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UNLOCKING BANKING'S DIGITAL FUTURE  
*Santander Digital Transformation  
Odyssey*

Catarina Ribeiro

152122334

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**Title:** Unlocking Banking's Digital Future: Santander Digital Transformation Odyssey

**Author:** Catarina Ribeiro

In today's fast-paced world of technological advancements and global disruptions, the banking sector is encountering unprecedented challenges that require companies to adapt their business strategies. This dissertation aims to comprehensively analyze Santander's reaction to the uncertainties that emerged during the 2020 pandemic. This study examines the adjustments made by the Group in the short- and long-term period to mitigate the impact of COVID-19 and increase its ability to respond to market demands while effectively supporting its stakeholders. Santander implemented contingency plans and accelerated its digital transformation, which it considered fundamental, especially when teleworking became a necessity. This research investigates the importance of modernizing core banking systems to meet the needs of customers in today's constantly evolving financial market. Additionally, it demonstrates how digital transformation, accompanied by an agile culture, can serve as a strategic response during periods of vulnerability. Strategic management models are introduced to support the analysis of the case study by promoting practical implications of the theoretical frameworks.

**Keywords:** Digital Transformation, Santander, Resilience, Banking Industry, Adaptability, Agility, Strategic Responses, Core Banking Systems, COVID-19

**Título:** Unlocking Banking's Digital Future: Santander Digital Transformation Odyssey

**Autor:** Catarina Ribeiro

Numa era caracterizada por rápidos avanços tecnológicos e interrupções globais, o setor bancário enfrenta desafios sem precedentes, que exigem uma adaptação por parte das empresas da sua estratégia de negócio. Esta dissertação procura analisar de forma minuciosa a resposta do Santander às incertezas que surgiram aquando enfrentado pela pandemia em 2020. No decorrer deste estudo, são examinadas as alterações que o Grupo efetuou tanto a curto como a longo prazo, com o objetivo de mitigar o impacto do COVID-19 e aumentar a sua capacidade de resposta às exigências do mercado, suportando simultaneamente e eficazmente os seus *stakeholders*. O Santander tomou a decisão de se debruçar sobre a implementação de planos de contingência, acompanhados pelo aceleração da transformação digital que o banco considerou fundamental, principalmente quando o teletrabalho se tornou numa necessidade. Através do caso de estudo, esta pesquisa investiga a importância da modernização dos sistemas bancários centrais para atender às necessidades dos clientes que no mercado financeiro atual, estão em constante evolução. Adicionalmente, demonstra como a transformação digital acompanhada por uma cultura ágil pode servir como uma resposta estratégica durante períodos de vulnerabilidade. Desta forma, são introduzidos modelos de gestão estratégica com o objetivo de apoiar a análise do caso de estudo, ao promover implicações práticas das construções teóricas. Por fim, são elaboradas questões relacionadas com o meio envolvente externo, os recursos e as capacidades dinâmicas do Santander, que podem ser aplicadas para efeitos de ensino pelos docentes, possibilitando aos alunos enriquecer o seu conhecimento.

**Palavras-Chave:** Transformação Digital, Santander, Resiliência, Indústria Bancária, Adaptabilidade, Agilidade, Respostas Estratégicas, Sistemas Bancários Centrais, COVID-19

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As this chapter gracefully draws to a close, it is evident that beyond the pursuit of academic excellence lies an enduring sense of gratitude. With this sentiment, I embark on new chapters, inspired by wisdom gained and shared experiences, ready to face the world with an ignited heart, an enlightened mind, and an invigorated spirit, ready to create, inspire, and, above all, embrace the pursuit of happiness.

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## GLOSSARY

AGM - Annual General Shareholders' Meeting

AI - Artificial Intelligence

APIs - Application Programming Interface

ATM - Automated Teller Machine

AUM - Assets Under Management

AWS - Amazon Web Services

B2B2C - Business-to-Business-to-Consumer

BBVA - Banco Bilbao Vizcaya Argentaria

BM - Business Model

BMs - Business Models

BNPL - Buy Now/Pay Later

BRRD - Bank Recovery and Resolution Directive

CAGR - Compound Annual Growth Rate

CBDCs - Central Bank Digital Currencies

CBS - Core Banking System

CDO - Chief Digital Officer

CEO - Chief Executive Officer

CMOs - Chief Marketing Officers

CoR - Cost of Risk

CRD - Capital Requirements Directive

CRR - Capital Requirements Regulation

CX - Customer Experience

DC - Dynamic Capabilities

DCB - Digital Consumer Bank

Digital Customers - Every consumer of a commercial bank's services who has logged on to their personal online banking and/or mobile banking in the last 30 days<sup>1</sup>

DLP - Data Leakage Protection

DMA - Digital Markets Act

DORA - Digital Operational Resilience Act

DSGD - Deposit Guarantee Schemes Directive

E2E - End-to-End

EBA - European Banking Authority

ECB - European Central Bank

EPS - Earnings Per Share

ESG - Environment, Social and Governance

GDP - Gross Domestic Product

GMS - Global Merchant Services

G-SIBs - Global Systemically Important Banks

GTS - Global Trade Services

HNWIs - High-Net-Worth Individuals

ICAAP - Internal Capital Adequacy Assessment Process

ILAAP - Internal Liquidity Adequacy Assessment Process

IT - Information Technology

JCL - Job Control Language

Loyal Customers - Active customers who receive most of their financial services from the Group according to the commercial segment to which they belong. Various engaged customer levels have been defined taking profitability into account<sup>2</sup>

M&A - Mergers and Acquisitions

Mbps - Megabits per Second

MiCA - Markets in Cryptoassets

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<sup>1</sup> Source: Santander Letter from the Group Executive Chairman; Santander Annual Reports Glossary

<sup>2</sup> Source: Santander Letter from the Group Executive Chairman; Santander Annual Reports Glossary

ML - Machine Learning

NII - Net Interest Income

NPS - Net Promoter Score

P2P - Peer-to-Peer

R&D - Research and Development

RBV - Resource-Based View

RoTe - Return on Tangible Equity

SaaS - Software-as-a-Service

SCF - Santander Consumer Finance

SCIB - Santander Corporate & Investment Banking

SGP - Santander Global Platform

SMB - Small and Midsize Business

SMEs - Small and Medium Enterprises

TLAC - Total Loss Absorbing Capacity

UBS - Union Bank of Switzerland

UK - United Kingdom

US - United States

VPNs - Virtual Private Network

VRIN - Value, Rare, Inimitable, Non-Substitutable

VRIO - Value, Rare, Inimitable, Organization

WM - Wealth Management

WoW - Way of Working

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## I. INTRODUCTION

At a time characterized by rapid technological progress and unforeseen global disruption, institutions are facing a crucial moment, forcing them to redefine their strategies. The fusion of digital innovation, changing consumer behavior, and the seismic impact of COVID-19 have fundamentally altered the paradigms of financial institutions, requiring unwavering resilience, adaptability, and an acute strategic vision. In this context, Santander, as one of the world's largest global banks, has faced multifaceted challenges while steadfastly pursuing operational excellence, customer centricity, and comprehensive digital transformation.

Among the most formidable modernization challenges across industries, the banking sector stands out, grappling with conservatism and stringent regulatory frameworks. Over recent decades, banks have relied on mainframe technology to underpin their core banking operations, a system both expensive and resistant to change due to the high risks associated with potential disruptions that could significantly impact customers. The inherent limitations of traditional software development further exacerbate the sector's agility and speed in adapting to evolving demands. This pedagogical research endeavors to conduct a meticulous analysis of Santander's strategic response to the transformative forces unleashed by the 2020 crisis. Its focus lies in analyzing the intricate interplay between the bank's crisis management strategies, its robust digital transformation initiatives, and the holistic approach taken to react to the evolving needs of stakeholders. The primary goal is to investigate the essential role played by digital transformation as an adaptive strategy during crises within the banking industry and ascertain the significance of modernizing core banking systems to meet the dynamic demands of customers. To support this endeavor, this dissertation incorporates a teaching case in the realms of Economics, Strategic Management, and Business Strategy.

The systematic structure of this thesis ensures clarity and accessibility for readers. It begins by exploring the potency of digital transformation in banking, unraveling the primary challenges and opportunities encountered. Subsequently, the literature review introduces and elucidates various pertinent frameworks essential for a comprehensive understanding of the case study. Following this, the thesis presents a case study centered on Santander's experience during the pandemic, showcasing its resilience. The subsequent teaching note is intended solely for academic use. It encompasses a concise introduction to Santander, followed by the objectives of the teaching note and its strategic approach. The note then proposes questions

related to the case study along with anticipated solutions and responses. Finally, the dissertation culminates by delineating the practical limitations of the research.

## II. EXPLORING THE POWER OF DIGITAL TRANSFORMATION IN BANKING

The banking sector, with centuries of existence, is widely regarded as a traditional industry with a rich history. Nevertheless, recent technological advancements have triggered a significant realignment within this sector.

A case in point is the research conducted by Boston Consulting Group, delving into e-commerce trends. The findings reveal a compelling shift, with e-commerce poised to command 41% of global retail sales by 2027, marking a substantial rise from its 18% share in 2017. Furthermore, the digital banking market presents noteworthy projections, with Net Interest Income (NII) anticipated to reach US\$650.30 billion in 2023, as reported by Statista (2023). Forecasts indicate a resilient annual growth trajectory (2023-2028) at a rate of 13.39%, culminating in a market valuation of approximately US\$1.2 trillion by the close of 2028. A closer look at the global landscape indicates that the US is a predominant contributor to NII in this context. Conversely, in traditional banking, NII is expected to reach US\$4.79 trillion in 2023, with a projected CAGR (2023-2028) of 2.94%, resulting in a market volume of US\$5.54 trillion by 2028, China emerging as a key player. To provide a comprehensive perspective, it is noteworthy that traditional banks' NII constituted a substantial 90.76% share of the retail and commercial banking market in 2022, whereas digital banks accounted for 9.24% (Statista, 2023).

Financial service firms are being pressured to adopt innovative technologies aiming to boost efficiency in a competitive market (Paulet & Mavoori, 2020). This adoption disrupts established processes and business models (BMs) (Horlacher & Hess, 2016; Bolton et al., 2019; Naimi-Sadigh et al., 2022), simultaneously generating new opportunities, challenges, and avenues for value creation (Hafke et al., 2016). Thus, digital disruption refers to the *“environmental turbulence induced by digital innovation that leads to the erosion of boundaries and approaches that previously served as foundations for organizing the production and capture of value”* (Skog et al., 2018), and it holds a dual potential to either diminish the role and connection of banks or contribute to the creation of more functional and valuable services (Naimi-Sadigh et al., 2022). This shift has resulted in real changes, notably the transition from traditional to online and digital value creation (Niemand et al., 2021).

In response to the gap left by banks during the 2008 global economic crisis, fintech companies emerged as key players in this evolution, leveraging cutting-edge technologies (e.g., AI, lean “as-a-service” approach, seamless integration, end-to-end (E2E) processes) and

employing innovative approaches such as customer-centric products, digital touchpoints, and direct peer-to-peer (P2P) BMs to offer more specialized and innovative services and products. Effectively, the fintech industry has witnessed remarkable growth, with a CAGR (2010-2022) of 27% in total investments, according to Statista (2023). The rise of digital business ecosystems is, therefore, the outcome of changes in traditional business ecosystems, significantly impacting organizations' strategic decision-making regarding their internal and external environments (Diener & Špaček, 2021). The initial digital disruptor - ING Direct - launched as an entirely online bank in 1996, demonstrated higher flexibility by offering new services at lower rates than conventional counterparts. Key capabilities such as digitization and digitalization are crucial for these banks (Osei et al., 2023; Naimi-Sadigh et al., 2022).

### **Digitization versus Digitalization**

At this stage, it is crucial to distinguish between these two concepts regarding their value within an enterprise. Diener & Špaček (2021) discussed how they complement each other, with digitization representing the shift from an analog solution to a digital solution, while digitalization pertains to the effects of leveraging digital technologies on the organization. Consequently, these forces have the potential to transform consumer behavior and change the dynamics of competition through technological disruption, offering new sources of advantages and BMs and providing a variety of tools to enhance insights, reduce costs, and increase revenue. These tools include advanced analytical techniques that leverage massive amounts of data.

### **Digital Transformation**

As the pressure increases, banks need to make revolutionary changes to improve their prospects of surviving and succeeding in the market, and one such transformation is integrating digital technology into their daily operations. An organizational shift like this is referred to as digital transformation (Tekic & Koroteev, 2019).

Indeed, this concept has undergone considerable discussion and evolution over the years, its precise definition and scope being a critical point to which this thesis can contribute (Warner & Wäger, 2019; Wessel et al., 2021). Consequently, Vial (2019) explored the present understanding of the subject and conceptualized digital transformation as “*a process that aims to improve an entity by triggering significant changes to its properties through combinations of information, computing, communication, and connectivity technologies*” (Saarikko et al., 2020). Two years later, Verhoef et al. (2021) emphasize it as a change in leveraging digital tech

to create new business models. To enhance structure and clarity, Hanelt et al. (2021) extend these concepts by introducing a typology that includes four perspectives on digital transformation, reducing its intricacy and asserting that digital business ecosystems' emergence propels the transition towards new organizational designs (see [Appendix](#)). Thus, it is essential for companies to establish a solid culture in order to embark on the journey of digital transformation. As Peter F. Drucker, the founder of modern management, famously stated, “*Culture eats strategy for breakfast*,” implying that a company’s culture has a significant impact on its operations management strategy (Lyu, J. J.- C., 2022).

In the banking sector’s digital transformation, the significance of the impact on BMs and the human side cannot be overstated. While constructing digital transformation roadmaps, banks face a fundamental decision: selecting the optimal BM to initiate this journey, which may involve establishing online branches, changing business processes, and relying on innovative technologies. Traditional banks like BNP Paribas, Nordea, and Santander are splendid examples since they have transitioned to an omnichannel and successfully integrated analytics into their structures. The specific case of Santander is analyzed further in [Chapter IV](#). It is important to note that the efficacy of digital transformation cannot be solely ensured by a digital business strategy. Thus, the imperative lies in adopting a dedicated digital transformation strategy. Tekic & Koroteev (2019) have formulated a framework delineating four distinct digital transformation strategies (observe [Appendix](#)).

As technology advances, it is disrupting traditional banking models characterized by vertical integration. This has led to the emergence of new non-linear BMs and increasingly fragmented value chains. Osei et al. (2023) stated the importance of customer experience (CX) in digital banking transition, which involves shifting from product-centric approaches to customer-centric ones. Additionally, the Capgemini TechnoVision Report (2023) has identified several trends in financial services, including prioritizing data-centricity, forging partnerships for value creation by embracing open ecosystems, adopting agile architectures, modernizing core systems, and transitioning to sustainable practices, such as using cloud services, SaaS solutions, and green coding practices (observe [Appendix](#) for a more comprehensive overview).

## 2.1 CHALLENGES AND OPPORTUNITIES

The insights shared by Sun Tzu in “The Art of War” (1910) emphasize the criticality of strategic positioning for triumph. In the contemporary banking landscape, strategic positioning, adaptability to change, investment in innovative technologies, and a sharp vision for the future

are paramount. Kitsios et al. (2021) illustrate how digital transformation in banking serves to broaden service channels via electronic platforms while streamlining operations by reducing physical branches and staff.

Upon a comprehensive analysis by various researchers, it becomes evident that the banking industry faces unique challenges in this digital landscape. These encompass deficiencies in traditional core banking systems, regulatory complexities, hurdles in digitization, security concerns, and the emergence of digital-only firms. There are additional obstacles, including compliance issues, energy consumption related to technology, and the challenge of maintaining an equilibrium between agility and stability. Yet, these challenges harbor opportunities for transformation within the industry. Initiatives such as modernizing core banking systems, augmenting efficiency and security, fostering flexibility and standardization, initiative-taking technological anticipation, sustainability endeavors, transitioning to online platforms, and leveraging cloud computing offer avenues for progress. Additionally, embracing customer-centric approaches and facilitating banking services signify potential avenues for evolution and growth in the banking domain ([Appendix](#)).

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### 2.2.1 IDENTIFYING POTENTIAL SOLUTIONS

In the pursuit of successful digital transformation, multiple researchers offer key solutions for the banking sector's evolution.

Kitsios et al. (2021) advocate for promoting remote work and prioritizing research training through in-organization programs, like e-learning, to maximize the utility of novel technologies. Naimi-Sadigh et al. (2022) highlights a comprehensive approach involving well-defined strategies, advanced digital capabilities, and a shift from product-centric to customer-centric focus, integrated with effective governance and a Chief Digital Officer (CDO) in top management. Li et al. (2021) stresses the importance of organizational mindfulness, enabling agile management of digital technologies while avoiding rigidity. Barroso and Laborda (2022) emphasize the creation of innovative user-centric applications and facilities to enhance customer loyalty. Diener & Špaček (2021) suggest collaboration with external partners, technology implementation tailored to diverse age groups, educational programs displaying technological advancements, innovation lab establishment, CDO appointment, and meticulous evaluations of capabilities, resources, and customer landscape for effective strategy formulation. Furthermore, a robust digital infrastructure plays a pivotal role in driving digital market advancements. Statista's Fintech Report (2023) highlights increasing internet and

smartphone usage globally, underlining the need to consider key market indicators. With 64.1% of the global population using the internet monthly and 63.6% using smartphones, the average worldwide internet speed at 23.57 Mbps supports advanced features like 3D simulation. Mobile broadband subscriptions reaching 90.9 per hundred people globally in 2022 further accentuate the positive trend in digital service establishment.

The successful transition to digital transformation necessitates a focus on enhancing both employee and customer experiences. This demands continuous innovation in products/services, integration of leading-edge technology, and a persistent commitment to delivering value to customers.

### III. NAVIGATING THE STORM WITH STRATEGIC INSIGHTS

#### 3.1 STRATEGIC RESPONSES IN THE FACE OF CHAOS

The 21st century has been marked by a series of crises that have underscored the cruciality of strategic management for organizations. This extends notably to banks, pivotal players in economic recovery. The strategies adopted by banks, as highlighted by Marcu (2021) and McKinsey & Company (2020), significantly impact the overall recovery process by fostering stability and confidence among individuals, households, and businesses. Beyond financial aid, banks' resilience and financial health determine the efficacy of their support in an economic crisis. To achieve this, banks must not only adapt to crises but effectively manage potential risks, such as loan defaults and increased risk assets, to sustain their stability and support the economy. To understand this point of view, it is essential to recognize the shocks that have shaped the global economic landscape. The dot-com bubble's burst in 2000 characterized the turn of the millennium, with the collapse of the "New Economy". This was followed by the tragic terrorist attacks in 2001, the invasions of Iraq and Afghanistan, and the monetary crisis of 2008. In the following years, more turbulence arose: corporate scandals (Enron, WorldCom, and Parmalat), eurozone crisis in 2011, market fluctuations represented by changes in the price of Brent crude oil, COVID-19 pandemic, geopolitical changes, Ukraine war, inflation, energy crisis and lately the conflict between Israel and Hamas. These global events have disrupted supply chains across multiple regions around the world and companies must be resilient as a basis for adapting to the crisis, acting in five main areas: recovering revenues, redefining operations, rethinking the organization, accelerating digitalization, and adapting marketing strategies (Esper, 2020; Marcu, 2021; Pinzaru et al., 2021). For instance, in 2008, the US

investment banks transitioned from traditional investment banking to commercial banking, completely abandoning their prior models (Teece, 2010).

