

Future of traditional banking and its digitalization

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Abstract

This study is a framework analysis of the banking sector and the impact of information and communication technology (ICT), using digitalization and innovation, internet use as an ICT policy variable and its possible correlation on its effect on the customers in the financial development sector. This study aims to stimulate the prominence of the digitalization and innovation of the banking sector in terms of its process for economic and financial development. The operations and processes of ICT increase the speed and accuracy of electronic activities in a society and contributes to cost reduction, which subsequently helps increase the productivity of the banking sector. The study is motivated by the fact that most industries and especially financial institutions rely on gathering, processing, analyzing, and providing information in order to meet the needs of customers.

Keywords: banking, digitalization, fintech, neobanks, customers

Introduction

The traditional business model of banks, with expansion of the branch network, besides being labor intensive, involved high cost activities such as cash management, manual transactions and operations, and staff management. Additionally, it is inefficient and time consuming for the customers as well.

The banking industry is today encountering a rapidly developing technological environment, where innovation is one of the most critical factors in creating a sustainable growth (Capgemini & Efma, 2016). The banking industry faces major challenges that has reshaped the industry, primarily consisting of the technological advancement, the altered behavior of customers, and the increased competition from non-financial organisations (Capgemini & Efma, 2016). Since the introduction of the internet and smartphones, new consumer behavior has emerged. In retail banking, customers are demanding multiple interaction points with a clear focus on digital and mobile banking services. This creates problems for banks as it becomes harder for them to meet their customers' demands and expectations. Percentage of commercial banking customers that want to use digital banking services is 95%, while the number of commercial banking customers that use digital banking services is 85%. Only 22% of customers today would consider opening a bank account by visiting a physical branch (World Bank, 2019).

The pace of digital development is growing and the banking industry is having a hard time keeping up (Capgemini & Efma, 2016). Factors such as regulation, limited digital capabilities and resources, such as digital skills, knowledge, and tools for integrating digitalized systems, limit their capability to respond and adapt to the new customer behavior (Sonono & Ortstad, 2017). With the digital transformation of the financial and banking industry resulting in low entrance costs for other businesses, there has been increased competition from new entrants coming from fintech industry, especially so called neobanks

(virtual banks). These new entrants are able to establish themselves and offer more suitable financial services and products that are in line with consumer preferences and demands.

The main contribution of this study is its analysis of the banking sector and the impact of information and communication technology (ICT), using digitalization and innovation, internet use as an ICT policy variable and its correlation on its effect on the customers in the financial development sector. This study aims to stimulate the prominence of the digitalization and innovation of the banking sector in terms of its process for economic and financial development. It can be argued that the operations and processes of ICT also increase the speed and accuracy of electronic activities in a society and contributes to cost reduction, which subsequently helps increase the productivity of the banking sector. The study is motivated by the fact that most industries and especially financial institutions rely on gathering, processing, analyzing, and providing information in order to meet the needs of customers.

ICT may have a large impact in terms of increasing competition and contestability of banking markets. Banking will move toward a customer-centric based model, and incumbents will have to restructure.

The framework of analysis that follows includes ICT and the banking sector, electronic banking services, customer satisfaction with digital and innovative products, future of traditional business models in banking and digitization, mobile/virtual banks and fintechs, and emerging trends.

In specific terms, this study attempts to answer the underlying research question as to why the banking sector has so rapidly transitioned from traditional to digital banking.

ICT and banking sector

The ICT sector as the generator of new technologies applicable across a wide range of other sectors, as well as the proliferation of high-speed internet have led to an increasing digitalization of innovation in content delivery, exploitation of platforms for e-commerce, and the need for new skills. At the same time, it has also changed the way internet is used not only by businesses, but also by consumers, thereby raising questions about trust, security, and the protection of personal data (European Commission, 2015)

Over the years, ICT has radically changed people's lives, while, it has had a special effect on the way of doing business, specifically on the work of banks. Banks are adapting to the use of this technology, reflecting change in terms of products. An important impact of ICT in banking has been the invention and implementation of data mining and customer relationship management which was not possible a decade ago. Consequently, the banks on their part can tailor their products to suit the customer needs and even pinpoint the customers who would purchase their products. Although 'banking' is an old activity and has its roots in economics, finance, and commerce, the concept of 'banking technology' is of recent origin. To many people 'banking technology' means the use of computers and related hardware to streamline and automate banking operations. (Ravi, 2008). The real goal or objective of ICT in the banking sector is not just to provide access to modern technology, but also the role of ICT in the banking sector is to develop linking communities together in the long run. (Basit, 2019).

