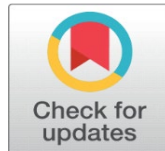
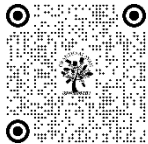


# STRATEGIC INSIGHTS INTO DIGITAL TRANSFORMATION IN BANKING: DRIVERS AND FRAMEWORKS

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## ABSTRACT

Digital transformation and the resulting business model innovation have significantly reshaped consumer expectations and behaviors, challenged traditional businesses, and disrupted various markets. The digital revolution in India's financial sector is notably altering the landscape, especially in the banking industry where it has become pivotal in managing the majority of funds within the system. In response to the increasing presence of emerging financial technologies (fintech) that pose a potential threat to the banking sector, numerous financial institutions are actively pursuing digital transformation initiatives. This heightened focus on Digital Transformation has sparked considerable interest among both researchers and practitioners. Despite the abundance of literature on the topic, a detailed exploration of the fundamental factors propelling these transformations, particularly the internal and external dynamics within the specific context of the Indian Banking Sector, remains somewhat limited. This study is centered on delving into the nuances of Digital Transformation within Indian banks to uncover and elucidate the primary drivers of digital transformation in the banking sector. As a result, this research endeavors to devise a comprehensive conceptual framework that captures the essence of the internal and external influences shaping this transformative journey in the Indian banking industry.

**Keywords:** Banking, Drivers, Internal, External, Conceptual, Digital Transformation, Framework



## 1. INTRODUCTION

### 1.1. DIGITAL TRANSFORMATION

Digital transformation unfolds in a progressive journey comprising three distinct phases that are crucial for reshaping and revolutionizing modern businesses. The initial phase, Digitization, serves as the foundational step where analog content and processes are systematically converted into digital formats, setting the stage for the subsequent stages. Building upon this foundation, the second phase, Digitalization, is characterized by an emphasis on elevating existing digital technologies through the seamless integration of supplementary software and tools into the current operational framework. This strategic enhancement aims to optimize efficiency and performance within the digital realm, laying the groundwork for the ultimate phase of Digital Transformation. This final stage represents the pinnacle of the transformation process, requiring the strategic amalgamation of cutting-edge technologies with pre-existing systems to catalyze holistic improvements across the entire business model. Integral to this phase is the imperative to realign the workforce and cultivate their skill sets in harmony with the innovative model, facilitating the exploration of untapped business prospects. In essence, the phenomenon of digital transformation entails leveraging advanced digital tools to redefine business paradigms and unlock fresh avenues for revenue generation. As highlighted by reputable

sources (Gartner, 2022; Wang et al., 2022), this transformative journey not only fosters innovation in business frameworks but also triggers cascading effects by reshaping key organizational processes (e.g., Usai et al., 2021), bolstering capabilities (e.g., Guinan et al., 2019; Rialti et al., 2019), and empowering businesses to seize nascent market opportunities (Chen et al., 2014; Tan et al., 2015; Venkatraman, 1994; Wengler et al., 2021). Through this comprehensive and strategic overhaul, digital transformation emerges as an indispensable driver of success in the contemporary business landscape.

Although the effects of digital transformation and the emergence of new digital business models are widely visible, academic research has only recently started to explore these topics, for example, the concepts of digitization, digitalization, and digital transformation as discussed by Venkatraman (2017). This paper aims to delve into the necessity of digital transformation in the specific context of India, researching the key drivers propelling this crucial change. To achieve this goal, comprehensive insights have been drawn from various secondary sources, culminating in the presentation of a robust conceptual framework that not only serves as a foundation for this study but can also potentially guide further research endeavours in this realm.

## 1.2. RESEARCH OBJECTIVES

- To explore the need of digital transformation in banking.
- To identify key drivers of digital transformation in banking.
- To provide a conceptual framework for digital transformation in banking.

### The need for digital transformation in Indian Banking Sector

The Indian banking sector, renowned for its diverse landscape, comprises a combination of scheduled banks, domestic institutions, and foreign entities, catering to the needs of a vast population. Within this dynamic sector, the ongoing digital transformation initiatives aim to enhance operational efficiency by streamlining processes, empowering employees through skill development, and implementing advanced technological tools to foster comprehensive growth and innovation.