Managers, as argued by Wenzel et al. (2020), play a crucial role in crisis mitigation and advocate for the following four adaptive strategies to navigate crises effectively:

<b>Adaptive Strategies</b>	<b>Definition</b>
<i>Retrenchment</i>	Entails the reduction of a company’s scope and activities, which includes decreasing costs and assets, discontinuing certain products or product lines, and streamlining operations to reduce overhead expenses (Pearce & Robbins, 1993)
<i>Persevering</i>	Comprises maintaining the status quo of a firm’s business activities and continuing to operate as usual despite the crisis building resilience (Wenzel et al., 2020)
<i>Innovating</i>	It involves conducting a strategic renewal recognizing what once was unfeasible, and discovering innovative ways to operate and adapt (Wenzel et al., 2020)
<i>Exit</i>	Consists of the discontinuation of a company’s operations (Wenzel et al., 2020)

*Table 1. Strategic Responses to Crisis*  
 Source: Own Analysis based on Wenzel et al. (2020)

These tactics offer companies a diverse toolkit to weather crises and emerge stronger in their aftermath, tailored to the unique nature of each crisis and organizational circumstance.

### 3.2 UNMASKING STRATEGIC FRAMEWORKS

In the realm of business, competition has long been the driving force, typically revolving around price and quantity. Saadatmand et al. (2018) illuminate two influential economic models that have shaped our understanding of competition: Cournot’s model, focusing on production levels to maximize profits, and Bertrand’s model, emphasizing price competition. Bertrand’s model challenged Cournot’s assumptions, revealing how price adjustments could swiftly sway consumer decisions, impacting competitors’ pricing strategies and eroding profits. This illustrates the intricate challenges of profitability within competitive markets.

Amidst heightened globalization and competitive pressures, companies realize the need for renewed strategies to stand out. A firm's edge lies in attaining sustainable advantages rooted in its mission and vision, achievable through market-based and resource-focused approaches. However, an overemphasis on markets might lead to companies neglecting core strengths, hampering long-term competitiveness. Today's fiercely competitive landscape demands organizations to secure enduring advantages, not merely for survival but for sustainable success. The critical question lingers: How can companies consistently secure and maintain their competitive edge over time?

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### 3.2.1 FIVE PORTER FORCES

In 1979, Michael Porter argued that besides the intensity of price rivalry between industry competitors, the level of competitiveness in an industry is influenced by additional forces. Consequently, Porter devised the five forces framework to examine the competitive dynamics of an industry and evaluate its ability to generate profits. The five key forces that shape competition in an industry are the threat of substitute products and new entrants, the bargaining power of buyers and suppliers, and the intensity of rivalry among existing competitors. Weak forces benefit many firms while strong ones lead to unattractive returns on investment (Porter, 1979; Ovans, 2015).

By effectively assessing the underlying causes and forces, companies can identify their strengths and weaknesses. This helps in developing strategies to leverage capabilities, providing effective defense, influencing the balance of forces through strategic moves, improving the company's position, and anticipating shifts in the underlying factors. The aim is to capitalize on changes by selecting a fitting approach for the altered competitive environment before rivals become aware of it.

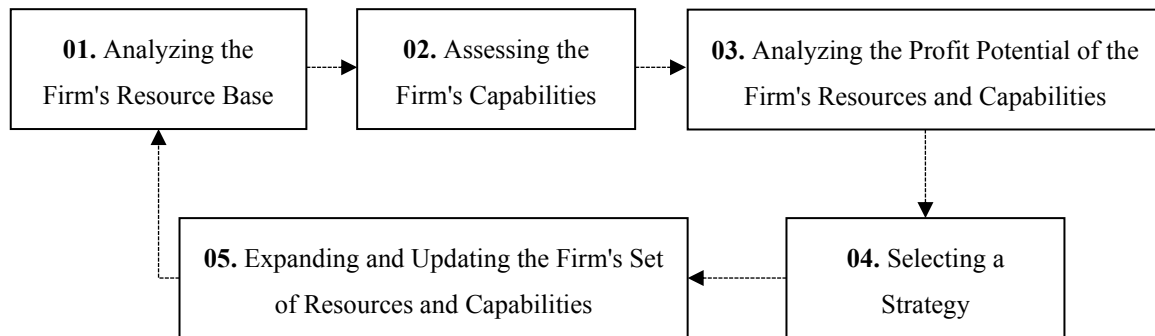
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### 3.2.2 RESOURCE-BASED VIEW (RBV)

A well-crafted strategy is vital for managing organizations effectively. It not only enhances decision-making but also streamlines coordination and prioritizes long-term goals. Therefore, according to Grant (1991), a long-term strategy should focus on resources and capabilities as a more stable foundation instead of external factors. Penrose's company growth theory echoes this, viewing firms as resource bundles (Saadatmand et al., 2018). Resources are defined as owned or controlled factors, and capabilities, the ability to deploy these resources, from the core of Amit & Schoemaker's (1993) perspective. Over time, capabilities evolve

through complex interactions among the company's resources and can be either tangible or intangible processes (Barreto, 2010).

To ensure a robust groundwork for long-term success, Grant (1991) resource-based theory for strategy formulation relies on the following five stages:



*Figure 1. Stages of Resource-Based View*  
 Source: Own Illustration based on Grant (1991)

Furthermore, RBV is based on two assumptions: resources and capabilities are distributed heterogeneously between companies and this heterogeneity should be sustained over time. Why? One of the values that companies seek is consistency, so the condition of heterogeneity must be long-lasting in order to generate value (Saadatmand et al., 2018). In line with Peteraf (1993, pp.184), the presence of heterogeneity is the root of imperfect mobility, wherein resources that are immobile due to their idiosyncrasies or specific firm nature are heterogenous and thus, less likely to be imitated. These assumptions suggest that, as resources are distinctive and scarce, firms achieve profits (Saadatmand et al., 2018).

However, this model does have its drawbacks in identifying the key resources that contribute to a company's successful performance. Therefore, VRIO framework (formerly VRIN) emerged to address this limitation.

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### 3.2.3 VRIO FRAMEWORK

Not all resources and capabilities hold the potential to sustain competitive advantage, prompting the need for an evaluation of their attributes and utility (Wernerfelt, 1989; Barney, 1995). The VRIN model explored by Barney (1991), reinforces the overall validity of RBV by stating that crucial resources must be valuable, rare, inimitable, and non-substitutable. Four years later, Barney (1995) proposed the VRIO framework, introducing the organizational level. It assesses the value, rarity, imitability, and organization of a company's resources and capabilities to determine whether can contribute to sustainable competitive advantage.

Results	Competitive Disadvantage	Competitive Parity	Temporary Competitive Advantage	Temporary Competitive Advantage	Sustained Competitive Advantage
<i>Value</i>	×	✓	✓	✓	✓
<i>Rarity</i>	×	×	✓	✓	✓
<i>Imitability</i>	×	×	×	✓	✓
<i>Organization</i>	×	×	×	×	✓

Table 2. VRIO Framework

Source: Own Analysis based on Barney (1995)

By applying this framework, a firm can effectively evaluate the value, rarity, and level of difficulty in replicating its resources and capabilities. Moreover, allows a company to determine whether it possesses the necessary tools to extract value from them.

At the end of the day, lasting competitive advantage cannot be achieved simply by assessing the opportunities and threats of the environment and doing business only in low-risk, high-opportunity environments. Instead, it lies in the organization’s own unique resources and capabilities mentioned above (Barney, 1995, pp. 60). Once these are identified, the company can develop strategies to leverage them in order to gain a competitive advantage over its rivals (Peteraf, 1993).

### 3.2.4 DYNAMIC CAPABILITIES FRAMEWORK

In rapidly changing environments driven by innovation, the RBV of the firm encounters limitations in dynamic markets, prompting the development of the dynamic capabilities (DC) framework (Teece et al., 1997). These drawbacks stem from its perceived static nature and its inability to clarify how firms sustain competitive advantages in “*high velocity*” and “*hypercompetitive*” environments (Bourgeois & Eisenhardt, 1988; D’Aveni, 1994).

Enterprise capabilities fall into ordinary and dynamic capabilities, where the former involves the performance of basic operational functions, and the later represents “*higher-level activities*” steering enterprises toward high-yield endeavors, requiring resource orchestration (Teece, 2014).

Initially, DC were defined as a firm’s capacity to adapt internal and external competencies to swiftly changing environments (Teece et al., 1997) and according to Eisenhardt & Martin (2000), they have strategic value in manipulating resources for value creation. Years later, this concept fragmented into “*the capacity to sense and shape opportunities, to seize opportunities, and to maintain competitiveness through enhancing, combining, protecting, and, when necessary, reconfiguring the business enterprise’s intangible and tangible assets.*” (Teece, 2007). Barreto (2010) furthered this notion, viewing DC as a firm’s potential to systematically solve problems by sensing opportunities, making timely decisions, and changing its resource base in a market-oriented manner.

The structure of the DC framework is illustrated by Teece (2014) who acknowledges that dynamic capabilities do not operate in isolation to achieve competitive advantage and long-term financial success.

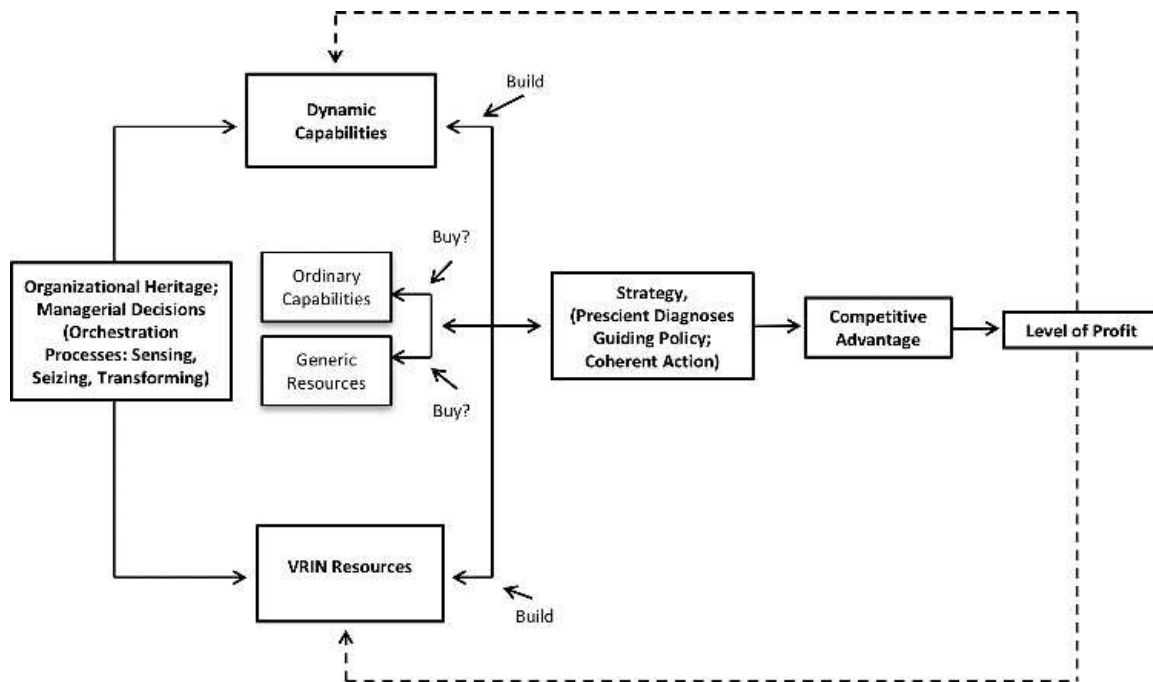


Figure 2. The Logical Structure of the Dynamic Capabilities Framework

Source: Teece (2014)

This framework highlights a company’s role in capitalizing on technological and market opportunities by constantly assessing their potential (Teece, 2014). There is a direct relationship between DC and a company’s performance if the resource base aligns with VRIN criteria (Barreto, 2010). An example of performance measures is environmental fitness proposed by Helfat et al. (2007).

However, while robust DC are essential, they are not enough on their own to maintain a competitive edge, a strong strategy is also crucial (Teece, 2014). Teece (2014) accentuates that an effective strategy demands an impartial assessment, clear policies, and decisive action, promoting adaptability and innovation. Precise diagnosis, alignment with policies, and coherent actions are critical for successful transformation and value enhancement.

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### 3.2.5 ANSOFF MATRIX

In 1957, Igor Ansoff introduced the Ansoff Matrix, a conceptual framework outlining four distinct growth strategies. This two-by-two model simplifies strategic decision-making for businesses, aiding in assessing market expansion and new product development opportunities (Meldrum & McDonald, 1995).

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<b>Growth Strategy</b>	<b>Definition</b>
<i>Market Penetration</i>	Focuses on existing products to existing markets to strengthen a business’s position through heightened market share
<i>Market Development</i>	Adapts existing products for new markets facilitating expansion into untapped markets without altering core offerings
<i>Product Development</i>	Seeks new products for existing markets often involving substantial R&D as well as expanding the product range
<i>Diversification</i>	Ventures into new products for new markets, involving a break from past patterns and traditions and potential organizational and structural changes

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*Table 3. Ansoff Matrix’s Growth Strategies*

*Source: Own Analysis based on Ansoff (Meldrum & McDonald, 1995)*

Diversification, known as the highest-risk strategy, is segmented into three types: Vertical, Horizontal, and Lateral. These approaches involve expansions into intermediate manufacturing, similar markets, or entirely unrelated markets. Employing diversification can stabilize sales during economic downturns, mitigate risks, counter technological obsolescence, or reinvest earnings (Ansoff, 1958).

The Ansoff Matrix stands out for its simplicity and practicality, aiding companies in revenue and profitability augmentation. It facilitates growth potential assessment and strategic

decision-making in line with a company's capabilities, dynamic environment, and long-term objectives.

### 3.3 AGILITY AT THE HEART OF A RESILIENT GOVERNANCE

The DC framework underscores the necessity of adaptability in volatile markets and strategic mobilization of resources. Li et al. (2021), alongside influential researchers, link this framework to market agility, emphasizing swift resource deployment and creative responsiveness (Dove, 2002; Goldman et al., 1995). Market agility involves two critical dimensions: alertness and responsiveness. Alertness denotes the capability to spot environmental shifts and discern inherent opportunities, whereas responsiveness signifies a company's adeptness in taking suitable actions once environmental signals are recognized (Li et al., 2021).

The outbreak of COVID-19 has highlighted the critical necessity for rapid and comprehensive action to protect public health and mitigate its economic repercussions. Effective leadership and agile, adaptive governance have become increasingly important (Janssen & Voort, 2020). According to the authors, agility and adaptability are distinct yet complementary concepts. Agility allows for quick responses to unexpected changes and goes beyond work practices to shape organizational cultures, becoming a transformative mindset and approach (Lu et al., 2021; Mergel et al., 2021). It originated in the IT field, specifically for software development, but has since been expanded to the entire organization, based on the Agile Manifesto (2001). It is based on twelve principles and described by four values: prioritizing individuals over processes and tools, working software over extensive documentation, collaboration with the customer over the contract, and responding to change over following a plan. Various methods have been developed over the years, including eXtreme programming, scrum, lean software development, feature-driven development, crystal methods, and DevOps (Dingsøyr et al., 2012; Mergel et al., 2021). An agile organizational environment often involves nurturing horizontal communication, diverging from traditional hierarchical structures. It fosters open dialogues, encourages collaboration, and facilitates information sharing across diverse levels and departments.

In contrast, adaptability is systemically oriented, drawing on evolutionary theory to develop flexibility and resilience in dealing with change, with the aim of protecting society from instability (Janssen & Voort, 2020). Hence, adaptive governance prioritizes adjusting to changing circumstances and ongoing learning as critical for survival, while agile governance is

an “organizational culture and collaboration methods to achieve a higher level of adaptability” (Janssen & Voort, 2020; Merge et al., 2018). In summary, incorporating agile and adaptive governance can be an advantage in tumultuous environments, where rapid responses and flexibility can deliver a sustainable competitive edge.

**IV. A CASE STUDY OF INNOVATION AND RESILIENCE**

**4.1 SANTANDER OVERVIEW<sup>3</sup>**

*“Our mission is to redefine banking through global solutions and common platforms that are efficient and flexible. We must be able to adapt to constant change, and for that, we rely on those who make a difference, our people.” - Santander Global Tech (2021)*

Established in 1857, Santander, a retail and commercial bank, remains dedicated to fostering prosperity for individuals and businesses. Evolving from a regional Spanish bank to a global financial giant, Santander’s unwavering commitment to enhancing CX and fostering innovation has propelled its transformation. This transformation, geared towards client-centricity (B2B2C), has enabled Santander to serve its clients better and rapidly adapt to changing market dynamics. As the parent entity of 743 subsidiaries within the Santander Group, its structure comprises primary segments delineated geographically, a Corporate Centre, and secondary sectors organized by business type.

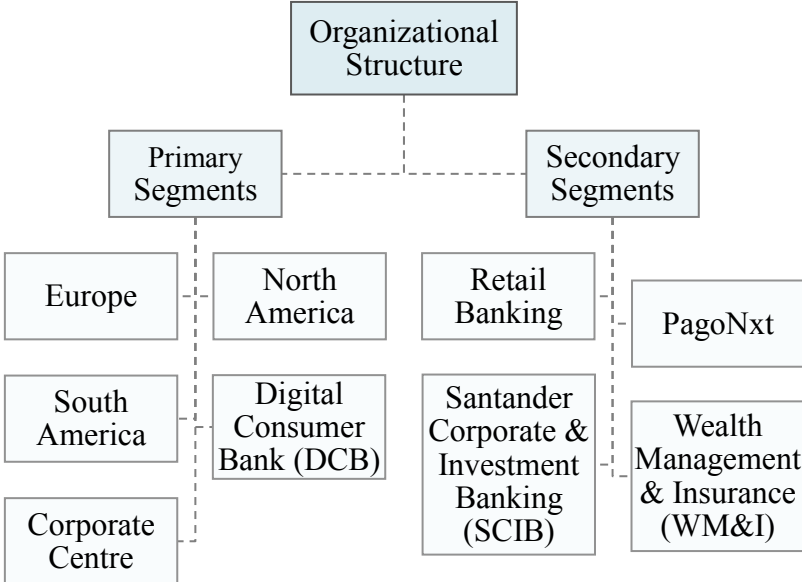


Figure 3. Santander’s Organizational Structure

Source: Own Analysis based on Santander Annual Report (2022)

<sup>3</sup> In this sub-chapter, information has been retrieved from multiple sources, including the cited authors, Santander’s website, Letters from CEO and Executive Chairman, interviews featured on Santander’s YouTube, and a virtual interview conducted with Mariano Saúca Blattner.

Santander's global expansion has secured a significant presence across Europe (Spain, Portugal, UK, Poland) and the Americas (US, Mexico, Brazil, Chile, Argentina, Uruguay, Peru, Colombia), with Europe accounting for 33% of the bank's profit and South America contributing 31% in 2022. North America and the DCB added 25% and 11% to the profit, respectively. This diversified geographic footprint stands out as a critical aspect of Santander's strategy.

