized institutions for financing and guaranteeing real estate projects.

2.3.1 Caractéristiques of Credit to Individuals

Credit to individuals is characterized by several elements related to the amount, interest, and duration.

- **Amount**

The amount granted varies according to the type of credit and the borrower's financial capacity. It reflects the specific use of the credit and is generally based on the net income of the individual. Mortgage loans usually involve higher amounts compared to consumer credit

- **Interest**

Interest represents the cost of credit and may be preferential depending on the conditions granted to the borrower. Interest rates vary depending on the duration of the credit, being fixed for short-term loans and variable or effective for medium and long-term loans.

- **Duration**

The duration of credit varies according to its type and amount. Consumer credit generally has a shorter repayment period than mortgage credit. The borrower may strengthen their repayment capacity through guarantees such as a surety.

2.3.2 Importance of Credit to Individuals

Credit to individuals plays a significant economic and social role for both companies and households. For companies, consumer credit stimulates demand for goods and services by facilitating consumer purchasing power, which contributes to increased sales, production growth, and job creation. It therefore supports economic activity and business development.

For individuals, credit improves living standards by enabling access to goods, services, housing, and transportation that may otherwise be financially inaccessible. In addition, personal credit facilitates professional mobility, supports social integration, and allows individuals to better adapt to economic and social changes, thereby contributing to greater financial autonomy and improved quality of life. (Laurent, 2004)

2.3.3 Characteristics of Credit to Individuals

Credit to individuals is characterized by several essential elements related to the amount, interest, duration, and guarantees required by the bank. The amount of credit depends on the type of loan and is generally calculated based on the borrower's income and repayment capacity. Mortgage loans involve higher amounts compared to consumer credit and often require a personal contribution from the borrower. Interest represents the cost of credit and varies depending on the duration and level of risk associated with the loan. It may be fixed or variable and reflects both the cost of funds and the bank's margin (Mishkin, 2016)

The duration of credit differs according to its purpose, with consumer credit generally being short or medium term, while mortgage credit extends over long periods that may reach several decades. The repayment capacity of the borrower is often reinforced by guarantees, such as personal sureties or real guarantees like mortgages. These characteristics make credit to individuals a structured financial product requiring careful evaluation and monitoring by the bank (Bessis, 2015)

2.3.4 Importance of Credit to Individuals

Credit to individuals plays a significant role in both economic and social development. For companies, consumer credit stimulates demand for goods and services, facilitating the sale of products and encouraging production expansion. This dynamic contributes to economic growth, industrial development, and job creation. For individuals, credit improves living standards by allowing access to housing, transportation, and modern equipment, thereby enhancing quality of life and economic inclusion (Levine, 2005) It also facilitates social mobility by enabling individuals to invest in education, housing, and professional development.

2.3.5 Conditions for Granting Credit to Individuals

The granting of credit to individuals is subject to strict conditions designed to ensure the borrower's solvency and to limit risks for the bank. The analysis of the borrower's financial situation is a fundamental step, including income level, job stability, and existing financial

obligations. Banks generally apply a debt ratio threshold to ensure that the borrower can meet repayment obligations without falling into over-indebtedness (Kharoubi & Thomas, 2016)

Professional stability is also a decisive factor, as borrowers with stable employment present lower risk. In addition, banks require guarantees to secure the loan, which may take the form of mortgages, pledges, or personal guarantees. These mechanisms allow banks to recover funds in case of default and reduce exposure to credit risk (Freixas & Rochet, 2008)

2.3.6 Credit Granting Process

The credit granting process involves several stages, beginning with the submission of the application, followed by the analysis of the borrower's profile, and ending with the decision and disbursement of funds. During the analysis phase, banks assess the borrower's creditworthiness using financial data, repayment capacity, and credit history. Credit scoring models are often used to facilitate this evaluation and improve decision-making efficiency. Once the application is approved, the bank defines the conditions of the loan, including the amount, interest rate, duration, and repayment schedule. The funds are then disbursed, either in a single payment or in several installments depending on the nature of the credit. The bank subsequently monitors repayment to detect potential difficulties and take corrective measures if necessary (Bessis, 2015)

2.3.7 Risks Associated with Credit to Individuals

Credit to individuals exposes banks to various risks, primarily the risk of default, which arises when the borrower fails to meet repayment obligations. This risk may result from changes in the borrower's financial situation, such as unemployment or unexpected expenses. In addition to individual risk, banks face macroeconomic risks related to economic cycles, inflation, and financial instability, which can affect borrowers' repayment capacity (Kharoubi & Thomas, 2016).

To manage these risks, banks implement strategies such as diversification of credit portfolios, use of guarantees, and continuous monitoring of borrowers' financial situations. These measures contribute to maintaining financial stability and reducing potential losses (Freixas & Rochet, 2008)

2.3.8 Evolution and Current Trends of Credit to Individuals

The evolution of credit to individuals is increasingly influenced by technological innovation and financial digitalization. The use of digital platforms, online credit applications, and automated decision systems has significantly improved access to credit and reduced processing time. These innovations also enable banks to better assess risk through the use of big data and advanced analytics (Philippon, 2016). At the same time, new challenges have emerged, particularly in terms of data protection, cybersecurity, and the prevention of over-indebtedness.

Section 3: Digitalization in Banking

This section examines the paradigm shift from traditional banking to a technology-driven ecosystem, where digitalization is no longer an elective upgrade but a core strategic necessity. It defines the transition toward digital transformation, exploring the suite of advanced tools ranging from CRM and ERP systems to Artificial Intelligence and Big Data that now underpin financial operations. Furthermore, the discussion details how these technologies specifically revolutionize the credit-granting process through document dematerialization and automated evaluation, ultimately analyzing the resulting influences on operational efficiency, risk mitigation, and the evolving customer experience.

3.1 General Concept of Digitalization

This segment analyzes the transition from paper-reliant methods to a tech-centric banking framework, tracing digital transformation from its internet roots to its role in global economic growth. By exploring how digital integration redefines corporate culture and meets modern user demands, the discussion highlights why these advancements are now essential for the survival and relevance of financial institutions

3.1.1 Definition of Digitalization in Banking

digitalization in the banking sector can be defined as the transformation of traditional banking activities through the adoption and integration of digital technologies that enable banks to deliver faster, more efficient, accessible, and customer-centered financial services. It involves the use of electronic platforms, online services, mobile banking applications, and digital communication tools to improve operational performance, reduce transaction time and costs, and enhance customer experience and satisfaction. (Aaras M. &, 2020)

3.1.2 Evolution of Digital Transformation

digital transformation did not emerge suddenly but developed progressively with the expansion of the internet during the 1990s. Initially focused on technological modernization, it gradually evolved into a broader organizational transformation affecting business models, managerial practices, and operational processes. The concept gained significant attention around 2014 in both academic and professional environments. However, despite its growing popularity, digital transformation is often used without a clear understanding of its practical implications, which makes its implementation challenging for many organizations. (Beye, 2017)

3.1.3 Digitalization of Companies and Banking Institutions

For any company, going digital means more than swapping out old software it means changing the way the whole organization moves and breathes. It creates room for faster decisions, more flexible teams, and a culture that's open to experimentation. Banks have felt this especially strongly. Rigid, slow-moving systems are giving way to ones that can adapt, innovate, and actually keep pace with what customers expect. The result, at its best, is an institution that works smarter and performs better. (Cuillandre, 2016)

3.1.4 Digitalization in the Global Context

According to the World Bank (2024), digitalization has transformed the global economic and social environment by changing the ways individuals communicate, work, and access information and services. The rapid expansion of internet connectivity and mobile technologies has increased digital access worldwide, although significant disparities remain between developed and developing countries. In addition, the widespread use of digital applications has reshaped consumer expectations by promoting faster, more accessible, and user-friendly services. From an economic perspective, digitalization has contributed to economic growth, innovation, and employment opportunities, despite ongoing challenges related to digital infrastructure in certain regions. (Bank, 2024)

3.2 Digital Tools Supporting the Credit Granting Process

This portion outlines the digital ecosystem streamlining the credit process, from management platforms like CRM and ERP to AI and Big Data. It examines how these tools improve data accuracy, accelerate decisions, and strengthen risk management within a cohesive technological infrastructure.

3.2.1 Customer Relationship Management (CRM)

A good CRM system is like giving a bank a proper memory. Instead of relying on scattered notes or disconnected databases, banks can track every client interaction, manage portfolios, and run targeted campaigns all from one place. In the context of credit, this means loan officers can walk into a conversation already knowing who they're dealing with, which makes for sharper decisions and better service . (Alma, 2025)

3.2.2 Enterprise Resource Planning (ERP)

ERP systems tie the whole operation together. Rather than having accounting, finance, and operations each working in their own corner, ERP brings everything under one roof. For banks, this centralization is especially valuable when it comes to credit risk having a unified view of financial data makes it far easier to spot issues before they become problems. (Alma, 2025)

3.2.3 Business Process Management (BPM)

BPM is essentially about working smarter, not harder. By mapping out processes, automating repetitive tasks, and digitizing workflows, it cuts down on the back-and-forth that can slow credit operations to a crawl. Communication between departments becomes cleaner, handoffs happen faster, and fewer things fall through the cracks . (Alma, 2025)

3.2.4 Intranet and Electronic Document Management (EDM)

The intranet keeps the internal gears turning it's where staff share updates, access resources, and stay connected across departments. Pair that with a solid document management system, and suddenly finding the right file doesn't mean digging through a filing cabinet. Everything is stored, organized, and retrievable in seconds, which matters a lot when credit decisions are time-sensitive . (Alma, 2025)

3.2.5 Specialized Software

Not every tool needs to be part of a grand unified system. Sometimes a focused piece of software built specifically for payroll, procurement, or project tracking does the job better than a generic one.

In banking, these specialized tools fill important gaps and bring a level of precision to credit-related tasks that broader platforms can't always match . (Alma, 2025)

3.2.6 Artificial Intelligence

AI is no longer a futuristic concept in banking it's already at work. From chatbots handling routine customer queries to algorithms assessing creditworthiness in seconds, AI is changing what's possible. It can sift through vast amounts of data, flag suspicious transactions, and surface patterns that no human analyst could catch at scale. In credit operations especially, this kind of intelligence is becoming genuinely indispensable . (Alma, 2025)

3.2.7 Business Intelligence and Big Data

Raw data on its own doesn't tell you much but the right tools can turn it into something that actually guides decisions. Business Intelligence platforms do exactly that, transforming enormous datasets into clear dashboards and digestible reports. For credit managers, this means a clearer picture of customer behavior, risk patterns, and portfolio health all in real time . (Alma, 2025)

3.2.8 Other Digital Tools

Beyond the headline technologies, banks rely on a whole ecosystem of digital touchpoints websites, mobile apps, social media channels, and cloud storage solutions. These might seem like supporting players, but they shape how customers experience the bank day to day. They make services more reachable, keep data secure and accessible, and ultimately help banks stay relevant in an increasingly digital world. (Alma, 2025)

3.3 Digitalization of the Credit Granting Process

This subsection explores the procedural shift from manual paperwork to a fully digitalized credit cycle. It highlights how dematerialization, robotic automation, and data-driven evaluation models replace traditional methods, these advancements fundamentally transition credit management from a slow, subjective "art" into a precise and high-speed science.

3.3.1 Dematerialization of Credit Files

Not long ago, opening a credit file meant pulling out a physical folder pages of printed contracts, handwritten notes, copies of invoices, all held together and hoping nothing got misplaced. It sounds almost quaint now, but the risks were real: documents got lost, damaged, or simply took too long to find when someone needed them urgently. Dematerialization changed all of that. When everything lives in a digital format, a file that once required a trip to the archive can be pulled up in seconds, shared across departments without making copies, and stored in a way that's both secure and auditable.

For credit operations specifically, this shift matters more than it might seem because speed and accuracy at the document level ripple all the way through to how quickly a decision gets made . (Bee, 2025)

3.3.2 Automation of Credit Processes

the automation of credit processes refers to the use of digital technologies and automated systems to simplify repetitive and time-consuming tasks involved in credit operations. Technologies such as Robotic Process Automation (RPA) enable banking institutions to automate activities including data entry, document verification, and workflow routing with greater speed and accuracy. By reducing manual intervention, automation minimizes operational errors, improves processing efficiency, and accelerates credit decision-making. Furthermore, automation allows employees to focus on higher-value analytical and customer-oriented tasks that require human expertise and judgment. (Deloitte, 2024)

3.3.3 Digital Credit Evaluation

For a long time, deciding whether to grant credit was as much an art as a science. A loan officer would sit across from an applicant, review whatever documents were available, and make a call based on experience and gut feeling as much as anything else. That wasn't necessarily wrong experienced people develop good instincts but it was slow, inconsistent, and limited by whatever information happened to be on the table.

Today, banks can draw on scoring models fed by vast amounts of data, cross-referenced in real time by algorithms that don't get tired or distracted. The result isn't that humans are removed from the equation, but that their decisions are better informed and arrive much faster. Risks that might have been missed get caught earlier. Applicants get answers sooner. And the overall process becomes something closer to a science than it ever was before. (Valnaos, 2025)

3.4 Influence of Digitalization on Credit Granting Performance

This segment evaluates the multifaceted outcomes of digital integration on bank performance, balancing significant gains against emerging obstacles. It analyzes how technology enhances operational output, sharpens risk mitigation through data analytics, and fundamentally redefines the customer journey. Furthermore, it addresses the critical security and human challenges that institutions must manage to sustain the benefits of a digitalized credit environment.

3.4.1 Operational Efficiency

digital transformation significantly enhances operational efficiency in the banking sector by integrating advanced technologies into banking operations and service delivery processes. The adoption of digital tools such as automation systems, artificial intelligence, and data analytics enables banks to optimize workflows, reduce operational costs, minimize human errors, and accelerate transaction processing. Furthermore, digitalization improves productivity and allows banking employees to focus on strategic and customer-oriented activities instead of repetitive administrative tasks. As a result, banking institutions achieve greater efficiency, flexibility, and overall operational performance. (Ononiwu, 2024)

3.4.2 Risk Management

According to Bouteille and Coogan-Pushner (2021), digital technologies have significantly improved risk management practices in banking institutions, particularly in credit risk assessment. The integration of data analytics, predictive models, artificial intelligence, and real-time monitoring systems enables banks to analyze large volumes of customer and financial data more accurately and efficiently. These technologies help identify potential risks at an early stage, detect hidden behavioral patterns, and improve the prediction of borrower default probabilities. As a result, digital risk management enhances the quality of lending decisions and allows banks to manage credit risk in a more proactive and strategic manner. (Bouteille, 2021)

3.4.3 Customer Experience

According to Román, Cuestas, and Iacobucci (2017), digitalization has significantly improved customer experience in the banking sector by making financial services more accessible, faster, and more convenient. Digital banking technologies allow customers to apply for loans remotely, submit documents electronically, and monitor the progress of their applications in real time. These innovations reduce waiting times, simplify administrative procedures, and enhance transparency throughout the credit process. As a result, digitalization increases customer satisfaction and strengthens the relationship between banks and their clients by providing a more efficient and user-centered banking experience. (Román, Cuestas, P. J., & Iacobucci, D., 2017)

3.4.4 Challenges of Digitalization

According to Youssef and Bennani (2022), digitalization presents several important challenges for banking institutions despite its numerous advantages. One of the major concerns is cybersecurity, as the increasing use of digital platforms exposes banks to more sophisticated cyberattacks and data breaches that may compromise customer trust and financial security. In addition, banks must continuously adapt to evolving data protection and privacy regulations in order to maintain legal compliance and ensure secure information management. Furthermore, digital transformation requires significant organizational and cultural change. Resistance to change among employees, lack of digital skills, and difficulties in adapting to new technologies may slow down the implementation process. Therefore, successful digitalization depends not only on technological investment but also on effective change management and strong organizational leadership.(Youssef & Bennani, M, 2022)

Conclusion

This first chapter established the theoretical and conceptual foundations necessary for understanding the research conducted in this dissertation. Through a structured review of the academic literature, it was demonstrated that the digital transformation of banking institutions is no longer a peripheral phenomenon but a strategic necessity, driven by the need to improve operational efficiency, reduce processing delays, and enhance customer experience.

The review of credit granting processes highlighted the complexity and the multistage nature of these operations, as well as the significant risks they carry when managed through manual and fragmented workflows. The analysis of retail credit in Algeria further revealed the specific historical and regulatory context in which individual banking products have developed, underscoring the particular importance of modernization efforts within this market.

Finally, the exploration of digitalization in banking made it possible to identify the key tools and mechanisms including CRM systems, workflow automation, electronic document management, and artificial intelligence that are progressively reshaping credit operations. These tools collectively contribute to reducing delays, improving traceability, and strengthening the overall reliability of credit processes.

The theoretical framework developed throughout this chapter will serve as the analytical foundation for the methodological approach and the empirical analysis presented in the following chapters.

CHAPTER 2: ORGANISATIONAL CONTEXT AND METHODOLOGICAL FRAMEWORK

Introduction

Having established the theoretical and conceptual foundations of this research in the preceding chapter, this second chapter is dedicated to presenting the institutional context in which the study is conducted, as well as the methodological framework adopted to guide the empirical investigation.

The chapter is organized into two complementary sections. The first section provides a detailed presentation of General Society Algeria, including its organizational structure, the organization of its Retail Division, and a process analysis of the consumer credit granting operations as they functioned prior to digital transformation. This organizational overview is essential for contextualizing the findings and understanding the specific operational environment within which digitalization initiatives have been deployed.

The second section presents the methodological choices made to conduct this research. It explains and justifies the adoption of a qualitative case study approach grounded in a constructivist research paradigm. It further describes the data collection tools employed namely semi-structured interviews, direct observation, documentary analysis, and process mapping as well as the analytical methods used to process and interpret the data collected, including thematic content analysis and chronometric process evaluation.

This methodological framework was designed to ensure that the research is both rigorous and closely aligned with the real operational dynamics of the institution under study.

Section 1: Organisational Context and Process Analysis

1.1 Over view

Understanding the retail credit granting process requires a thorough analysis of the organisational context in which it operates. Process performance — in terms of efficiency, speed, and quality of service — is strongly influenced by the internal structure of the bank, the roles of different actors, and the level of digitalisation implemented within operational workflows.

In this perspective, this section adopts an analytical approach to present Société Générale Algérie, focusing on elements that are directly linked to the research problem. The objective is not to provide an exhaustive institutional description, but rather to identify the structural and strategic factors that influence the credit granting process.