Bank distribution channels have been going through a phase of challenges and changes for several years. This is evidenced by the addition of new and alternative distribution channels. Growing competition in the banking industry has brought to attention of bank managers, the adoption of differentiating and innovative policies in distribution channels and service delivery. Technology, accessibility and organization within banks, these are the key elements that enable supply differentiation, adding to this investment in delivery systems and services, enable customers to use various banking services. Technology in particular, is the variable that precedes innovative product and distribution channels. Technological developments are related not only to the product and service but also with the process of production or deployment of banking products. For instance, a payment that can be executed at the counter of a bank can be also performed away from bank premises; even directly from home, office, or

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mobile through a cell phone. Thus, the place of service delivery, operational procedures and customer-bank communication and relationship, differ completely from one form of service delivery to another.

Table 1: Consumer Preferences (USA, in %)

Consumer preference		Channel			
		Branch	Contact center	E-banking	M-banking
Banking services	Information	40	12	23	11
	Transfers	17	8	46	30
	Utility payments	11	9	52	28
	Update of client data	23	10	48	24
	Loan application	33	9	19	11
	Account opening	38	8	21	12
	Financial advice	35	12	15	9

Source: Valenti & Alderman, 2021

As we can see as well as from the Table 1 customers prefer branches for info gathering, loan applications, account openings and financial advices. On the other hand, e-banking and m-banking (mobile banking) have become indispensable in consumers' daily lives, expanded the availability of financial services especially for transfers, utility payments and update of client data. They capture the client interface with multiple functions including payments (i.e., digital wallets), money transfers, and online shopping. Digital wallets are among the fastest growing technology markets. Their integration is highly advanced in Asia, where payment apps are currently serving a billion users and are part of a bundle that includes e-commerce, chat, deliveries, food ordering, and ride hailing. Even though the traditional or mainstream bank cards (Visa and MasterCard) are still the leaders of the market for transaction payments, nonbanks such as PayPal, Apple, and Google and new entrants such as Revolut, N26, and TransferWise are offer alternative payment innovations. For example, mobile-based payment schemes have a considerable effect in jurisdictions where the share of the population owning a current account is low. This is often the case in African countries, where only one-quarter of the population has a bank account but many more people have access to a mobile phone. (OECD, 2020)

Traditional payment systems and banking may also be disrupted by digital currencies. Cash is being used less and less. In the EU, as elsewhere, there is an increasing trend toward contactless payments (EBA 2019, ECB 2018, as cited in OECD, 2020). Many examples of digital currencies already exist, such as Bitcoin, Ethereum, etc. as well as very accessible apps for digital payments such as Alipay and WeChat Pay in China, M-Pesa in Kenya, etc.

The digital revolution has changed the demand for financial services and led the sector to become more customer-centric. On the supply side, it has left incumbents with obsolete technologies, such as an overreliance on rigid mainframes, and an overextended branch network, while younger generations want to bank with their mobile phones. The sector has overcapacity and, perhaps worse, the wrong kind of capacity. The industry is facing a deep restructuring in a context of low interest rates and profitability (in particular in the Eurozone and Japan). (OECD, 2020)

There are four basic ways in which digital capabilities can be used by banks to create value. First, digital technologies increase the connection to the bank, not only with customers, but also with employees and suppliers. This is extended from the interaction online and making payments online down to mobile functionality and opportunities to enhance the bank's influence on social media. Secondly, digitalization relies heavily on advanced data and analysis to expand and refine the decision-making process. A third way that digitization creates value is by enabling direct processes such us automation and digitization of a number of iterative processes with low cost and low risk. Finally, digitalization is a tool for fostering innovation in all products and business models. Each of these ways of creating value through

digitalization can be applied to any function of the bank, through the value chain, from IT operations to marketing and sales, to product development and finance, data and technology needed to implement transformation already exists (OECD, 2020).