Financially, 2022 displayed robust outcomes compared to 2021: a 12% revenue surge, a record profit of €9,605M, bolstered by a 23% EPS growth and a RoTe of 13.4% due to share buybacks. Notably, assets and customer funds surged by 9%, with a 7M increase in the customer base, marking an 8% rise in loyal and digital customers, reflecting improved CX indicated by a higher net promoter score (NPS) among the top three in customer satisfaction across eight core markets. Employee numbers also saw a 4% increase. Santander's financial statements paint a picture of strength: a 7% growth in the loan portfolio, a robust capital level of 12.04%, and a controlled CoR<1, portraying a well-managed and promising institution.

Competitively, Santander stood as the fourth-largest European bank by total assets and by market capitalization, stood the second-largest bank in the eurozone, and the leader in Spain. Globally, its competitors include JPMorgan Chase, Bank of America Corp, Wells Fargo, Industrial and Commercial Bank of China, HDFC Bank, and HSBC Holdings PLC. Within Europe, key competitors encompass HSBC Holdings PLC, BNP Paribas, UBS, Intesa Sanpaolo, ING Group, Sberbank, Nordea Bank, and BBVA. Domestically in Spain, it competes with BBVA, Caixabank, Banco de Sabadell, Bankinter, and Unicaja Banco.

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#### 4.1.1 STRATEGIC MANAGEMENT AND ORGANIZATIONAL CULTURE

*"We are confident that our business model will allow us to continue to successfully navigate the global changes while seizing opportunities to create value for our stakeholders"* - José Antonio Álvarez, Vice Chairman and CEO (Santander Letter from the CEO, 2020)

#### **Business Model and Sources of Competitive Advantage**

Santander purposes to be the best open financial services platform by acting responsibly and earning the lasting loyalty of its stakeholders. Through "The Santander Way," the bank fosters inclusivity, emphasizing simplicity, personalization, and fairness in its operations. Core behaviors ("TEAMS") and risk culture ("Risk Pro") further fortify its business approach. The bank views value creation as a cyclical process: an engaged team fosters customer loyalty,

leading to robust financial results. This loop, driven by three core pillars - customer focus, scale, and diversification - underpins the bank's value generation and competitive advantages.

**Customer Focus** centers on improving operations through Santander Digital Bank expansion and cultivating deeper customer relationships via simplified offerings and superior CX across multiple channels.

**Scale** seeks to leverage in-market scale with a global network to achieve greater profitability and support local banks.

**Diversification** sets for business diversification across customer segments, geographical diversification between developing and mature markets, and a rock-solid and diversified balance sheet to deliver recurrent pre-provision profit with low volatility and overcome regional challenges.

Santander's powerful brand, symbolized by a red flame representing light, warmth, and strength, reflects its commitment to prosperity and technological advancement. In 2022, it ranked 3<sup>rd</sup> among global banks, climbing from 6<sup>th</sup> in 2020, as per the BrandZ ranking.

Besides, the Group continued implementing best practices, seamlessly integrating ESG criteria into its operations, securing a distinct competitive edge (e.g., partnership with Ecovadis as an alternative to structure sustainability-linked supply chain finance). Notable initiatives include extensive green finance allocations (e.g., SCIB allocated €94.5 billion to green finance, securing the 2<sup>nd</sup> global position in project finance renewables), strategic investments in sustainable ventures, and a responsibility to reaching net-zero carbon emissions by 2050, detailed in the [Appendix](#). On the fronts of Governance and Social responsibility, the board composition demonstrated 40% female representation, while the equal pay gap remained commendably low at around 1%. Notably, over 10M individuals experienced financial empowerment since 2019, translating to a substantial sum exceeding €900M.

## 4.2 UNRAVELING SANTANDER EXPERIENCE<sup>4</sup>

*“There will be no prosperity without growth, and there can be no growth without confidence, investment, innovation, and a policy framework designed to support productivity*

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<sup>4</sup> In this sub-chapter, information has been derived from multiple sources, including the cited authors, Santander's official website, interviews featured on Santander's YouTube channel, and a virtual interview conducted with Mariano Saúca Blattner.

*improvements, efficient resource allocation, and profitability” - Ana Botín-Sanz de Sautuola y O’Shea, Chair Executive Director (Santander Annual Report, 2022)*

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#### 4.2.1 CORE BANKING SYSTEM

Historically, mere intermediaries, banks have evolved through technology, expanding their services to foster enduring client connections (Rahman & Qi, 2016). They aim to bridge commerce and finance for consumers and businesses, acting as vital conduits in the economic flow. In turbulent times, they serve as buffers, absorbing shocks.

Throughout the pandemic, Santander, like its counterparts, faced the urgent task of swiftly channeling capital and funds where needed, whether via state loans or financial market interventions. The objective was prompt fund distribution, including managing deferred loan payments while safeguarding the system’s integrity. Operational resilience became critical; Santander’s mandate demands unwavering support during extreme situations like COVID-19, conflicts, or market upheavals, amplifying the pressure on banks to endure such shocks and serve customers seamlessly.

Societal trends signal a shift away from cash toward electronic transactions and a transition from traditional banking methods to a reliance on mobile and online channels. In the UK, less than 5% of transactions now involve cash, with electronic modes dominating (Bank of England, 2023). Nevertheless, Santander remains attentive to cash preferences, values its branch network, and acknowledges the significance of contact centers. Ensuring universal access for customers - anytime, anywhere - is the cornerstone. Santander operates an omnichannel approach, recognizing the importance of keeping all avenues open for customers.

#### **Santander’s Legacy Infrastructure Challenges**

Santander grapples with formidable obstacles in adapting to evolving technology due to its reliance on dated infrastructure developed in the 1980s and 1990s, ill-suited for today’s landscape. The bank’s primary hurdle rests in its legacy CBS, comprising mission-critical servers and computers facilitating nearly every transaction (Williams, 2018; Sunio et al., 2023). Historically, these systems relied on closed legacy technologies, supporting fundamental operations like loans, mortgages, account management, and various transactions.

In the past, data centers were populated with servers, each designed for a specific function, causing critical delays in data integration. This antiquated setup deters adaptability

and responsiveness to modern digital demands. Santander’s systems, utilizing mainframe technology, operate on a sluggish “waterfall” development approach, taking weeks or even months to launch new products or services (Sunio et al., 2023). Legacy systems curtail innovation and limit customer outreach, constraining the bank’s agility. While mainframe technology offers robustness, it struggles to meet contemporary needs. It excels in vertical scalability but falls short in horizontal scalability, which is crucial in today’s dynamic banking environment. Despite its security, mainframes incur high maintenance costs, sluggishness, and inflexibility, necessitating a shift towards more agile and cost-effective technologies.

The banking sector faces the challenge of balancing operational resilience and security while meeting increasing demands for speed, stability, cost-efficiency, and diversification of products and channels. To navigate this landscape, Santander aims to modernize its systems through digital transformation, leveraging cloud technology and hardware abstraction. This shift involves virtualization, where software assumes tasks previously managed by hardware, creating a more abstract hardware layer. Santander’s private cloud, composed of hardware clusters and abstracting software, suggests a crucial step in its digital transformation, detailed in sub-chapter 4.4.2.

4.2.2 TECHNOLOGY TRENDS

Confronting outdated central systems, traditional bank branches are evolving. Santander, in line with industry shifts, strategically reduced physical branches by 4% CAGR from 2012 to 2022. Simultaneously, the bank witnessed a 1% CAGR rise in its workforce, signaling Santander’s commitment to digital banking and technological advancements amidst changing customer behaviors (Figure 4).

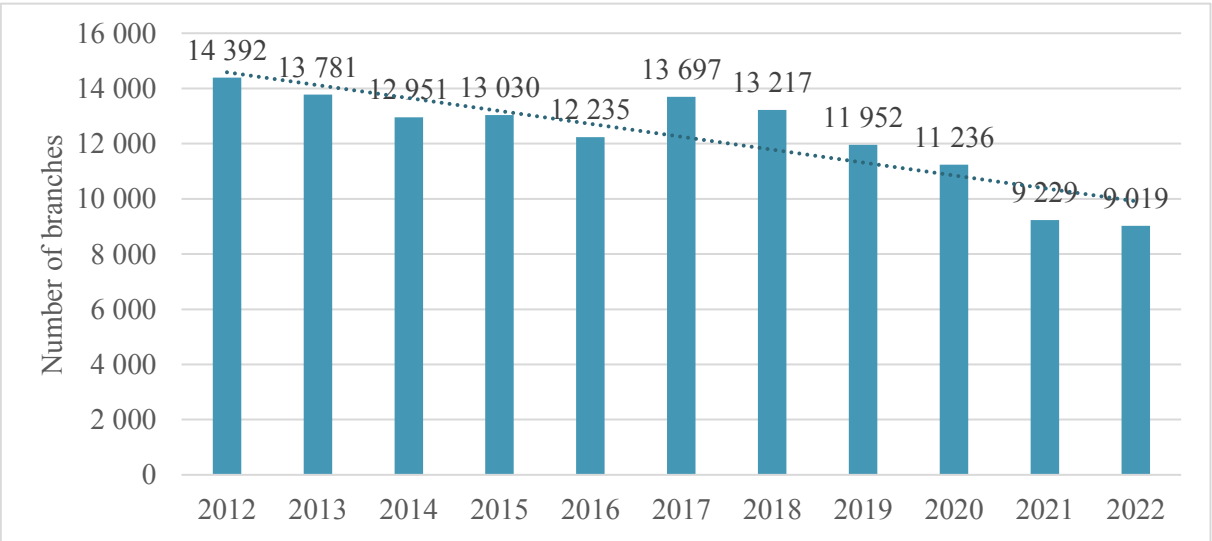


Figure 4. Evolution of Santander's Physical Branch Network (2012-2022)  
 Source: Own Illustration based on Santander Annual Reports (2012-2022)

In step with technological trends, Santander, among other institutions, harnesses various emerging technologies:

**Blockchain** revolutionizes transactional integrity by eradicating double spending, ensuring trust, and preventing unauthorized modifications within an agreed-upon chain. This decentralized, real-time ledger underpins P2P networks, reducing reliance on intermediaries for faster, cost-effective operations. According to Buitenhek (2016) and Khadka (2020), Santander InnoVentures identifies numerous applications, including digital currency, fraud prevention, cross-border payments, and more, projecting substantial infrastructure cost reductions.

**AI** refers to systems that use technology to perform tasks that conventionally require human intelligence, such as recognizing visual inputs, analyzing speech, and making decisions. It is distinct due to advancements in algorithms, data storage, and specialized hardware. In banking, AI transforms customer experiences, automates routine tasks, optimizes operational efficiency, and facilitates conversational banking. Forbes (2023) and Deloitte (2021) highlight AI significant impact on customer service, fraud detection, risk assessment, debt collection, and regulatory compliance.

**Cloud Computing** allows banks to foster innovation in their business operations and customer engagement. Cloud-based core banking systems offer many benefits, including computing, storage, and networking services. Banks leverage cloud providers to reduce costs, enhance scalability, agility, speed, and operational flexibility. Williams (2018) discusses this transition, emphasizing how it modernizes core systems, bolsters IT capabilities, and facilitates rapid solution deployment via APIs.

**Big Data Analytics** refers to high-volume, high-velocity data sets that empower banks to improve decision-making, emergency response, customer service, and supply chain performance. Ahi et al. (2022) mention how banks harness big data to enhance their dynamic capabilities, international performance, risk mitigation, partner selection, contract drafting, and demand forecasting, optimizing business operations and decision-making.

**Cybersecurity Measures** are vital for safeguarding information against unauthorized access, cybersecurity remains a top priority in banking. Despite a 5% CAGR decline in global malware attacks from 2015 to 2022, the finance and insurance sector remains a prime target, with significant cyber incidents (Statista, 2023). Santander (2021) emphasizes the importance of ensuring integrity and confidentiality amid persistent cyber threats.

### 4.3 IMPACT OF COVID-19

The global outburst of the pandemic in 2020 triggered widespread disruption across economies and financial systems, impacting various economic stakeholders worldwide. Financial markets experienced heightened tension and volatility, significantly affecting banking sector performance and stability. Notably, bank stock prices in multiple countries, including Canada, France, Germany, Italy, and the US, faced negative impacts amid the pandemic-induced closures. These effects extended to loan dynamics, with studies reporting mixed demand trends - initial positive shocks followed by decreased demand due to heightened uncertainty and risk, leading to increased credit risk. In response to this crisis, measures such as liquidity support, borrower assistance programs, and monetary easing were swiftly implemented (Shabir et al., 2023).

Contrary to the 2008 crisis, banks assumed a crucial role in mitigating the impact of the pandemic, as evidenced in Santander's Annual Report (2020). The year witnessed global bank stocks underperforming the broader market due to widespread business closures and consumer adherence to lockdown measures. European banks, affected by the European Central Bank's (ECB) guidelines on dividend cancellations and share buyback programs, experienced GDP contractions in the initial half of the year. Consequently, there was a short-term downward pressure on share prices, with indices like Stoxx Europe 600 Banks dropping by 24.5%, Spain's Ibex 35 declining by 15.5%, and Santander's shares plummeting by 29.0%. This period also led to an escalated risk profile, marked by increased provisions and budgetary deviations. However, with a reinforced control environment and the optimism surrounding vaccination announcements, market sentiment shifted favorably, particularly benefiting cyclical sectors, notably banks. Santander's share price notably rebounded, marking a 65.6% increase during this phase. EPS recorded an unprecedented negative value at €0.54, a stark contrast even to the 2008 crisis. The underlying attributable profit mirrored this trend, showing a substantial decline in 2020 (38% compared to 2019) but remained positive ([Appendix](#)).

## 4.4 SANTANDER STRATEGIC CHANGES<sup>5</sup>

As a customer-centric and responsible bank, Santander took all necessary actions during 2020 to manage credit risk, maintain profitability, and to navigate this turmoil. Their main focus was on two goals:

1. Helping people and businesses overcome the crisis;
2. Accelerating transformation to a digital and more responsible bank.

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### 4.4.1 HELPING PEOPLE AND BUSINESSES OVERCOME THE CRISIS

In response to COVID-19, the Group implemented a range of **contingency plans** and ensured **business continuity** to continue to run operations smoothly with the same quality while prioritizing the welfare of their stakeholders. Santander established a Special Situations Management Committee to monitor crisis management and guarantee effective decision-making through regular dry runs to raise awareness. These contingency plans allowed them to respond quickly and protect their stakeholders. To ensure business continuity, the Group took special actions in all countries, namely social distancing and shift patterns, designation of critical staff, and segregation of technology infrastructure.

#### Customers

They supported their 148M customers by preserving their health and guaranteeing 24/7 service. Santander provided new digital solutions and financial services using cloud technology and increased its capacity to manage greater demand for online banking and calls to their contact centers. Besides, they provided easy access to government-backed lines of credit, granted payment and repayment deferrals to support their customers, provided moratoria on loans totaling €112 billion, and additional support through liquidity, credit facilities, grace periods, and reduced fees.

#### People

After a big performance test on its VPNs, Santander swiftly transitioned over 100,000 employees to teleworking through successful cloud-based solutions. The bank supported its workforce with digital collaborative spaces (Work Cafés, Ágil branches, SmartBank), financial

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<sup>5</sup> In this chapter, information has been derived from multiple sources, including the cited authors, Santander's website, interviews featured on Santander's YouTube channel, and an interview conducted with Mariano Saúca Blattner.

aid, and psychological support, implementing clear workplace protocols and a global training platform named Dojo, covering 243 skills with over 38,000 learning activities. Prioritizing an employee-centric approach, the bank fostered a culture of active engagement, where 86% of employees appreciated the bank's response to the crisis. Open virtual meetings with the Group CEO ensured transparent communication and alignment with agile hierarchy goals, promoting flexibility and rapid value delivery.

### **Shareholders**

The corporation prioritized financial resilience and trust-building for shareholders by ensuring uninterrupted service which attracted 30,000 new shareholders in 2020. In October 2020, shareholder approval enabled the reinstatement of dividend payments, including a dividend per share for 2019 results and a potential 2021 payout, complying with ECB guidelines and AGM resolutions.

### **Communities**

Santander united under the banner "All. Together. Now." initiating global fundraisers like the Together Solidarity Fund for healthcare supplies. The board voluntarily reduced top management's remuneration by 50% and directors' fees by 20%, channeling the savings toward COVID-19 relief efforts. Aligning with ECB recommendations, Santander canceled the 2019 final dividend and the 2020 dividend policy, contributing a total of €105 million alongside its employees to aid government initiatives and charitable causes. These contributions encompassed vital health equipment, university support, and aid for vulnerable communities.

Santander's pandemic response exhibited adaptability, dedication to stakeholders, and adept crisis management, acknowledged through accolades like the Euromoney awards for COVID-19 leadership in Europe and recognition as the best bank for SMEs. Additionally, The Banker honored Santander as the best bank in the Americas, Argentina, Brazil, and Spain in 2020.

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## **4.4.2 ACCELERATING TRANSFORMATION TO A DIGITAL AND MORE RESPONSIBLE BANK**

In the dynamic realm of global finance, Santander stands out as a pioneer, navigating challenges with an innovation-driven resilience. As customer expectations evolved, the bank accelerated its digital trajectory, strategically embracing a multi-channel approach and digitalizing core processes and operations.

During the pandemic's zenith, digital channels became pivotal, accessed roughly 190 million times per week, reflecting a substantial shift in customer behavior. Pre-crisis, digital customer numbers were on the rise, but the pandemic catalyzed this trend. By 2020, 44% of Santander's sales occurred via digital channels, a significant leap from 36% in 2019, serving over 42M digital customers, with mobile banking favored by more than 35M.

This digital transformation transcended mere responsiveness; it was an ongoing evolution that accelerated in 2020, fortifying the bank's resilience amid adversity. Santander grappled with two key challenges:

1. Adapting to a dynamic business landscape by embracing simplicity, personalization, and fairness while harnessing technology;
2. Pursuing inclusive, sustainable growth, aligning its operations with societal and environmental impacts, thereby fostering greater societal and economic equilibrium.

The journey began in 2014 with Santander's pledge to digital evolution, marked by establishing a Centre of Global Excellence, fostering agile methodologies, and launching Santander InnoVentures, a fund propelling fintech startups' growth. This digital journey wasn't a spontaneous occurrence; it was guided by groundbreaking solutions like Mobile First (2014), Santander NEO CRM (significantly developed in 2016) offering comprehensive customer behavior insights, and notable blockchain initiatives like We.trade, Enterprise Ethereum Alliance, Fnality (tokenization fintech), Alastra, coupled with a Ripple partnership integrating RippleNet into One Pay FX (2018) - the world's first blockchain-based retail mobile application for cross-border payments. In 2018, Santander outlined its digital transformation focus for core banks, prioritizing seamless service delivery through digital channels and rapid, efficient product delivery. Their transformative agenda comprised five pillars: front-end transformation, back-end re-engineering, IT architecture evolution, tech integration, and becoming an agile, data-driven organization.