Special attention is given to the organisation of the Retail division, which represents the core of consumer credit activities, as well as to the structure of the actors involved in processing credit applications. Furthermore, the analysis of the current credit granting process allows for the identification of key steps, interactions between departments, and potential inefficiencies affecting overall performance.

The integration of visual tools, such as the organisational chart and the process mapping diagram, enhances the clarity of the analysis and supports the identification of improvement opportunities, particularly in the context of digital transformation.

1.2 Presentation of General Society Algeria (GSA)

General Society Algeria (GSA) is a wholly owned subsidiary of the Société Générale Group, one of the oldest and most established banking institutions in France. Established in Algeria in 1999 and operational since 2000, the bank operates under the supervision of the Bank of Algeria and has progressively built a significant presence within the national banking sector.

GSA has developed an extensive network of over 100 branches distributed across several regions, supported by a workforce of more than 1,700 employees. Through this structure, the bank serves a diversified customer base including individuals, professionals, and corporate clients.

From a strategic perspective, it adopts a universal banking model with a strong emphasis on retail banking activities. In particular, the bank focuses on serving individual clients through a wide range of financial products, including consumer credit, which represents a key component of its business model. This positioning reflects the importance of credit activities in generating revenue and strengthening customer relationships.

In addition, (GSA) is engaged in a progressive digital transformation aimed at modernising its services and improving operational efficiency. This transformation is reflected in the development of digital channels, such as online banking and mobile applications, which complement the traditional branch network. However, the current operational model remains partially digitalised, combining manual and automated processes.

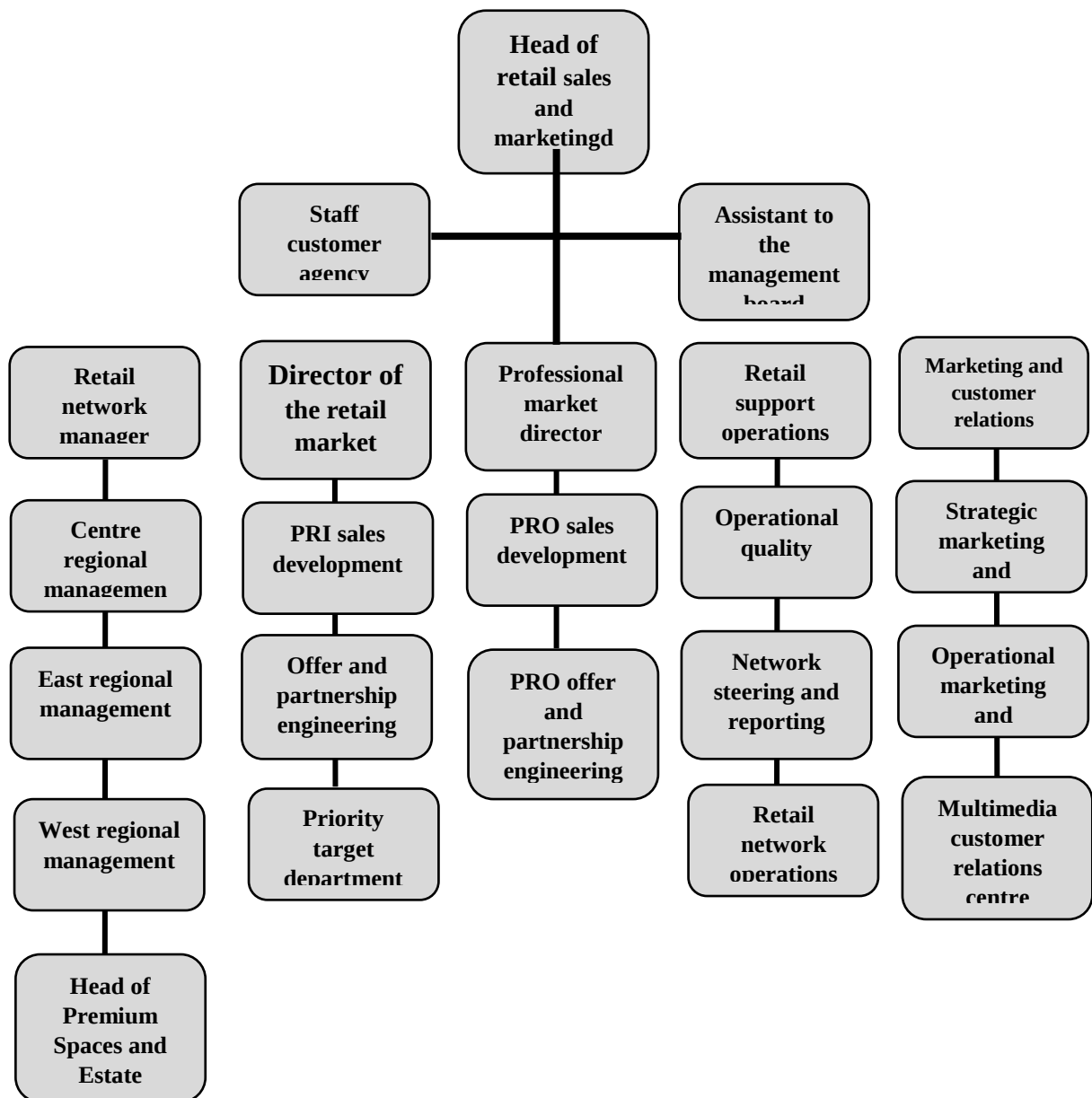
This hybrid configuration provides a relevant context for analysing the influence of digitalisation on process performance, particularly in the case of the retail credit granting process, which constitutes the core focus of this research (GSA, 2025).

1.3 Organisation of the Retail Division

The Retail division represents the core operational structure responsible for managing relationships with individual customers and processing credit applications. It includes several key actors, each playing a specific role within the process.

Customer advisors (CRR), both junior and senior, are responsible for interacting directly with clients, collecting information, and initiating credit applications. Back-office agents are involved in processing files, verifying documents, and ensuring compliance with internal procedures. The Director of the Retail Market oversees the overall performance of the division and ensures alignment with strategic objectives.

Figure 1: Organisational Chart of the Retail Division (SGA)



Source :made by author

The organisational structure reflects a division of tasks between front-office and back-office functions, which allows for specialisation but may also introduce coordination challenges. These interactions between actors play a critical role in determining the efficiency of the credit granting process.

1.4 Retail Credit Granting Process (As-Is Analysis)

The retail credit granting process consists of a sequence of steps that begins with the customer request and ends with the disbursement of funds. This process involves multiple actors and includes both manual and digital operations. (Check on appendice N°1)

The main stages include:

1. Customer onboarding (if necessary)
2. Data collection
3. Document verification
4. Credit analysis
5. Risk assessment
6. Validation and approval
7. Contract preparation
8. Final disbursement

Each of these steps contributes to the overall processing time and may introduce delays depending on the level of automation involved.

The analysis of the current process highlights the coexistence of manual, digital, and hybrid steps. While certain operations benefit from system support, others still rely heavily on human intervention, which may lead to inefficiencies and increased processing time.

1.5 Critical Analysis of the Current Process

Beyond its structural description, the credit granting process requires a critical analysis in order to identify its limitations and areas for improvement. Several types of inefficiencies can be observed.

First, bottlenecks are present in stages that require manual validation or involve multiple levels of approval. These steps tend to slow down the overall process and increase processing time. Second, redundancies can be identified, particularly in cases where information is entered multiple times or verification procedures are repeated unnecessarily.

Additionally, certain tasks can be classified as non-value-added activities, as they do not directly contribute to the final outcome but still consume time and resources. These inefficiencies highlight the limitations of the current partially digitalised system.

The analysis also reveals that the level of digitalisation remains insufficient to ensure optimal performance. While digital tools have been introduced, their integration into the process is not yet complete, resulting in a hybrid model that combines the disadvantages of both manual and automated systems.

This situation underscores the importance of further digital transformation, particularly through the automation of repetitive tasks, the integration of systems, and the reduction of manual interventions. Such improvements are essential for enhancing efficiency, reducing processing time, and improving customer experience.

Section 2: Methodological Framework

In order to successfully conduct this study and achieve the set objectives, it is essential to define the methodological framework that guides the entire research process. This section presents the foundations of the scientific approach, specifying the adopted reasoning, the chosen methodological strategy, the tools used for data collection and analysis, as well as the methodological limitations. It aims to ensure the rigour, coherence, and reliability of the research, while taking into account the specificities of the studied field, namely the retail credit granting process within General Society Algeria (GSA).

2.1.1 Research Paradigm: Pragmatism

This research adopts a pragmatic research paradigm, which is particularly appropriate for studies aiming to solve practical organisational problems through the integration of multiple sources of evidence. Pragmatism rejects the idea that a single philosophical position should guide research and instead focuses on selecting the methods that best address the research objectives (Creswell & Plano Clark, 2018; Saunders, Lewis, & Thornhill, 2023).

The objective of this dissertation is not only to understand how the consumer credit granting process operates within its organisational context but also to evaluate how digitalisation improves its operational performance. Consequently, the study combines qualitative evidence obtained through semi-structured interviews, direct observations, and documentary analysis with objective operational data derived from process mapping and chronometric measurements.

This combination of subjective interpretations and measurable operational indicators is consistent with the pragmatic paradigm, which encourages the use of complementary methods to obtain a comprehensive understanding of complex organisational phenomena (Morgan, 2014). Rather than privileging either objective or subjective knowledge, pragmatism recognises that both forms of evidence contribute to answering the research questions and generating practical recommendations.

Accordingly, the pragmatic paradigm provides the most appropriate philosophical foundation for analysing the digital transformation of the consumer credit granting process within Société Générale Algérie.

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2.1.2 Research Reasoning: Abductive Reasoning

This research follows an abductive reasoning approach, which combines elements of both deductive and inductive logic. Abductive reasoning is particularly suitable for applied business research because it allows researchers to move iteratively between existing theoretical knowledge and empirical observations in order to explain organisational phenomena and develop practical solutions (Saunders et al., 2023; Dubois & Gadde, 2002).

The study builds upon the existing literature on banking digitalisation, business process management, and operational performance while simultaneously analysing empirical evidence collected within Société Générale Algérie. Throughout the research process, theoretical concepts were continuously compared with observations obtained from interviews, direct observation, documentary analysis, process mapping, and chronometric measurements.

Rather than testing a predefined hypothesis or generating entirely new theory, the research seeks to explain how digitalisation influences the consumer credit granting process within its real organisational environment. This iterative movement between theory and empirical evidence characterises abductive reasoning and enables the development of context-specific explanations and operational recommendations (Timmermans & Tavory, 2012).

The abductive approach therefore provides an appropriate methodological framework for understanding the mechanisms through which digital technologies improve the efficiency of consumer credit operations while maintaining close alignment between theory and practice.

2.2 Research Approach: Qualitative Case Study

To carry out this study, a qualitative research approach based on a case study methodology was adopted. This choice is justified by the complex and operational nature of the consumer credit granting process within General Society Algeria (GSA), which requires an in-depth understanding of organisational practices, workflow dynamics, and the influence of digitalisation within a real banking environment. The case study approach makes it possible to analyse the process within its actual organisational context and to examine how digital transformation affects operational performance and daily activities (Yin, 2018).

This methodological positioning was defined in order to ensure coherence throughout the research process. The study mainly focuses on understanding the process from the perspective

of the operational actors involved through semi-structured interviews, direct observations, documentary analysis, and process mapping. In addition, chronometric measurements of the different operational steps were conducted in order to evaluate the concrete influence of digitalisation on processing times, workflow fluidity, and operational efficiency. The objective of this chronometric analysis was not to establish a purely quantitative statistical study, but rather to support the qualitative case study by providing objective operational indicators regarding the effectiveness of the digital transformation.

This qualitative case study approach is particularly relevant in the context of banking digitalisation, where organisational, human, technological, and operational dimensions are strongly interconnected. It allows for a contextualised understanding of the consumer credit granting process while highlighting the practical contribution of digitalisation in reducing delays, minimising manual intervention, and improving overall process performance within General Society Algeria (GSA).

2.2.1 Justification of the Qualitative Approach

Matmati (2020) states that the qualitative approach aims to explore an organisational situation in depth, based on field immersion and a contextualised interpretation of observed facts. It allows a better understanding of the perceptions, interactions, and lived experiences of the actors involved. Data are generally collected through interviews, documentary analysis, or observation, and then processed using techniques such as content analysis.

The qualitative method was used in order to better understand the actual functioning of the credit granting process, taking into account the context, internal practices, and perceptions of the actors. This approach allowed for the collection of rich and detailed information, essential for identifying the root causes of dysfunctions. The choice of this approach is justified by the use of several complementary qualitative tools namely semi-structured interviews, direct observations, and analysis of internal documents provided by the bank which allowed an in-depth exploration of the field.

2.2.2 Justification of the Case Study Methodology

Yin (2018) indicates that the qualitative case study approach is based on the in-depth analysis of a phenomenon within its real-life context in order to better understand its functioning, dynamics, and operational environment. This approach allows the researcher to explore organisational practices, employee interactions, and process behaviours through direct

observation and contextual analysis. It is particularly appropriate when the objective is to understand a complex process in its natural setting and to generate practical insights grounded in reality.

The qualitative case study approach was chosen because it allows the consumer credit granting process at General Society Algeria to be analysed in a detailed and contextualised manner. This methodology facilitates the identification of operational dysfunctions, workflow constraints, and process inefficiencies through direct observations, semi-structured interviews, documentary analysis, and process mapping. In addition, chronometric measurements of the different operational steps were integrated as analytical support tools in order to evaluate the concrete influence of digitalisation on processing times and operational fluidity. These measurements were not intended to establish a purely quantitative statistical study, but rather to strengthen the qualitative interpretation of the process and support the evaluation of the operational contributions of digital transformation initiatives.

2.3 Data Collection Tools

2.3.1 Semi-Structured Interviews

Qualitative methods allow in-depth information to be collected on the actual functioning of the process through direct observations and exchanges with field actors. In this study, interviews and observations were used to better understand the possible causes of delays and inefficiencies within the credit granting process.

A. Interview Guide and Structure

In order to ensure consistency and rigour in the qualitative data collection process, a structured interview guide was developed and used during all semi-structured interviews. This guide was designed to align with the research objectives and to cover all relevant dimensions related to the digitalisation of the retail credit granting process within General Society Algeria.

The interviews were conducted individually in a semi-structured format, with a duration ranging from approximately 30 minutes to one hour. The target population included customer advisors (both junior and senior), back-office agents, and the Director of the Retail Market. This diversity of participants allowed for the collection of multiple perspectives across different levels of the process.

Each interview began with an introduction phase, during which the researcher presented herself and explained the purpose of the study. Participants were informed that the research focuses on the influence of digitalisation on the credit granting process, and their consent was requested prior to conducting the interview, including permission for audio recording when applicable.

The interview guide was structured into the following thematic sections:

1. Profile of the participants (current role and years of experience in the banking or digital field).
2. Banking digitalisation: main driving factors and influence on efficiency and processing time.
3. Retail credit granting process: description of the traditional process, transformations introduced by digitalisation, influence on processing time, cost reduction, customer experience, and associated risks.
4. Digital investment in the banking sector: level of investment and potential improvement strategies.
5. Open section: additional comments or insights not covered during the discussion.

This structured yet flexible approach ensured both consistency across interviews and the ability to capture rich, detailed, and context-specific information. The full interview guide is provided in the appendix to enhance the transparency and replicability of the research.

B. Selection of Participants

Semi-structured interviews were conducted with several key operational actors involved in the consumer credit granting and account opening processes within General Society Algeria. The selection of the interviewees was based on their direct involvement in the execution, management, technical validation, and digital transformation of the studied processes.

The following profiles were selected:

1. A Banking Operations Expert in Front-Office and retail credit management was interviewed due to his direct involvement in customer handling, file processing, and front-office operational activities.
2. A Banking Operations Expert in Back-Office processing and technical validation was also interviewed in order to analyse the administrative and technical dimensions of the credit process.

3. The Head of Solution Pole – SIOP (DSI + DPO) was included because of his strategic and technical role in business analysis, system development, and process integration within General Society Algeria (GSA).
4. Three Customer Advisors were interviewed due to their direct operational involvement in account opening and consumer credit activities.

The following table presents the profile of each participant:

Table 1: Profile of Interviewed Participants

Code	Current Position	Interview Type
R01	Banking Operations Expert (Front-Office / CDC)	Individual face-to-face
R02	Banking Operations Expert (Back-Office)	Individual face-to-face
R03	Head of Solution Pole – SIOP (DSI + DPO)	Individual face-to-face
R04	Customer Advisor	Individual face-to-face
R05	Customer Advisor	Individual face-to-face
R06	Customer Advisor	Individual face-to-face

Source: Established by the author based on interview data.

2.3.2 . Direct Observation

For the realisation of observations, the researcher directly attended the different stages of the credit granting process, systematically noting the practices and behaviours observed in the field, without interfering with the normal course of operations. This approach made it possible to collect rich and spontaneous information, encouraging the emergence of varied perspectives and potential causes not visible through formal documents alone.

2.3.3 Documentary Research and Internal Process Analysis

Documentary research was conducted through the analysis of confidential internal documents, operational procedures, workflow descriptions, process reports, and existing process mapping related to the retail credit granting and account opening activities within General Society Algeria (GSA) . This documentary analysis made it possible to understand the structure and functioning of the legacy process, identify the different operational stages, and analyse the interactions between the various banking systems involved in the workflow.

The review of these internal documents also supported the comparison between the legacy operational model and the projected digital process by identifying process modifications, workflow simplifications, automation mechanisms, and operational improvements introduced through digitalisation initiatives. According to Prior (2003), documentary analysis constitutes an important qualitative research method that allows the researcher to better understand organisational practices, operational structures, and institutional processes through the interpretation of existing documents and records.

2.3.4 Process Mapping

In addition to textual analysis, a process mapping diagram is included in this research in order to visually represent the workflow of the onboarding and credit granting processes. This diagram provides a clear and structured overview of all process steps, decision points, and interactions between actors. The integration of a visual representation significantly enhances the readability and analytical rigour of the study. It allows for the identification of bottlenecks, redundancies, and non-value-added activities in a more intuitive manner, thereby supporting the overall objective of process optimisation. The process maps were created according to the BPMN 2.0 standard (Business Process Model and Notation) (Dumas et al., 2018; Harrington, 1991).