- The Digital India initiative, with programs like Pradhan Mantri Jan-Dhan Yojana (PMJDY), e-KYC, and Unified Payments Interface (UPI), has revolutionized the way India interacts with financial services. The NITI Aayog's 2022 report on digital banks aims to position India as a leader in the fintech sector, focusing on "Digital Banks" (DBs) that offer banking services online, without physical branches.
- Millennials represent 34% of India's total population, which amounts to approximately 440 million people. Additionally, this age group contributes around 44% of total lending in the country.
- This highlights how crucial millennials are to the country's economic and financial sectors, including digital and fintech services.
- Adopting IT gives banks a competitive edge by enhancing customer behavior insights, boosting satisfaction, and strengthening relationships. With rising competition, internet access, and tech advancements, consumer demands now include superior products, faster services, 24/7 accessibility, skilled support, and tax-saving help, driving financial institutions to transform their offerings.
- The rise of mobile wallets, UPI payments, and QR transactions has fueled digital payment adoption in India. With growing internet users and e-commerce, the digital payment ecosystem is set to expand further. In 2021-22, 118 banks processed 8,840 crore digital transactions, showcasing this sector's robust growth (RBI, 2022; Singh et al., 2021).
- According to Deloitte's 2019 Millennial Survey, millennials believe businesses should prepare their workforce for Industry 4.0 by offering regular skill training and technical updates. Platforms like NPTEL and MOOCs support self-paced learning.

In continuation of the study by Berghaus and Back (2017), it is evident that the primary objective for any organization embarking on the journey of digital transformation is to effectively equip itself to adapt to forthcoming changes. By undertaking digital transformation, companies unlock avenues for fostering innovation, enhancing service delivery, and developing a more streamlined business framework, ultimately fortifying their competitive standing and

creating fresh revenue streams. This aligns seamlessly with the prevalent global trends surrounding digital transformation goals, particularly resonating within the Indian banking sector. Indian banks strategically prioritize digital innovation to address the escalating demands of consumers and stay competitive against the backdrop of emerging fintech entities and digitally savvy counterparts (KPMG, 2022). Noteworthy initiatives such as the integration of mobile banking apps, utilization of AI-powered chatbots, and implementation of digital payment infrastructures exemplify the dedicated efforts exerted to enrich customer engagements and augment overall satisfaction levels (Arora & Singh, 2020; Kapoor & Goyal, 2021). Moreover, the impetus provided by the Indian government towards fostering digital financial inclusion, exemplified through initiatives like the Unified Payments Interface (UPI) and Aadhaar-based authentication, has significantly hastened the pace of transformative initiatives within the banking landscape (Chaudhry et al., 2020; Reserve Bank of India, 2021; EY, 2020).

## 2. KEY DRIVERS OF DIGITAL TRANSFORMATION IN BANKING

In the study conducted by Liere-Netheler et al. (2018, p.1), drivers are elucidated as the essential "preliminaries" or anticipations regarding future advantages that have a positive impact on the adoption phase. Along the same lines, according to Osmundsen et al. (2018, p.6), drivers encompass the notions of "internal or external triggers" which urge organizations to partake in the digital transformation journey. Similarly, Morakanyane et al. (2017) depict drivers as the pivotal "attributes that mold and facilitate the progression of digital transformation" (p.7). It is noteworthy that in this particular research endeavor, the terms 'driver' and 'DT driver' will be used interchangeably, given the primary goal of pinpointing the fundamental drivers steering digital transformation initiatives.

## 3. DIGITAL TECHNOLOGIES IN BANKING

The adoption of digital technologies, such as the Internet of Things (IoT) and Big Data, plays a crucial role in driving and facilitating digital transformation efforts, as highlighted by research studies by Alexopoulos et al. (2022) and Trung et al. (2021). It is important to note, however, that merely implementing these advanced technologies is not a guarantee of successful digital transformation initiatives, a point emphasized by Behnam Tabrizi et al. (2019). To achieve effective digital transformation, organizations must go beyond mere adoption and instead focus on aligning these technologies with their specific business objectives and transformation goals, as advocated by Abujarad et al. (2010).

In banking, digital transformation encompasses adopting advanced technologies (Eksell & Härenstam, 2017), leveraging data analysis, and prioritizing customer needs to overhaul traditional banking methods and services. With technologies such as artificial intelligence, blockchain, cloud computing, and mobile apps, banks have enhanced operational efficiency, customer satisfaction, and competitiveness (Chen & Zhang, 2020). These advancements enable 24/7 service delivery, reduce reliance on physical branches, paper, and signatures, and empower customers to conduct financial transactions seamlessly, even during holidays (Meena & Parimalarani, 2020).