Electronic banking services

In recent years, one of the main developments within the EU's banking sector has been an expansion of online services. The frequency with which consumers visit their local branch has fallen rapidly, with online transfers and e-payments becoming the norm. Markets have seen the emergence of internet (or virtual) banks that do not have any physical branches. As such, internet banks eliminate the overhead costs associated with running local branches and they are often in a better position to offer more competitive services with lower price than traditional banks with physical branches. In 2020, almost three fifths (58%) of the EU's adult population (aged 16-74 years) used the internet for banking. As with most internet activities, there are quite large differences between age groups concerning the adoption of internet banking. Young people aged 25-34 years were most likely to make use of internet banking (75%), while the share for older people (aged 65-74 years) was 34%. (Eurostat, 2021). The use of internet banking reflects, to some degree, the availability of broadband internet connections.

Customer satisfaction with digital and innovative products

With the increase of technological developments, life for people, in general, has become easier and the demands for even more innovative equipment have increased. As a result, banking consumers are often more open to exploring options outside the traditional banking system. According to Deloitte research data (Valenti & Alderman, 2021), 29% of millennials are likely or very likely to open a deposit account with digital-only banks, compared to 5% of boomers. Moreover, new banking customers are nearly thrice as likely to open a deposit account with digital-only banks, compared to current traditional banking customers. A recent study suggests that although satisfaction with digital-only banks has dipped during the last year, it still remains higher than traditional banks. Number of users of digital banking and digital services in general has increased especially after the COVID 19 pandemic (Valenti & Alderman, 2021). Most consumers are open to buying financial products via digital channels, but far fewer really make a purchase of digital financial products, especially in emerging markets (Barquin et al., 2021). Contactless has become the new default payment method as shown in Figure 1. Contactless payments are on the rise with increased consumers' adoption and increased limits across Europe. As a result banks are increasing ATM cash withdrawal fees and adopting alternative payment methods such as mobile wallets and Peer-to-peer banking. The COVID 19 pandemic boosted e-commerce; the online share of total retail sales is estimated at 16.4%, with e-commerce accounting for more than 75% of overall global retail growth. Online marketplaces currently account for 56% of online sales and will attain 67% of global e-commerce sales by 2022. (Paparella, 2021)

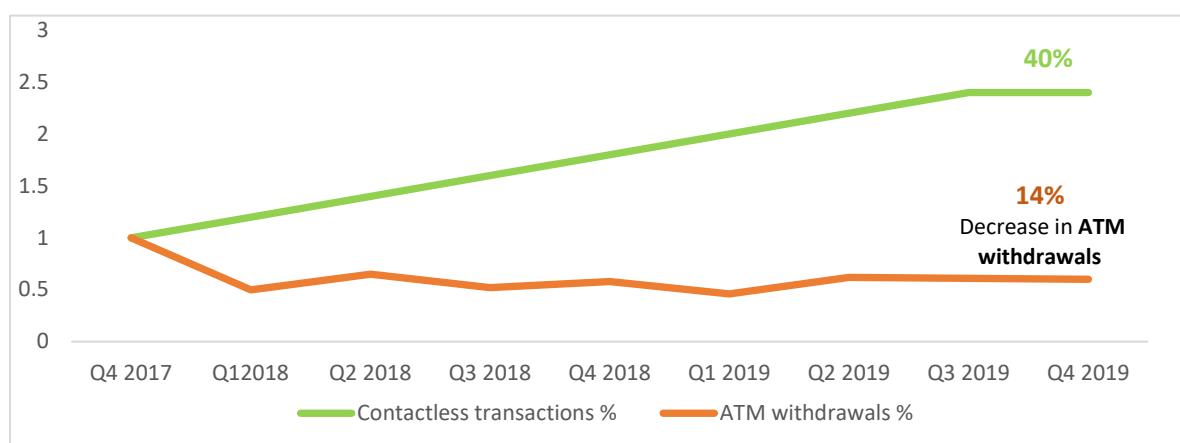
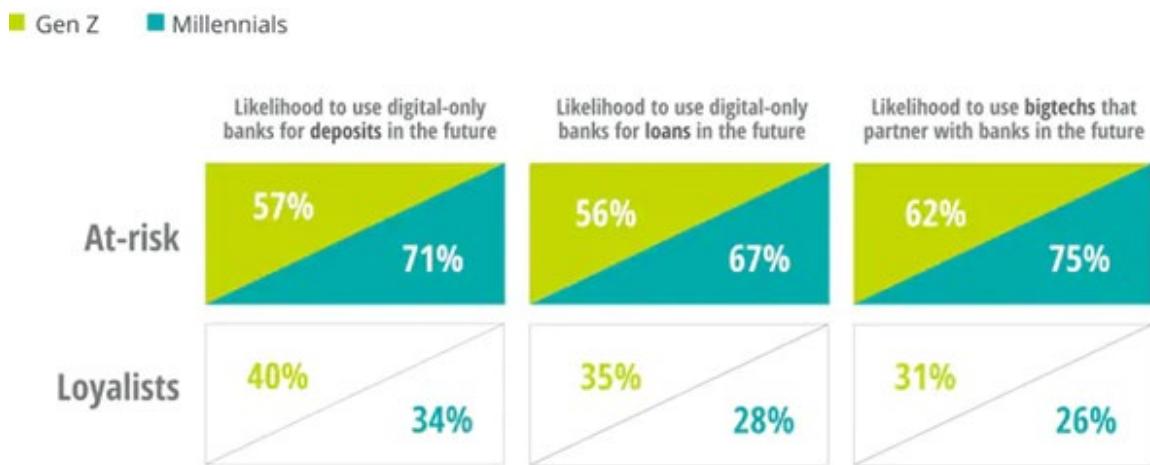