The narrative unfolds via the Santander Global Platform (SGP), encompassing Openbank (2017), Europe's largest fully digital cloud-based bank; Superdigital (2019), extending financial inclusion in Latin America; Global Merchant Services (2019) offering E2E payment solutions under Getnet; Pago FX (2019), an international payments app based on blockchain; and Global Trade Services (2020) in collaboration with Ebury via OneTrade, facilitating SMEs' access to global trade finance. Additionally, Santander introduced a new mobile app aimed at reducing branch visits, featuring a predictive financial agenda, geolocation for card purchases,

enhanced payment options, and heightened customer security through biometric authentication. The story extends to sustainable financing, demonstrated by Santander issuing the first E2E blockchain bond and becoming a reference in the issuance of green bonds, reaching €28 billion in green finance by 2022, with a predominant share in project finance (€12 billion). Given the Group's historical emphasis on mergers and acquisitions (M&A), it is unsurprising that the second-largest investment was directed towards M&A (€8.5 billion).

But none of this would have happened if security was not the number one priority for Santander, the protection against cybercrimes and fraud. In the bedrock of Santander's digital journey lies an unwavering commitment to cybersecurity. With a robust defense model of Protect, Detect, Respond, and Fraud Prevention, monitored round-the-clock by the Santander Fusion Center, the bank invests in continuous learning, hyper-specialization, and cutting-edge technology within its Cyber TechStack. Through regular training and global initiatives like Cyber Heroes, FS-ISAC, and the US Ransomware Task Force, Santander prioritizes awareness among employees and society. In 2022, the bank bolstered its cybersecurity measures, engaging in cyber exercises and obtaining certifications like ISO 27001. Santander's investments extend to cybersecurity innovation through strategic partnerships, as demonstrated by its alliance with Forgepoint Capital.

Santander's digital transformation is encapsulated in three strategic growth initiatives - "One Santander", "PagoNxt", and "Digital Consumer Bank". "One Santander" unifies operations and technology across markets, aiming to lead in NPS, boost digital sales, and enhance efficiency. "PagoNxt" combines payment businesses, targeting growth in merchant, trade, and consumer domains. "Digital Consumer Bank" leverages technology for a global digital finance business. This digital voyage underscores Santander's foresight, commitment, and relentless pursuit of excellence, positioning the bank as a transformative force in the financial landscape.

In specific geographies, Santander's digital revolution reflects substantial advancements and transformations.

### **Santander Portugal**

*"OutSystems' development approach contributed greatly to the success of the program. It improved our agile practices and helped engage business users in a much more responsive*

way.” - Domingos Ferreira, IT and Operations Director of Santander Consumer Portugal (OutSystems Consumer Stories, 2020)

Santander Consumer Portugal initiated a robust digital transformation in 2017, partnering with OutSystems and KPMG to overcome challenges posed by a rapidly changing market and complex legacy IT systems. Recognizing the need for agility, the institution replaced 70% of its core systems, simplifying operations and accelerating the rollout of innovative products. The low-code approach supports agile development, code reusability, and efficient deployment of APIs, as evident in the “NeXT Future” program’s 47 initiatives from 2017 to 2019. These initiatives, operational since late 2018, include E2E digital processes, robust user authentication, versatile communication gateways, and workflow services.

### **Santander UK**

In 2022, Santander UK underwent a notable digital transformation, capitalizing on dynamic capabilities and low-code application development techniques facilitated by the Salesforce and AWS partnership established a year earlier. This strategic initiative aimed to streamline integration processes and shorten deployment times.

The focal challenge revolved around Santander’s aging contact center platforms, necessitating replacement to ensure compatibility across all channels and future-proof technology. The adoption of Salesforce’s Service Cloud Voice and Amazon Connect revolutionized telephony systems, integrating conversational channels natively into Salesforce. By melding digital channels with Customer 360, agents gained in-depth customer insights encompassing purchasing patterns, challenges, and historical interactions. The platform’s enrichment continued with automated transcription and sentiment analysis, heightening interactions’ relevance and actionability. Amazon Connect’s scalability and robust contact handling merged seamlessly with Salesforce’s sentiment analysis, optimizing relevance for agents. This partnership empowered Santander to swiftly confront business challenges, smoothing integration barriers and advancing toward value-driven solutions. The scope expanded across analytics, martech, integrated offerings, customer-driven innovation, and AI/ML. Initially focusing on integrated offerings, leveraging Service Cloud Voice, Santander plans to incorporate the remaining four use cases by 2023.

The shift to the Cloud Contact Center delivered substantial benefits, enabling Santander UK to establish the platform in five months, pilot it with 100 agents, and provide personalized

customer experiences. Small yet dedicated teams from Amazon and Salesforce demonstrated exceptional efficiency, receiving positive feedback from agents, and yielding tangible productivity improvements. The transition was seamless, with committed individuals embracing new features and capabilities. Additionally, Santander acquired real-time supervision and reporting, enhancing insights into individual agent performance.

## **Santander Group**

*“Innovation is at the heart of our transformation, helping us serve customers better while delivering profitable growth and value creation. Gravity, and many other examples across the group, are testament to this.”* - Ana Botín-Sanz de Sautuola y O’Shea, Chair Executive Director (Santander Press Release, 2023)

The banking industry, heavily reliant on mainframe technology, distinguishes itself by conducting nearly 100% of its operations within this system. In 2020, Santander embarked on a monumental task - to transition away from mainframe technology, a challenge faced by many institutions. The complexity of mainframe reliance, compounded by vendor lock-in issues, historically impedes such transitions due to associated costs and dependencies. This shift required regulatory approval within the highly regulated banking realm, where customer service and data security hold paramount importance. Operational disruptions could potentially lead to severe repercussions on reputation and customer relationships, prompting Santander to navigate a proof-of-concept phase, addressing technological readiness and regulatory compliance intricacies.

In 2021, the Group resolved to establish a cloud environment, a key decision driven by the need for agility in a rapidly changing landscape, reflecting bank’s adaptability but also unlocking innovative potential of cloud technology. The Group’s hybrid Cloud strategy, integrating private (Optimized Hosting Environment) and public cloud (Amazon, Microsoft) clouds, ensures operational coherence, efficiency, and security. Automation, a linchpin of this strategy, permeates the IT lifecycle, from infrastructure provisioning to software development, embedding quality and regulatory compliance transparently.

Central to this transformative journey is Gravity, Santander’s pioneering cloud-native banking platform, signifying a paradigm shift transcending the mere migration from COBOL to COBOL while maintaining a unified code structure, thus mitigating operational risk and obsolescence while fortifying the bank’s stability and technological prowess. Santander’s

journey with Gravity started in 2022, driven by the imperative to modernize its mainframe technology amid challenges of cost dynamics, skills availability, educational gaps, and agility concerns. By integrating in-house capabilities with insights from external providers, Santander's pioneering platform epitomizes the institution's unwavering commitment to innovation. Its success story encompasses Santander's distinction as the world's first major bank to harbor in-house software capable of digitally transforming core banking. The deployment of Gravity spanned across significant realms, including Corporate Banking UK, Santander Consumer in Chile, and SCIB in Spain - the latter representing Santander's sole migration to the public cloud through a strategic partnership with Google. This collaborative endeavor underscored the bank's progressive outlook, marking its foray into the public cloud sphere and setting a precedent for industry-wide transformations. This global implementation has accrued multifaceted benefits, streamlining operations, enabling faster data access, and facilitating management of substantial accounting and treasury operations. The platform's envisioned migration of core banking operations to Gravity by 2024 seeks to manage over one trillion technical executions annually.

The critical factor in Gravity adoption was Santander's recognition that merely modernizing technology and cost reduction would not suffice in a competitive landscape. Instead, the move aimed to bolster responsiveness, enhance time-to-market, and embrace real-time information access. Gravity's tangible business benefits include shortened product launch timelines and adoption of event-driven architecture for immediate crucial information dissemination. Moreover, Gravity empowers Santander to diversify business models swiftly, fostering collaborations with various industry players and leveraging the platform's agility to create new financial offerings. The platform's implementation in Spain unearthed dormant 55,000 JCL processes, leading to enhanced operational efficiency and a remarkable 60% cost reduction. Beyond cost efficiency, the shift away from batch processes represented a transformative leap. By reducing reliance on back-office departments and minimizing human intervention, Gravity significantly mitigated the risk of errors, enhancing operational integrity and reliability within Santander's operational framework.

The platform's success has not gone unnoticed, with Santander being named the Most Innovative Bank globally by Financial Times' The Banker. Its groundbreaking feature - facilitating dual operational mode (Dual Run) - enables real-time testing without disrupting ongoing operations. This capability, honed through collaboration with Google Cloud, extends beyond Santander, offering mainframe migration services globally.

Lastly, Gravity instigated a cultural shift within Santander, creating a modern, high-performing environment, attracting top-tier talent among its 16,500 developers and engineers. Furthermore, the platform embodies Santander's commitment to responsible banking, reducing IT infrastructure energy consumption by an impressive 70%.

## V. TEACHING NOTE

Presenting an engaging pedagogical instrument, this section delves into the Santander case study, offering teaching objectives, guiding questions, and illustrative solutions. This facilitates a practical application of theoretical frameworks from [Chapter III](#) to a tangible scenario.

### 5.1 SYNOPSIS

Santander, a venerable institution with a rich 165-year history, stands as a testament to resilience amid industry upheavals. Analyzing the bank's response to global crises, digital transformations, and heightened competition, this case study scrutinizes strategic maneuvers amidst economic uncertainties. Geographically diversified, Santander pursues a digital transformation, aiming to be the premier open platform for global financial services. Collaborations with technology stalwarts like OutSystems, Ripple, Salesforce, AWS, and Google Cloud leverage blockchain, cloud, big data analytics, and AI to redefine core systems. Focused on customer and operational resilience, Santander pioneers Gravity technology - an internal cloud-native platform, marking it as the world's first major bank to digitize core banking with native software.

### 5.2 TEACHING OBJECTIVES

In this section, students are invited to put their critical thinking into practice. They will develop an understanding of business adaptive strategies during times of crisis and beyond, by rigorously examining internal resources and scrutinizing external environmental factors influencing the banking industry. The teaching objectives are:

1. Evaluate how economic downturns influence strategic management in banking.
2. Analyze the effectiveness of Santander's strategic adjustments, emphasizing digital transformation, and their repercussions on CX and operational resilience;

3. Apply renowned frameworks – Porter’s Five Forces, Resource-Based View, VRIO Framework, Dynamic Capabilities Framework, and Ansoff Matrix - to real-world scenarios;
4. Recognize the importance of agility in today’s volatile business environment to foster innovation.

### 5.3 TEACHING STRATEGY

Tailored for undergraduate and postgraduate students in Business Management, Economics, Strategic Management and Business Strategy, this pedagogical study strategy aims to deliver an engaging and interactive learning experience.

The approach unfolds in three phases:

1. **Preparation Phase:** Instructors furnish relevant reading materials and preset questions, prompting students to delve into Santander’s recent endeavors and industry trends, fostering informed analyses.
2. **Guest Speaker Session:** A dynamic 60-minute session explores themes like the impact of volatile business environments, digital transformation, and organizational agility. Encouraging active participation, students pose questions during this interactive phase.
3. **Group Discussion Phase:** Commencing with a 5-minute Santander-themed icebreaker video, this phase triggers a 45-minute group discussion among 4 to 6 students. Insights and perspectives are exchanged, and each group subsequently presents findings during a 15-20-minute debriefing session. Reflection and identification of key takeaways, successful aspects, and areas for improvement cap off the session.

Instructors are encouraged to adapt the strategy based on class dynamics and preferences, leveraging its structured framework as a foundation for a versatile and enriching learning experience.

### 5.4 SUGGESTED ASSIGNMENT QUESTIONS, ANALYSIS AND DISCUSSION

1. **How did Santander mitigate the impact of COVID-19 crisis? Explain what factors have changed the dynamics of competition in the banking industry considering the external environment of the bank and the resulting strategic adjustments.**

*Analyze the adaptive strategies adopted by Santander using strategic responses to crises framework and Porter's five forces.*

This question delves into the analysis of Santander's operating environment within the financial industry, emphasizing the impact of external factors both pre-pandemic and during the COVID-19 crisis. The imperative is to comprehend how Porter's forces have shaped Santander's position and identify the adaptive responses necessitated by the bank.

Prior to the pandemic, the financial sector witnessed a significant digital evolution, with banks embracing digital payment platforms and enhancing online banking experiences. Santander, aligning with industry trends, pivoted in 2018 to position itself as the premier open financial services platform, emphasizing responsibility and stakeholder loyalty. This strategic transformation was a response to the industry's challenge of adapting to the digital era and meeting tech-savvy customer expectations.

Post-2008, stringent regulations were implemented to fortify financial stability and consumer protection, coinciding with historically low global interest rates due to central banks' accommodative policies. The onset of COVID-19 heightened global financial market volatility, impacting bank stock prices, and necessitating increased provisions for potential loan defaults. Lockdowns accelerated the shift to online banking, reducing physical branches, and compelling banks to swiftly implement remote work setups.

#### **Threat of new entrants (moderate):**

Santander, an established entity within the financial realm, faces a moderate threat from newcomers aiming to establish themselves in this capital-intensive and highly regulated industry. The barriers to entry greatly hinder the attempts of these aspirants.

The high capital requirements present a barrier, demanding substantial financial investments to comply with restrictive government policy, develop infrastructure, and achieve competitiveness, although it depends on the size of the new entrants. The intense sector's regulatory landscape also poses a challenge, requiring a license for financial institutions and adherence to complex standards, thereby escalating costs, and delaying potential entry. Established banks like Santander have already attained operational efficiencies through their large size and market presence, and these efficiencies, often referred to as "economies of scale," allow these institutions to operate more efficiently and cost-effectively due to their size, extensive infrastructure, and widespread operations. These advantages are difficult for

newcomers to replicate, as they lack the scale and resources of established players. The disruption instigated by fintechs and bigtechs, exemplified by entities like PayPal, intensifies competition. These innovative players wield technological prowess and agility, challenging traditional banking models and narrowing gaps in certain segments. Sensing this shift, Santander, with its legacy systems, perceives these entrants as opportunities to modernize its CBS through strategic partnerships. Regarding the unequal access to distribution channels, the threat is low since the pandemic accelerated the shift of branch network to online channels.

Moreover, Santander's robust brand presence, diversified BM, loyal customer base, and investments in technology collectively fortify its defensive stance. This reinforces the barrier for new entrants, curtailing their scope to achieve exceptional profitability within the banking landscape.

#### **Bargaining power of suppliers (low-to-moderate):**

Within the banking sector, suppliers encompass entities providing technology, software, capital, and resources. The low-to-moderate classification arises from a concentrated supplier group. Santander, a major player, benefits from diverse supplier options, diminishing individual influence. While technological advancements and specific providers wield moderate impact, Santander's size empowers favorable negotiations. The transition from mainframe also reduces the power of vendor lock-in. Emphasizing ESG standards fortifies Santander's stance, encouraging suppliers to uphold high standards, reducing price pressures, and constraining their influence. The bank's ongoing commitment to risk management and responsible sourcing augurs well for sustained strength in this domain.

#### **Bargaining power of buyers (moderate-to-high):**

Buyer power in the banking sector is moderate-to-high, with customers demanding competitive prices and superior service. Santander mitigates this by leveraging its size and diversified BM to spread customer bases across various products and services. The bank's commitment to innovation and product differentiation further retains customers, reducing the likelihood of switching.

While individual consumers with smaller accounts wield limited bargaining power, larger groups, corporate clients, and high-net-worth individuals (HNWIs) possess more significant influence. This stems from factors like enhanced competition, low switching costs, standardized services, information accessibility, and regulatory safeguards. Santander must carefully manage

relationships across customer segments, providing competitive offerings to individuals while recognizing the substantial power of corporate and HNWI clients. Strategic management of these dynamics allows Santander to balance interests effectively and sustain a growth trajectory.

### **Threat of substitute products or services (moderate-to-high):**

The potential threat of substitutes for Santander leans towards a moderate-to-high level. These substitutes, including non-bank financial services and innovative fintech solutions, offer alternatives that fulfill similar customer needs in the banking sector. Fintechs and bigtechs, introducing digital banking alternatives, challenge Santander's traditional services based on customer preferences, regulatory dynamics, and their pace of integration. Often designed to be more user-friendly, convenient, and cost-effective, these alternatives encompass non-banking financial services like investment products or P2P lending platforms, impacting specific segments of Santander's business due to their tailored nature. The rise of digital payment platforms and mobile wallets is also reshaping payment behaviors.

Despite these substitutes, traditional banking services like lending, deposit accounts, wealth management, and insurance remain vital within the financial ecosystem. Santander's ongoing innovation strategies and diverse service offerings, coupled with its established trust and high client satisfaction (ranking in the top 3 NPS positions across 6 out of 9 geographies in 2020), work to mitigate the impact of substitutes, warranting a moderate-to-high threat level classification.

### **Competitive rivalry (high):**

Analyzing the aggressiveness of competitors and market competition, this force depends on various factors like competitor number, size, diversity, industry concentration, growth, product differentiation, switching costs, fixed costs, and exit barriers, as per Porter's framework.

Competition in the banking industry is robust, influenced by decreasing switching costs affecting customer behavior. Santander faces fierce competition not only from local and regional Spanish banks but also from global players like JPMorgan Chase, Bank of America, HSBC Holdings, and BNP Paribas. The market's fragmentation, driven by increased demands in emerging economies and the influx of new competitors (neobanks, nonbanks, bigtechs, and fintechs), escalates rivalry as banks vie for differentiation, diverse services, and superior customer experience.

Santander grapples with barriers hindering new entrants, while technological disruptions from fintechs and bigtechs challenge traditional services. Despite moderate supplier influences, the bank's strong positioning aids in negotiating favorable terms. The evolving balance of power with customers necessitates innovation, while the looming threat of substitute products demands continuous adaptation and differentiation. In this competitive market, Santander's strategic resilience against these forces underscores the imperative of ongoing innovation and adaptability.

As the pandemic changed the dynamics of competition and the industry itself, Santander's management looked for responses to these forces through the strategic implementation of Wenzel et al. (2020) **crisis responses**. By applying this framework to Santander's case, it is possible to observe that the bank chooses to mix diverse strategies (Appendix).

While navigating through an economic slowdown, Santander displayed a significant level of **perseverance**, by prioritizing operation stability while emphasizing the health and safety of both employees and customers. The bank's focus on business continuity during the pandemic by adapting channels through transitioning employees to remote work setups, building a flexible workforce through training and agile working culture, improving internal procedures, and ensuring uninterrupted customer services, highlighted its resilience in trying to continue working and delivering its products/services as always. Moreover, the continuous investment in an unpredictable world driven by digital channels and technologies showcased Santander's unwavering commitment to evolving with the changing landscape and meeting customer needs. Santander strategically implemented **retrenchment** measures in support of the major strategy of **innovation**, notably seen in the reduced branch network and in its efforts to revamp the legacy CBS. Recognizing the limitations posed by outdated infrastructure, the bank embarked on a comprehensive modernization program. This initiative involved transitioning from traditional mainframe technology to cloud-based systems, facilitating increased agility, scalability, and responsiveness to market demands. The strategic overhaul aimed at reducing operational inefficiencies, enhancing adaptability, and improving the speed of service delivery by streamlining internal processes. An **innovative** approach was observed through Santander's branches innovation, acceleration of digital transformation, adoption of leading-edge technologies, embrace of initiatives such as the combination of Openbank's platform and services with SCF ability to capture customers, and investments in growth opportunities. For instance, One Santander, transformation of SGP into PagoNxt, and DCB as growth strategies

and the partnerships with Ebury and Mercury, coupled with the acquisition of technology-based assets from Wirecard.