2.4 Data Analysis Methods

2.4.1 Qualitative Data Analysis: Thematic Analysis

The qualitative data collected through interviews were analysed using a thematic analysis approach, which involves a systematic process of coding, categorisation, and interpretation. This analysis was carried out entirely by the researcher, without using any dedicated software, following the six phases proposed by Braun and Clarke (2006):

1. Familiarisation with the data: transcription of interview recordings and careful reading.

2. Generation of initial codes: identification and labelling of key concepts and ideas.
3. Searching for themes: grouping of codes into broader themes based on similarities and recurring patterns.
4. Reviewing themes: verification and refinement of identified themes.
5. Defining themes: construction of structured categories reflecting the main dimensions of the process, including digitalisation, inefficiencies, bottlenecks, and customer experience.
6. Producing the final report: interpretation of themes in relation to the research objectives, moving from descriptive insights to analytical conclusions.

2.4.2 Chronometric Analysis and Process Evaluation

Within the framework of this qualitative case study, chronometric analysis was conducted in order to evaluate the operational influence of digitalisation on workflow efficiency and processing times. The chronometric measurements were carried out step by step in real operational conditions across four different agencies of General Society Algeria (GSA). Two agencies included both junior and senior Customer Relationship Representatives (CRR), while the two other agencies included only senior employees.

The observed processing times were collected and averaged in order to obtain a representative estimate of the current process performance and to reduce the effect of individual operational variations between employees and agencies. The analysis focused on several operational variables, including account opening processing time, consumer credit processing time, customer journey duration through both branch and mobile application channels, and the duration of each elementary operational step such as document verification, credit simulation, solvency analysis, contract signature, and fund disbursement.

This approach follows the principles of Time and Motion Studies developed by Taylor (1911) and further expanded by Barnes (1949), which consist of decomposing a process into elementary tasks in order to measure execution times, identify operational inefficiencies, and support workflow optimisation.

A. Data Processing and Time Standardisation

All processing times collected during the time and motion study were initially standardised into a single unit (seconds) in order to ensure consistency and accuracy in calculations. The results were subsequently converted into minutes for interpretation and presentation purposes.

B. Calculation of Average Processing Time

For each stage of the process, the arithmetic mean was calculated in order to obtain a representative estimate of the processing time, using the following formula:

$$\bar{X} = (1 / n) \times \sum X_i$$

Where: $\bar{X}$ = average processing time | X_i = observed processing time for each observation | n = number of observations. This approach reduces the effect of individual variations and provides a more reliable estimate of execution time.

C. Aggregation of Total Process Time

The total processing time was calculated by summing the duration of all sequential process steps according to the following formula:

$$T_{\text{total}} = \sum T_i$$

Where: T_{total} = total processing time | T_i = processing time of each step. The process was divided into two principal operational components: Front Office (FO) and Back Office (BO). The end-to-end processing time was therefore defined as:

$$T_{\text{E2E}} = T_{\text{FO}} + T_{\text{BO}}$$

Where: T_{E2E} = total end-to-end processing time | T_{FO} = Front Office processing time | T_{BO} = Back Office processing time.

D. Gap (Time Saving) Analysis

The time gain generated by the optimised process compared to the previous process was calculated using the following formula:

$$\text{Gain} = T_{\text{old}} - T_{\text{new}}$$

Where: T_{old} = processing time of the previous process | T_{new} = processing time of the optimised process. A positive result indicates a reduction in processing time and therefore an operational improvement.

E. Efficiency Improvement Calculation

The efficiency improvement rate was calculated as a percentage using the following formula:

$$\text{Efficiency (\%)} = (\text{Gain} / \text{T old}) \times 100$$

This indicator was used to evaluate the level of performance improvement achieved between the different process versions.

F. Estimation of Relationship Manager (CRR) Effort

The workload associated with the Relationship Manager (CRR) was estimated by considering only the activities performed within the Front Office process:

$$\text{CDC Effort} = \text{T Front Office}$$

This estimation provides an assessment of the operational effort required from the Relationship Manager during the customer handling process.

G. Handling of Time Ranges

When processing times were expressed as intervals, the average value of the interval was calculated in order to integrate the data into the quantitative analysis using the following formula:

$$\text{T avg} = (\text{T min} + \text{T max}) / 2$$

Where: T avg = average estimated time | T min = minimum estimated time | T max = maximum estimated time.

H. Predictive Analysis Justification

The predictive analysis is based on internal digital transformation plans covering the period 2025–2028. These projections are used to estimate future process performance, taking into account the expected influence of automation and artificial intelligence. However, these projections remain subject to assumptions and must be interpreted with caution. The objective is not to provide exact forecasts but to offer an evidence-based estimation of potential gains that can inform strategic decision-making.

2.5 Strengthening of Critical Analysis

Beyond descriptive analysis, this study adopts a critical perspective aimed at identifying inefficiencies within the process. This includes the identification of bottlenecks, non-value-added activities, and redundant tasks. This analytical dimension is essential for moving from

observation to evaluation and for proposing meaningful improvements. The critical analysis is not limited to measuring performance gaps but also questions the underlying assumptions of the current process design, the allocation of responsibilities, and the appropriateness of existing control mechanisms. This critical stance ensures that the recommendations are not merely incremental but potentially transformative.

2.6 Conclusion of the Methodological Framework

This methodological framework is based on a qualitative case study approach centred on the analysis of the consumer credit granting process within General Society Algeria. The study combines the following data collection and analysis tools:

1. Semi-structured interviews conducted with six key operational actors, using a structured interview guide and analysed through manual thematic analysis following Braun and Clarke's (2006) six-phase process.
2. Direct observations carried out in real operational conditions across four agencies.
3. Documentary analysis of internal operational procedures, workflow descriptions, and process reports.
4. Process mapping diagrams created.
5. Chronometric analysis through time and motion measurements conducted under real operational conditions across four different agencies, including both junior and senior employees.

The chronometric study was carried out across four different agencies and included both junior and senior employees in order to reflect actual operational variability. For each agency, average processing times were calculated based on the observed execution times of the employees involved in the process. Subsequently, a global average was calculated from the four agencies in order to establish a representative estimate of the current process performance. Part of the measurements was conducted personally in two agencies, while the results from two additional agencies were integrated from an existing internal study conducted within SGA following the same methodology.

Descriptive statistical tools including mean, range, and standard deviation were used to support the interpretation of the observed processing times. Control charts ($\bar{X}$, R,) were used to evaluate the stability and variability of the operational processes. The $\bar{X}$ chart was employed to analyse

the evolution of average processing times, while the R chart measured the dispersion between observations.

All formulas and calculation methods have been clearly presented, and all procedures have been described step by step, including the detailed timing methodology and the structure of the interview guide. A critical analytical perspective was adopted throughout the research in order to move beyond simple description toward evaluation and operational improvement.

This methodological framework allows for an in-depth qualitative understanding of the retail credit granting process while integrating operational performance indicators derived from the chronometric analysis. The objective is to identify process inefficiencies, evaluate the contributions of digitalisation, and propose recommendations adapted to the specific organisational context of General Society Algeria. The practical application of this methodology including measured processing times, calculated averages, standard deviations, gap values, and projected process performance is presented in the results chapter.

Conclusion

This second chapter provided the organizational and methodological foundations that underpin the empirical analysis developed in the following chapter. The presentation of General Society Algeria and its Retail Division made it possible to understand the institutional environment in which the digital transformation of credit processes is taking place, as well as the operational complexity that characterizes these processes in their pre-digital configuration.

The methodological framework adopted — a qualitative case study approach grounded in constructivism was shown to be particularly suited to the objectives of this research. By combining semi-structured interviews with direct observation, documentary analysis, process mapping, and chronometric measurement of operational steps, this study was able to capture both the subjective perceptions of operational actors and the concrete performance data of the processes under examination. This methodological triangulation strengthens the reliability and depth of the findings.

The data collection instruments and analytical methods presented in this chapter were specifically designed to enable a comprehensive evaluation of the role of digitalization in optimizing the consumer credit granting process at Société Générale Algérie. The results of this analysis are presented and discussed in the third and final chapter of this dissertation .

CHAPTER 3 : ANALYSIS, RESULTS AND DISCUSSION

Introduction

Building upon the theoretical framework established in Chapter One and the methodological approach presented in Chapter Two, this third chapter constitutes the empirical core of the dissertation. It presents, analyzes, and discusses the findings obtained through the qualitative case study conducted at General Society Algeria.

The chapter is structured around three main sections. The first section presents the results of the qualitative approach, drawing on thematic content analysis of the semi-structured interviews conducted with operational and technical stakeholders. This analysis examines the main themes that emerged from the data, including the inefficiencies of the legacy system, the operational contributions of digitalization, the role of Agile governance in managing the digital transformation, the challenges and residual limitations identified, and the potential of artificial intelligence for future process optimization.

The second section presents the case study analysis, focusing on chronometric measurements of the Account Opening Process and the Consumer Credit Granting Process across different operational configurations — from the 2025 legacy model to the current 2026 digitalized model and the projected 2027 Full Digital model. This section also examines the mobile banking channel and the proposed artificial intelligence integration strategy.

The third section provides a discussion of the results, positioning the empirical findings within the broader academic literature reviewed in Chapter One, identifying areas of convergence and divergence, and highlighting the original contributions of this research.

Section 1: Qualitative Approach

1.1 Introduction to the Qualitative Approach

This chapter presents the empirical component of the dissertation on the digitalization of the credit granting process at General Society Algeria (SGA). The qualitative approach conducted here is grounded in a series of semi-structured interviews carried out with six key professionals directly involved in the credit process, spanning Front-Office, Back-Office, Information Systems, and Customer Advisory functions. The methodological approach adopted for this analysis strictly mirrors the thematic content analysis framework applied in the reference model, ensuring consistency, academic rigour, and alignment with established qualitative research standards in management and banking studies.

The primary objective of this approach is to extract, codify, and interpret the empirical evidence gathered from the interviewees in order to produce a comprehensive understanding of: (1) the pre-digital state of the credit granting process, (2) the nature and scope of the digital transformation undertaken, (3) the observable operational contributions generated by digitalization, (4) the limitations and challenges that persist, and (5) the future perspectives for further evolution, particularly through the integration of Artificial Intelligence.

The richness of the data collected across multiple professional vantage points from the operational front-line to the strategic information systems layer provides a triangulated perspective on the transformation, there by strengthening the validity and reliability of the findings. The approach is structured around six major themes that emerged iteratively from the coding process, each of which is explored in depth throughout the following sections.

1.2 Profile of the Interviewees

The table below presents a synthesis of the professional profiles of the six respondents who participated in the study. The diversity of positions and levels of seniority ensures a comprehensive and multi-layered understanding of the digitalization process, encompassing both technical implementation and front-line operational experience.

Table 2: Profiles of Interviewees

Code	Current Position	Experience	Previous Positions	Interview Date
R01	Banking Operations Expert (Front-Office / CRR)	8 years	Front-Office Retail Credit Management, SGA	2025
R02	Banking Operations Expert (Back-Office)	8 years	Back-Office Processing & Technical Validation, SGA	2025
R03	Head of Solution Pole – SIOP	11 years	Business Analysis, Development & Integration Engineering, SGA	2025
R04	Product Owner – OCP	12 years	Teller → Client Advisor → Regional Coordinator → Head Office Commercial Support	2025
R05	Head of Client Acquisition Service (PPO)	10 years	Branch Banker, Digital Projects Officer, SGA	2025
R06	Client Relationship Manager (CRR – Legacy Method)	10 years	Client Advisor since pre-digitalization era, SGA	2025

Source: Established by the author based on interview data.

The information provided on positions held, years of experience, and institutional roles indicates a professionally diverse and experienced sample group. The presence of both technical specialists (SIOP Head, Back-Office Expert) and operational practitioners (Customer Advisors, Front-Office Expert) ensures that the approach captures the transformation from both a systems architecture perspective and a day-to-day operational standpoint.

1.3 Overview of the Traditional Process (Pre-Digitalization)

Before engaging with the thematic coding, it is instructive to present a cross-respondent overview of the traditional credit granting process as described by the interviewees. This provides the necessary baseline against which the digital transformation can be assessed and contextualised. The following table synthesizes the key features of the pre-digital process as reported across the six respondents.

Table 3: Cross-Respondent Overview of the Traditional Credit Granting Process

Respondent	Key Elements of the Traditional Process	Main Constraints Identified
R01 – Front-Office Expert	Hybrid model: digital Workflow existed but manual data entry remained dominant across Amplitude and Delta systems. Physical "white paper" memos required for supervisor validation.	Fragmented systems (Workflow / Amplitude / Delta); manual re-entry errors; bottlenecks at validation stage; no digital dashboard for supervisors.
R02 – Back-Office Expert	File arrived on Workflow for compliance check; manual accounting setup in Amplitude; physical liaison sheets required supervisor's handwritten signature before Delta entry.	Redundant manual entry; lack of inter-system fluidity; high operational risk due to data recopying errors; process described as extremely slow.
R03 – SIOP Head	Advisors collected physical files; repeated printing and scanning for system integration. Average credit processing cycle: three (3) weeks.	Administrative heaviness; manual entry errors; poor information circulation; marked customer dissatisfaction and reduced competitiveness.
R04/R05/R06 – Customer Advisors	100% manual and paper-dependent; ~100 fields entered manually in Workflow; physical handoff to Branch Manager; then redundant	Extreme slowness; 20 min per entry session; double-entry phenomenon;

	entry in Amplitude by Back-Office. 11–28 business days average.	heavy actor chain (CRR → RA → BO); significant bottlenecks.
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Source: Established by the author based on interview data.

The convergence of testimonies across respondents from different functional areas confirms that the pre-digital process was characterised by systemic fragmentation, in which multiple disconnected systems forced staff to perform redundant manual data entry at each stage of the process.

1.4 Thematic Analysis: Interpretation by Theme

1.4.1 Thematic 1: Legacy System Inefficiency

The first theme to emerge from the data is a convergent and unambiguous characterisation of the pre-digital credit process as fundamentally inefficient. All six respondents, regardless of their organisational function, described a system whose limitations were structural rather than incidental. The core dysfunctionality resided in the multi-system architecture of the bank's legacy environment: files initiated in the Workflow software required manual transcription into the Amplitude core banking system, before a separate manual entry was performed in the Delta system for final disbursement.

R06 – CRR (Legacy Method): "The average timeframe between first contact and fund disbursement generally ranged from 11 to 28 working days. A data entry session for a single file could take up to 20 minutes of continuous typing. The double entry between software systems created massive bottlenecks at the Back-Office."

R04 – Product Owner OCP: "The system suffered from a major lack of efficiency: time-consuming for employees, it increased the risk of human error when entering more than 100 fields per file, and posed quality issues related to the manual scanning of often illegible documents. The influence was direct on client experience and the bank's reputation."

R03 – SIOP Head: "Full processing of a credit file took an average of three weeks. Frequent delays occurred due to the physical handling of documents and waiting times between different validation stages."

From a banking efficiency standpoint, a processing cycle of eleven to twenty-eight business days for a standard consumer credit application placed SGA at a significant competitive disadvantage. This theme establishes the empirical rationale for the digitalization initiative and

provides the essential baseline against which all subsequent performance improvements must be assessed.

1.4.2 Thematic 2: Digital Process Transformation

The second theme captures the nature and scope of the digital transformation that SGA undertook through the OCP (project). The most consequential transformation identified across all respondents is the shift from a fragmented, multi-entry process to an end-to-end automated digital flow.

R01 – CRR Front-Office: "The new process is fully integrated. Once data is captured at source application or branch automated APIs (SMG) retrieve and transmit this information directly into the core banking system without manual re-entry. The fundamental difference lies in automatic locking and real-time synchronisation."

R04 – Product Owner CGP: "The new journey is fluid and fast: thanks to the client's unique identifier (radical), the system instantly retrieves 90% of the required information. Tools communicate in real time, eliminating flow interruptions and double entry. The fundamental difference is the elimination of the tedious manual entry of 100 fields."

R06 – CRR (Legacy Method): "The new process is fluid, integrated, and highly synergistic. The account opening and PPO credit applications are now intrinsically linked. By simply entering the client's unique identifier, 90% of fields are automatically pre-filled, enabling the advisor to focus on high value-added financial advisory."

Together, these technologies APIs, OCR, and mobile application infrastructure constitute a coherent digital architecture in which the customer can initiate a credit application remotely and the data is transferred in real-time to all relevant back-end systems without any manual intervention. The Agile project governance structure organised in Tribes and Squads, with iterative Sprint-based delivery, ensured that this transformation was implemented progressively.

1.4.2 Thematic 3: Operational Contributions of Digitalization

The third theme consolidates the empirical evidence of the performance improvements generated by the digital transformation. The data consistent across respondents: digitalization has produced quantifiable, transformative gains in processing speed, file volume capacity, and operational risk management.

R03 – SIOP Head: "Digitalization targeted a drastic reduction of the credit cycle, with an objective of three days against three weeks previously, representing an 80% reduction. The

automation of controls and document classification enables processing of a higher workload volume without additional human resources."

R04 – Product Owner OCP: "The productivity gain is massive: data entry time has decreased from 20 minutes to just 2 minutes. Overall processing timelines have been divided by four, going from 11–28 days to an average of 4 days. The Back-Office is now capable of completing its portion in just 24 hours. The process has been industrialised, capable of absorbing much larger volumes."

R05 – Head of Client Acquisition: "The influence is revolutionary. Where the traditional process took days, the combined digital onboarding and credit journey is now completed in approximately 20 to 25 minutes. A complete file can be validated and the account opened in under 30 minutes. The bank has freed up commercial time for advisors."

The improvement in operational risk management, consistently cited by both the Front-Office and Back-Office experts, represents a less visible but equally important contribution. By eliminating manual data transcription, the system has removed the primary source of clerical errors data recopying mistakes that previously generated compliance issues, correction cycles, and customer complaints.

1.4.3 Thematic 4: Agile Methodology and Digital Project Governance

The fourth theme addresses the organisational and methodological dimension of the digital transformation. The choice to implement the OCP project using Agile methodology structured around Tribes and Squads reflects a deliberate alignment with contemporary best practices in managing large-scale digital transformation in complex, regulated environments.

R03 – SIOP Head: "SIOP is currently working on the complete digitalisation of other banking products (Trade, Internal Supply) through successive Sprint iterations."

The SIOP Head's account reveals that the scope of this Agile transformation extends beyond the OCP project itself. SIOP is applying the same Sprint-based iterative model to the full digitalization of other banking products, suggesting that the Agile framework has become the institution's standard vehicle for digital transformation. This institutionalization of Agile governance represents a significant organisational maturation that will accelerate the pace of future digital initiatives.