In India, digital technologies are revolutionizing the banking sector by driving efficiency, enhancing customer experiences, and fostering innovation. Artificial intelligence (AI) tools, like HDFC Bank's EVA chatbot, are transforming customer interactions with instant query resolution and personalized services (Kapoor & Sharma, 2022). Blockchain ensures secure and transparent transactions, especially in trade finance and payments, reducing fraud risks (Singh & Ramesh, 2022). Big data analytics helps banks understand customer behavior, enabling tailored product offerings (Kumar et al., 2023). Cloud computing supports cost-effective, scalable infrastructure, while mobile banking and platforms like UPI drive financial inclusion and transform digital payments (Sharma & Gupta, 2022; RBI, 2022).

## 4. DIGITAL CONSUMER EXPERIENCE

Consumer behavior is evolving due to the digital revolution, with more purchases shifting to online platforms. Digital touchpoints now play a critical role in the customer journey, influencing both online and offline sales (Kannan & Li, 2017). With the advent of new search and social media tools, consumers are more connected, informed, and empowered (Lamberton & Stephen, 2016; Verhoef et al., 2017). Digital technologies also enable consumers to co-create value by customizing products, participating in last-mile distribution, and sharing reviews, contributing to the overall customer experience (Beckers, van Doorn, & Verhoef, 2018; Grönroos & Voima, 2013).

Digital consumer behavior in Indian banks has evolved significantly, driven by technological progress, the rise of smartphones, and government initiatives like Digital India. Younger consumers, especially millennials and Gen Z, are leading the shift to digital banking, attracted by its convenience and speed. However, older generations tend to be more cautious, often due to concerns about security and unfamiliarity with technology (Mishra et al., 2020).

Mobile banking, UPI, and digital wallets have become integral to consumer behavior. UPI, in particular, has revolutionized payments, making them quicker and more accessible (Sharma & Gaur, 2021). Research shows that while urban, tech-savvy consumers embrace these changes, rural areas face barriers like poor internet connectivity and lower digital literacy (Kumar et al., 2023).

Security and trust remain key concerns for Indian consumers. Banks have worked to address these issues by implementing features like two-factor authentication (Patel & Saha, 2022). Overall, digital banking is growing rapidly, but challenges around trust and accessibility persist, particularly for certain demographic groups.

## 5. DIGITAL COMPETITION

Organizations experience significant shifts in their respective industries, driven by digital advancements and evolving competitive landscapes (Berghaus & Back, 2017). These changes introduce new competitive pressures, as businesses contend with an increasingly diverse array of competitors, including non-traditional and cross-industry players (Piccinini et al., 2015).

In the context of Indian banking, digital transformation has intensified competition, with fintech firms, digital payment platforms, and neo-banks entering the market. This disruption compels traditional banks to adopt innovative technologies to maintain relevance and customer loyalty (EY, 2020; Reserve Bank of India, 2021). The interplay of technology, customer expectations, and regulatory shifts has redefined competition in the Indian banking sector, encouraging banks to rethink their strategies and embrace digital ecosystems (KPMG, 2022).

Fintechs and payment platforms like Paytm and Google Pay, leveraging technologies such as UPI, have disrupted traditional banking by offering seamless and cost-effective financial services (Chaudhry et al., 2020; Saini & Sahu, 2021).

To remain competitive, banks have adopted advanced technologies like AI, blockchain, and big data analytics. AI-driven chatbots, such as HDFC's EVA, are enhancing customer service, while blockchain is improving transparency in areas like trade finance (Kapoor & Goyal, 2021; Rao et al., 2020). Additionally, government initiatives, including Aadhaar-based KYC and DBT, have accelerated digital financial inclusion (Bansal & Agarwal, 2019).

Collaborations with fintechs, such as ICICI Bank and Paytm, further showcase strategies to innovate and meet evolving consumer demands (Sinha & Gupta, 2021), emphasizing a customer-centric, technology-driven future.