Santander's multi-dimensional response combined innovative technological advancements with strategies aimed at maintaining business continuity, addressing legacy system limitations, and adapting to changing customer behavior. Through these **strategic adjustments**, the bank not only mitigated immediate challenges but also set the stage for sustained growth and competitiveness in an ever-evolving financial landscape.

**2. To what extent do Santander's dynamic capabilities have contributed to its ability to adapt swiftly to the crisis? Describe its BM and how it differentiates from competitors and sustains a competitive edge in its market.**

*Analyze the resources and capabilities of Santander using the VRIO framework, RBV theory, and dynamic capabilities framework.*

Following the exploration of Santander's COVID-19 response measures, a deep dive into dynamic capabilities unfolds, employing resource and capability assessments, VRIO framework application, and scrutiny of Barreto's (2010) four propensities.

**Resource Analysis:**

- *Financial Resources:* A robust financial stance, reflected in a liquidity ratio of 168%, empowers Santander's investments in technology, innovative ventures (e.g., Santander InnoVentures), and market adaptability.
- *Human Resources:* Strategic investment in talent acquisition and specialized programs fosters an agile, diverse workforce, propelling innovation, and operational excellence.
- *Technological Resources:* Anchored by a digital infrastructure aligned with strategic pillars, Santander harnesses advanced technology skills (API, blockchain, AI, robotics) to deliver innovative products, elevate customer experience, and differentiate itself.
- *Organizational Resources:* Santander's agile WoW, fortified brand reputation, and customer-centric ethos forge customer loyalty and retention, pivotal for sustainable growth.

- *Physical Resources:* A widespread network of branches, offices, ATMs, and secure data centers, equipped with cutting-edge technological systems, ensures operational reliability and customer accessibility.

### Capability Analysis:

This entails evaluating Santander’s prowess in sensing, seizing opportunities, and reconfiguring resources in response to evolving market dynamics.

- *Innovation and Learning:* Santander showcases adaptability through talent development, digitalization, and strategic partnerships with external experts and fintechs.
- *Customer-Centric Approach:* Integral to Santander’s business model, this capability enables personalized experiences and tailored solutions through data-driven insights.
- *Technological Capability:* Santander leverages technology trends to fuel digital transformation, operational efficiency, and user-friendly digital banking solutions.
- *Operational and Organizational:* Santander’s 165-year legacy underscores its adept management of large-scale operations, including a widespread branch network and a diverse employee base.
- *Risk Management and Compliance:* Santander’s bottom-up approach ensures a robust risk management framework, addressing economic, regulatory, cyber, and climate-related risks.

This holistic analysis illuminates Santander’s strengths and strategic positioning, showcasing its adaptability to market changes and the utilization of competitive advantages. The question remains: Can Santander sustain this remarkable success?

Resource/Capability	Valuable	Rare	Inimitable	Organized	Classification
<i>Innovation &amp; Learning</i>	Yes	No	Partially	Yes	Temporary Competitive Advantage
<i>Technological Infrastructure &amp; Digital Transformation</i>	Yes	Yes	Yes	Yes	Sustained Competitive Advantage

<i>Business Culture</i>	Yes	Yes	Yes	Yes	Sustained Competitive Advantage
<i>Risk Management &amp; Compliance</i>	Yes	Yes	Yes	Yes	Sustained Competitive Advantage
<i>Agility &amp; Adaptability</i>	Yes	Yes	Yes	Yes	Sustained Competitive Advantage

*Table 4. VRIO Analysis of Santander Resources and Capabilities*

*Source: Own Analysis based on Barney (1995)*

The table above shows that Santander has established sustained competitive advantages by leveraging its diverse business culture (brand reputation, global reach, customer focus), investing in technology, and continually adapting through risk management and compliance. However, it is worth noting that not all capabilities can offer long-term advantages. While innovation and learning are incredibly valuable in today's market, competitors may also have access to similar processes, making it less distinctive and limiting its rarity.

Santander's COVID-19 response was successful due to their agility and digital transformation. They aligned their dynamic capabilities with Barreto's propensities, enabling them to seize opportunities and make timely decisions. See the table below for details.

<b>Barreto's Propensity</b>	<b>Santander's Actions</b>
<i>Sense Opportunities &amp; Threats</i>	Applied AI-powered analytics to monitor market trends and customer behavior in real-time. Identified emerging financial service needs and potential risks, actively assessing top and emerging risks due to the pandemic (economic recession, regulatory changes, cyber risks, and intensified competition). These risks were thoroughly analyzed and utilized as inputs for the bank's risk management framework, including ICAAP, ILAAP, and recovery planning
<i>Seize Opportunities &amp; Threats</i>	Accelerated digital transformation via advanced technologies (Cloud strategy), and a hybrid distribution model (One Santander).

<i>Timely &amp; Market-Oriented Decisions</i>	<p>Forged strategic partnerships to integrate innovative digital solutions into banking services</p> <p>Adapted cybersecurity strategies to counter increased cyberattacks due to remote work. Expanded digital banking services, invested in AI-driven chatbots and customer-centric apps, and hired digital experts</p>
<i>Reconfigure Resource Base</i>	<p>Modernized core systems for enhanced agility and scalability. Strengthened cyber mechanisms and fraud management by making defense capabilities more agile, sustainable, and risk-based to further standardize and strengthen internal controls, through DLP and network segregation. Invested in talent development programs to enhance employees' skills and capabilities, and focused on sustainable finance initiatives</p>

*Table 5. Dynamic Capabilities of Santander Analysis*

*Source: Own Analysis based on Barreto (2010)*

In a broader sense, the bank implemented several measures in different segments to quickly adapt to changing circumstances, with most of the changes happening in the short term. Taking advantage of its online channels, which had more than 42M digital customers in 2020, the bank expanded and improved its services. Even during the crisis, Santander made market-oriented decisions by using its internal resources and ongoing digital transformation. By keeping a close eye on market trends through its strong risk management culture and proactive approach, the digital core rigidities of the past turned into core capabilities by scaling the digital team, improving software, and making managerial improvements in the portfolio, delivery, method payments, and online channels.

**3. Was Santander’s digital transformation strategy considered optimal in addressing the crisis? Consider the lasting effects of the strategy beyond the immediate crisis.**

*Evaluate the potential of different strategic options using Ansoff Matrix.*

This question aims to delve into the profound impact and effectiveness of Santander’s digital transformation in addressing immediate crisis and enabling sustained growth post-crisis, employing the Ansoff Matrix for strategic clarity.

Santander’s adept crisis mitigation stemmed from its proactive adoption of advanced digital capabilities and a focus on sustainable finance. The implementation of the Cloud

Strategy facilitated operational continuity, enabling a swift transition to remote work setups. This shift played a crucial role in solidifying relationships, maintaining 24/7 customer service, and safeguarding employee health. The heightened cybersecurity focusses effectively countered evolving threats in the digital landscape, resulting in decreased total risk by business area. Beyond immediate crisis constraints, Santander's digital transformation showcased lasting effects poised for sustainable growth. The strategic emphasis on enhancing customer experience through personalized services, refined digital profiles, and analytics reflects an enduring commitment to customer-centric practices. Notably, loyal, and digital customer activity continued to grow, positioning Santander favorably to deepen relationships and fortify loyalty in the ever-evolving market. An impressive 86% of employees affirm the effectiveness of Santander's response to economic and business challenges during the pandemic.

The crisis propelled Santander's steadfast commitment to technological advancement. The bank's continuous investment in research and development, exemplified by its leadership in the 2020 EU Industrial R&D Investment Scoreboard, reflects an unwavering drive for innovation. Integration of agile methodologies, API functionalities, and artificial intelligence underscores Santander's agility in adapting to evolving market dynamics beyond the crisis. Santander's gradual transition to a Cloud-centric operational model promises enduring operational efficiencies and cost savings. Operating expenses from 2019 to 2020 decrease by business area and digitalization "*reduced time to yes and time to cash in core mortgage markets*". The bank's distributed network of high-quality data centers, complemented by Cloud infrastructure, signifies a commitment to secure, integrated, and scalable technological frameworks that ensure sustained operational resilience. Santander's creation of PagoNxt, aimed at fortifying its position in the digital payments arena, denotes a forward-looking approach within the burgeoning fintech landscape. This strategic maneuver not only addresses immediate market demands but also lays the foundation for continued relevance and competitiveness in the evolving digital financial ecosystem.

Let us evaluate digital transformation strategy efficacy using the **Ansoff Matrix** to understand how different growth options played out:

- *Market Penetration:* Santander improved its existing digital banking services, focusing on penetrating deeper into its current markets by encouraging higher adoption rates among its customer bases. The outcome was clearly reflected in

improved customer engagement, increased usage of digital banking platforms, and heightened market share within its current customer segments.

- *Product Development:* the development of home-office solutions, cybersecurity mechanisms improvement and ongoing R&D investments showcased a strong inclination towards diversifying digital portfolio to cater to existing markets to meet evolving customer demands. The outcome was the introduction of novel digital tools, and expansion of product/service range (e.g., API layer, payment hubs, mobile app for SMEs, virtual assistant services);
- *Market Development:* the bank focused on expanding its customer base and existing services into new markets, such as Openbank, GMS, and GTS platforms.
- *Diversification:* Santander's strides in sustainable finance hinted at potential exploration of new markets by investing in areas like One Santander (e.g., European common mobile app), DCB and PagoNxt, to roll them out in new geographies, representing a departure from traditional operations.

In essence, Santander's digital transformation strategy is aimed at innovating organizational parameters for enhanced efficiency, utilizing customer engagement, digital adoption, satisfaction, market share, and flexibility. It not only delved into existing markets but also ventured into new territories, introduced innovative products, and diversified into novel areas. Post-crisis, this strategy paves the way for sustained growth and innovation, evident in substantial technological progress, particularly through the impactful Gravity project.

Santander's cloud-native core banking platform, a significant achievement, seamlessly runs back-end workloads concurrently on mainframes and in the cloud. This enables real-time testing without business disruptions. Notably, Santander's international reach expands this success; recently, SCIB migrated to Google Cloud using the Gravity platform on December 23, marking a crucial milestone in the bank's transformation journey. This strategic move contributes significantly to bolstering profitability.

**4. Compare Santander's digital strategy to potential alternative approaches. Consider if other strategies might have achieved better results or if the chosen strategy was the most feasible and suitable given the circumstances.**

Santander's response to the 2020 crisis was anchored by two fundamental objectives: aiding people and businesses in overcoming the crisis while propelling their transformation into a more digitally oriented and responsible banking institution. While the strategic emphasis

leaned towards digital transformation, an alternative scenario could hypothetically consider an approach solely focused on business agility and supporting stakeholders during the crisis without an extensive emphasis on digital transformation.

Central to Santander's crisis management was an agile governance approach, meticulously designed to address immediate challenges while enhancing the bank's adaptive capacities. Their commitment to assisting stakeholders - encompassing customers, employees, shareholders, and communities - was a cornerstone of their crisis response strategy. Swift and decisive actions were taken to preserve the health and safety of their vast employee base and customer network, exemplifying their commitment to the well-being of all stakeholders. For customers, Santander ensured uninterrupted service through a comprehensive digital shift, boosting online banking capabilities, and providing financial support during the crisis. Measures such as payment deferrals, loan moratoriums, and access to government-backed credit lines were crucial in safeguarding financial resilience for millions of customers. Key factors enabling the institution to protect customers and maintain operational integrity without a substantial reliance on digital transformation included the launched in 2020 of Dojo project, which tackles common learning paths under academies and badges (in Agile framework fundamentals, Agile for Teams, Agile Metrics, and Scaling Agile at Santander), and the implementation of a Comprehensive Special Situation Corporate Framework. This framework, characterized by centralized governance and decision-making via regular dry runs and Special Situations Management Committee, facilitated swift and effective crisis management.

Furthermore, their dedication to employees was showcased by enabling a rapid transition to remote work setups, while also providing financial aid and psychological support. Santander also invested in collaborative spaces (Ágil branches, Work Cafés, SmartBank). Simultaneously, Santander didn't neglect shareholders and communities; reinstating dividends, contributing to relief funds, and prioritizing financial resilience underscored their commitment to these stakeholders. Collaborative initiatives like the "All. Together. Now." campaign displayed solidarity in fighting the pandemic, amplifying their social responsibility.

Crucially, the agility strategies Santander adopted facilitated the execution of these multi-faceted initiatives. Agile methodologies empowered the bank to swiftly adapt, enabling faster decision-making, and an iterative approach. The transition from traditional waterfall practices to agile frameworks within the CBS expedited processes, ensuring the rapid deployment of

resources, effectively managing credit risk, and maintaining operational integrity during turbulent times.

Moreover, while agility was pivotal, its true impact was accentuated through the symbiosis with the bank's digital transformation. The combination of agile governance and digital acceleration formed the bedrock of Santander's success. The fusion of rapid decision-making and digital innovation allowed the bank to meet the evolving needs of stakeholders in an increasingly digital landscape.

In conclusion, Santander's success in managing the crisis stemmed from the holistic combination of agile governance strategies with a customer-centric approach, embracing digital transformation, and honoring their commitment to stakeholders. The convergence of these strategies facilitated a comprehensive, resilient, and responsive approach to navigate through the pandemic's challenges.

## VI. CONCLUSIONS AND LIMITATIONS

The exploration of Santander's trajectory unfolds a narrative rich in resilience and innovation, amidst the pandemic. The bank's adept navigation and maintenance of robust financial performance underscore its adaptive strategies and crisis management prowess, presenting a real-world instructive bridge to theoretical frameworks within the banking sector.

This case explores the impact of COVID-19 in Santander's operations and business, acknowledging its successful strategic response. The main findings surface in its multi-faceted approach, from aiding customers with new digital solutions and financial services to supporting employees through teleworking and financially, while accelerating the Group's digital transformation. This thesis delves into Santander's response to legacy infrastructure challenges by continuously leveraging emerging technologies and fostering a hybrid cloud strategy. Within this transformation, Gravity emerges as a transformative asset, not only offering technological advantages but also driving business benefits. It accelerates service delivery via agile methodologies, significantly reducing time-to-market, and enables the provision of real-time information, thereby enhancing customer-centricity.

Nevertheless, this study faces several limitations. Firstly, the company's reluctance to disclose certain information affects the depth of the analysis. Secondly, the case relies predominantly on secondary information from Santander's website, annual reports, press releases, online interviews, and only one interview with Mariano, introducing potential bias. Thirdly, the ongoing implementation of Gravity limits the availability of significant business-related results, with insights mainly at the technological level. Additionally, the rapidly evolving landscape of technology and banking may render some findings subject to change over time, and the challenges of data availability and accuracy, particularly in a global crisis, pose inherent limitations.

In conclusion, Santander's digital transformation serves as a beacon, offering lessons in crisis management and strategic technology integration. Its experiences forge a blueprint for sustained excellence in an evolving banking landscape, rendering it a compelling case study for practitioners and academics alike.

### Appendix 1: Macroeconomic Overview

In times of crisis such as the COVID-19 pandemic, banks grapple with economic uncertainties, where indicators like gross domestic product (GDP), interest rates and inflation play pivotal roles in shaping adaptive strategies.

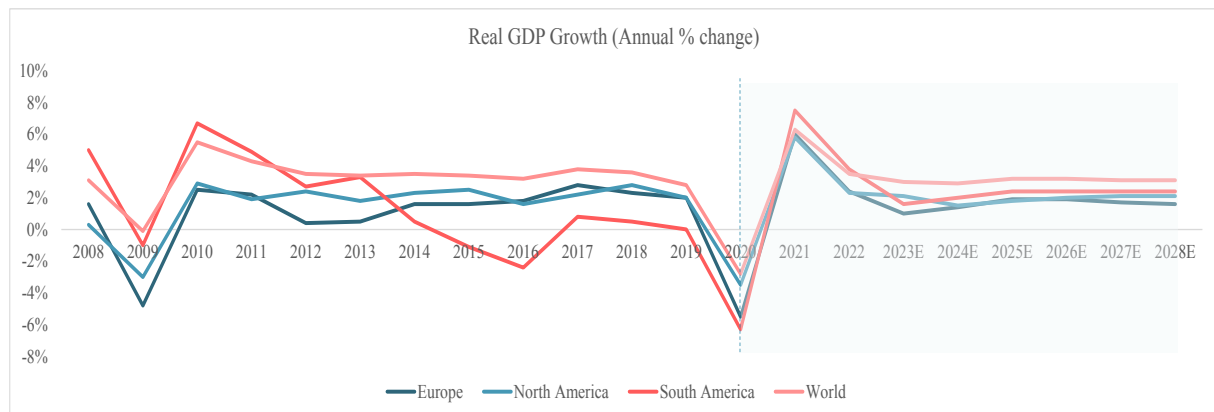


Figure 5. Real GDP Growth – Europe, North America, South America, and World

Source: Own Illustration based on World Economic Outlook, October 2023 (IMF)

Certainly, analyzing Real GDP growth from 2008, 2020 (amidst COVID-19), and future projections offers critical insights. In 2008-2009, during the financial crisis, global growth dipped slightly, while the COVID-19 pandemic in 2020 triggered a more significant contraction. Europe, North America, and South America, markets where Santander operates, all experienced notable downturns during the pandemic, with varying degrees of recovery in subsequent years. Europe witnessed a substantial -5.5% contraction in 2020, followed by a gradual recovery with growth rates estimated around 1-2% for 2023 onwards. North America faced a -3.5% dip but is projected to achieve moderate growth between 1.5% and 2.1%. South America's sharp -6.3% decline is gradually stabilizing with expected growth rates of 2-3.8%. Globally, the COVID-19 impact led to a -2.8% drop in 2020, followed by a recovery with growth rates hovering around 3-3.5% post-2023. Comparing the pandemic's effect to the 2008 crisis, it's evident that COVID-19 posed more significant challenges. However, post-2020 projections indicate a gradual recovery across regions, albeit at a slower pace than pre-pandemic levels.

Understanding these trends is crucial for banks and policymakers, guiding adaptive strategies and resilience-building measures for a stable and growth-oriented post-pandemic

future. Banks heavily rely on GDP trends to decipher market conditions, forecast financial landscapes, and tailor lending practices accordingly.

