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Digital Transformation Journey for Incumbent Banks: The Case Study of Greece

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Abstract

Banking institutions' digital transformation framework has a phased journey, whose pace may position the institution for success of failure. The paper is providing a structure of progress for assessment on that journey, building on a study of the Greek banking institutions. The main tools employed were empirical case study examination of a representative bank, relevant scholar and professional literature review and market observations. The Greek banking system, having to weather multiple external pressure factors, is pushing through into the digital journey. The paper examines and assesses progress achieved by identifying areas of success and others where steam has been lost. Further research will deepen the knowledge around digital transformation banking transition, also providing opportunity for cross-examination with grey literature and practitioners. On practical implications, the findings could be used by banks' leadership to identify the position they are in the digital transformation journey and the way forward. To our knowledge, it is the first study that builds such an overview for the Greek financial incumbents, with potential management concerns identified.

Keywords: digital transformation, digital banking, Greek banks, incumbent banks, digital innovation

1. Introduction

Although business transformation is necessary when conditions in competition and technology change radically, evidence is overwhelming: The results of transformation do not live up to initial expectations with only a third succeeding (Messenböck et al., BCG, 2021; Allchin, 2020). It takes a long-term effort to re-align the strategy and operational model of a company with the new conditions in the external environment, which affects the value offering, capital structure, the organizational structure and strategy, the human resources, the systems, and the culture itself, all key enablers of a digital transformation journey (DTJ), as in Papathomas and Konteos (2022), Hai et al. (2021), Venkantraman (2017) and Verhoef (2021). Digital transformation plays a crucial role in incumbents' future survival, becoming a top agenda item. They will face challenges and barriers when searching and implementing business model innovation, given the weights of legacy they have to carry (Panzarino, 2021; King, 2019). Unsurprisingly, incumbent firms are often forced to deal with conflicts and trade-offs between existing and new ways of doing business (Verhoef et al., 2020; Christensen et al., 2015; Markides, 2006). Yet, Digital Innovation is an opportunity (King, 2019), if incumbents accept it and then find ways to exploit it (Markides, 2006; Charitou et al., 2003).

The need for change presents a particular challenge for the Greek banking sector, where a perfect storm is brewing, made from an economy that is suffering for the last 15 years (Papadopoulos, 2020), a pandemic crisis, the highest number of Non-Performing Loans in Europe (NPL ratio of 14.84%, as per ECB Q2 2021 asset quality statistics) and a forced 95% concentration of market to four banks, now considered "systemic" (Press Release of BoG, 11/2021). Inevitably, many resources have been directed on that front (Provopoulos, 2014). Yet, the Hellenic banking system cannot survive in vacuum and cannot elude the technology pace. Almost inevitably (Hai et al., 2021; Venkantraman, 2017) all four banks have embarked into a digital transformation journey that should see them into a new era. On that journey, bank management will need a set of guidelines to navigate through the different approaches and options, extending beyond the consultancy reports to more systematic empirical evidence (Mergel, 2019) on the stages and the content and context of the digital transformation

journey.

2. Research Objective & Methodology

The paper is conducting an empirical research based on real-time data. The main hypothesis of it is formulated in two interrelated Research Questions, postulated as below:

Q1. Does the Geek bank industry have a specific, traceable, and recognizable position in their digital maturity status?

Q2. Can a framework of tracking enablers be developed for measuring position in DTJ?

Case study research has been used by researchers to develop theoretical propositions based on empirical evidence within a given context (Eisenhardt & Graebner, 2007 as transferred in Patsiotis et al., 2013). The classic case study consists of an in-depth inquiry into a specific and complex phenomenon (the 'case'), set within its real-world context (Yin, 2013, p. 321). Having observed the small universe of the total number of banks and the similarities of the organizations in the Greek market, (four banks of 95% share); we opted for an in-depth single case study of a smaller sample (one unit of analysis i.e. one bank), seeking to understand in-depth insights and to mirror findings into the other three incumbents (Wiener et al., 2018). The whole exercise remained qualitative. The study did not go as far as making an analytic or conceptual generalization (Yin, 2013) given the very limited number of the universe. All relevant case study elements and descriptors (case, bounding system, context, in depth, study, selection, evidence, design) as presented at Table 1, [36] of Harrison et all on their *Case Study Research: Foundations and Methodological Orientations* (2017) were observed. Data sources included field observation, background characteristics of the Bank, organizational charts, public interviews of CEO/Executives, 3rd party evaluations and informal interviews. Documentation from secondary information sources (industry reports, financial magazines, and corresponding internet publications) was also gathered and integrated into the research process. The overall research follows interpretivism (Alharahsheh & Pius, 2020), given that the nature of the subject involves an active environment. Our approach is naturally inductive, as we have had to collect the data first and then develop the theoretical standing. We did not employ structured methodology with controls, but instead opted for qualitative methods, namely informal interviews & conversations, observation, and data search (Tranfield & Starkey, 1998).