Figure 1: Reduced cardholder preferences for cash

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Customer and merchant experiences were transformed by enhancements delivered through smart-devices, multi-channel integration, and seamless payment experiences. Consumers expect long term changes in several aspects of their lives. They are dealing with new concerns: hygiene & the economy (pandemic effect); changing how they pay—contactless over cash and connecting with others virtually for work as well as socially. The COVID 19 pandemic has accelerated the consumer embracing of digital commerce. With the accelerating shift to digital, consumers are embracing a digital lifestyle at a rate faster than predicted. Overall digital adoption in Europe is almost universal (95%), compared to 81% at the start of the pandemic (Zehnacker, 2021). Payments today are becoming more than just a transaction; they must be an experience. Customers value flexibility as a priority, 76% of consumers like to have as much payment choice as possible (Mastercard, 2020); then security is a necessity with 86% of consumers prefer to trust their banks to securely manage their data (Mastercard global research, 2019, as cited in Mastercard, 2021). All this is resulting to digitalization as a differentiator, where 69% of consumers want their entire financial lifecycle on digital channels (Oracle, 2018). In this respect, banks need to offer flexible, secure, digital payment experiences to meet consumer expectations. According to Deloitte research data (Figure 2), at-risk consumers (those who are "very likely," "likely," or "somewhat likely" to switch their primary bank) are more open to a relationship with digital-only banks and bigtechs that partner with banks. This preference for non-traditional institutions is especially pervasive among younger customers, possibly due to the fact that these nonbanks offer superior digital experiences.



Source: Valenti&Alderman (2021)

Figure 2: At-risk younger consumers are more open to a relationship with digital-only banks in the future

Millennials, born between 1980 and 1996, grew up during the economic boom. They tend to be idealistic and are focused on having experiences. They are mobile pioneers and prefer brands that share their value. They prefer facebook and instagram. Alternatively, generation Z, born between 1997 and 2010, grew up during a recession. They tend to be pragmatic and are focused on saving money. They are mobile natives and prefer brands that feel authentic. Both groups of generations have adopted to the recent evolution of technology.