1.4.4 Thematic 5: Limitations, Challenges, and Residual Vulnerabilities

Despite the considerable operational contributions described under Theme 3, the qualitative data reveals a set of persistent limitations and challenges that temper an unconditionally optimistic assessment of the digital transformation. These limitations operate across three distinct dimensions: technical, cultural, and regulatory.

R01 – CRR Front-Office: "Technical anomalies or bugs can occur at the API level, requiring a temporary return to manual methods to process urgent files. The main limit is cultural: a digital divide exists, where older profiles remain reluctant to use digital tools."

R05 – Head of Client Acquisition: "The main remaining technical obstacle is the signature specimen: although the loan is digital, the client must still visit the branch once to physically sign their signature specimen sheet for the Delta system and collect their physical payment instruments."

R06 – CRR (Legacy Method): "The main remaining obstacle is the signature specimen. Despite a 95% digital journey, local regulations still require the client to visit the branch at least once to physically sign a signature specimen sheet for the Delta system."

At the regulatory level, the Customer Advisors' testimony reveals that despite a ninety-five percent digital journey, local regulations still require customers to visit the branch physically to provide a handwritten signature. This regulatory constraint constitutes the last significant barrier to a fully contactless credit journey, and its resolution depends on external factors central bank policy and legal framework evolution that lie beyond the bank's direct control.

1.4.5 Thematic 6: Artificial Intelligence and Future Digital Evolution

The sixth and final theme consolidates the forward-looking perspectives expressed by respondents regarding the future trajectory of the digitalization process. There is a remarkable convergence of views around Artificial Intelligence as the next strategic frontier for the credit granting process.

R05 – Head of Client Acquisition: "The bank is moving towards a Full Digital process by 2027. This objective aims for every stage, from first contact to final fund disbursement, to be managed electronically, with no physical requirement for the client."

R06 – CRR (Legacy Method): "The strategic target is the transition to a Full Digital model by 2027. The objective is to achieve a 100% electronic journey where neither the onboarding nor the credit disbursement will require a physical branch visit, creating a genuine bank in the client's pocket."

Beyond document verification, the SIOP Head envisions AI applications in instantaneous credit scoring, predictive analysis of customer behaviour, and fraud detection. These applications represent a qualitative leap from process automation to intelligent decision support a transition that would fundamentally reconfigure the role of credit analysts and advisors, shifting their value contribution toward complex, non-standard case management and relationship quality.

Synthesis Tables

Thematic Synthesis: Main Themes, Elements, and Operational Contributions

The following table provides a condensed synthesis of the six major themes identified through the coding process, summarising the key observed elements and their assessed contribution to the credit granting process.

Table 4: Thematic Synthesis – Observed Elements and Operational Contributions to the Credit Granting Process

Main Theme	Observed Elements	Contributions to the Credit Granting Process
Theme 1 – Legacy System Inefficiency	Manual multi-system data entry (Workflow → Amplitude → Delta); physical liaison documents; 100 fields per file; 11–28 day processing cycle; 3-week average (SIOP); supervisor bottlenecks; no digital dashboards.	Confirmed the critical need for end-to-end digitalization. Fragmentation between systems was the root cause of all operational delays and customer dissatisfaction.
Theme 2 – Digital Process Transformation	OCP Project (Agile framework); SMG APIs;; OCR; mobile application for customer self-initiation; 90% auto-population of fields; automated loan convention generation; digital signatures.	The shift to automated, integrated flows eliminated redundant entry, reduced human error, and created a seamless Front-to-Back-office data pipeline.

Theme 3 – Operational Contributions	Processing time: 21 days → 3 days target (SIOP); 11–28 days → 4 days (Customer Advisors); entry time: 20 min → <2 min; higher file volume capacity; reduced operational risk; improved Back-office throughput.	Digitalization generated measurable, quantifiable gains in speed, volume and risk management, positioning SGA competitively in the consumer credit market.
Theme 4 – Agile Methodology & Tools	OCP project structured in Tribes and Squads; iterative Sprints for continuous deployment; progressive rollout to other products (Trade, Internal Procurement); Agile governance enabling rapid adjustment.	Agile methodology provided the organisational framework for managing the complexity of digital transformation, ensuring alignment between IT delivery and business objectives.
Theme 5 – Limitations & Challenges	API/SMG technical anomalies requiring manual fallback; customer digital divide (older demographics); regulatory constraint (physical signature specimen required by law); cultural resistance to change.	Despite significant gains, technical fragility, regulatory barriers, and cultural adoption gaps constitute residual vulnerabilities that limit the full realisation of digital transformation benefits.
Theme 6 – AI & Future Digital Evolution	Intelligent OCR (for document verification); AI-based instant credit scoring; fraud detection automation; predictive behavioural analysis; Full Digital roadmap by 2027.	AI integration represents the next evolutionary frontier, promising near-zero processing times and fully autonomous credit decisions, while raising critical questions around ethics, data security and regulatory compliance.

Source: Established by the author based on interview data.

1.4.6 Comparative Synthesis: Advantages, Challenges, and Suggested Improvements

Table 5: Comparative Synthesis – Advantages, Challenges, and Suggested Improvements

Advantages of Digitalization	Challenges & Limitations	Suggested Improvements
85–90% reduction in processing time; elimination of redundant data entry; higher file volume capacity; reduced operational risk; automated loan convention generation; digital signature integration; improved customer experience; real-time inter-system synchronisation; advisor role shift to value-added counselling.	API/SMG technical anomalies; customer digital divide (older clients); regulatory constraint on physical signatures; risk of staff losing traditional banking skills; cultural resistance to change; dependency on system availability; stabilization-phase anomalies; insurance integration still partially manual.	Full automation of insurance subscriptions (AXA); AI-powered document verification (OCR); instantaneous AI credit scoring; fraud detection automation; achieve Full Digital model by 2027; ongoing staff training in traditional methods; human-in-the-loop validation for AI decisions; regulatory engagement for e-signature approval.

Source: Established by the author based on interview data.

1.5 General Synthesis of Findings

This qualitative approach, based on six interviews conducted at General Society Algeria, shows that the bank is successfully transitioning from a traditional paper-based credit process to a modern digital banking system. The interviews, collected from different departments, provide a clear and reliable view of the digital transformation and the contributions of digitalization to banking operations.

Before digitalization, the credit process was slow and inefficient because employees had to manually enter the same information into several systems. This created delays, errors, and processing times that could reach up to three weeks. The study confirms that digitalization was necessary for the bank to remain competitive and improve operational performance.

The OCP digital transformation project has produced major improvements: processing times were reduced by around 80–85%, manual double entry was eliminated through automated

system integration, and operational errors were significantly reduced. These changes improved both customer service quality and risk management efficiency.

The research also shows that the Agile governance model, based on Tribes, Squads, and Sprint cycles, played an important role in the success of the transformation. However, the transformation is still ongoing. Some challenges remain, including technical issues related to API systems, differences in customer digital literacy, and regulatory limitations concerning electronic signatures.

Finally, all interviewees agreed that Artificial Intelligence represents the next stage of transformation for the bank. Future projects include intelligent OCR document processing, automated credit scoring, and the Full Digital roadmap planned for 2027. These innovations could position General Society Algeria as one of the most advanced digital retail banks in Algeria.

1.6 Conclusion of the Qualitative Approach

This qualitative approach demonstrates that the digitalization of the credit granting process at General Society Algeria has created a major and measurable transformation. Through six semi-structured interviews, the study revealed that the bank moved from a slow, paper-based system to a more integrated and digital process thanks to the OCP project and Agile methodology. As a result, processing times were reduced by more than 80%, improving the efficiency of the entire credit process.

The approach identified six main themes: inefficiency of the old system, digital transformation, operational contributions, Agile project management, existing challenges, and the future role of Artificial Intelligence. The convergence of perspectives across Front Office, Back Office, IT, and advisory teams strengthens the reliability of the findings.

However, the study also highlights that the digital transformation is not yet fully complete. Challenges such as regulatory limitations, resistance to change, and technical issues still need to be addressed. The transition toward a Full Digital model by 2027 will require not only new technologies but also organisational adaptation, employee training, and better customer support for users with different digital skill levels.

Finally, the research concludes that digitalization at SGA is more than a technological improvement it is a strategic transformation that enhances operational performance, competitiveness, and customer relationships. With strong management and continuous innovation, this transformation can create long-term value across the entire credit process.

Section 2: Case Study Analysis

2.1 Section Overview

This section presents an in-depth operational analysis of the digital transformation implemented at General Society Algeria within the Account Opening Process (AOP) and the Consumer Credit Granting Process. The study examines the progressive evolution of banking operations through three major transformation phases: the current process optimisation phase (2026), the future Full Digital process (2027), and the long-term Artificial Intelligence–driven banking model planned for 2028 and beyond, compared with the legacy operational process used in 2025.

The first phase focuses on the optimisation of the current process (2026), including the implementation and generalisation of electronic signatures, workflow integration with internal and external databases, and the reinforcement of operational interconnectivity through systems such as CRM, KYC, AXA, and CNAS.

The second phase analyses the future Full Digital process targeted for 2027. The study compares traditional branch operations, current digitalised workflows, and projected fully digital customer journeys by analysing each operational step from customer onboarding through credit approval to final disbursement.

Finally, the case study introduces a strategic perspective on the Artificial Intelligence–driven banking ecosystem planned for 2028 and beyond, exploring the potential integration of AI technologies into customer acquisition, intelligent credit processing, and automated decision-making.

2.2 Methodological Approach for the Chronometric Measurement of the Account Opening Process

In order to evaluate the operational performance of the account opening process within General Society Algeria agencies, a chronometric field study was conducted across four pilot agencies during the year 2025. The objective of this study was to identify the average execution time associated with each operational step and to assess the influence of process digitalization and automation on processing efficiency between the 2025 legacy model, the current 2026 process, and the projected 2027 model.

The methodological approach adopted was based on direct observation and time measurement of the different operational activities performed throughout the customer onboarding process. Each step of the workflow was observed and timed separately in the four selected agencies under normal working conditions. The measurements were carried out during real customer interactions in order to ensure the reliability and representativeness of the collected data.

For each operational activity, the execution times collected from the four agencies were consolidated using the arithmetic mean method. This method allowed the reduction of potential variations related to organizational differences, customer flow, workload, or individual employee performance between agencies, thereby providing a standardized and representative average duration for each operational step.

The average processing time was calculated according to the following formula:

$$\mathbf{T_{avg} = (T1 + T2 + T3 + T4) / 4}$$

Where:

- **T_{avg}** represents the average execution time retained for the study;
- **T1** represents the execution time measured in Agency 1;
- **T2** represents the execution time measured in Agency 2;
- **T3** represents the execution time measured in Agency 3;
- **T4** represents the execution time measured in Agency 4.

For example, regarding the “Client Interview” step, the following execution times were recorded:

- Agency 1: 4 minutes
- Agency 2: 7.3 minutes
- Agency 3: 6.7 minutes
- Agency 4: 10 minutes

The average duration retained for this activity was therefore calculated as follows:

$$\mathbf{(4 + 7.3 + 6.7 + 10) / 4 = 7 \text{ minutes}}$$

The same calculation methodology was systematically applied to all operational stages of the CRRs and RAs parts and for the BO parts its extracted from internal SGA documents included in the account opening workflow presented in AOP Tables and the same method is used for the credit process steps tables.

The comparative timing analysis between the “Legacy 2025”, “Current 2026”, and “Projected 2027” models was then established in order to measure the operational efficiency gains expected from process optimization, robotic automation, document digitization, and artificial intelligence integration within the AOP Branch Channel framework.

Source: Chronometric field study conducted in four General Society Algeria agencies, based on direct observations and measurements performed by the researcher and interne documents collection.

2.3 Account Opening Process (AOP) – Branch Channel: Comparative Timing Analysis (2025–2027)

The table below illustrates the evolution of the Account Opening Process (AOP) at General Society Algeria between 2025 and 2027.

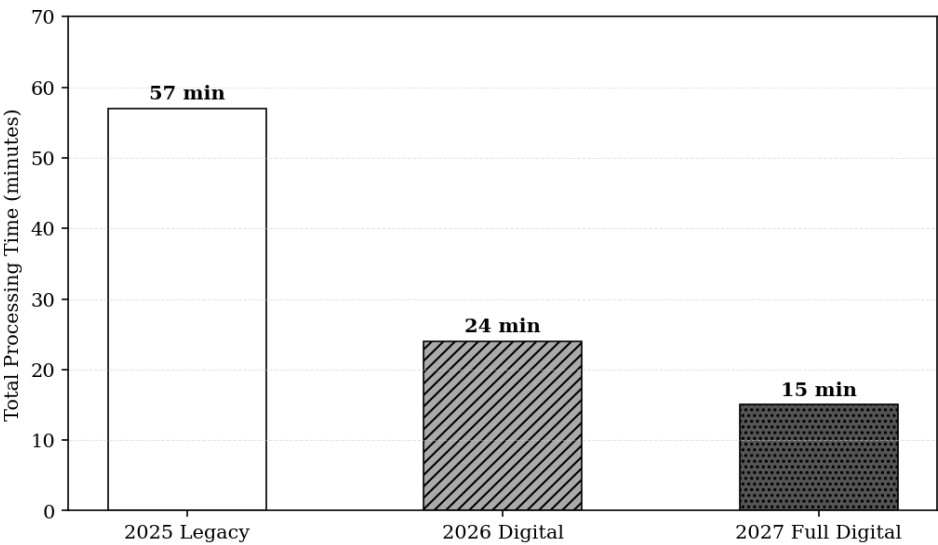
Table 6: AOP Branch Channel – Comparative Timing Analysis (2025–2027)

N°	Operational Step	Legacy 2025	Current 2026	Projected 2027	Responsible
1	Client interview	7 min	7 min	7 min	CRR
2	Customer document collection	2 min	2 min	2 min	CRR
3	Document classification and scanning	3 min	1 min	1 min	CRR
4	Data extraction	2 min	10 sec	10 sec	CRR
5	Document compliance verification	4 min	2 min	2 min	CRR
6	Identity document reading	6 min	5 sec	5 sec	CRR

7	Customer form completion	5 min	2 min 06 sec	10 sec	CRR
8	Customer profile creation	4 min	2 min	10 sec	CRR
9	Automatic control initiation	2 min	10 sec	10 sec	CRR
10	Control document generation	4 min	2 min	10 sec	CRR
11	Control document signature	1 min	10 sec	10 sec	CRR
12	Account creation on Amplitude	2 min	30 sec	10 sec	CRR
13	Account opening agreement generation	6 min	2 min	10 sec	CRR
14	Agreement signature	1 min	15 sec	15 sec	CRR
15	Sending welcome letter and bank details (RIB)	2 min	Automatic	Automated	CRR
16	File transmission to RA	4 min	Automatic	5 sec	CRR
17	File validation	5 min	1 min (within 48h)	1 min (within 48h)	RA
18	Document classification	1 min	1 min	1 min	CRR
TOTAL		57 min	24 min	15 min	

Source: Chronometric study – GSA Internal Data and personal measurement conducted by the researcher. All values expressed in minutes.

Figure 2: AOP Branch Channel – Total Processing Time Evolution (2025–2027)



Source :*Established by the author based on interview data and internal GSA documentation*

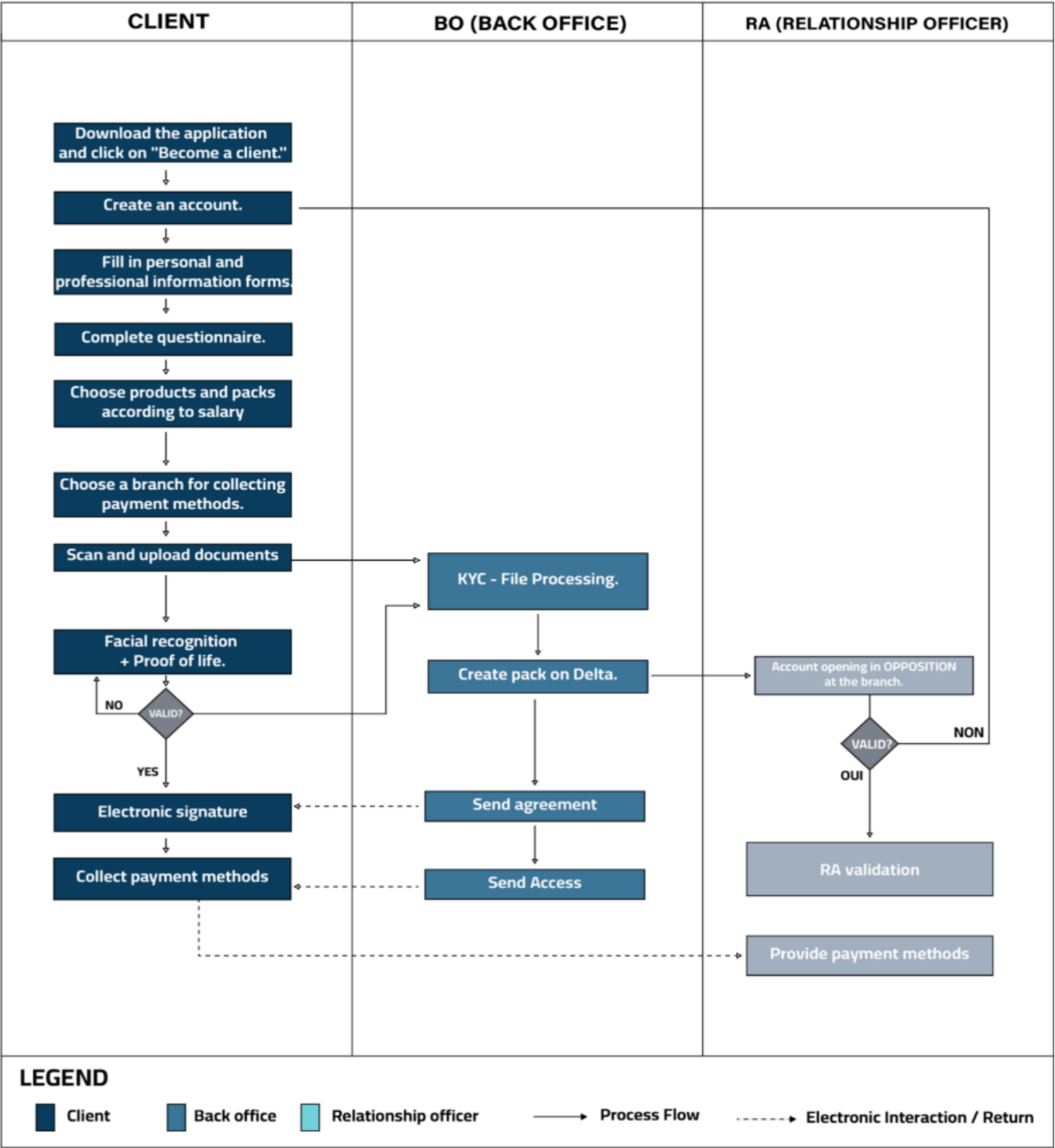
The AOP process at General Society Algeria demonstrates a major reduction in processing time, from 57 minutes in 2025 to 24 minutes in 2026, down to a projected 15 minutes in the Full Digital model of 2027. This improvement is mainly driven by workflow automation, electronic signature, and the elimination of manual administrative tasks.