3. Literature Support

Several prior studies, as well as industry publications, contribute critically to the understanding of the paper and its conclusions. Panzarino (2021), Venkantraman (2017), Warner and Wager (2018), have analysed key constituents on shaping digital transformation journey, while others such as Kristiansen and Ritalia (2018) have raised the importance of being able to measure performance over the journey or of the Key Success Factors for each step (Shah, 2006). Mergel (2019), Vial (2019), Rosenstand (2018), Parida (2019) and Verhoef (2021) have conducted informative literature analysis. Yet, in our view, literature has still enough steps to complete before a more holistic view of the necessary steps to transformational journey of the banking systems is offered. Scholars have sufficiently debated over focused areas, covering siloed areas such as resources required (Yang, 2011), task dilemmas of management (Heavin & Power, 2018) or choice of business model (Charitou, 2003). Our work offers a better viewpoint over the managerial approach to financial incumbent's transformation journey implementation by defining a comprehensible, tactical evaluation that practitioners can adapt. It is this paper's approach that digital transformation requires a purpose specific set of competencies and managerial approach, which is differentiating itself from traditional transformations (Kotter, 1995). The case study context is a better-informed discipline with several scholars (Harrison, 2017; Henderikx, 2022; Eisenhardt, 1989) and predominately Yin (2013) providing the framework. Extensive contribution came also from the work of professional consulting firms (Oliver Wyman, Mckinsey, capgemini, Accenture). Our research was narrowed down by English and Greek language literature. The study draws also from a connected paper of the researchers (Papathomas & Konteos, 2022).

4. Transformational Journey for Financial Institutions: Phases and Key Enablers

4.1 Phases

The transformation that digital disruption brings is coming as a journey for most industries, building a route from the early stages of discovery to incubation to end up in acceleration, much like a project life cycle at the view of O'Connor et al. (2008). The concept of journey, with a beginning, a middle point, and a destination, is present to almost all academia and professional publications that deal with digital transformation, acknowledging a distinct-phases path, albeit each scholar providing their own split of the stages in numbers, pace and conceptualization (Verhoef, 2021; Saldanha, 2019; Costa et al., 2015; Frankenberger et al., 2013). Panzarino and

Hatami (2021, pp. 54–74) and Venkantraman (2017) employ a 3-stage concept that the current paper also follows: a) Stage one: Adapt. Phase of digitization, with basic familirization of the idea and front-line implementations. b) Stage two: Grow. Phase of digitalization, Omnichannel delivery, business adaptation, culture change c) Stage three: Transform. Phase of digital transformation, major shift in internal culture, organizational chart model and core banking systems. New business paradigm. There is no explicitly defined borderline between the different phases, given the complexity and multi-factor layers that defines the journey.

4.2 Key Enablers

The focus of digital transformation at incumbent firms can be viewed from different angles, including but not limited to strategy, structure, and technology (Gregory et al., 2019), digital resources—organizational structure growth strategy—metrics and goals (Verhoef et al., 2021), strategic‐centric, customer‐centric, organizational‐centric, and technology‐centric perspectives of Loonam et al. (2018). To our view, Strategy & Organization, People & Culture, Technology & Innovation and Value Proposition formulate the dynamic capabilities that, once interconnected, create the necessary traction to move across the stages. They are the contingency factors that can trigger, enable, and may even hinder the digital change, all interconnected, all contributing to every phase (Papathomas & Konteos, 2022).