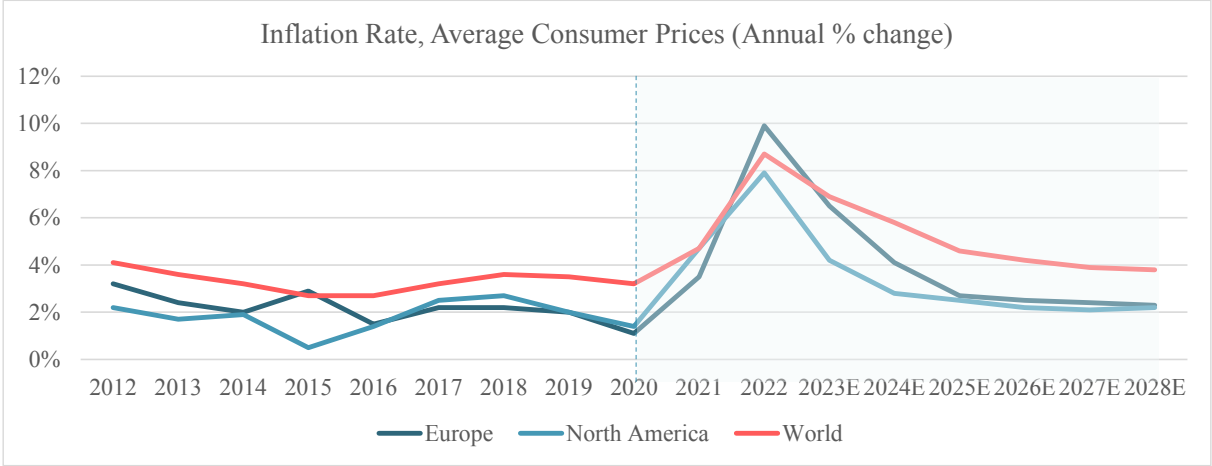


Figure 6. Inflation Rate - Europe, North America, and World

Source: Own Illustration based on World Economic Outlook, October 2023 (IMF)

By analyzing inflation rates based on average consumer prices from 2012 to projected figures in 2028 offers insights into economic stability and future trajectories. In Europe, inflation rates fluctuated modestly from 2012 to 2020, ranging between 1% and 3.5%. However, a notable surge occurred in 2021, reaching 9.9%, followed by a gradual decline to stabilize around 2-3.5% post-2023. Similarly, North America experienced relatively stable inflation between 0.5% and 2.7% until 2020. Subsequently, a sharp increase to 7.9% in 2021 was noted, gradually decreasing to an anticipated range of 2.1-2.8% in the years following 2023. Globally, inflation rates displayed moderate fluctuations from 2012 to 2020, hovering between 2.7% and 4.1%. However, a substantial surge to 8.7% in 2021 was observed, moderating to an estimated range of 3.8-6.9% post-2023.

Inflation’s impact on interest rates is a key concern for banks. During periods of high inflation, central banks might adjust interest rates to counter the effects, influencing the cost of borrowing for banks and affecting their profitability. This dynamic relationship between inflation and interest rates directly influences how banks lend and borrow money, managing risks associated with inflation’s erosion of loan values over time.

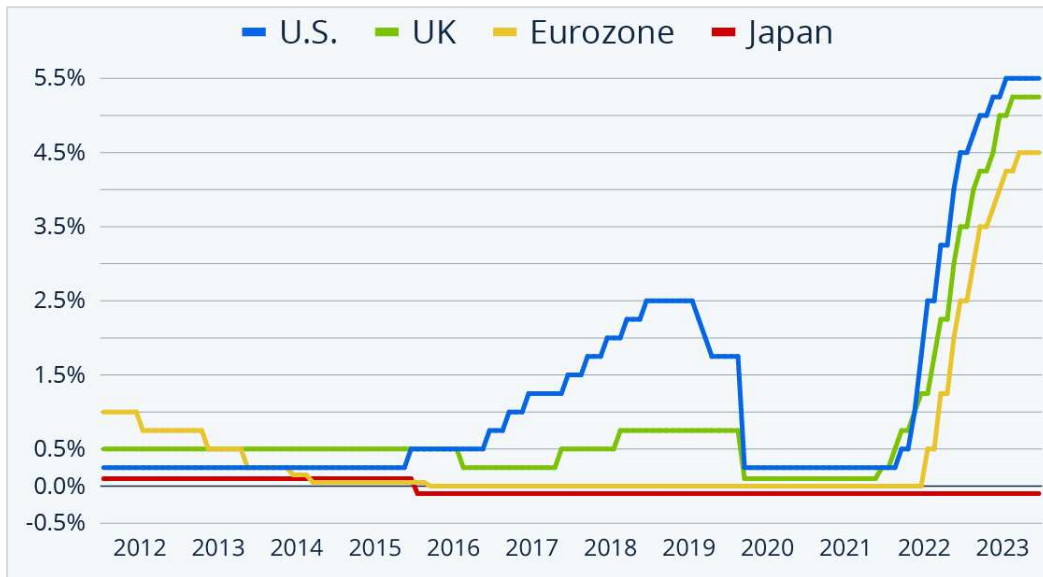


Figure 7. Central Banks Extend Interest Rate Plateau (2012-2023)

Source: Federal Banks, Statista (2023)

As can be acknowledged in the figure above, during the pandemic the interest rates many central banks implemented strategies to counter the economic fallout by slashing interest rates to historically low levels. However, after 2020, banks faced a battle against surging inflation, and the U.S., UK, and Eurozone witnessed a robust upward trajectory in rates from early 2022. Projections from the Federal Open Market Committee anticipate three 0.25 percentage point rate cuts in the U.S. throughout 2024. Conversely, the Bank of England emphasized the need for sustained high rates to steer inflation back to its targeted 2%.

## Appendix 2: Fintech Market Analysis

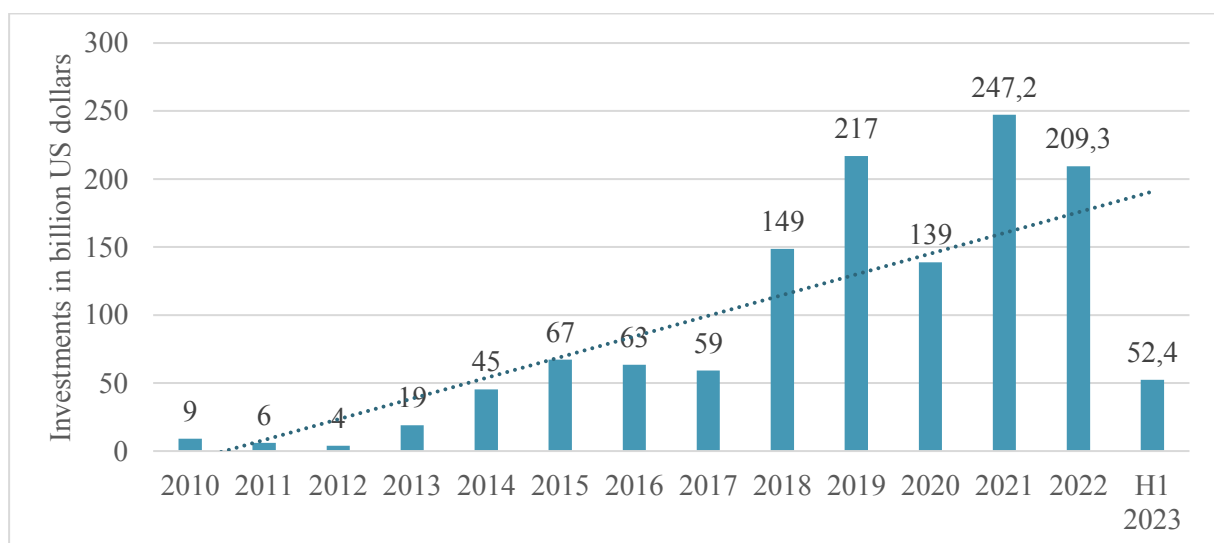


Figure 8. Total Investments into Fintech Companies Worldwide (2010-H12023) in billion U.S. dollars

Source: Own Illustration based on KPMG, PitchBook (Statista, 2023)

The fintech industry is evolving into a highly competitive landscape, being divided into five main markets: digital payments, digital investment, digital capital raising, digital assets, and neobanking. Selected key players, according to Statista (2023) are:



Figure 9. Fintech Market Key Players Landscape

Source: Statista (2023)

The global digital investment market’s trajectory has been marked by fluctuations, shaped by various societal and economic influences.

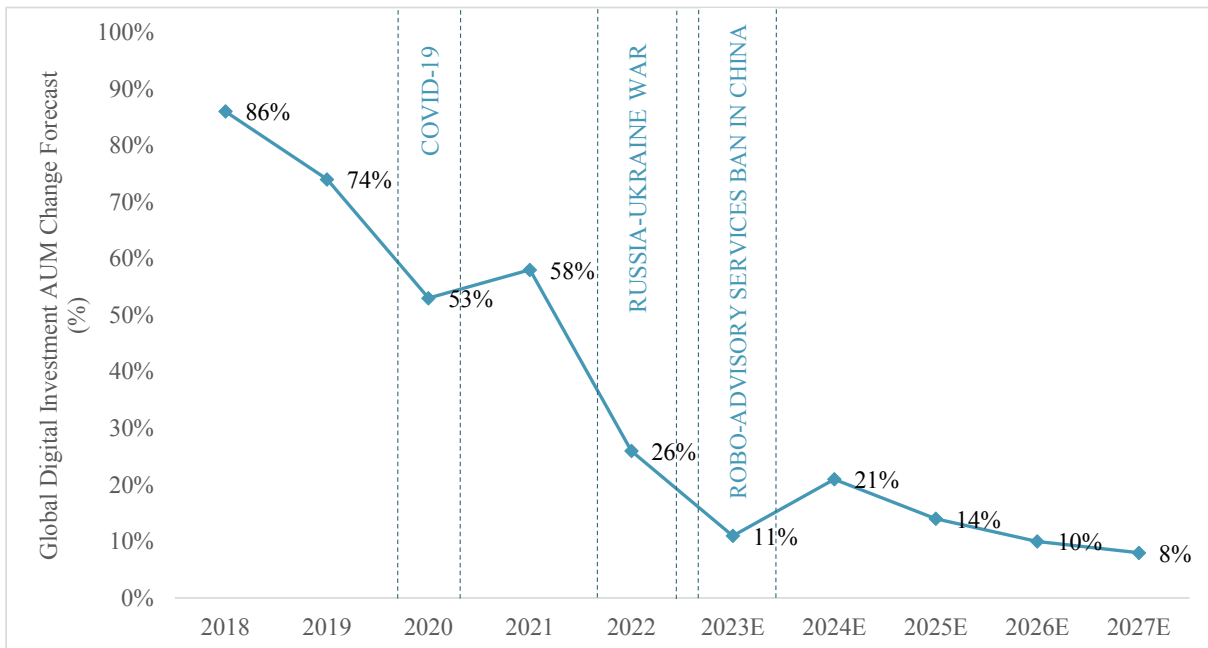


Figure 10. Global Digital Investment AUM Change Forecast (%)

Source: Own Illustration based on Statista (2023)

In 2020, a decline in assets under management (AUM) occurred as uncertainties surrounding the pandemic and government-imposed restrictions prompted individuals to prioritize saving over investing.

Additionally, the ongoing Russia-Ukraine conflict further impacted the digital investment market. Disrupted supply chains resulted in increased costs for essential goods and services, prompting consumers to reallocate their spending away from investments.

Projections suggest a substantial shrinkage in AUM within affected regions, with potential global repercussions due to this conflict. Moreover, the ban on robo-advisory services in China during 2022 is anticipated to significantly influence the market’s future development, adding another layer of impact on forthcoming market trends.

However, despite economic environment uncertainties, fintech five markets are all expected to grow from 2022 to 2027.

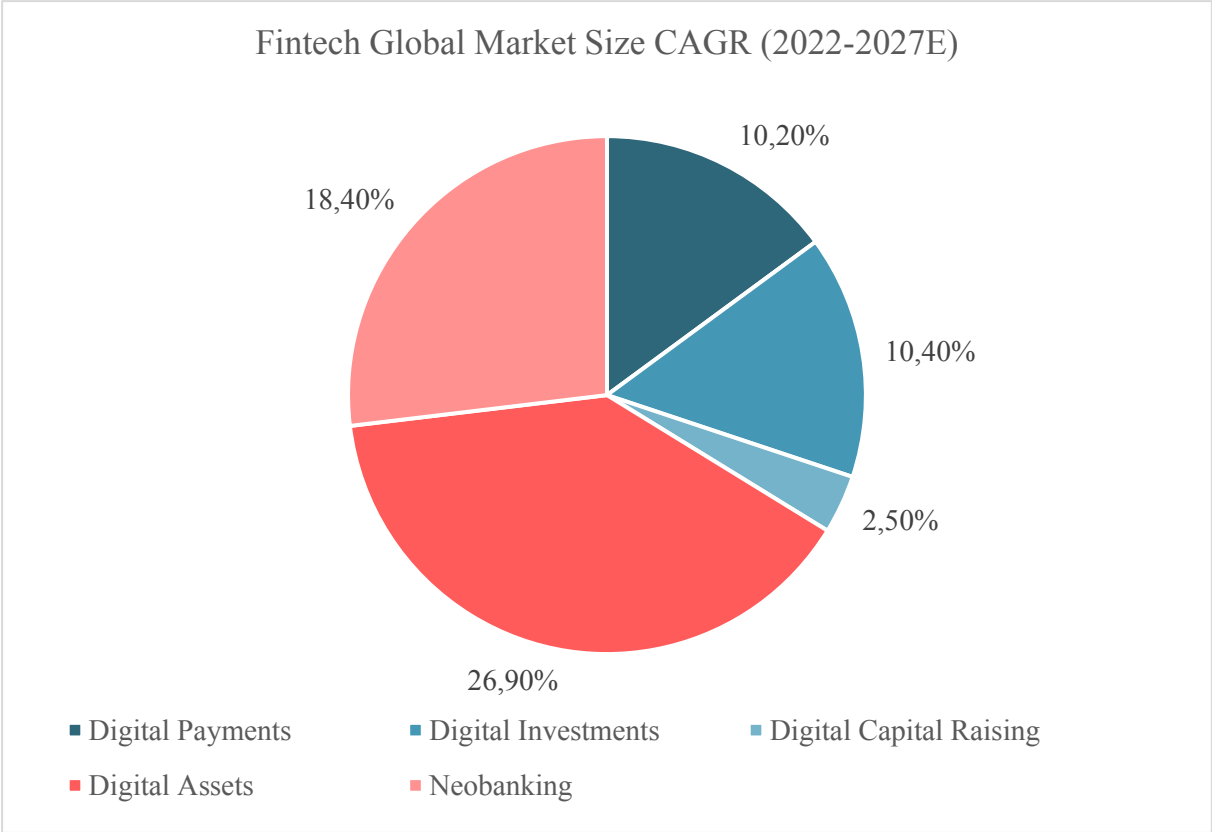


Figure 11. Fintech Five Markets Global Size CAGR (2022-2027E)  
Source: Own Illustration based on Statista (2023)



To offer a comprehensive understanding of the different viewpoints to digital transformation, in addition to the main content of this thesis, Hanelt et al. (2021) present four distinct perspectives that provide unique insights into the changing outlook.

**Technological Impact** focuses on the immediate effects of specific digital innovations, exploring how technologies such as blockchain or social media reshape business, revealing their nuances and implications. **Compartmentalized Adaptation** focuses on how organizations adapt to selected technologies in specific scenarios, investigating changes at the micro level, showing how companies take advantage of tools such as mobile or augmented reality to improve interactions with customers. On the other hand, **Systemic Shift** broadens the view to explore the interaction between digital environments and global organizational structures, illustrating how digital shifts reshape entire sectors, such as e-books transforming the book market. Finally, **Holistic Co-evolution** steps back to analyze the dance between organizations and their dynamic digital environment. It shows how companies adapt in an ever-changing digital landscape, exemplified by companies’ struggles and adaptations in response to technological and market changes.

In the case of Santander, its path is aligned with the holistic perspective of co-evolution, requiring the continuous adoption of new technologies within the framework of a people-centered management paradigm. At the same time, in line with the compartmentalized adaptation perspective, Santander is integrating digital tools into its operations, product development and talent training to tap into new customer markets. This reflects the gradual evolution of technology in banking, in line with the perspective of systemic change, underlining the sector’s continuous adaptation to technological advances.

**Appendix 4: Digital Transformation Strategies and their Main Characteristics**

This typology serves as a conceptual framework, highlighting the diverse nature of digital transformation strategies and their multifaceted impacts on business.

<b>Main characteristics</b>	<b>Types of digital transformation strategies</b>			
	<i>Disruptive</i>	<i>Business model led</i>	<i>Technology led</i>	<i>Proud to be analog</i>
<i>Primary target of transformation</i>	Substantial change of the value proposition	Exploration of new opportunities	Optimization and cost reduction	Identification of parts of a business that could and

				should be digitalized
<i>Leadership type</i>	Vision led	Vision led	Risk avoidance led	Risk avoidance led
<i>Creativity and entrepreneurial spirit among employees</i>	Crucial for success and main fuel of the company	In high demand, but typically not available inside the company	Typically underutilized, sometimes even counterproductive	Not in high demand as all innovation steps are done with extreme caution
<i>Typical risks and challenges</i>	Failing with experiments slowly; scaling up too early	Recognizing which parts of firm's knowledge base are useful and needed, and which are not	Using individual digital technologies to solve discrete business problems	Transiting from predigital generation of users to digital native users
<i>Consequences of the failure</i>	Minimal	Very high, may be fatal	Medium	Low to medium
<i>Tactics for improvement</i>	Fail fast and fail cheap	Copy from the disruptor as much and as quickly as possible	Allow and promote bottom-up approach in selected cases	Experiment through partnering with digital native companies
<i>Companies pursuing this strategy</i>	Dominantly startups from B2C sector	Dominantly from B2C sector (e.g., consumer financial and insurance services, retail, telecom, media)	Dominantly from B2B sector (e.g., oil and mineral extraction companies, heavy machinery, legal services, healthcare)	Exclusively from B2C sector (e.g., producers of the finest luxury watches, jewelry, suits, shoes, porcelain, cars)

Table 6. Digital Transformation Strategies and their Main Characteristics

Source: Own Illustration based on Tekic & Koroteev (2019)

The strategies above are centered around CX, operational processes, and BMs. Shortly, they are classified as follows:

- *Disruptive strategy*: characterized by a high BM readiness for digital operations and adeptness in digital technologies, this strategy is commonly observed among startups or industry newcomers like Uber, Amazon, and Facebook. Newcomers

typically implement this approach to the industry and is seldom utilized by established companies with traditional operations that can be adapted.

- *Business model led strategy*: marked by low digital technology mastery but high BM readiness, these companies, often from sectors that face intense competition and need to transform in order to survive. This approach is common among B2C sectors featuring low barriers to entry.
- *Technology led strategy*: companies with a high grasp of digital technologies but a low BM readiness. This strategy is frequently applied by firms investing in modern technologies, B2B organizations, and certain B2C companies, commonly seen in industries that aim to optimize and cut costs using technology.
- *Proud to be analog strategy*: reflecting low BM readiness and digital technology mastery, these firms prioritize analog heritage.