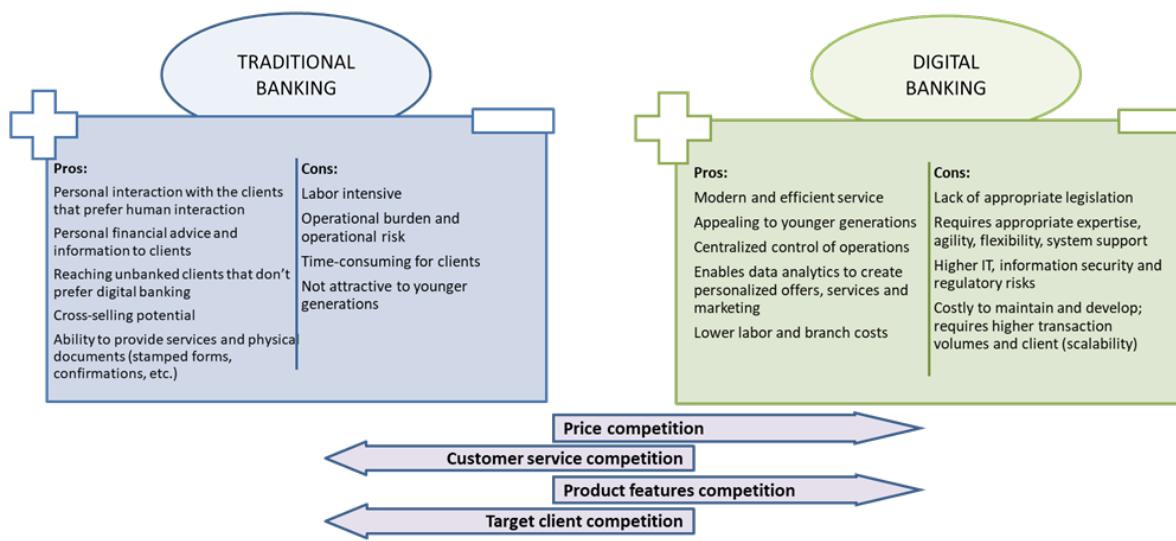
As seen from the Figure 2, where percentages represent at risk versus loyalist generation Z and millennials respondents who are "very likely", "likely" or "somewhat likely" to open an account or use a deposit or loan product at a digital bank or bigtechs are for millennials higher at risk than for Gen Z, who are more loyal to digital banks.

Upcoming years will shape a new generation of customers who demand a brand new level of value and care. In order to live up to that, financial institutions are forced to adopt new ways of thinking and

operating, and to do it quickly (Kreger, 2021). If it wasn't for the COVID 19 pandemic, the finance industry would still lag behind in many crucial areas of digitalization and customer experience improvement. The pandemic was a harsh but needed push that enabled 10 years of growth in only a few months (LaBerge et al., 2020)

Future of traditional business models in banking and digitalization

Traditional banking at its core uses bank branches and any interaction with the customer is carried out through the branch; digital channels are scarce and secondary in service delivery. The digital banking model focuses on the client and his/her experience with digital channels of banking services. The client chooses the way/channel through which he/she wants to communicate with the bank or perform a financial service, and in reality, may never visit the branch. There are numerous advantages of digital banking: 24/7 flexibility, speed, choice in the most convenient service channel, unnecessary branch visits, convenience, global access (payment at ATMs around the world, online shopping, travel services). Traditional banking is labor intensive business model for banks and involves personal interaction with the customer that prefer human interaction. Likewise, this business model besides being labor intensive, involves high operational burden and operational risk. It is time consuming for customers and not attractive to younger generations. On the other side, digital banking is a modern and efficient business model. It is appealing for younger generations and involves the centralized control of operations. Digital banking facilitates and enables data analytics to create personalized offers, services and marketing. It involves lower labor and branch costs. In order to enable digital banking, financial institutions need appropriate legislation and require appropriate expertise, agility, flexibility and system support. However, there are higher IT, information security and regulatory risks involved. Furthermore, costs to maintain and develop are much higher compared to the traditional business model. These and other advantages and disadvantages are shown in the Figure 3, with which we as well as tried to illustrate theirs' consequences.



The majority of banks in Europe have introduced innovative solutions in the area of digital distribution/e-commerce sales, mobile payments, social media marketing, big data analytics, social media complaints handling and secure messaging. Some banks have also introduced telematics/biometrics/wearable technologies (HSBS and BNP Paribas), AI, robotics and auto provisioning of cards for apple/android pay. The number of branches in Europe has fallen by 30% in the last decade (Saravia, 2020).

Digitalization of banking

The following Table 2 displays the evolution of banking digitization and its integration into banking practices by consumers from a multi country perspective.