2.4 Mobile Application Projected Model – AOP Full Digital (2027)

The account opening process begins with the client downloading the application and completing a fully digital journey that includes filling in personal information, answering a questionnaire, selecting products based on salary, and choosing a branch. The client then scans the required documents and completes facial recognition verification.

Once these steps are completed, the workflow is transferred to the Back Office for KYC processing. Finally, the Responsible of the Agency (RA) validates the account opening at the branch level, enabling the electronic signature process and the collection of payment methods by the client.

Figure 3: account opening procedures via application made by author using illustrator



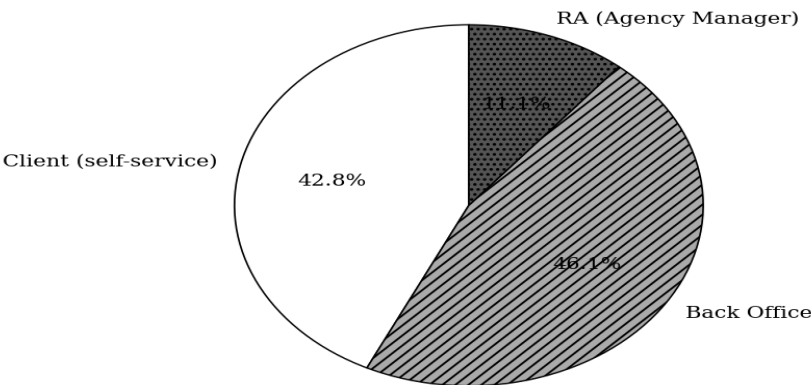
Source : Established by the author based on interview data.

Table 7: AOP Mobile Application – Projected Full Digital Process (2027)

N°	Operational Step	Projected Time (min)	Responsible
1	App download + OTP reception	2	CLIENT
2	Account creation	1	CLIENT
3	Completion of personal/professional information form	1	CLIENT
4	Security questionnaire verification	1	CLIENT
5	Product/package selection + validation	0.5	CLIENT
6	Branch selection for withdrawal	0.25	CLIENT
7	Document scanning and upload	2	CLIENT
8	Facial recognition + proof of life	1	CLIENT
10	File processing + confirmation phone call	7	BO
11	Pack creation on Delta	1	BO
13	RA validation	2	RA
14	Sending electronic agreement	0.17	BO
15	Customer electronic signature	0.25	CLIENT
16	Sending access credentials (welcome letter + login)	0.17	BO
TOTAL		19 min	

***Source:** Established by the author based on internal GSA documentation and personal measurement conducted the researcher. All values expressed in minutes.*

Figure 4: AOP Mobile Application (2027) – Time Distribution by Actor (minutes)



Source: Established by the author based on interview data and internal GSA documentation and personal measurement

This table illustrates a fully digital customer onboarding process for the AOP Mobile Application projected for 2027, with a total estimated duration of only 19 minutes. The process combines automated client actions and back-office operations, including identity verification, document processing, and electronic signature.

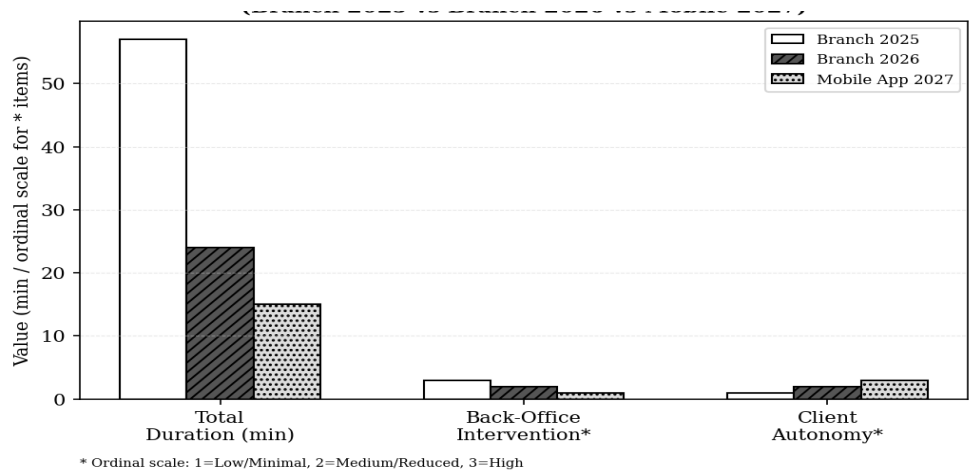
2.5 Comparative Analysis of AOP Channels

Table 8: Comparative Analysis of AOP Channels

Comparative Dimension	Branch 2025	Branch 2026	Mobile App 2027 (Projected)
Total Duration	57 min	24 min	19 min
Physical Visit Required	Yes	Yes	No (partial)
Back-Office Intervention	Systematic	Reduced	Minimal (7 min)
Client Autonomy Level	Low	Medium	High
Electronic Signature	No	Partial	Full
24/7 Availability	No	No	Yes

Source: Established by the author based on internal GSA documentation and personal measurement conducted by the researcher. All values expressed in minutes.

Figure 5: AOP Channel Comparison – Key Indicators (Branch 2025 vs Branch 2026 vs Mobile 2027)



Source : Established by the author based on interview data and internal GSA documentation

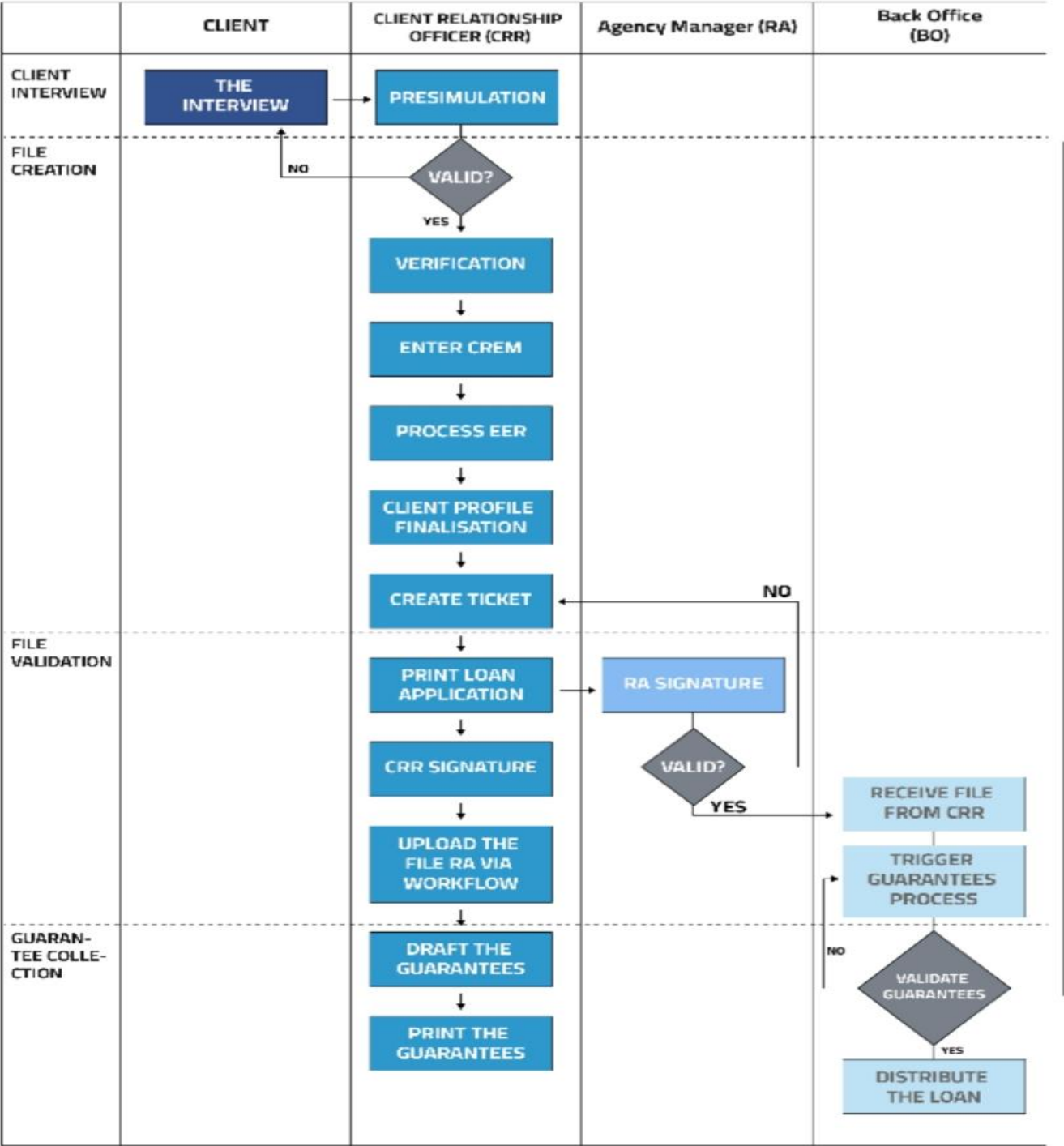
The comparison highlights the transition from a traditional branch-based model to a more efficient digital banking system. The mobile application enables a nearly fully digital onboarding process with greater customer autonomy, full electronic signature integration, and 24/7 accessibility.

2.6 Consumer Credit Granting Process

2.6.1 Consumer Credit Granting Process – Agency Channel

The process starts with a client interview and pre-simulation conducted by the Client Relationship Officer (CRR), followed by file verification, profile finalisation, and loan application preparation. Once the file is validated and signed by the Agency Manager (RA), it is transferred to the Back Office for guarantee processing and validation. After successful validation of the guarantees, the loan is finally approved and disbursed to the client.

Figure 6: the credit procedures via branch cannal made by me with illustrator



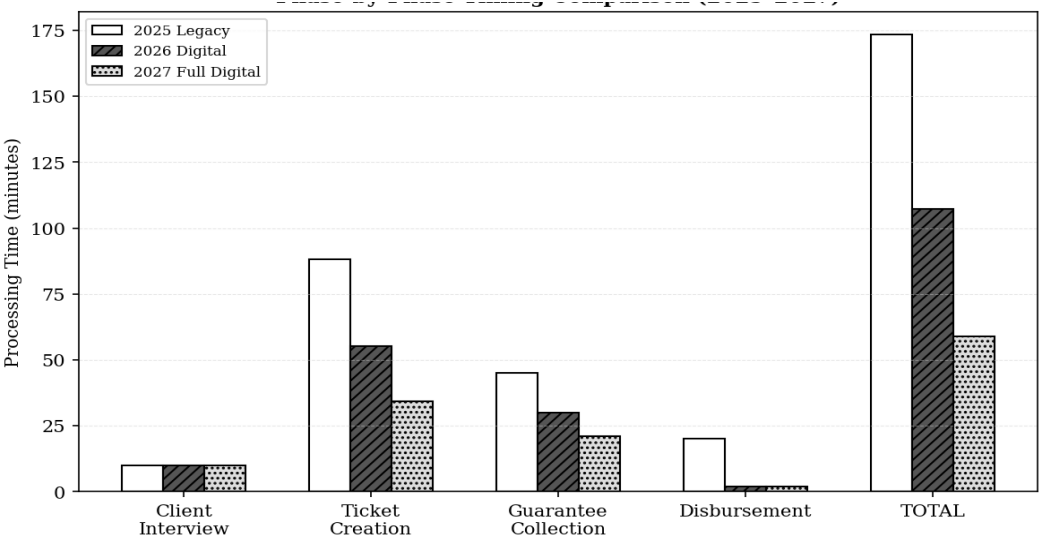
Source : Established by the author based on interview data and internal GSA documentation

Table 9: Consumer Credit Process – Branch Channel Comparative Timing Analysis (2025–2027)

Main Phase	Operational Step	2025 Legacy (min)	2026 Digital (min)	2027 Full Digital (min)	Optimisation (%)
Client Interview	Verbal interview	7	7	7	0%
	Pre-simulation	3	3	3	0%
Ticket Creation	File verification	7	7	7	0%
	CRM processing	10	2	0.25	98%
	Ticket creation	19	9	0.5	97%
	Customer & RA signature (loan request)	2.33	2.17	1.5	36%
	File escalation to RA via Workflow	10	10	10	0%
	RA validation	10	10	10	0%
	File transmission to Back Office	30	15	15	50%
	Guarantee activation	10	10	0.17	98%
Guarantee Collection	Guarantee drafting	25	14.03	13.03	48%
	Guarantee validation (BO)	20	16	8	60%
Disbursement	Disbursement operations	20	2	2	90%
TOTAL PROCESS		173.33 min	107.2 min	59 min	~66%

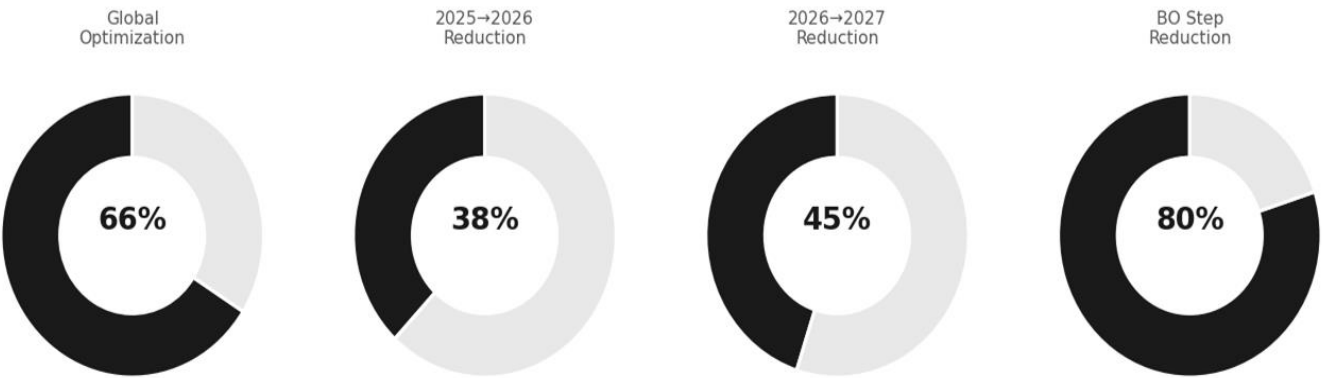
Source: Chronometric study GSA Internal Data and personal time measurement All values in minutes.

Figure 7: Consumer Credit Branch Process – Phase-by-Phase Timing Comparison (2025–2027)



Source :Established by the author based on interview data and internal GSA documentation

Figure 8: Performance indicator donut charts for PPO Consumption — Branch Channel.



Source : Established by the author based on interview data and internal SGA documentation

2.6.2 Branch Channel: Descriptive Comparative Analysis (2025 → 2026 → 2027)

The consumer credit granting process represents one of the most operationally complex workflows within the General Society Algeria branch network, involving multiple institutional actors the Customer Relationship Representative (CRR), the Relationship Approver (RA), and the Back-Office (BO) across four principal phases: client interview, ticket creation, guarantee collection, and disbursement.

The comparative timing analysis traces the evolution of this process from the 2025 legacy model (173 minutes) through the 2026 digitalised model (107 minutes) to the projected 2027 Full Digital model (59 minutes), representing a global optimisation rate of 66%. The Ticket Creation phase records the most significant absolute reduction, driven principally by the elimination of manual CRM processing and automated ticket generation.

2.6.3 Mobile Application: Consumer Credit Granting Process (2026)

The mobile application channel for consumer credit — operative since 2026 — represents a fundamentally restructured process architecture in which the client self-initiates and partially completes the credit application through a streamlined digital interface. SGA is the only bank in Algeria currently offering this service to its customers. The total measurable processing time for application-managed steps stands at 35.17 minutes, a 67% reduction compared to the 2026 branch equivalent of 107 minutes.