### Appendix 5: Top Trends in Payments (*left*), Wealth Management (*middle*), & Retail Banking (*right*) 2023

Customer Centricity		Changes in Industry Dynamics		Changes in Industry Dynamics	
1	B2B Buy Now/Pay Later (BNPL) picks up momentum amid post-pandemic macroeconomics	1	ESG regulatory standards aim to curb corporate investment greenwashing	1	Smart branches feature experiential banking and convenience to spark customer connection
2	Embedded finance providers leverage customer data and actionable insights to unlock new use cases	2	Demand for outsourced chief investment officer services are on the rise	2	Incumbents scout for mature fintechs to complement capabilities, boost bank profitability
Creating and Enabling New Values		Creating and Enabling New Values		3	More banks commit to driving circular economy sustainability
3	Global adoption of ISO 20022 opens doors to data monetization	3	Investor appetite for digital assets drives wealth industry capabilities beyond cryptocurrencies	Creating and Enabling New Values	
4	Central banks gear up to pilot and implement CBDCs	4	Amid volatility, investors seek new portfolio strategies, such as direct indexing	4	Banks step up and own CX with embedded finance
Changes in Industry Dynamics		Changes in Industry Dynamics		5	Financial wellness advice can help customers navigate cost-of-living challenges
5	Composable architecture creates competitive advantage efficiencies	5	Wealth management firms refocus on the mass-affluent segment	Customer Centricity	

6	Real-time cross-border payment rails with boost the speed and volume of regional trade	6	Women increasingly control more wealth, yet many firms falter at winning their mindshare and share of wallet	6	CMOs leverage actionable data insights to guide customer centricity
7	An E2E ecosystem approach simplifies payment hub modernization	<b>Business Resilience</b>		7	Digital identity to unlock efficiency gains for banks
<b>Business Resilience</b>		7	Evaluating cybersecurity for future readiness	<b>Business Resilience</b>	
8	PayTech innovation and ecosystem partnerships focus on revamping SMB payments	8	A digitalized core can bridge the gap between relationship managers' expectations and WM firms' automation capabilities	8	Banks unlock value at scale by migrating workload to the cloud
<b>New Horizons</b>		<b>New Horizons</b>		9	A boom in synthetic data will catalyze data ecosystem growth
9	Tokenization – a multi-pronged approach for scalable and secure card payments infrastructure	9	The wealth management industry is consolidating to achieve scale	<b>New Horizons</b>	
10	Eco-Friendly cards, digital payments, and cloud-based payments hubs will boost sustainability	10	Family offices showcase bespoke services while facing regulatory dynamics	10	As banks explore decentralized finance, they remain cautious

Figure 13. Top Trends in Payments and Retail Banking 2023

Source: Own Illustration based on Capgemini Research Institute for Financial Services Analysis, 2022

By anticipating trends such as the rise of B2B Buy Now/Pay Later models, advancements in CBDCs, ESG and cybersecurity importance, decentralized finance, female wealth control, workload migration, or the adoption of innovative technologies, banks like Santander gain a competitive edge. Understanding these trends helps in aligning strategies to meet future demands, fostering quicker adaptation to changing market landscapes, and preparing infrastructure for seamless integration of new technologies. Essentially, forecasting trends enables banks to preemptively strategize, adapt, and stay ahead, ensuring they're not just reactive but proactive in addressing challenges and leveraging opportunities as they arise.

In this study, it became evident that banks like Santander prioritize cloud adoption. This shift was crucial during COVID-19, ensuring uninterrupted operations and disaster readiness. Cloud migration not only cut costs but also boosted productivity. Looking forward, banks aim for innovation and agility, moving beyond cost-centric approaches.

## Appendix 6: Challenges and Opportunities of Digital Transformation

Challenges	Opportunities
Traditional core banking systems lacks automation, increasing workload, being time-consuming and adding to costs of coordinating processes competently (Rahman & Qi, 2016)	Modernize core banking systems to innovate, generate novel products/services, enhance predictions and decisions about lending, risk management, and product development, and resolve complex issues (Ghandour, 2021)
Power of regulators, cyber risk, lack of trained human resources, employees' perception, and technology accessibility for elderly individuals (Kitsios et al., 2021)	Enhance efficiency, minimize expenses, optimize monitoring, risk management, and control methods, offer improved quality products/services, and allow customers to reduce the time between transactions while being more secure (Kitsios et al., 2021)
Digitization of contemporary banks, culture shift, changing business processes, and digital skills (Naimi-Sadigh et al., 2022)	Flexibility, standardization, documentation, automation of value chain processes, and development and integration of interactive channels with suppliers and partners (Naimi-Sadigh et al., 2022)
Security, privacy, trust, regulatory arbitrage and managing the trade-offs that surround the regulation of new developments (Barroso & Laborda, 2022)	Proactive anticipation, planning, and control of changes in digital technology, which helps companies to respond to shifts in the market environment (Li et al., 2021)
Traditional companies and their industries frequently fail to adapt quickly enough to the rapidly changing markets of today, resulting in a substantial risk of disruption (Diener & Špaček, 2021)	Consistency and scalability, enable a significant level of innovation or originality by transforming current components into data sources and forming new connections in creative ways (Tekic & Koroteev, 2019)
Basel III compliance costs, complexity, and risk of fines and reputational damage in case of failing (Diener & Špaček, 2021)	Basel III improvements in risk management capabilities and mitigation of regulatory arbitrage in the context of counterparty credit risk, and adoption of RegTech for regulatory compliance (Diener & Špaček, 2021)
Implementation and maintenance costs, lack of skills and resources, ambiguity of modern banking, conflicting guidance, inconsistent support, and increased level of competition from fintech companies (Diener & Špaček, 2021)	Contribution towards the UN Sustainable Development Goals through corporate sustainability and digitalization, which will narrow the boundaries (Diener & Špaček, 2021)
Regulation and supervision. The asset "money" is one of the most regulated assets and the differences between jurisdictions around the world increase the difficulty of applying the correct laws and regulations (Buitenhek, 2016)	Opening online stores instead of physical ones to lower overhead costs, increase flexibility, eliminate space restrictions, and exercise greater control of transactions (Kaygin et al., 2021)
Energy consumption related to blockchain technology's proof-of-work mechanism (leaves a large carbon footprint e.g., bitcoin produces around twenty-two megatons of CO <sub>2</sub> annually) (Khadka, 2020)	Facilitation of banking services (ATMs, electronic fund transfers, online banking, debit/credit cards, mobile banking), lower costs, removal of the need for a central clearing mechanism and target 2 settlement, continuous updating, potential for a P2P payments system, increased speed, risk reduction, transparency (Khadka, 2020 & Buitenhek, 2016)
Emergence of digital-only firms (is fragmenting the banking industry and intensifying pressure). These firms are breaking banking products down into individual components, making it easier for customers to select specific products and services (Osei et al., 2023)	Serve multiple customers simultaneously, increase operational efficiency, facilitate strong customer connections, strengthen risk management, and enable cross-selling opportunities. By sharing data, banks can streamline their information processing, resulting in significant economies of scale (Osei et al., 2023)

Balancing agility and stability (Capgemini TechnoVision 2023: Financial Services Report)

Leverage cloud computing for asset interoperability, agility in assessing new products/services, strengthen security and compliance, and avoid costs on legacy infrastructure (Capgemini TechnoVision 2023: Financial Services Report)

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*Table 7. Challenges and Opportunities in Banking of Digital Transformation*

*Source: Own Analysis based on Rahman & Qi (2016), Ghandour (2021), Kitsios et al. (2021), Naimi-Sadigh et al. (2022), Barroso & Laborda (2022), Diener & Špaček (2021), Tekic & Koroteev (2019), Buitenhek (2016), Khadka (2020), Kaygin et al. (2021), Osei et al. (2023), Capgemini TechnoVision (2023)*

## **Appendix 7: Regulatory Context**

In 2020, as in all the other years, Santander operated under stringent regulations. Despite being private entities, banks, as service providers to the public, face strict oversight from regulators. The regulatory landscape has changed with respect to solvency and resolution requirements. Notably, the European CRR and the CRD underwent sweeping transformation, introducing key elements (e.g., TLAC mandate for G-SIBs under CRR2). Simultaneously, amendments within CRDV, including updates to the Pillar 2 Guidance, underscored the evolving nature of these directives. Concurrently, modifications to the BRRD underscored an increased emphasis on minimum requirements for own funds and eligible liabilities.

Besides, as a response to COVID-19, competent authorities orchestrated measures to reduce liquidity, capital, and operational requirements, ensuring sustained financing while advocating prudent conduct by financial institutions. Recommendations from ECB, national governments moratoria, and EBA guidelines are examples of that. Sustainability became an entrenched facet, as evidenced by the Taxonomy Regulation and Regulation (EU) 2019/2088. Santander, meanwhile, diligently aligned its practices to adhere to Basel Committee directives and the implementation of Basel III reforms sought to minimize risk variability and enhance comparability between banks. Regarding digitalization, MiCA regulation streamlines the European cryptoasset framework, DORA introduces unified supervision and cybersecurity standards for tech providers serving financial institutions, and DMA mandates rules for digital platforms to foster EU market competition. Finally, while the DSGD retained its stability, ensuring robustness within deposit guarantee schemes, market evolutions prompted revisions in Delegated Regulation (EU) 153/2013, specifically concerning collateral acceptance by central counterparty entities.



EUROPEAN CENTRAL BANK  
BANKING SUPERVISION

EN

**RECOMMENDATION OF THE EUROPEAN CENTRAL BANK  
of 15 December 2020  
on dividend distributions during the COVID-19 pandemic and  
repealing Recommendation ECB/2020/35  
(ECB/2020/62)**

THE GOVERNING COUNCIL OF THE EUROPEAN CENTRAL BANK,

Having regard to the Treaty on the Functioning of the European Union,

Having regard to Council Regulation (EU) No 1024/2013 of 15 October 2013 conferring specific tasks on the European Central Bank concerning policies relating to the prudential supervision of credit institutions<sup>1</sup>, and in particular Article 4(3) thereof,

Whereas:

- (1) On 27 March 2020, the European Central Bank (ECB) adopted Recommendation ECB/2020/19 of the European Central Bank<sup>2</sup> which recommended that at least until 1 October 2020 no dividends are paid out and no irrevocable commitment to pay out dividends is undertaken by credit institutions and that credit institutions refrain from share buy-backs aimed at remunerating shareholders. On 27 July 2020, the ECB prolonged this recommendation until 1 January 2021 by adopting Recommendation ECB/2020/35 of the European Central Bank<sup>3</sup>. These Recommendations were based on the consideration that it is crucial that credit institutions continue to fulfil their role of funding households, small and medium-sized businesses and corporations amid the COVID-19-related economic shock. Therefore, it was considered essential that credit institutions conserve capital to retain their capacity to support the economy in an environment of heightened uncertainty caused by the COVID-19 pandemic. To this end, preserving capital resources to support the real economy and absorb losses was deemed to be a priority over discretionary dividend distributions and share buy-backs.

*Figure 14. ECB Recommendations During the COVID-19 Pandemic*

*Source: ECB Banking Supervision*

**Appendix 8: Santander’s Principles and Risk Culture**

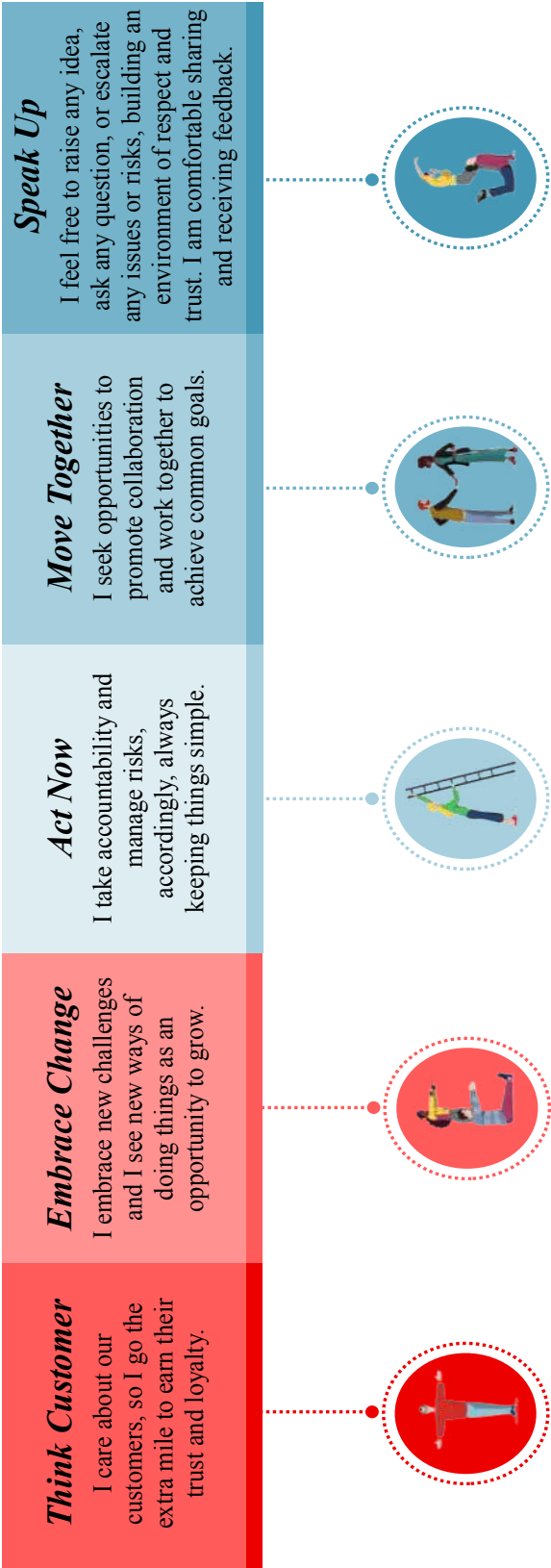


Figure 15. Santander's Corporate Behaviors (T.E.A.M.S.)  
Source: Own Illustration based on Santander Corporate Website

The risk culture, known as “Risk Pro”, is based on common risk principles that are aligned with regulatory requirements and inspired by best market practices.



Figure 16. Santander’s Common Risk Principles

Source: Overview of Santander’s Corporate Governance (October 2023)

**Appendix 9: Supporting the Green Transition**

By supporting the 2015 Paris Agreement climate change goals and the UN Principles for Responsible Banking, Santander set specific targets.

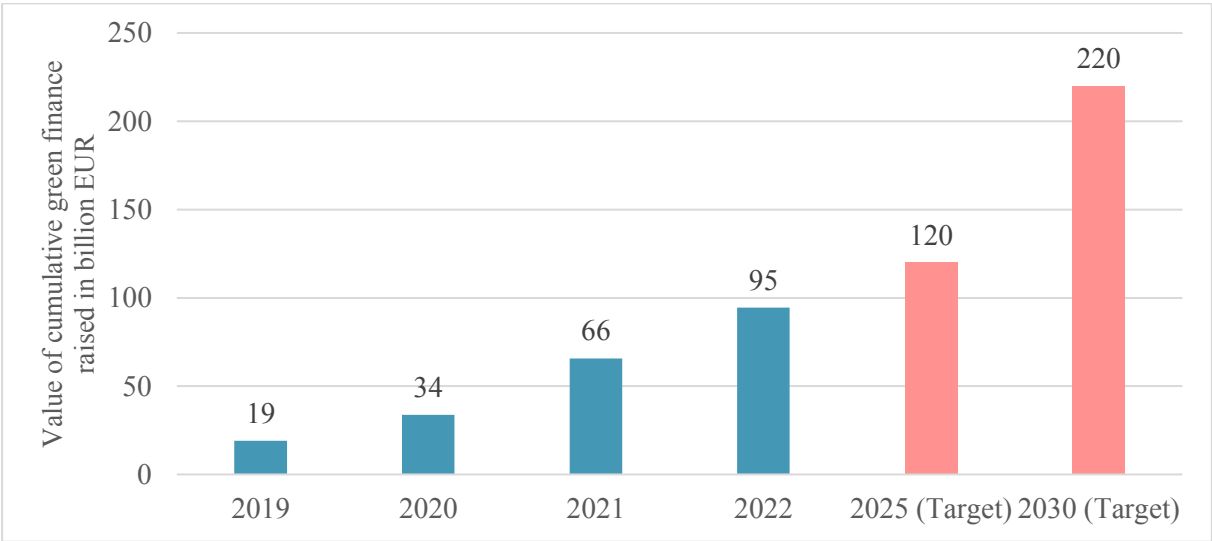


Figure 17. Green Finance Raised and Facilitated (2019-2030 Target)

Source: Own Analysis based on Santander Annual Report (2022) and Statista (2023)

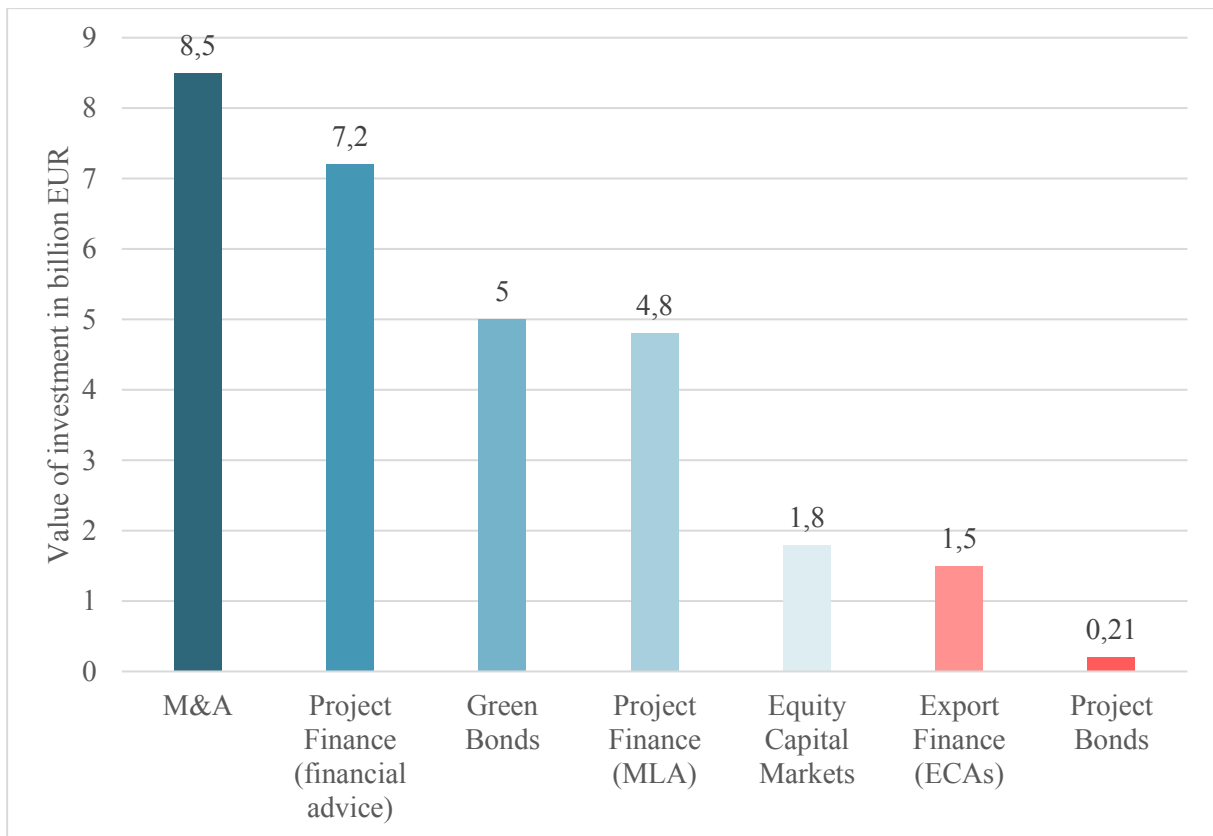


Figure 18. Value of Sustainable Finance Commitment of Santander (2022)

Source: Own Analysis based on Santander Annual Report (2022) and Statista (2023)