## 6. DIGITAL HUMAN CAPITAL

Human capital plays a vital role in driving digital transformation, particularly through the readiness of employees to adopt technological change (Al-Alawi et al., 2023; Benevene & Cortini, 2010). In the Indian banking sector, the availability of skilled ICT professionals and the adaptability of the workforce are crucial for successful transitions (Angélico Gonçalves et al., 2016; Guerra et al., 2023). Recognizing this, banks like HDFC and Axis Bank have heavily invested in employee training programs focusing on data analytics, cybersecurity, and digital banking (Sharma & Gupta, 2022). Moreover, nontechnical skills such as leadership, communication, and problem-solving are being emphasized to create a versatile workforce (Sousa & Rocha, 2019).

Digital resources also act as significant enablers of transformation, with technologies like cloud computing, big data analytics, and AI streamlining operations and enhancing customer experiences (Rao & Prakash, 2023). For example, ICICI Bank leverages AI and machine learning in its mobile apps to provide personalized financial advice (Singh & Ramesh, 2022).

Creativity and innovation play an essential role in driving digital transformation, especially within the realm of corporate culture where employees are empowered to engage in collaborative brainstorming sessions and to embrace nascent technologies to solve complex challenges (Botella-Carrubi & Torras, 2019; Jiang et al., 2022). Noteworthy examples from the financial sector, such as Kotak Mahindra and YES Bank in India, showcase the strategic partnerships they have formed with fintech startups. Through these collaborations, these banks have successfully cultivated



operational nimbleness and customer-centric innovations to effectively meet evolving demands and expectations in the era of digitalization (Bhattacharya et al., 2023).

## 7. DIGITAL CULTURE

In the rapidly evolving business landscape characterized by cut-throat competition, organizations find it increasingly imperative to wholeheartedly adopt and leverage technological advancements for their survival and growth. One critical aspect of this adaptation involves cultivating a robust digital culture within the organizational framework, which serves as a cornerstone for revolutionizing day-to-day operations, fostering enhanced internal teamwork dynamics, and elevating the overall quality of customer interactions. A digital culture, as conceptualized by industry experts, encompasses the strategic integration of cutting-edge digital tools and technologies that not only shape the collective behavior and mindset of the organization but also empower employees to tap into digital resources adeptly for driving innovation, facilitating seamless collaboration across functions, and ultimately enriching customer journey experiences.

In the ever-evolving landscape of the Indian banking sector, the cultivation of a vibrant digital culture has emerged as a fundamental driver of extensive digital transformation initiatives. Noteworthy players such as ICICI and HDFC have taken proactive steps to invest significantly in the development of a digitally oriented environment, where cutting-edge technology and seamless collaboration form the bedrock of day-to-day activities. This pervasive digital ethos not only paves the way for widespread adoption of innovative digital tools but also serves as a catalyst for elevating both customer service standards and overall operational efficiency within the banking realm (Rao, 2023). By ingraining this forward-thinking digital culture into their operational frameworks, Indian banks can meticulously harness the power of data analytics, thereby unlocking a treasure trove of invaluable insights that can be leveraged to pinpoint nascent revenue streams, optimize existing operational processes, and underpin strategic, data-informed decision-making practices (Goran et al., 2017; Tulip, 2023). Such a concerted effort towards embracing digitalization not only revolutionizes the internal functioning of banking institutions but also bolsters their external competitiveness and resilience within the dynamic financial landscape, setting the stage for a transformative journey towards sustained growth and innovation in the digital era.

Moreover, digital culture promotes continuous learning, adaptability, and effective communication within the organization. In India, where customer expectations are evolving rapidly, banks must foster a learning environment where employees stay updated with emerging technologies and trends (Yadav & Bhardwaj, 2022). Leaders in Indian banks are playing a crucial role in encouraging this culture by fostering innovation and providing the necessary resources and support for employees to experiment with new ideas and technologies (Blanka et al., 2022). This approach not only enhances internal operations but also improves customer engagement through personalized services and digital innovations such as mobile banking apps and UPI services. Ultimately, a strong digital culture in Indian banking fosters agility and innovation, positioning banks to better navigate the fast-paced digital landscape and meet changing consumer demands.

## 8. DIGITAL BUSINESS STRATEGY

Digital business strategy plays a crucial role as a primary catalyst driving the ongoing digital transformation within the dynamic landscape of the Indian banking sector. In response to the escalating trend towards digitalization in banking, the development and implementation of a well-crafted digital strategy have become imperative for banks to stay ahead in the competitive arena and enhance the overall quality of customer service. The essence of digital business strategy lies in harmonizing cutting-edge digital technologies with the strategic objectives of the business, thereby fostering operational efficiency, elevating customer interactions, and cultivating innovative revenue streams (Sahoo & Pradhan, 2023). Notably, in the Indian context, leading banks like HDFC and SBI exemplify this ethos by embracing digital-first approaches designed to harness the full potential of technological tools such as mobile banking, artificial intelligence (AI), and blockchain to re-engineer internal processes and deliver tailored experiences to customers (Ghosh & Das, 2023).