5. The Case of Greek Financial Institutions

5.1 Market Overview

The Greek banking world had started catching up with the rest of the advanced economies' financial institutions traction as late as the middle 90s, when, from just two private banks—namely Alpha-Trapeza Pisteos and Trapeza Ergasias, approx. 20 representative branches of foreign banking institutions with limited reach and 14 entities controlled directly or indirectly by the state, at 2004, it leaped into 23 locally owned banks, while another 20 foreign ones established their presence in the country and, eventually names such as Société Générale, Credit Agricole, Millennium, Bank of Cyprus etc. gained considerable volumes (Papadopoulos, 2020). Such was the expansion that, in 2009, the assets of Greek banks were totalling €500 bn while few years back, in 2000, they were adding to no more than €150 bn. (Tzavalis, 2013; Papadopoulos, 2020). Yet, having been struck by the world-wide banking crisis of 2008, the continuing crisis of the Greek economy, leading to capital controls in 2015, and then again by the covid pandemic, the Greek banking system suffered a continuous punishmen (2014). As a result, by 2018, assets of the Greek banking sector had fallen to €245 bns, while the Non-Performing Loans reached €100bns, a staggering 51% of the total loan portfolio (Papadopoulos, 2021). The sector had to engage, among others, into a frenzy of mergers (forced or otherwise), with the participating institutions being heavily reduced in volumes as well as numbers, eventually leaving it with four "systemic" banks of 95% market share and 5-6 institutions dividing the remaining market. As a natural by-product, staff and branches within 10 years were reduced by almost 50% to 33.097 and 1702 respectively (BoG 2020 published reports).

The bad economy combined with the small, digitally immature market—World Bank Digital Adoption Index ranks Greece 115th among 180 nations in 2014 and 129th in 2016, the limiting language and an inherited inertia of the consumer has somewhat protected the remaining incumbents from non-banking threats (Pogkas, 12/2016; Mouratidis 7/21), being these international banks, fintechs, neobanks or the BigTech players. The few notable exceptions were Praxia, an exclusively digital bank that failed after two years of start-up efforts, VIVA a fast-expanding fintech, specializing in cards acquiring and Optima, a classic-format banking new entry. Still, despite the limited competition, the industry has not escaped the inevitable pressure from shareholders (Allchin, 2020) and customers alike (Mbama et al., 2018), who, starting from a different point of view, demand changes that will make the banks more cost effective and user friendly in doing business. Backed up by need for social distancing at the times of covid, the request for anytime, anywhere with personalized experience and ease of use became louder, (Saprikis et al., 2022).

Offering web based on-line application for a card is not in itself enough to bring a financial institution into the new world of digital. Management of the four systemic and the other surviving banks has recognized the need for a holistic change and has publicly committed to engage in a journey that will eventually see them into a new phase, where technology will have a pivotal role in their DNA, as expressed by all four systemic banks CEOs. Yet, the successful outcome of these publicly declared intentions of the Greek banks to transform themselves (see reference on Press Releases, Greek banks,) into digitally driven institutions will vastly rely on their ability to avoid the pitfalls of the old practices in the field. The strategies that have led these institutions on their continuous effort for improvement may not be equally adequate, especially within an ever-changing digital technology environment. According to a survey published by the firm Oliver Wyman and the Procensus investor, only 25% of investors are confident digital transformation strategies will be effective (Allchin & Moynihan,

2020). Aware of this, Management of the four systemic and the other surviving banks are making heavy commitments by deciding to move towards digital development.