## Appendix 10: Cyber Crime and Security

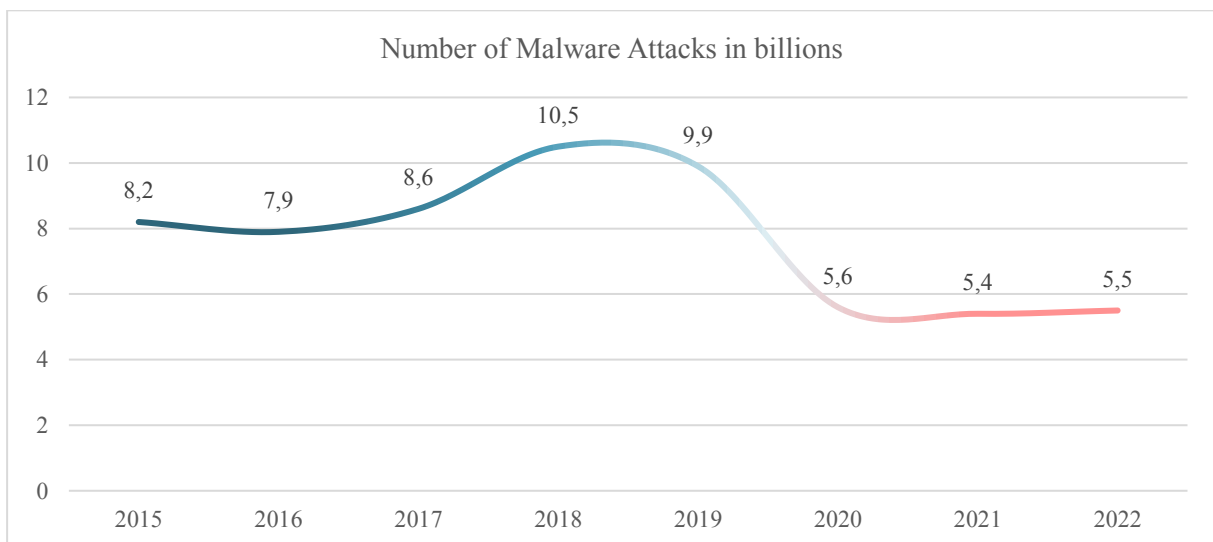


Figure 19. Annual Number of Malware Attacks Worldwide (2015-2022)

Source: Own Illustration based on Statista (2023)

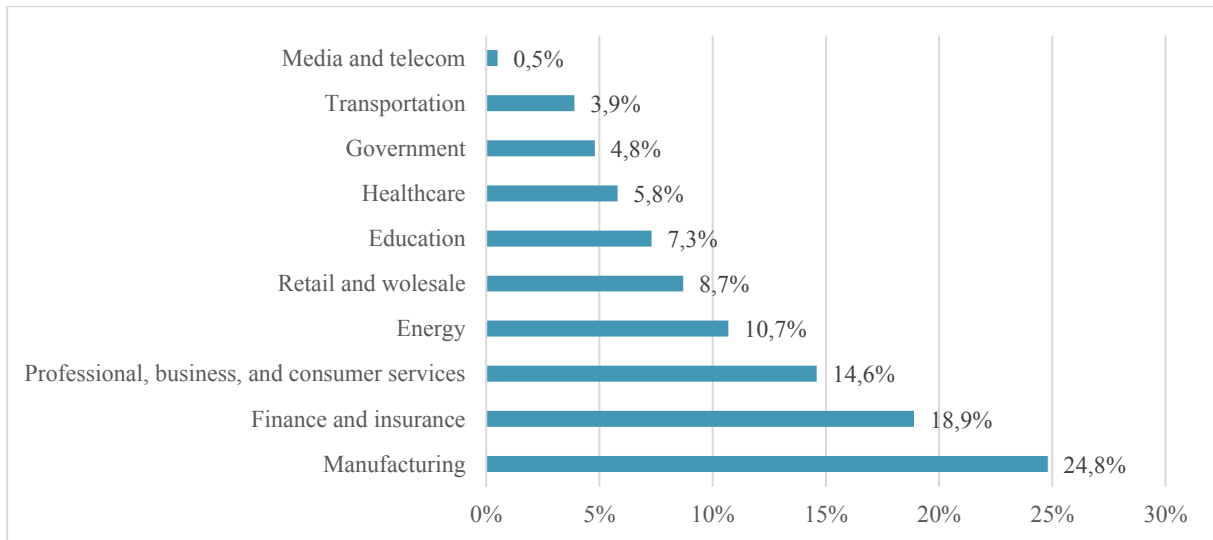


Figure 20. Distribution of Cyber Attacks across Worldwide Industries (2022)

Source: Own Illustration based on Statista (2023)

### Appendix 11: Impact of COVID-19 on Santander

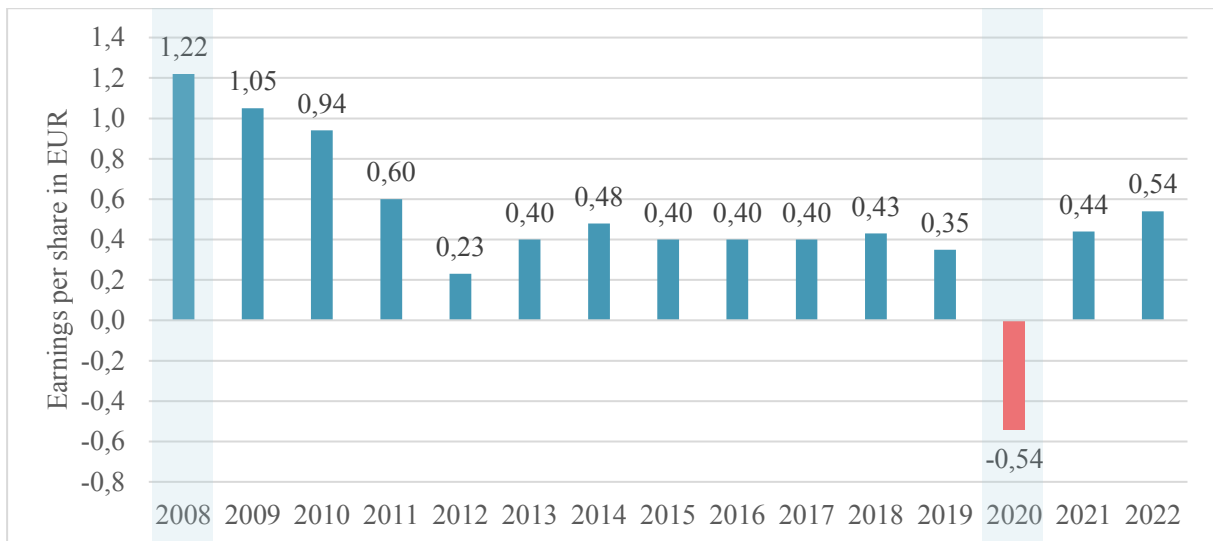


Figure 21. Earnings Per Share of Santander (2008-2022)

Source: Own Analysis based on Santander Annual Reports and Statista (2023)

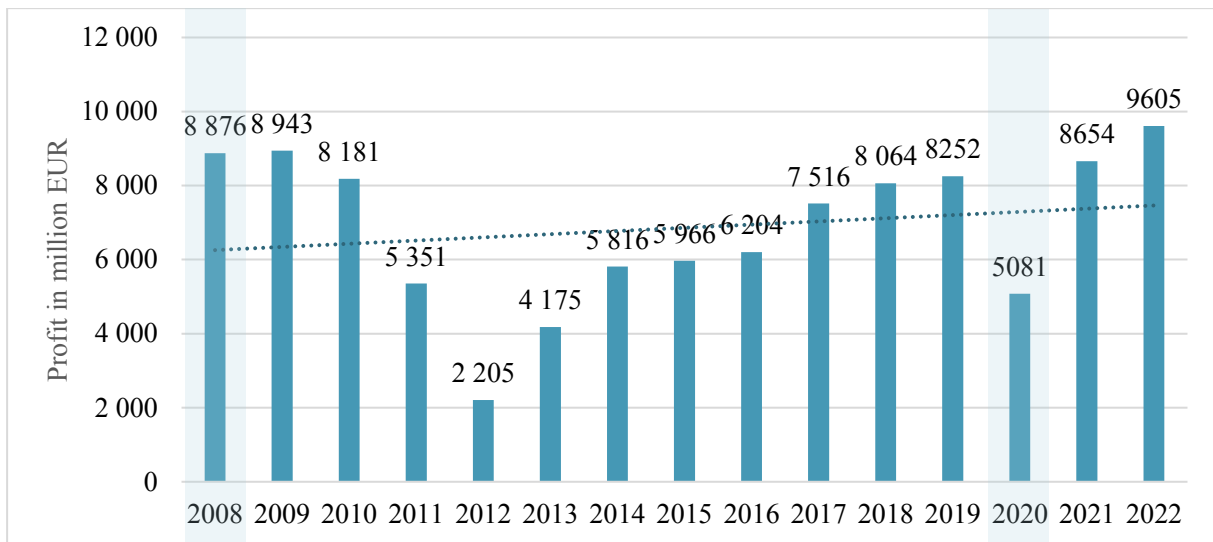


Figure 22. Santander's Attributable Profit (2008-2022)

Source: Own Analysis based on Santander Annual Reports and Statista (2023)

## Appendix 12: Santander Digital Transformation

Santander are transforming its core banks in five ways:

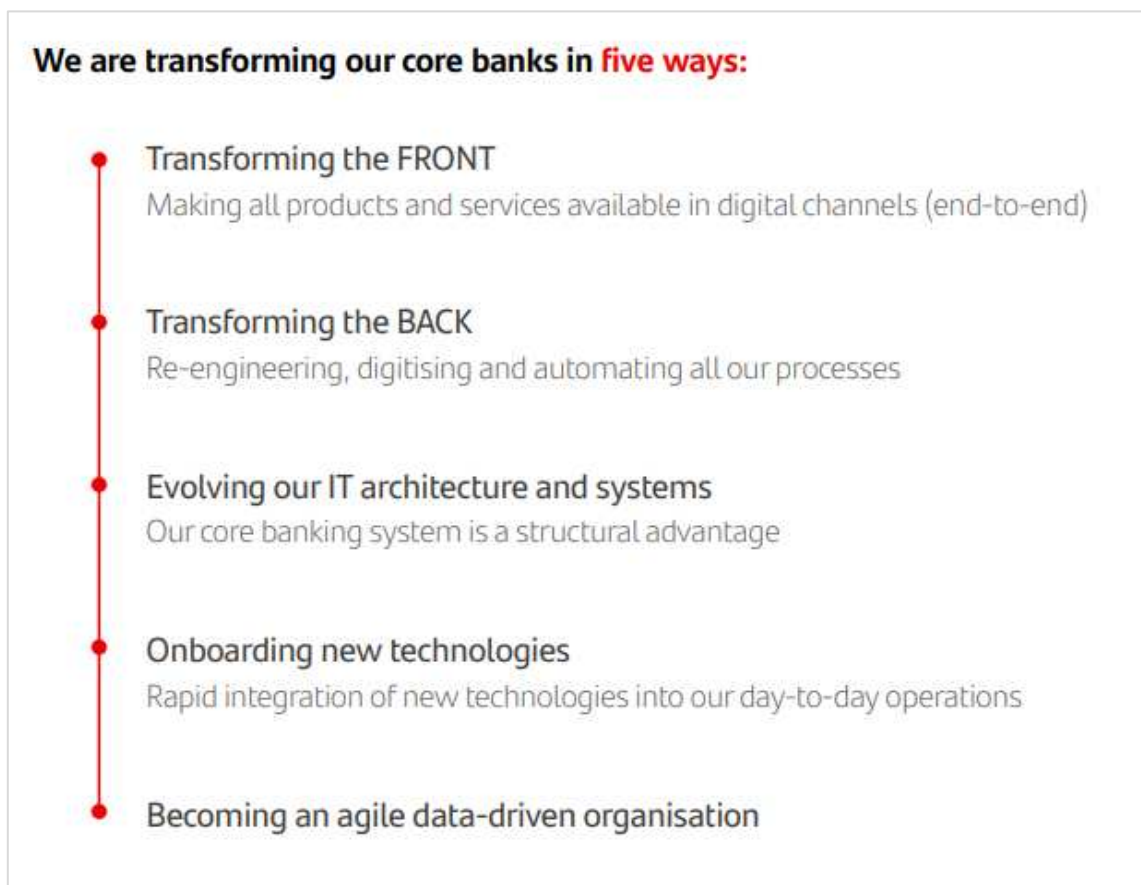


Figure 23. Santander's Core Banks Digital Transformation

Source: Santander Annual Report (2018)



Figure 24. Santander UK Transformation Journey with AWS & Salesforce

Source: Salesforce & AWS (2022)

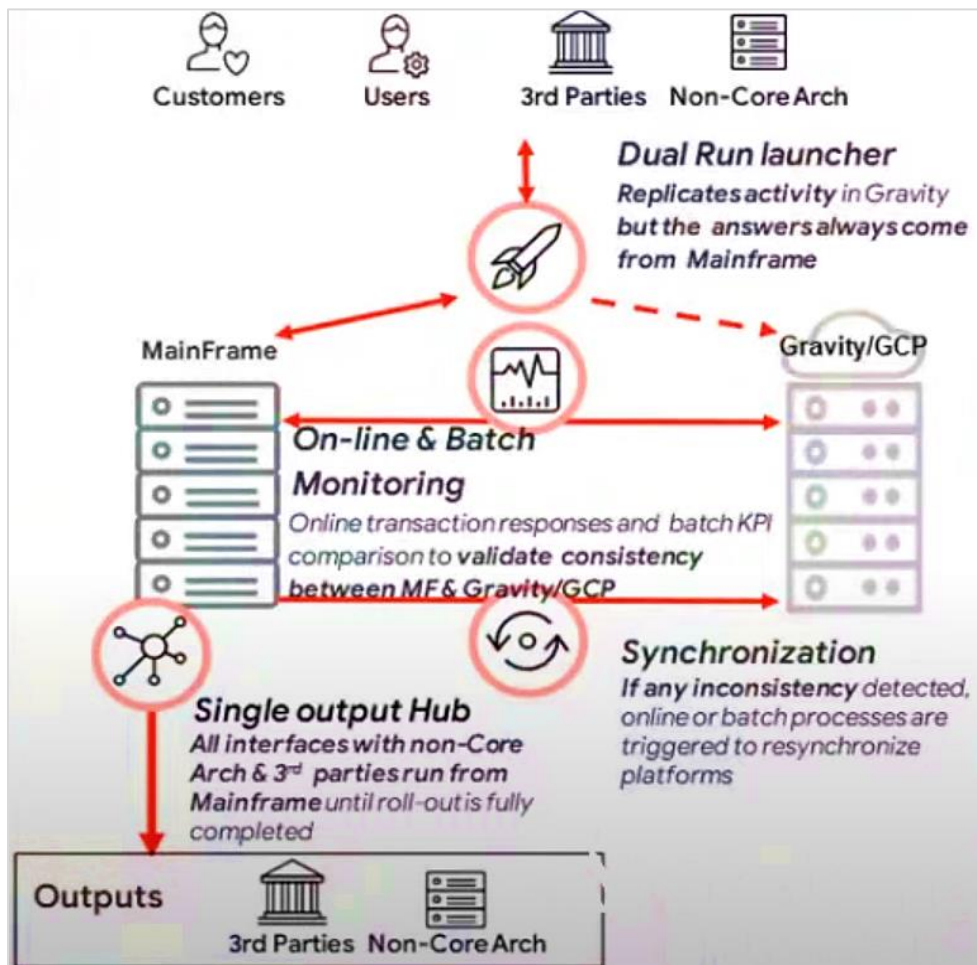


Figure 25. Channels/Inputs of Google Cloud Dual Run (Mainframe vs Gravity)

Source: Santander Digital Services YouTube (2023)

The cornerstone of the Gravity project's implementation lies in its meticulous execution strategy, predominantly centered on two fundamental components: automated migration and the certification process via a meticulously orchestrated dual run.

### **Automated Migration:**

The Gravity project strategically employs automated migration processes to seamlessly transfer diverse programs and databases from the existing mainframe to the Gravity infrastructure. This automation significantly enhances efficiency and expedites the overall transition process, mitigating prolonged implementation periods that could deter stakeholders' investment.

### **Certification through Dual Run:**

The implementation process further entails a meticulous certification phase termed the "dual run." This intricate strategy involves:

- *Parallel System Operation:* initially, both the incumbent mainframe system and the nascent Gravity infrastructure operate concurrently. Users seamlessly interact with the mainframe while operations from both systems are meticulously compared in the production environment.
- *Continuous Comparative Analysis:* over several months, a rigorous comparison of operations and system behaviors ensues, ensuring that the Gravity infrastructure mirrors the performance and functionality of the mainframe system. This meticulous assessment culminates in certifying the Gravity system's equivalence to its predecessor.
- *Transition and Safeguarding:* upon certification, a gradual transition occurs, marking the Gravity infrastructure as the primary system while maintaining the mainframe in a standby role. This backup system acts as a safety net in case of unforeseen challenges, ensuring a smooth and secure transition.

## Appendix 13: Santander's Strategic Adjustments during COVID-19

Segment	Strategic Changes	Implementation Time	Goal
<i>Operations Management</i>	Accelerate digital transformation supported with advanced technological infrastructure (Cloud strategy)	Mid-to-long-term	Innovation
	Optimize software and internal procedures (automating low-value-added processes)	Mid-to-long-term	Retrenchment
	Develop a hybrid distribution model (One Santander)	Mid-to-long-term	Innovation
	Autonomous global payments platform (PagoNxt)	Medium-term	Innovation
	Building common operating model by scaling across core banks through common apps, data, and systems (DCB)	Long-term	Innovation
	Strategic Partnerships to integrate new digital capabilities	Short-to-mid-term	Innovation
<i>Workforce Optimization</i>	Remote work	Short-term	Persevering
	Agile WoW	Short-term	Innovation
	Developed digital skill training	Short-term	Persevering
	Hire digital experts (+ 2,000)	Short-term	Persevering
<i>Risk Management</i>	Innovative and robust cybersecurity mechanisms and data protection reinforcement, enhanced operations risk controls	Short-to-mid-term	Innovation
	Proactive fraud management measures	Short-to-mid-term	Persevering
	Stronger focus on sustainable finance	Long-term	Innovation
<i>Stakeholders</i>	CSR initiatives supporting local communities	Short-term	Persevering
	Enhanced customer engagement programs	Short-term	Persevering
	Transparent communication strategies on financial stability	Short-term	Persevering
<i>Retail Clients</i>	Improved digital banking experiences for customers and 24/7 customer service	Short-to-mid-term	Innovation
	Broader range of global products and digital services	Short-to-mid-term	Innovation
	Improved customer insights through enhanced data analytics	Short-to-mid-term	Innovation
<i>Workplace</i>	Clear protocols, health checks, hygienic and safe solutions	Short-term	Persevering
	Closure of non-core physical branches (70% remained open) and certain rented offices	Short-to-mid-term	Retrenchment
	Innovate branches (Work Cafés)	Short-to-mid-term	Innovation
<i>Corporate Clients</i>	Online meetings	Short-term	Persevering
	Provide liquidity and credit facilities	Short-term	Persevering
	Increase of risk provisions	Short-term	Persevering

Table 8. Santander's Strategic Adjustments during COVID-19

Source: Own Analysis based on Santander Annual Report (2020) and Press Releases

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