Indian banks are not only focusing on integrating fintech partnerships into their digital strategies to reach underserved markets and provide innovative financial solutions; they are also leveraging these collaborations to enhance their overall competitiveness and stay relevant in the rapidly evolving financial landscape. An excellent

illustration of this proactive approach is YES Bank's utilization of blockchain technology to facilitate quicker and more secure financial transactions. Similarly, ICICI Bank's expansion of its mobile banking services in response to rising customer needs underscores the sector's commitment to meeting evolving demands. Furthermore, the integration of digital strategies enables banks to embrace data-driven decision-making processes that, in turn, enhance operational efficiency – a critical factor in today's highly competitive financial arena where agility and adaptability are essential for sustainable growth.

## 9. DISCUSSION

Conceptual Framework:

### External Factors:

**Digital Technologies:** The adoption and integration of new technologies like AI, blockchain, mobile banking, and cloud computing.

**Digital Customer Behavior:** Shifts in customer preferences and behavior, with an increasing demand for digital services, personalized offerings, and 24/7 accessibility.

**Digital Competition:** The influence of fintech startups, digital-first competitors, and global players entering the Indian banking space, creating competitive pressure for traditional banks to adapt.

### Internal Factors:

**Digital Human capital:** Availability of digital infrastructure, skilled workforce, data analytics capabilities, and technological tools within the bank.

**Digital Culture:** The organization's mindset and approach towards innovation, collaboration, and adoption of digital technologies across all levels of the workforce.

**Digital Strategy:** A clear, forward-looking digital business strategy that aligns digital technologies with business goals, focusing on operational efficiency, customer experience, and revenue growth.

### Diagrammatic Representation of Conceptual Framework:

#### External Factors In this framework:

#### Drivers of Digital Transformation in Banking



**Figure 1** Conceptual Framework (Author's Work)

External Factors like emerging technologies, evolving customer behavior, and increasing competition play a pivotal role in steering the strategies and operational decisions of banks. These external influences serve as catalysts that require banks to not only react but also proactively adapt in order to remain competitive in the rapidly changing landscape. On the other hand, Internal Factors such as the available resources, organizational culture, and strategic frameworks within banks form the foundation upon which decisions are made and operational processes are structured. The continuous interaction and interplay between these external and internal factors create a dynamic environment within banking institutions. It is this synergy that propels the digital transformation journey forward, serving as a driving force for innovation and improved customer experiences. By closely aligning and integrating both sets of factors, Indian banks can effectively navigate the complexities of the market, anticipate emerging trends, and enhance their digital capabilities.

This conceptual framework not only provides a structured approach to understanding the digital transformation process but also highlights the intricate web of relationships that exist within the banking sector. By recognizing and leveraging the symbiotic relationship between internal and external drivers, banks in India can strategically position themselves to capitalize on the opportunities presented by digitalization while mitigating potential risks and challenges. In essence, the harmonious balance between external and internal factors is crucial for Indian banks to successfully navigate the digital transformation landscape and emerge as leaders in providing innovative and customer-centric digital solutions.

## 10. CONCLUSION

Digital transformation is no longer just a strategic investment for banks; it has become a critical necessity driven by the ever-changing demands of consumers, intensifying competitive landscapes, and the continuous evolution of technology. This pressing need has propelled banks to delve deep into the intricacies of change catalysts and embrace a well-defined framework designed to steer them through their digital metamorphosis endeavors with confidence and agility. As banks embark on this journey, they're not just looking to improve efficiencies or enhance customer experiences; they are paving the way for sustained growth and resilience in an environment where adaptability is key to survival. The forward-thinking approach of integrating digital solutions is not merely a means to keep up with the industry trends; it's a proactive strategy to future-proof operations and capitalize on emerging prospects in the dynamic digital era. By embracing digital transformation wholeheartedly, banks are gearing up to surmount the challenges that lie ahead, while simultaneously laying the groundwork to seize the untapped possibilities that await them in the digital landscape of tomorrow.

## CONFLICT OF INTERESTS

None.

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