5.2 Bank "A" Case Study

The single case research study provided the authors with an empirical, in-depth insight into the specifics of digital transformation efforts of a purposefully selected banking institution, one of the four systemic banks, operating in the Greek market and SE Europe. The study follows over the institution's path to digital transformation, its approach and status. The institution, "Bank A", a pseudonym, is a rather dynamic, privately owned, younger organization that has grown considerably by introducing antagonistic marketing, customer centric and modern interfaces as well as massive expansion on retail. Like all its competitors, it saw its balance sheet growing exponentially in the early 00s. Its aggressive sales techniques have also gathered criticism. The bank currently enjoys a market share of 18–25% in most sectors, and, much like all competitors, it has suffered the consequences of the economic turbulence, having to readjust in branch numbers, cost cuttings and revenues. Original shareholders' ownership (prior to 2008 crisis) has changed, with the state gaining a large stake. The institution has engaged in a series of digitization and digitalization exercises, it has a full unit devoted to digital transformation and has recently upgraded the role of the leader responsible for digital transformation. As an institution, it maintains an organizational chart of typical pyramid multi-layered structure, with the digital department being separate and distinct from the business units and the IT. Since early 00s, the Bank A has been introducing e-banking, m-banking, online apps etc. while internally it has commissioned a number of major initiatives to digitize its processes with the pace slowing done the last period. It has been aggressively reducing the number of branches. Its vision for the future, voiced by its CEO sees the bank in a Phygital form (Anker, 2021). Average staff age is 40+ ys old, >6500 FTEs in total, decreasing via voluntary package exits, with about 35% placed in the Network. Branch footprint (approx. 300 branches nationwide) and segments penetration is similar to the other three incumbents, with a bias to middle upper customer profiles. The bank model is a universal one. Recently the bank, much like all other market players, recognized that payments are becoming a specialty game, sold its Point of Sales Acquiring card acceptance terminal fleet to an external international specialized player, retaining part of the customer value chain.

Case study bank "A" had started in February 2000 adding electronic banking services in its arsenal, claiming the title of one of the first banks in Europe that were offering electronic banking services through three different channels simultaneously: computer, mobile and interactive TV. Ever Since, the bank had a number of milestones in its digitization process: e-Banking for business, retail on-line site (2000), e-Banking 2.0 (2002), upgraded e-Banking (multichannel), e-Statements (2006), notifications, online chat, SMS OTP (2008), online only products: current account Live and e-prepaid card (2010), SMS Banking 2.0 (2013), Mobile App 4.0 and Newer-Banking for individuals (2018), Account Aggregation (2020). By 2017, a major digital transformation strategy had been designed and approved, set up to last 3 years and bring the institution into the next decade of 2030. The total spend commitment would be a very large proportion of the total IT budget, exceeding €100m for the whole period.

5.3 Extrapolation and Similarities with Total Universe

As stated, Greek banking system was a lot more diverse and multi-schematic, with approx. 65 challenger and incumbents, sector specific, private and state owned, foreign and domestic institutions (Chatzoglou et al., 2010). The world economic crisis of 2008 and the consequent huge pressure it put on these institutions (Mitsakis, 2014), led, the following decade, into an unprecedented concentration of institutions and assets into virtually four players, whose commercial names are Alpha Bank, Eurobank, Piraeus Bank and National Bank of Greece. The mergers have safeguarded the continuity of the banking system (Provopoulos, 2014; Papadopoulos, 2021) but have created one of the highest financial institutions' concentrations in EU with 95% of total market assets into these four systemic banks (Papadopoulos, 2020). A direct consequence was that market shares, branch footprints, core banking systems, staff numbers were dispersed proportionately and almost evenly to these institutions. A visual representation of that conformity is depicted in Table 1. Based on that data and relevant discussions, we have established that most characteristics are very similar, and we have therefore extrapolated the observations and findings of bank A to the other three banks.

Table 1. Key comparable ratios for the four systemic Greek banks

	Alpha	**Eurobank**	**Piraeus**	**NBG**
	2020A	*2020A*	*2020A*	*2020A*
€,m				
Performing Loans (Gross-NPEs)	29800	28500	30400	26800
Net Interest Income	1542	1349	1486	1169
Fees	335	384	317	256
Recurring Operating Expenses	-1042	-869	-937	-814
Core Pre-Provision Income	835	864	866	611
….				
Cost to Income (%)	55,2	51,7	51	35,9
FTEs (#)	6538	6683	9764	7626
Branches (#)	313	299	404	341
Model stripped off from other P&L key components (sign offs, other incomes, Group)				

Source: Own estimates based on Investor Relations publicized P&Ls.