Table 2: Evolution of banking solutions

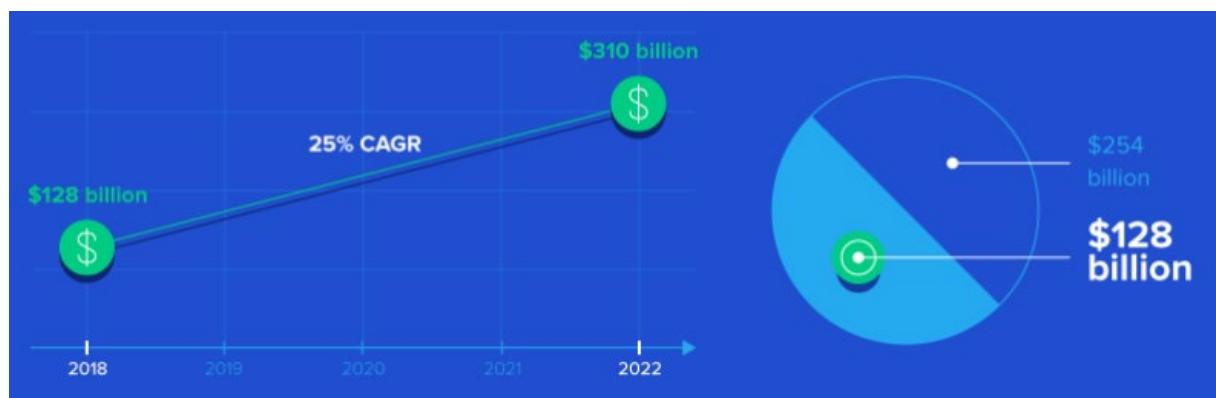
1960s	Semiconductor microprocessors	Credit Cards	Allowed the replacement of physical recording by digital data
1970s	Mainframes		Enabled batch overnight processing
1980s	Terminals and PCs	Messaging Services (e.g. SWIFT)	Automated banks and branches and facilitated offline remote banking
1990s	Internet and local networks	ATMs	Enabled data centers, intranets and corporate systems
2000s	Smart devices	Electronic trading	Facilitated the global exchange of data and enabled a series of international businesses Created a new medium to interact with clients and collect data
2010s	Mobile	Digital Banking	Spearheaded frictionless payments

Source: Mastercard, 2021

As technology innovation has evolved and adopted by the banking industry so has consumer confidence and comfort in using that technology. The banking industry has, as a result, become more productive, accountable, and efficient—while at the same time have offered consumers greater convenience, flexibility and control in their transactions. Furthermore this has been an international experience enhanced with the internet's widespread diffusion, but also, with emerging more secure technologies including block chain. Banking has evolved in pace with overall global digitization.

Mobile/Virtual banks and fintechs

After the financial crises of 2008, the European banking industry has undergone massive changes with fintechs driving that transformation. Many banks have initiated processes with the aim of increasing efficiency or improving the quality. Common projects initiated are reorganization of managerial and operational structures, re-engineering of critical processes, digitalization of data and automation of work processes, enhancement of data analytics, and improvement of customer relation management (CRM) systems. Across the financial industry, there have emerged a wide range of innovative business models and startups that have enriched the sector while broadening the choice for the consumer; from payments to lending and from risk management to entire new financial ecosystems. In Europe more than 2,000 startups dedicate their business to financial technology, while globally more than 7,500 startups provide valuable solutions for the industry (Natis et all, 2019). Fintech investments are surging, reaching €27 billion worldwide in 2017 alone, with €4.6 billion in Europe making this more than double the amount of a year before (European Banking Federation, 2018). More than half of this financing occurred in the business-to-business space (ActiveViam, 2018). As of 2021, 55% of banks worldwide partner with Fintechs to provide additional digital services (Deloitte, 2021). More recently are noticed added investments in new technologies, 91% of banks in Europe are reported to have invested in Blockchain and 77% in artificial intelligence systems (Megaw, 2018).



Source: Katabchi (2019)

Figure 4: What's happen in fintech industry?