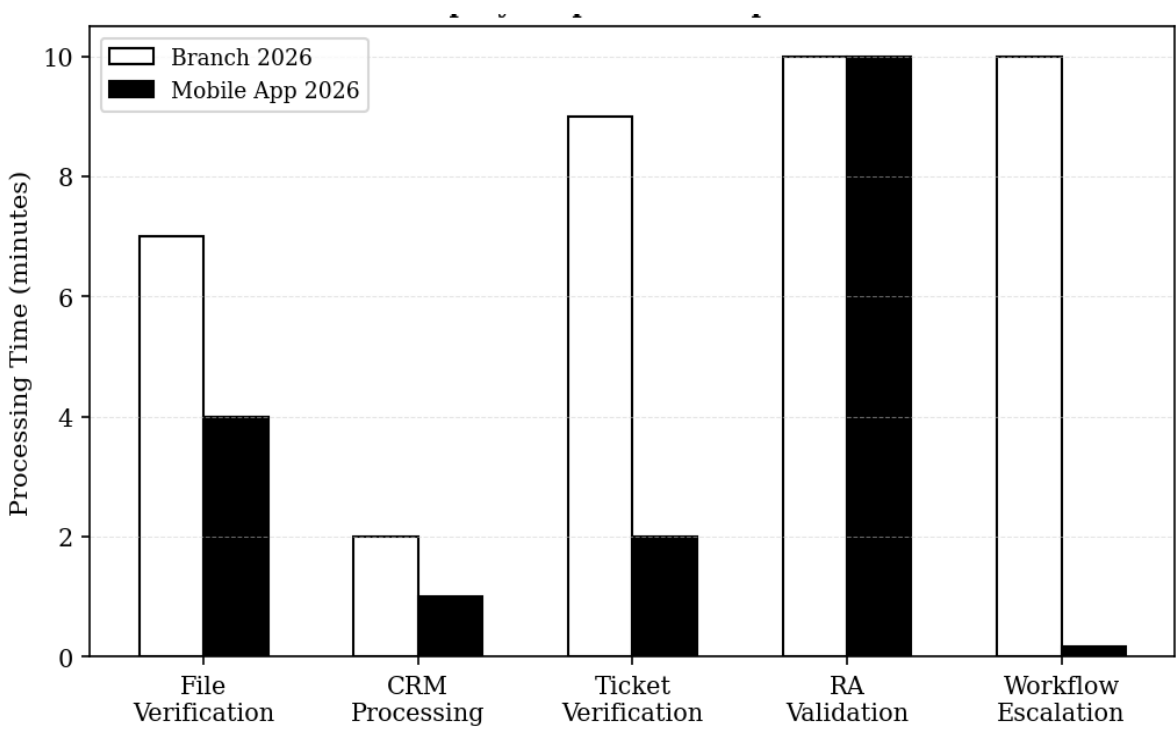
Table 10: Mobile Application Credit Process (2026)

Main Phase	Operational Step	App 2026 (min)	vs. Agency 2026
Ticket Creation	File verification	4.00	−3 min
	CRM processing	1.00	−1 min
	Customer profile reliability check	5.00	N/A
	Ticket verification	2.00	−7 min
File Validation	RA signature of the file	1.00	N/A

	File escalation to RA via Workflow	0.17	–9.83 min
	RA validation	10.00	0 min
Guarantee Collection	Guarantee escalation via workflow	12.00	N/A
TOTAL (calculated steps)		35.17 min	vs. 107.2 min

Source: Established by the author based on internal GSA documentation and operational observation and personal measurement conducted by the researcher. All values expressed in minutes.

Figure 9: Mobile vs. Branch Credit Application (2026) – Step-by-Step Time Comparison From excel



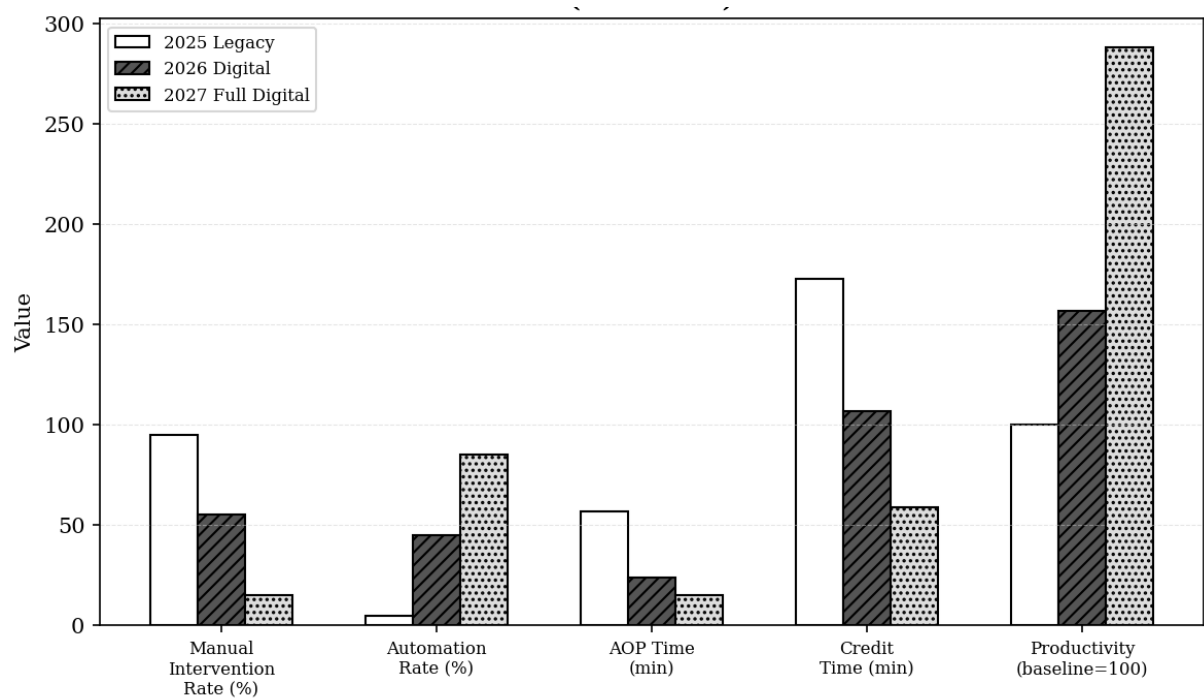
Source : Established by the author based on interview data and internal SGA documentation

Table 11: Digital Mutation and Transformation Analysis (2025–2027)

Indicator	2025 Legacy	2026 Current	2027 Full Digital	Variation %	Operational Contribution
Manual intervention rate	~95%	~55%	~15%	–84%	Critical
Automation rate	~5%	~45%	~85%	+80 pp	Very High
AOP processing time (min)	57	24	15	–74%	High
Loan processing time (min)	173	107	59	–66%	High
Back-Office interventions	Systematic	Reduced	Minimal	~–85%	Very High
Data entry errors	High	Moderate	Near-zero	~–95%	Critical
Customer waiting time	Very Long	Reduced	Minimal	~–80%	High
Document handling (paper)	100%	40%	0%	–100%	Critical
Workflow automation	None	Partial	Full STP	N/A	Transformational
Operational productivity	Baseline	+57%	+188%	+188%	Very High

Source: Established by the author based on chronometric study and GSA internal data. pp = percentage points.

Figure 10: Digital Transformation Key Performance Indicators (2025–2027)



Source : Established by the author based on interview data and internal GSA documentation

This case study analysis highlights a major digital transformation within General Society Algeria between the legacy operational model of 2025 and the projected Full Digital model planned for 2027. The findings demonstrate significant improvements in operational efficiency, processing speed, workflow automation, for both the Account Opening Process and the Credit Process.

At a transversal level, the case study confirms a structural evolution from manual and paper-based operations toward automated and streamlined digital workflows. Manual intervention rates decline from approximately 95% to nearly 15%, while automation rates increase from 5% to 85%. Overall, the findings confirm that the digital transformation strategy considerably strengthens operational fluidity, institutional performance, and customer experience within General Society Algeria

2.6.4 Artificial Intelligence Integration Strategy Proposal

The integration of Artificial Intelligence technologies into the operational framework of General Society Algeria represents the most advanced stage of the Full Digital transformation strategy. Building upon the workflow automation and electronic signature foundations implemented during the 2026 digitalisation phase, the AI layer introduces cognitive automation capabilities, including intelligent document recognition, predictive risk scoring, automated compliance verification, conversational AI, and autonomous operational support systems.

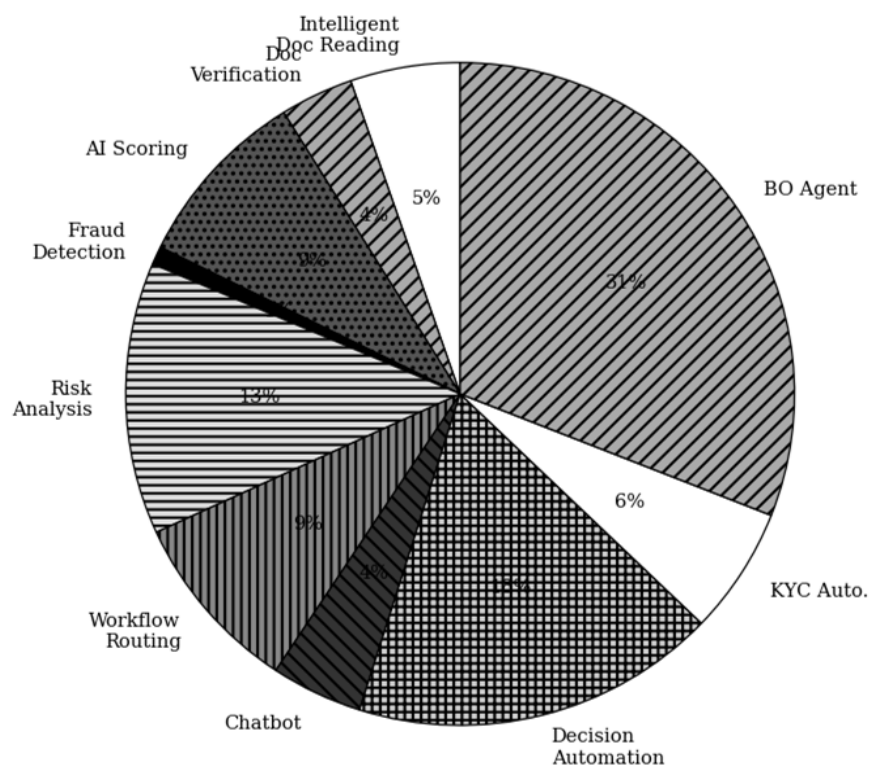
2.6.5 AI Implementation Areas and Operational Contribution

Table 12: AI Implementation Areas – Technology, Contribution, and Automation Level

AI Implementation Area	Technology	Process Contribution	Time Saving Estimate	Automation Level
Intelligent Document Reading	OCR + NLP	Auto-extraction of payslips, IDs, birth certificates	–5 to –7 min/file	Full
Automated Document Verification	AI Classification	Conformity check without human review	–4 min/file	Full
AI Scoring System	ML Predictive Model	Real-time creditworthiness scoring	–10 min/decision	Full
Fraud Detection	Anomaly Detection AI	Real-time transaction & identity verification	Instant	Full
Predictive Risk Analysis	ML Risk Engine	Automated risk profiling and provisioning	–15 min/file	Full
Intelligent Workflow Routing	Process Automation	Auto-routing to correct RA or BO queue	–10 min/case	Full

Chatbot Client Assistance	NLP Conversational AI	24/7 onboarding & credit guidance	Continuous	Full
Decision Automation	Rules Engine + AI	Auto-approval for pre-scored eligible clients	–20 min/case	Full
KYC Automation	AI Face Recognition	Biometric verification replacing manual KYC	–7 min/client	Full
Back-Office Agent Program	Autonomous AI Agent	AML/KYC compliance, reconciliation, audit trail	–85% BO time	Full

Source: Established by the author. NLP = Natural Language Processing; ML = Machine Learning; OCR = Optical Character Recognition.

Figure 11: AI Implementation Areas – Proportional Time Savings Distribution

Source :Established by the author based on interview data and internal GSA documentation

2.6.6 Strategic Goals and AI Contribution at Société Générale Algérie

The artificial intelligence transformation strategy at that General Society Algeria is built around four complementary strategic objectives. The first, the Client Agent Program, focuses on creating a seamless 24/7 self-service environment through a conversational AI capable of autonomously managing KYC onboarding, balance inquiries, fund transfers, and routine service requests for more than 300,000 clients, resolving 80% of routine inquiries instantly.

The second, the Back-Office Agent Program, aims to automate compliance verification and transaction processing activities across all 104 branches. This operational automation is projected to reduce transaction processing time by 85% and decrease compliance-related manual errors by 95%.

The third strategic pillar, the RO Agent Program, supports relationship officers through AI-assisted decision-making, liberating approximately 40% of their capacity from routine data collection activities to enable up to three times more strategic customer interactions.

Finally, the Proactive Insights Program introduces a proactive advisory model powered by AI monitoring of customer portfolios, expected to increase savings and investment product adoption by 25% while maintaining a customer-centric advisory model.

Figure 12: AI strategic influence performance indicators — derived from documented SGA AI program metrics.



Source : Established by the author based on interview data and internal GSA documentation

2.7 Global Synthesis: Toward Full Digital Banking

This research demonstrates that General Society Algeria is undergoing a profound digital transformation aimed at evolving from a traditional banking model toward a fully digital, automated, and customer-centric institution. The AOP onboarding process experienced a major optimisation, with branch processing time decreasing from approximately 57 minutes to 15 minutes in the projected Full Digital configuration. The Consumer Credit process shows a substantial reduction from 173 minutes to 59 minutes through workflow automation, CRM integration, digital validation, and streamlined disbursement procedures.

At a transversal level, the study reveals a structural evolution from manual and paper-based banking operations toward highly automated digital workflows. Manual intervention rates decline from nearly 95% to approximately 15%, while automation rates increase from 5% to 85%. These results confirm the effectiveness of workflow digitalization and Straight-Through Processing (STP) architectures in optimising banking operations.

Overall, the research confirms that the combination of digitalization, workflow automation, mobile banking, and artificial intelligence constitutes a strategic lever for modernising banking operations and strengthening competitiveness. General Society Algeria's transformation trajectory positions the institution toward a fully digital banking ecosystem aligned with international standards of operational excellence, intelligent automation, and customer-centric financial services.

Section 3: Discussion Of Results

3.1 Over view

The results obtained through the qualitative case study approach, supported by chronometric observations and thematic analysis, confirm that digitalization plays a central and transformative role in optimising the consumer credit granting process at that General Society Algeria. The findings are consistent with the literature reviewed and validate the principal hypothesis of this research: the integration of digital technologies significantly improves operational efficiency, reduces processing delays, minimises manual intervention, and enhances customer experience in retail banking activities.

3.2 Account Opening Process (AOP): Reduction in Branch Processing Time

The chronometric analysis carried out across four pilot agencies of Société Générale Algérie showed a significant improvement in the account opening process between 2025 and the projected 2027 model.

The total processing time evolved as follows:

- **2025 Legacy Model:** 57 minutes
- **2026 Digital Model:** 24 minutes (–58%)
- **2027 Full Digital Model:** 15 minutes (–74%)

The most important reductions were observed in repetitive administrative tasks automated through the new digital system. Identity document reading was reduced from 6 minutes to only a few seconds, while data extraction, customer form completion, and agreement generation became almost instantaneous.

On the other hand, tasks requiring human interaction and professional judgment such as customer interviews, document verification, and final validation remained relatively unchanged throughout the three configurations. This confirms that digitalization mainly optimized operational and repetitive activities while preserving human involvement in decision-making tasks.

3.3 Mobile AOP Channel: Full Digital Onboarding

The projected 2027 mobile onboarding process allows customers to open an account entirely through a mobile application in approximately 19 minutes, without visiting a branch.

The client can independently complete most steps of the process, including:

- OTP verification
- Personal and professional information entry
- Product selection
- Document scanning
- Facial recognition and proof-of-life verification
- Electronic signature validation

Back-Office intervention is limited mainly to file verification and confirmation, representing approximately 7 minutes of processing time.

This model removes geographical and time constraints associated with traditional branch banking and provides continuous 24/7 accessibility.

3.4 Consumer Credit Process: Reduction in Processing Time

The comparative analysis of the consumer credit process highlighted a major reduction in operational delays between 2025 and the projected 2027 model.

The total measurable processing time evolved as follows:

- **2025 Legacy Model:** 173.33 minutes
- **2026 Digital Model:** 107.2 minutes (–38%)
- **2027 Full Digital Model:** 59 minutes (–66%)

The Ticket Creation phase recorded the highest optimization levels. CRM processing decreased from 10 minutes to 15 seconds, while ticket creation was reduced from 19 minutes to 30 seconds.

The disbursement phase also improved considerably, decreasing from 20 minutes to only 2 minutes through direct system integration.

As observed in the account opening process, activities requiring human expertise — such as customer interviews, pre-simulations, and risk validation — remained stable across the different models.

3.5 Mobile Credit Application Channel

The mobile credit channel introduced by Société Générale Algérie in 2026 reduced total processing time to 35 minutes, compared to 107 minutes for the equivalent branch process, representing a reduction of approximately 67%.

The main improvements were generated through:

- Automated workflow escalation
- Faster CRM processing
- Integrated digital validation mechanisms

The study also confirms that SGA is currently the only bank in Algeria offering consumer credit through a mobile application, giving the bank a strong competitive positioning in the local retail banking market.

3.6 Digital Transformation Indicators

The collected indicators reveal a major transformation in the organization of banking operations between 2025 and 2027.

The main observed evolutions include:

- Manual intervention reduced from **95% to 15%**
- Automation increased from **5% to 85%**
- Data-entry errors reduced by approximately **95%**
- Elimination of paper-based document handling
- Reduction of Back-Office interventions by approximately **85%**
- Reduction of AOP processing time by **74%**

- Reduction of consumer credit processing time by **66%**
- Increase in operational productivity by approximately **188%**

These results demonstrate that the transformation implemented at SGA goes beyond simple process improvement and reflects a deep operational restructuring. The same operational teams are expected to process significantly more files without proportional increases in staffing levels.

3.7 Artificial Intelligence Integration Strategy

The future transformation strategy also includes the progressive integration of artificial intelligence into several operational activities related to onboarding and consumer credit management.

The projected applications include:

- Intelligent document reading through OCR and NLP technologies
- AI-based credit scoring
- Automated decision-making for eligible files
- AI-assisted Back-Office processing
- Conversational AI for customer support

The projected operational influences include:

- 5 to 7 minutes saved per file through intelligent document reading
- 10 minutes saved per decision through AI scoring
- 20 minutes reduction per case through automated decision-making
- 85% reduction in Back-Office processing activities
- Automated management of approximately 80% of routine customer requests

In parallel, the implementation of AI tools is expected to free a significant portion of relationship officers' operational capacity, allowing them to focus more on advisory and high-value customer interactions.

The following discussion situates these empirical findings within the broader framework of the academic literature, examining areas of convergence, divergence, and original contribution. It is structured in two complementary axes: first, a discussion of the empirical findings in relation to the qualitative and chronometric analyses conducted; second, a positioning of these findings relative to the theoretical literature reviewed.

3.8 Legacy System Inefficiency and the Imperative of Digitalisation

The pre-digital process documented at GSA characterised by a triple-entry workflow across Workflow, Amplitude, and Delta systems, processing cycles ranging from eleven to twenty-eight days, and a manual data entry burden of approximately one hundred fields per credit file aligns closely with the systemic inefficiencies described in the process optimisation literature.

The IEOM Society (2024) demonstrated that fragmented multi-system architectures in banking generate compounding delays through redundant validation loops, and that workflow redesign is the primary lever for operational improvement. The GSA case provides a concrete empirical illustration of this mechanism: the fragmentation between three disconnected legacy systems was not merely a technical inconvenience but the root structural cause of all customer dissatisfaction and competitive underperformance documented in the qualitative data.