6. Greek Systemic Banking Universe's Digital Transformation Journey Assessment

6.1 Overview

From international conglomerates to small local entities, firms have tried to reinvent themselves. These efforts have gone under many banners: total quality management, reengineering, right sizing, restructuring, cultural change, turnaround. Nevertheless, in almost every case, the basic goal has been the same: to make fundamental changes in how business is conducted to help cope with a new, more challenging market environment (Kotter, 1995). This change is not free from perils. Miles and Snow (Ghoshal, 2003) used the term strategic fit to emphasize that organizations need to find a match between their internal resources/capabilities and the demands of their external environments to enhance their competitive advantage. Finding such a strategic fit for Greek banks is quite a guesswork. Denning (2016) on an interview with Christensen are emphasizing here that "market-leading companies have missed game-changing transformations in industry after industry—computers (mainframes to PCs), telephony (landline to mobile), photography (film to digital), stock markets (floor to online)—not because of 'bad' management, but because they followed the dictates of 'good' management. They listened closely to their customers. They carefully studied market trends. They allocated capital to the innovations that promised the largest returns. And in the process, they missed disruptive innovations that opened new customers and markets for lower-margin, blockbuster products". This may well be a description of what science of management calls the paradox of Kaizen (Stringleman, 2018). The Kaizen approach is theorizing the highly successful methods of production of the Japanese industrial enterprises and especially Toyota of the 50s. Their dogma states that there could be a constant improvement by small continuous comprehensible and quantifiable stages or better waves of changes (MacPherson, 2015; Wittenberg, 1994). The paradox here lies on the fact that these successful improvements for the Greek banks have the risk of disorienting and creating an illusion of innovation and change while, at best, the firm just follows environment developments. Management will have to differentiate between using digital technologies for redesigning existing business processes (business process reengineering) vs the fundamental change of the operating model.

For the bank in our case study, the phase of adaptation has, like most other banks, started at the early 00s. The course of the systemic Greek banks, demonstrates, as early as the beginning of the 00s, the willingness of their leadership to look outside and adapt new technological developments in a series of reform programs (Carucci, 2017). At this stage there has been gradual introduction of new online banking capabilities, still rather basic, and every couple of years the bank has systematically or not introduced a revised version of the banking, enhanced capabilities, reaching the last five years where online applications for retail products were introduced. The institution under review was the first one to move into that era but naturally the rest of the incumbents have either caught up or advanced further. They cannot afford to miss the race. In a series of studies on Retail banking undertaken by international management consulting firm Mckinsey (Broeders & Khanna, 2015; Olanrewaju, 2014), institutions that stay behind in their transformation journey could see up to 35 percent of their net profit eroded due to competition, increased expenditure in new IT and overall cost of entering new era, while successful moving into new digital sales and added value services may realize a profit upside of 45 percent or more. Abbot et al. (2021), reaches a similar number by estimating a net profit up lift of 5 percent.

6.2 Key Enablers: Strategy & Organisation

Greek management has already passed the basic implementation stages of digitization, back-office automation

and streamlining of IT initiatives with digital focus. Even more so, an organisational change delivery framework is being deployed to all of them, with centres of excellence, group wide integrated efforts and targeted investment. The quest now is for the Strategy that will deliver the next and last phase of the DTJ. Margiono Ari identifies in his paper two paths of digital transformation, the offensive and the defensive. In their offensive scenario, incumbents identifying the hostilities that surround them move fast to launch offensive strategies to ensure that they remain leaders in the industry. They offer new products to new markets and place themselves head-to-head with emerging competitors. Goldman Sachs is used as an example of a traditional banking institution that uses portfolio investment and M&A tactics to ensure that they quickly acquire new resources to compete in the disruptive environment. The defensive scenario starts by choosing to serve the existing market through the digitization of their existing products before transforming into a fully blown digital company, ensuring first that their existing structure can absorb digitization. Netflix's organic growth of digital capabilities from the DVD rental business to going into international expansion and "internet movie" before finally storming out as global leader in movie streaming services, (Margiono, 2021, pp. 3–7 ahead of print). Greek banks seem to be taking defensive path, which is a relatively slow one and relies on themselves growing their own digital capabilities (Skinner & Hess, 2017). To the Greek incumbents, this may be a one-way street, given their poor overall financial recovery and capital structures (BoG, ECB multiple reports), that cannot facilitate aggressive acquisitions. One management choice would be to maintain the high street status in the main brand name and go for a spin off on-line bank. This option may have a high risk of alienating existing clientele, simply because, as Porter (1996) argues, a firm can't run two conflicting models at the same time e.g., Amazon (online, low cost) vs local neighbourhood established chains of bookstores (personal touch, high maintenance). Such approach, of course, it is not unheard of, and, according to Markides and Charitou (2004), under circumstances, such as Mercedes with Mercedes A-Class, Aegean Airlines with low cost, short haul Olympic subsidiary, can be profitable. Yet, the banking sector does not have much on that to show off with several attempts from establish banks failing (Bo of RBS, Finn of JPMorgan) while others of course succeed so far (Goldman Sachs' Marcus, Santander' Openbank). Whichever the approach, its strategy that drives the business, not technology (Kane et al., 2015; Matt et al., 2015).