In the Figure 4 we can see that in 2018 \$128 billion was invested globally into fintech. Investment in the sector is expected to grow to \$310 billion by 2022, at an 25% annual growth rate. Even more impressive is the fact that in 2018 out of \$254 billion invested in venture capital globally, fintech accounted for nearly half of it.

Trends

The combination of powerful technologies and underlying market trends across all industries have shaped the digital payments landscape. Consumers embrace digital commerce in all regions of the world. Rise of fintech is taking advantage of open banking and new payment methods. New technologies are fueling change in commerce and payments and there is an increasing concentration of major commerce platforms. As a result, banks are focusing more and more on security and privacy, by both consumers and regulators. Banks are continuously striving hard to bring the state-of-the-art ICT innovations to make banking an even more convenient and pleasurable experience to attract more and more customers, thereby increasing the banks' profits. Consequently, the banks have dumped their traditional product-driven strategy to embrace the more logical and profitable customer-driven strategy. On the other hand, customers have also become hungrier and want the banks to become a one-stop-shop for all their financial and investments needs.

The COVID 19 pandemic played a huge role in terms of financial industry digitalization and has accelerated consumers to embrace of digital commerce. With the acceleration shift to digital, consumers are embracing a digital lifestyle at a rate faster than predicted. The first half of 2020 saw an increase in ecommerce equivalent to that of the previous ten years in the US (Zehnacker, 2021). Overall digital adoption is almost universal (95%), compared to 81% at the start of pandemic (Fernandez et al., 2020). Banks are fully aware of digital transformation challenge. The pandemic pressured banks to offer the availability of online financial products, though deficient implementation speed and the lack of focus are slowing down the progress of digital transformation in European Banks (Deloitte, 2020).

Digital technologies have played a central role in expanding the reach of financial services. Globally, 52 percent of adults had sent or received digital payments in 2017, compared with 42 percent in 2014. In low-income countries, this rate increased from 15 percent in 2014 to 26 percent in 2017 (World Bank, 2021). According to Deloitte survey, banking consumers are often more open to exploring options outside the traditional banking system. Data reveal that 29% of millennials are likely or very likely to open a deposit account with digital-only banks, compared to 5% of boomers (Valenti & Alderman, 2021). Moreover, underbanked customers are nearly thrice as likely to open a deposit account with digital-only banks, compared to banked customers. This study suggests that although satisfaction with digital-only banks has dipped during the last year, it remains higher than traditional banks

With the changes of the generations, the future of banking is changing as well. With the emergence of computer banking and mobile banking, younger generations, mainly millennials and generation Z, prefer to do banking transactions online rather than visiting bank branches. Thus, in order to stay competitive banks have to adopt customer needs and to invest in their digital transformation.

According to a special Eurobarometer survey conducted in September and October 2021, an overwhelming majority of EU citizens think that the internet and digital tools will play an important role in the future (European Commission, 2021). The findings of the survey show that more than eight in ten Europeans (81%) feel that by 2030, digital tools and the internet will be important in their lives. In this respect, the European Banking Authority identifies a rapid growth in the use of digital platforms to ‘bridge’ customers and financial institutions, a trend expected to accelerate in line with the wider trend toward the digitization of the EU financial sector. (European Banking Authority, 2021)

Conclusion

Banking has been forever changed through digitization not only driven by the evolving digital technology—but also by consumer demand for better tools, real time access in a user friendly package. Customer familiarity with digital technology in all aspects of their lives due to computer and smart phone apps providing convenience anywhere and anytime is evidenced by transaction user data.

For business models to remain sustainable, banks cannot afford to stand still when it comes to technology. Customer demand for convenience will certainly increase, so banks should push their work on digitalization forwards as fast as possible.

It is not surprising that use of online banking is higher among young people. For the digitally native younger generations, online is the default option. They expect banking services – like other online services – to be available without any extra effort and, if possible, zero costs.

Customers have for some time been on an inevitable path away from traditional physical branch-based banking and towards online and mobile alternatives. This means that online service applications must become more and more convenient and available.

With respect to the underlying research question as to why the banking sector has so rapidly transitioned from traditional to digital banking; the banking industry has become more and more demanding, driven by the high speed of change not only because of the ICT development and achievements but also because of the growing need to find new ways and means to service customers—catalyzed by the COVID 19 pandemic lockdowns.

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