Furthermore, the pre-digital processing cycle of up to twenty-eight business days at the branch level closely mirrors the delays reported by Ntiamoah et al. (2014), who identified that unstructured credit processes not only slow operational delivery but actively degrade risk management quality, as manual recopying introduces transcription errors that compromise the integrity of credit files submitted for regulatory review. The GSA Back-Office Expert's testimony regarding the physical liaison sheets and handwritten supervisor signatures represents a near-identical manifestation of this phenomenon in the Algerian banking context.

3.9 Digital Transformation Outcomes and Process Optimisation

The case study analysis highlighted a substantial reduction in processing times across both the Account Opening Process (AOP) and the Consumer Credit Process. The Consumer Credit branch process decreased from 173 minutes in the 2025 legacy model to 59 minutes in the projected 2027 Full Digital configuration, representing a global optimisation rate of approximately 66%. Similarly, the AOP process evolved from a heavily manual workflow requiring nearly 57 minutes to a digital process completed in approximately 15 minutes.

Sharma and Singh (2023) demonstrated that automation technologies in banking operations reduce processing times by 50–70% on average; the SGA findings fall at the upper bound of

this range for the credit process and exceed it for the account opening process, suggesting that the integration of API-based inter-system synchronisation (SMG) constitutes a particularly effective architectural approach.

The accuracy dimension of this transformation is equally significant. The near-elimination of data transcription errors estimated at approximately 95% reduction is consistent with the findings of Fernandez and Aman (2020), who argued that Straight-Through Processing (STP) architectures remove the primary source of operational errors in retail banking by decoupling data creation from data transfer.

A significant contribution of this research lies in its integration of a detailed chronometric analysis. While the existing literature on banking digitalization extensively discusses operational efficiency and technological transformation, very few studies provide precise chronometric measurements of each operational step. This methodological approach constitutes one of the original contributions of this dissertation, providing a concrete operational evaluation of processing durations and efficiency gains.

3.10 Mobile Banking and Customer Autonomy

The findings align with the literature on e-banking transformation and digital banking adoption. Similar to the conclusions reached by Ndlovu and Sigola (2013), the implementation of mobile banking channels at General Society Algeria considerably improved accessibility and customer autonomy. The projected mobile onboarding process enables customers to complete account opening procedures in only 19 minutes without physical branch interaction, while the mobile credit application reduces operational duration to nearly 35 minutes.

These authors emphasised that mobile channels do not merely replicate branch services digitally they fundamentally restructure the customer-institution relationship by shifting agency toward the client and removing the temporal and geographic constraints of physical banking. The SGA case extends this finding: the mobile credit application reduces total customer-managed processing time to 35 minutes compared to 107 minutes in the 2026 branch model.

It is noteworthy, however, that the mobile channel at SGA does not yet achieve full contactlessness: a physical branch visit remains required under current regulatory constraints for handwritten signature specimen collection and payment instrument distribution. This finding partially qualifies the optimism expressed in studies such as Zhang and Wang (2022), which projected near-complete branch displacement by mobile channels in the medium term. In the Algerian regulatory context, digitalisation must therefore be understood as a layered

transformation in which technological capability consistently outpaces the pace of regulatory adaptation.

3.11 Agile Governance and Organisational Adaptation

One of the most distinctive findings of this research and one that receives relatively limited attention in the banking digitalisation literature is the central role of Agile project governance (Tribes, Squads, iterative Sprints) in enabling the successful deployment of the OCP project.

While Rodriguez et al. (2021) and Bhandari and Rao (2022) identify project governance complexity as a primary risk factor in banking automation projects, the GSA case demonstrates that Agile methodology can effectively manage this complexity by creating iterative feedback loops between IT delivery teams and business units. The institutionalisation of Agile governance beyond the OCP project extending to Trade Finance and Internal Procurement represents a structural organisational adaptation that most comparable studies do not capture, as they tend to assess digital projects in isolation rather than as components of an evolving institutional learning process.

3.12 Artificial Intelligence Integration and Cognitive Automation

The proposed Artificial Intelligence integration strategy represents the most advanced stage of this transformation trajectory. The integration of OCR, NLP, predictive scoring systems, anomaly detection tools, and conversational AI introduces cognitive automation capabilities capable of eliminating residual manual tasks still present in the current digital model.

The GSA roadmap reflects a clearly structured transition: the 2026 phase automates manual tasks, while the 2027–2028 AI phase aims to automate judgment itself — credit scoring, fraud detection, and compliance verification. This is broadly consistent with the strategic trajectories identified by Ghosh et al. (2022) and Nguyen et al. (2023), who characterised AI integration in retail banking as a shift in which the system not only executes predefined workflows but generates intelligent decisions within them.

However, the "human-in-the-loop" principle consistently articulated by SGA respondents introduces a critical nuance. The respondents' insistence on maintaining human oversight not merely as a quality control mechanism but as a strategic safeguard against systemic failure is consistent with the risk governance frameworks advocated by Kraus et al. (2021), who argued that full AI autonomy in credit decision-making remains premature in regulated banking environments where algorithmic accountability frameworks are still nascent. This finding suggests that the pace of AI adoption at GSA will be shaped not only by technological readiness

but by the co-evolution of internal governance structures and the external regulatory environment.

3.13 Qualitative Analysis and Organisational Challenges

The qualitative analysis reinforced the operational findings by highlighting the perceptions of operational actors directly involved in the transformation process. Through thematic content analysis, respondents confirmed that the digitalization strategy significantly improved workflow fluidity, reduced operational complexity, accelerated decision-making, and enhanced coordination between departments.

However, the interviews also revealed the persistence of several structural limitations, particularly related to regulatory constraints, technical dependencies, and resistance to organisational change. These observations are coherent with the work of Rodriguez et al. (2021) and Bhandari and Rao (2022), who identified technological integration complexity and change management challenges as major barriers to successful automation projects in financial institutions.

3.14 Conclusion of the Discussion

In conclusion, the discussion confirms that digitalization constitutes a strategic lever for optimising the consumer credit granting process within General Society Algeria (GSA). The empirical findings are robustly supported by the academic literature on banking automation, process optimisation, mobile banking, Agile governance, and AI integration, while simultaneously extending this literature through an original chronometric methodology and contextualised findings from the Algerian banking sector.

Beyond technological modernisation, the transformation reflects a profound organisational and operational repositioning toward a more agile, automated, customer-centric, and competitive banking model. The combination of workflow digitalization, mobile banking, automation technologies, and artificial intelligence not only improves operational efficiency but also strengthens the institution's capacity to adapt to the evolving demands of the modern banking environment.

Conclusion

The findings presented, analyzed, and discussed throughout this third chapter confirm that digitalization plays a central and transformative role in optimizing the consumer credit granting process at General Society Algeria. The empirical evidence gathered through interviews, direct observations, documentary analysis, and chronometric measurements consistently demonstrates that the transition from a manual, paper-based operational model toward an automated, digitally integrated workflow generates significant improvements across multiple performance dimensions.

The chronometric analysis revealed substantial reductions in processing times for both the Account Opening Process and the Consumer Credit Process, with the Full Digital model projecting efficiency gains of up to 66% in credit processing duration and 74% in account opening time. The thematic analysis of interviews further confirmed that digitalization improves workflow fluidity, reduces operational errors, strengthens coordination between departments, and enhances the overall quality of customer service.

At the same time, the analysis identified several challenges and limitations that must be acknowledged. Regulatory constraints, technological dependencies, resistance to organizational change, and the complexity of legacy system integration continue to represent obstacles to full digital deployment. The discussion also highlighted that the pace of artificial intelligence adoption within the bank will depend not only on technological readiness, but also on the co-evolution of internal governance structures and the broader regulatory environment

GENERAL CONCLUSION

This dissertation examined the role of digitalization in optimizing the consumer credit granting process at Société Générale Algérie, with particular focus on the Account Opening Process and the Consumer Credit Granting Process. The study was conducted through a qualitative case study approach combining semi-structured interviews, direct observation, documentary analysis, and chronometric field measurements across four pilot agencies. The central research question addressed how digitalization enables the optimization of consumer credit operations in terms of reducing processing delays and improving operational efficiency.

The empirical investigation produced the following principal findings:

1. The pre-digital process at SGA was structurally fragmented, relying on three disconnected systems requiring redundant manual data entry of approximately 100 fields per file, generating processing cycles of 11 to 28 business days and individual entry sessions of up to 20 minutes per file. This systemic fragmentation was identified as the root structural cause of all operational delays, customer dissatisfaction, and competitive underperformance documented prior to the transformation.
2. The implementation of the OCP digital project, through API-based system integration, eliminated redundant manual data entry by enabling 90% automatic field pre-population from a single client identifier entry. This architectural shift from a sequential, multi-system handoff model to a real-time synchronization model constitutes the primary mechanism explaining the efficiency gains observed throughout the study.
3. The Account Opening Process was reduced from 57 minutes in the 2025 legacy model to 24 minutes in the current 2026 model and a projected 15 minutes in the 2027 Full Digital configuration, representing a total reduction of 74% over the transformation period. Steps involving human judgment, including client interviews and final validation, remained unchanged across all configurations, confirming that automation was applied selectively to repetitive data-handling tasks.
4. The projected mobile AOP channel enables complete account opening in approximately 19 minutes without any physical branch visit, with the client autonomously completing the majority of process steps through a smartphone application. This channel provides 24/7 accessibility and removes all geographic and temporal barriers previously associated with branch-based onboarding.
5. The Consumer Credit Granting Process was reduced from 173 minutes in the 2025 legacy model to 107 minutes in the current 2026 model and a projected 59 minutes in

the 2027 Full Digital configuration, representing a total reduction of 66%. The most significant gains were recorded in the Ticket Creation phase, where CRM processing decreased from 10 minutes to 15 seconds and ticket creation from 19 minutes to 30 seconds, while the disbursement phase was reduced from 20 minutes to 2 minutes through direct system-to-system integration.

6. The mobile consumer credit channel, operative since 2026, reduced total processing time to 35 minutes compared to 107 minutes for the equivalent branch process, representing a 67% reduction. SGA is confirmed as the only bank in Algeria currently offering this service, establishing a first-mover competitive advantage in the domestic retail banking market.
7. At the structural level, the digital transformation produced a decline in manual intervention rates from approximately 95% to a projected 15%, an increase in automation rates from 5% to 85%, a reduction in data entry errors by approximately 95%, the complete elimination of paper-based document handling, a reduction in Back-Office interventions by approximately 85%, and a projected increase in operational productivity of 188% relative to the 2025 baseline.
8. The qualitative thematic analysis confirmed that Agile project governance, structured around Tribes, Squads, and iterative Sprint cycles, was a critical enabling factor in the success of the OCP project, ensuring continuous alignment between IT delivery and business operational requirements. The institutionalization of this governance model across other banking products represents a significant organizational maturation.
9. Three categories of persistent limitation were identified: technical vulnerabilities related to API and SMG anomalies requiring occasional manual fallback; cultural challenges associated with a generational digital divide among employees and clients; and a regulatory constraint requiring a mandatory physical branch visit for handwritten signature specimen collection, which constitutes the primary remaining barrier to a fully contactless credit journey.
10. Artificial Intelligence was identified by all respondents as the next strategic frontier of the transformation. The proposed AI integration strategy targets ten operational areas including ML-based credit scoring, intelligent document processing, fraud detection, and autonomous Back-Office agent operations, with projected time savings ranging from 5 minutes per file for document reading to 20 minutes per case for automated decision-making, and an 85% reduction in Back-Office processing activities. All

respondents emphasized the human-in-the-loop principle as a non-negotiable governance safeguard for AI-assisted decisions.

Research Limitations

Despite the relevance of the findings obtained, several limitations should be acknowledged. First, the study was conducted within a single banking institution and focused on a specific organisational context, which limits the generalisation of the results to the entire banking sector.

Second, due to the confidentiality of banking information and internal operational procedures, certain strategic, technical, and financial data could not be fully integrated into the research. This limitation restricted the level of detail that could be presented regarding some internal systems and transformation projects.

Third, the chronometric analysis was conducted across four bank agencies only. Although the measurements were carried out under real operational conditions and included both junior and senior employees, the results remain operationally indicative rather than statistically generalizable.

In addition, some projected digital and Artificial Intelligence processes analysed in this study are still under development and have not yet been fully implemented within the bank. Consequently, certain observations concerning future Full Digital and AI-driven models remain prospective and exploratory.

Finally, the study mainly focused on operational and organisational perspectives, while customer perceptions regarding digital adoption and satisfaction were not extensively explored.

Managerial Recommendations :

Recommendations

The following recommendations are formulated on the basis of the empirical results established through the qualitative thematic analysis and the chronometric case study conducted at General Society Algeria. Each recommendation is directly grounded in a specific finding, ensuring that the proposed measures are evidence-based, operationally realistic, and strategically aligned with the institution's Full Digital transformation trajectory.

Recommendation 1 : Resolving the Regulatory Barrier of the Electronic Signature

Empirical Basis

The qualitative analysis and the chronometric data confirm that despite a 95% digital journey, a mandatory physical branch visit remains required for handwritten signature specimen collection under current Algerian banking regulations. This regulatory constraint constitutes the single most significant remaining barrier to a fully contactless consumer credit journey, and its resolution lies outside the bank's direct operational control.

Recommended Action

SGA should initiate proactive institutional dialogue with the Bank of Algeria to advocate for the legal recognition of qualified electronic signatures in retail credit banking acts. In parallel, the biometric signature combined with facial recognition technology, already integrated into the projected AOP Mobile 2027 model, could be submitted to the regulatory authorities as a structured proof of concept, demonstrating both technical feasibility and operational reliability. The regulatory reform experience of comparable emerging markets, including Morocco, Tunisia, and Egypt, which have successfully modernized their legal frameworks on electronic authentication, should be mobilized as reference cases to support and accelerate this regulatory engagement.

Recommendation 2 ; Deploying an AI-Based Predictive Credit Scoring Engine

Empirical Basis

The chronometric analysis reveals that the Ticket Creation phase, specifically CRM processing and ticket creation, still requires 9.75 minutes in the current 2026 model, compared to a projected 0.75 minutes under full automation in 2027. The AI implementation table further identifies that a Machine Learning-based scoring system would generate an estimated saving of 10 minutes per credit decision, representing one of the highest individual time-saving contributions within the proposed AI integration strategy.

Recommended Action

SGA should implement a predictive scoring engine based on Machine Learning, trained on internal behavioural data including credit history, account transaction flows, and customer seniority, and enriched by external data sources such as CNAS records and employer

verification. Consistent with the governance position expressed by respondents, a human-in-the-loop oversight principle must be embedded in the system architecture for atypical or borderline credit files, ensuring that algorithmic decisions remain subject to human review in non-standard cases. A semi-annual algorithmic audit cycle must be integrated from the design stage to detect and correct scoring biases and ensure ongoing regulatory compliance. The client's right to explanation for automated credit decisions must be formally guaranteed in accordance with applicable data protection standards.

Recommendation 3 : Fully Automating Insurance Subscription Through API Integration With AXA Algeria

Empirical Basis

The comparative synthesis of qualitative findings explicitly identifies that insurance integration between SGA's credit process and AXA Algeria's management system remains partially manual, constituting one of the documented persistent limitations of the current digitalized model. This residual manual interface introduces avoidable delays and human error risk at an otherwise highly automated stage of the process.

Recommended Action

A dedicated API should be developed between SGA's OCP system and AXA Algeria's management platform, enabling the automatic generation of the borrower insurance contract upon credit file validation, without any human intermediary action. This integration would eliminate the residual processing delays currently generated by manual information exchange between the two institutions. A quarterly inter-system resilience testing protocol must be established to verify service continuity and define fallback procedures in the event of API partner unavailability, ensuring that this integration does not introduce a new operational dependency risk.

Recommendation 4 : Designing a Differentiated Digital Skills Development Programme for Senior Profiles

Empirical Basis

Thematic analysis identifies the existence of a persistent internal digital divide: senior employee profiles show measurable resistance to the adoption of digital tools, which the Front-Office expert explicitly characterizes as the primary cultural limitation of the current transformation. The comparative synthesis further lists resistance to organizational change as an ongoing challenge that tempers the full realization of efficiency gains.

Recommended Action

A differentiated digital skills development programme should be designed and implemented, structured around employee profile segmentation rather than uniform training delivery. Practical training modules covering the OCP platform, SMG tools, and the mobile banking application should be integrated into individual development plans for identified at-risk profiles. An internal mentoring mechanism, structured around designated digital champions defined as employees with high digital proficiency, should be established to provide peer-level support and continuous guidance within branch environments. Critically, and consistent with the operational resilience principle emphasized by respondents, parallel training in traditional manual methods must be maintained as a contingency capability to ensure process continuity during system unavailability.

Recommendation 5 : Formalizing a Business Continuity Plan for Digitalized Credit Operations

Empirical Basis

The Front-Office expert reports that technical anomalies at the API and SMG levels occasionally require temporary reversion to manual processing for urgent credit files. This systemic dependency on continuous digital infrastructure availability constitutes an unaddressed operational risk that, in the absence of a formalized response protocol, generates unpredictable service disruptions.

Recommended Action

A formal Business Continuity Plan specific to the digitalized consumer credit process should be designed and validated, defining clear manual switchover procedures, anomaly triggering thresholds, and quantified recovery time objectives and recovery point objectives. In parallel, a

real-time monitoring dashboard covering all critical API connections, including SMG, CRM, CNAS, and AXA, should be deployed at the Information Systems Department level, enabling proactive anomaly detection before operational influence reaches client-facing staff. The full API architecture should be subject to an annual independent resilience audit to verify structural robustness and identify emerging vulnerability points.

Recommendation 6 : Accelerating Mobile Credit Channel Adoption Through Structured Customer Support

Empirical Basis

The chronometric case study confirms that SGA is currently the only bank in Algeria offering consumer credit through a mobile application, with the mobile channel reducing total journey duration by 67% relative to the branch equivalent, from 107 minutes to 35 minutes. However, the qualitative analysis identifies that adoption of this channel remains conditional on the digital maturity level of individual clients, limiting the full realization of its efficiency and commercial potential.

Recommended Action

An in-branch assisted digital onboarding programme should be implemented, in which customer advisors actively guide clients with limited digital literacy through their first use of the mobile credit application during branch visits. Within the application itself, integrated tutorials, contextual guidance prompts, and a dedicated support hotline should be deployed to reduce abandonment rates on incomplete digital applications. An intelligent notification system should be implemented to follow up on incomplete files and prompt client action at each stage of the digital journey. A formal client segmentation model by digital maturity level should be developed to enable advisors to propose the most appropriate channel, whether mobile, branch, or hybrid, for each client profile, optimizing both commercial conversion rates and customer experience quality.