6.3 Key Enablers: People & Culture

All four systemic Greek banks demonstrate a high attrition of the top digital management positions of digital. The businesses and other functions' peers stay in their jobs for more that 8–10 years, the digital Head can expect two years' average staying on this job, a trend observed universally (Wade, 2020). This comes to show the sensitivity of the job that have to ensure top-down organizational Digital turn (Reichert et al., BCG, 2022). Senior management should instate and disperse a New Digital Age culture and a Vision for the future, to the point that Digital First culture is established. The chief digital officer, as well as other similar, digitally related roles, need to ensure that the transformation process can be orchestrated smoothly. Singh and Hess (2017) stated that the chief digital officer plays a different role from other C-level officers because he is responsible for the overall digital initiative and linking the information technology and business functions (Margiono, 2021). Training days for the top management, appointment of chief digital officer in the top layer, sponsor of transformation at every major part of the bank by a top making the Executive Team permanent part of the whole change (Reichert et al., ibid). Greek banks have to move from the old traditional working environment to digitized, digitalised and eventually embrace the New WoW _ New Ways of Working with seamless working from everywhere, e-signatures etc. (Kaufman et al., 2020). Inevitable though, the transformation will lead to branch closures (Mbama et al., 2018; Selimovic et al., 2021), new roles and job profiles being introduced and old ones becoming obsolete (King, 2019; King & Nesbitt, 2020; Schmidt et al., 2016).

6.4 Key Enablers: Technology and Innovation Approach

Next generation banking includes blockchain, 5G speeds, cloud-based core banking and use of artificial intelligence (Harris & Wronglimpiyarat, 2019). In the combined work from Rosenstand et al. (2018) and Christensen (2015) digital disruption is a 'process whereby entrants with fewer resources are able to successfully disrupt incumbents by offering a value proposition based on a digital technology and a value network utilizing an exponential price performance trajectory'. Just within 2020, as announced by special advisor to Bank of Greece Strauroula Kampouridou (FinForum Greece, 2021), the institution received almost 40 requests for participation mostly of start-up companies to the regulatory sandbox that was set up to assist the Greek fintech ecosystem, helped by the state's intensified efforts on building infrastructure and incorporating EU PSD2 practices (Greek Government digital transformation bible; Zacahriadis & Ozcan, 2017). The choice is not clear nor unlimited but, still, it's the opportunity to harness innovation for the benefit of the financial system (Crowe, 2015). As a worldwide survey by Deloitte presented in FinForum Greece (2021), offered services of Fintech and other new

players (novobanks) are not mature enough as yet, as 80% of digital champions come from traditional banks and just 20% are challengers. Greek players need to build a new model bank that will accommodate a new generation of customers and a new set of players with their new functionalities, as complementors, competitors or catalysts, in other words an ecosystem (Deloitte, 2013, 2021), adding agility, lean approaches and open banking mentality (Kristi et al., 2021).