Recommendation 7 : Establishing an AI Ethics and Governance Framework Prior to the 2027 Deployment Phase

Empirical Basis

The qualitative analysis identifies Artificial Intelligence as the next strategic frontier of SGA's transformation, encompassing credit scoring, fraud detection, biometric KYC, and autonomous Back-Office agent operations. All respondents consistently emphasize the human-in-the-loop principle as a non-negotiable strategic safeguard. This position is aligned with the risk governance frameworks advocated by Kraus et al. (2021), who argue that full AI autonomy in credit decision-making remains premature in regulated banking environments where algorithmic accountability frameworks are still nascent.

Recommended Action

An AI Governance Committee should be constituted immediately, bringing together representatives from the Information Systems Department, the Risk Management Department, the Compliance Division, and the Retail Division. This committee should be formally tasked with defining the acceptability criteria for algorithmic credit decisions, the model audit mechanisms addressing bias detection and model drift, the personal data protection protocols in compliance with applicable Algerian regulatory requirements, and the conditions governing the maintenance of human control over high-influence decisions including credit refusal and fraud detection outcomes. This governance framework must be fully operational and formally validated before any production deployment of the AI modules planned for the 2027 phase, ensuring that technological readiness and governance readiness progress in alignment.

Recommendation 8 : Formally Institutionalizing Agile Methodology Across the Full Digital Transformation Portfolio

Empirical Basis

Thematic analysis demonstrates that Agile project governance, structured around Tribes, Squads, and iterative Sprint cycles, was a key enabling factor in the successful deployment of the OCP project, ensuring continuous alignment between IT delivery and business operational requirements. The Head of the Solution and Integration Operations Pole confirms that this model is already being extended to Trade Finance and Internal Procurement, indicating institutional recognition of its effectiveness.

Recommended Action

The Agile model should be formally institutionalized as the reference framework for all of SGA's digital transformation initiatives, through the establishment of an internal Agile Center of Excellence. This Center should be tasked with training project managers and Squad leads, standardizing Agile ceremonies and delivery rituals across projects, and measuring Squad velocity as a formal performance indicator for transformation delivery. A structured lessons learned capitalization system, implemented through formalized retrospectives at the conclusion of each Sprint cycle and each project phase, should be established to enable knowledge transfer across transformation initiatives, accelerate future deployment timelines, and systematically prevent the recurrence of obstacles encountered during the OCP project implementation.

Research perspectives

This research opens several perspectives for future studies related to digital transformation within the banking sector. Future research could explore the long-term influence of Artificial Intelligence integration on banking operational performance, customer trust, and risk management practices.

Comparative studies between different Algerian banks, or between public and private banking institutions, could also provide a broader understanding of digital transformation dynamics within the national banking environment.

Future studies may additionally investigate customer perceptions regarding digital banking adoption, customer satisfaction with fully digital banking services, and the social influence of automation on banking employment and organisational practices.

Moreover, further research could focus on cybersecurity governance, regulatory adaptation to Artificial Intelligence technologies, and the ethical implications of intelligent automation within financial institutions.

This dissertation contributes both theoretically and operationally to the understanding of digital banking transformation within the Algerian banking sector. One of the principal contributions of the study lies in the integration of a detailed chronometric operational analysis within a qualitative case study framework. Unlike many previous studies focused mainly on conceptual or strategic dimensions of digitalisation, this research provided a concrete operational evaluation of workflow performance and processing durations.

Overall, the study confirms that digitalisation constitutes a major strategic lever for improving operational efficiency, service quality, organisational agility, and competitiveness within General Society Algeria . Beyond technological modernisation, the transformation analysed throughout this dissertation reflects a profound evolution of banking practices toward a more integrated, intelligent, customer-centric, and digitally driven banking environment.

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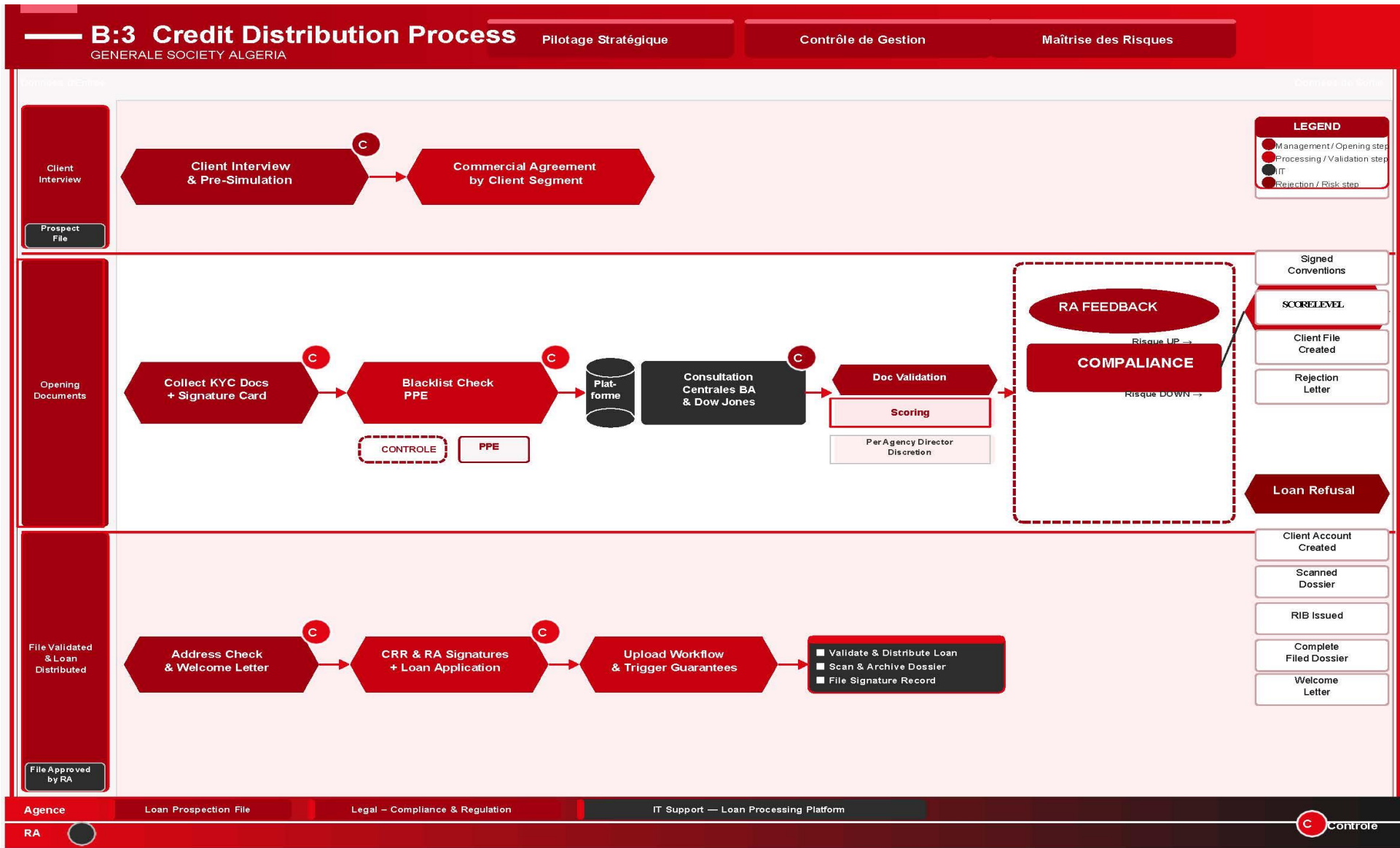
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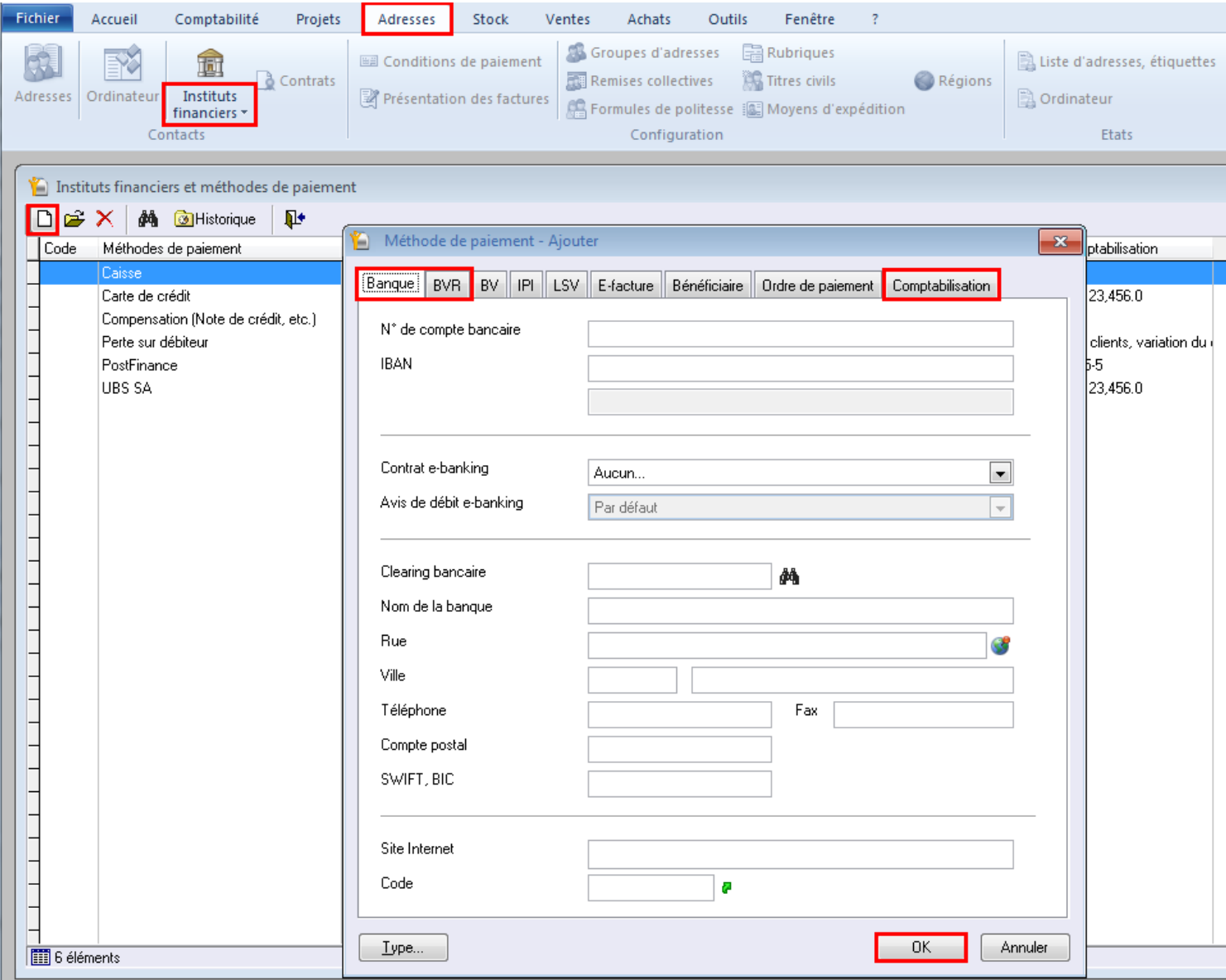
APPENDICES

Appendice N°1 : process mapping



Appendices

Appendice N°2 : amplitude screen shot From internet



Appendice N°3 : time measurement step by step credit process in 1st branch

Étape du processus	Sous-étape	RESPONSABLE	client SGA/CCP		Prespet SGA /CCP	
			Client SGA/CCP (Nouveau)	Client SGA/CCP (Ancien)	Prospect SGA / CCP (Nouveau)	Prospect SGA / CCP (Ancien)
Entretien client		CLIENT	00:02:05	00:05:00	00:02:05	00:07:00
		CDC	00:03:45	00:03:00	00:03:45	00:03:00
Création du dossier		CDC	00:01:20	00:07:00	00:01:20	00:07:00
		CDC	00:09:00	00:01:00	00:09:00	00:01:00
		CDC	—	-	27 MIN	30 min
		CDC	00:07:18	00:05:00	00:07:18	00:10:00
		CDC	00:05:00	00:09:00	00:05:32	00:09:00
Validation du dossier		CDC	00:10:00	00:01:00	00:10:00	00:01:00
		CLIENT	00:00:10	00:00:10	00:00:10	00:02:00
		CDC	00:00:20	00:00:10	00:00:20	00:00:10
		RA	00:00:10	00:01:00	00:00:10	00:01:00
		CDC	00:10:00	00:06:00	00:10:03	00:06:00
		CDC	00:03:01	00:04:00	00:03:01	00:04:00
		RA	00:05:00	00:10:00	00:05:00	00:10:00
		BO	15 MIN	15 MIN	15 MIN	15 MIN
		BO	5-10 SEC	10 MIN	10 SEC	10 MIN
Recueil des garanties		CDC	00:20:10	00:30:00	00:20:00	00:30:00
		CDC				
		CLIENT				
		RA				
		CDC				
		CDC				
		BO	10 Min	30 MIN	10 MIN	30 MIN
		BO	6 Min		6 MIN	
		BO	0 - 1 min		1 min	
		BO	Auto 0 min		0 MIN	
Total			01:49:29	02:32:20	02:16:29	03:01:20

Appendice N°4 : signature card



**SOCIETE GENERALE
ALGERIE**

**بطاقة إمضاء
CARTE DE SIGNATURE**

وكالة: _____ Agence : _____

Date d'ouverture	تاريخ الفتح:	Compte N°	حساب رقم:
Nom et prénom du titulaire	لقب و اسم المستفيد	Signature	التوقيع
profession : _____ المهنة:			
Adresse personnelle : _____ العنوان الشخصي:			
N° pièce d'identité : _____ رقم بطاقة التعريف:			
Date et lieu de naissance : _____ تاريخ و مكان الميلاد:			
Nationalité : _____ الجنسية:	Tél:	الهاتف:	
Mandataire :	الوكيل:	التوقيع	
Nom et prénom :	اللقب و الاسم:		
Nationalité :	الجنسية:		
Nom et prénom :	اللقب و الاسم:		
Nationalité :	الجنسية:		
Nom et pr énom :	اللقب و الاسم:		
Nationalité :	الجنسية:		
Nom et prénom :	اللقب و الاسم:		
Nationalité :	الجنسية:		
Nom et prénom :	اللقب و الاسم:		
Nationalité :	الجنسية:		

Appendice N° : interview guide

Section	Question / Topic	Interview Questions & Probes	Research Objective
I. Introduction and Participant Presentation	Introduction	Good morning / Good afternoon. My name is Bouguern Khadidja, a postgraduate student at the École Supérieure de Management. I am conducting research on the influence of digitalisation on the consumer credit granting process at Société Générale Algérie. Participation is voluntary and all responses will remain confidential.	To introduce the study and ensure informed consent.
II. Respondent Profile	Q1. Current Role and Responsibilities	• What is your current position/job title within the institution? • Could you briefly describe your main responsibilities in this role?	To identify the participant's professional role and involvement in the credit process.
	Q2. Professional Experience	• How many years of experience do you have in the banking sector? • Have you participated in any digitalisation or technology-related projects during your career?	To understand the participant's level of expertise and exposure to digital transformation.
III. The Traditional Credit Granting	Q3. Overview of the Traditional Process	• Could you describe the traditional consumer credit granting process before digital transformation? • What were the	To document the operational characteristics of the traditional process.

Process (Pre-Digitalisation)		main stages involved? • Which departments or actors participated at each stage? • What documents were required from applicants?	
	Q4. Processing Timeframes	• On average, how long did it take to process a consumer credit application? • Were there frequent delays? If yes, at which stages? • What were the main causes of delays?	To assess efficiency and identify operational delays.
	Q5. Constraints and Limitations	• What were the main constraints of the traditional process? • Were issues such as slow processing, high error rates, or limited capacity significant? • What were the main workflow bottlenecks? • How did these limitations affect client satisfaction and bank performance?	To identify weaknesses and limitations of the conventional system.
IV. The Digital Transition	Q6. Drivers of Digitalisation	• What factors motivated the bank to digitalise the credit granting process? • Were these factors internal (efficiency, cost reduction) or external (competition, regulation, customer expectations)? • Was there a specific event or strategic decision that initiated the transformation?	To understand the reasons behind digital transformation.

V. The Digitalised Process and Its Influences	Q7. Nature of the Transformation	• What major changes were introduced through digitalisation? • Which technologies or platforms were implemented? • Were employees consulted during implementation? • What training or change-management initiatives were provided?	To examine the implementation process and organisational adaptation.
	Q8. Description of the New Digitalised Process	• Could you describe the current digitalised consumer credit process? • What are the main workflow steps? • How does the new system differ from the previous one? • How have front-office and back-office roles changed?	To analyse the structure of the digitalised process.
	Q9. Efficiency and Performance Gains	• To what extent has digitalisation reduced processing times? • What is the current average processing time compared to before? • Has the number of processed applications increased? • Which KPIs improved the most (processing time, error rate, customer satisfaction, etc.)?	To evaluate operational and performance improvements.
	Q10. Challenges and Current Limitations	• What difficulties have emerged since implementation? • What are the current limitations of the digital system? • Which aspects remain difficult to automate?	To identify ongoing challenges and system limitations.

VI. Future Perspectives and Emerging Technologies	Q11. Planned Improvements and Ongoing Projects	How has the institution addressed these challenges? • Are there any future projects aimed at improving the credit process? • Which areas are targeted for improvement? • What is the expected implementation timeline?	To explore future strategic developments.
	Q12. The Role of Artificial Intelligence	• Could artificial intelligence further improve the credit granting process? • At which stages could AI be most useful (risk scoring, fraud detection, document verification, decision support)? • What benefits do you expect from AI integration? • What risks or limitations do you foresee (bias, compliance, data privacy)?	To examine perceptions of AI in banking operations.
VII. Additional Comments	Final Remarks	• Is there any additional information or experience you would like to share regarding this topic?	To allow participants to provide additional insights.
Closing	Acknowledgements	Thank you for your participation and valuable contribution to this research. If you wish to receive a summary of the findings, please provide your preferred contact information below.	To conclude the interview professionally.

Optional Contact Information	Participant Details	• Email Address • Phone Number • LinkedIn Profile	For follow-up communication if consent is provided.
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