6.5 Key Enablers: Value Offering

What will be changing dramatically, as the journey moves to a transformational model, is the reinvention by incumbents of the customer experience. The new experience will not be driven by product or service but by relationships, gamified interaction, instant responses (Porter & Heppelmann, 2015; Weinstein, 2020). The process begins with bringing in data and analytics-based insights about what really matters to customers and how best to deliver it to them, Mckinsey by Diaz et al. (2017), ensuring also an omnichannel service (Lazaris & Vrechopoulos, 2014; Zhou et al., 2020). It is not easy for many companies, especially those who have not mastered the full concept of digitalization and are still focusing their attention only on the front face of the activity, the individual's touchpoints to see it as a complete journey that cuts across multiple functions and channels (Heavin & Power, 2018). Companies, incumbents in this case, have to explicitly tie the reinvented customer experience to their operations (Barrett et al., 2015). If they focus only on the front-end experience and do not change the back-end operations that support it, the new experience is unlikely to be sustainable as per Mckinsey by Diaz et al. (ibid). Changes will be needed in both underlying processes and the way employees work. Banks do seem to have responded, by offering the ability to the individual client to conduct almost 90% of his or her daily monetary transactions electronically (NBG Head of Retail & Digital Banking, C Theofilidi, FinForum Greece, 2021).

6.6 Assessment of Greek Banking Industry Digital Maturity

Based on the enablers' framework and the extrapolation of the case study, we have accumulated the key characteristic parameters of the status that the four systemic banks are currently in Table 2. There is a lot to be done in the customer value offering with SB proposition and on-boarding still virtually on hard copies, individual customer information that varies depending on the medium the customer access it, personal banking that has not as yet reached any recognition of the life cycle events and time to yes for many products remains too long. Likewise, the prevailing company culture is that of resistance, as the need for transformation has not disseminated downwards successfully. Roles are still following older organizational charts and silos still prevent new approaches to reach all levels, despite the opening of new, digital job profiles. In contrast, there has been a lot of progress in a continuous effort for digitalization of internal processes, adaptation of Agile & Design Thinking management techniques, hackathons, and open days for start-ups and fintechs, connectivity availability via API platform, but also a declared intention for drawing the optimum long-term approach to digital strategy and the best suited Business Model.

Table 2. Review of banking sector current phase per enabler

Enabler	Greek banking sector phase status
Strategy & Organization	Business Strategy is driven by digital vision of each institution, that are by now planning their integrated operational-improvement program organized around journeys
	Budget, Targets, resources commitment for digital transformation and R&D investment that goes focused to digital initiatives
	Moved from digitization to digitalization of business with back-end processes automated across all channels
	Non –customer facing Unites (Operations, Support Functions, HR, Risk) are being turned digital, albeit with delays and issues. Repetitive internal actions digitized (invoicing, general ledger fulfilment, contracts, customer applications)
	Use of smart process technology to create data /Big Data Analytics and alignment with digital is underway with efforts to escape legacies
	Not ready yet for Phygital approach i.e., combine and merge branches & on-line banking. All trxs are not as yet available in digital format, Branches have a mixed role
People & Culture	Top management has being developing a Digital Vision with Digital Executive Board creation, operational progress tracking fora, C-suite level appointment for digital overview (but with frequent changes)
	Digital adoption and change of culture throughout the organizations is not visible as yet with resistance and inertia causing delays, despite active internal promotions of need to turn digital
	Limited change of Digital upskills training for staff
	Org charts still represent formats and hierarchy of older type structures
Technology & Innovation	Agile & Design Thinking project approach implemented, new methodologies Customer Journey redesign, Lean also in place and practised
	API, Open banking platform, PSD2-enambed capabilities
	Ecosystem creation & integration with Hackathons and start up cooperation's underway
	Digitized work environment Staff has access to remote desktop, but basic company intranet, some dashboards/ Business Intelligence capabilities access, on line meetings, e-learning seminars
	Digital first culture is already employed but no full End to End Paperless back offices
	Open & flexible system architectures with Data away from old legacy systems are being envisaged but not in full operational mode as yet
Value Proposition	Omnichannel not fully operational although developing
	Introduction of remote access /banking Online/mobile presence. Customer on boarding capabilities digitally, e-m banking gamification
	No customized and personalized service to individual and businesses but rather product and services push still
	Introduction of fully operational remote access banking services (agent virtual banking)
	e-signature, biometric appliances, contactless interactions, digital issuance of products and services, electronic wallets, Account aggregation all available

Source: Own interpretations of Case Study, Papathomas & Konteos 2022 paper.

6.7 Summary Rating

Based on the enablers we have reviewed, we believe that the Greek banks' status of digital maturity, positions them at the early part of the Growing Phase (Table 3). They have gone a long way into their journey, but there is still work to be done in every relevant enabler to reach the final transformational destination.

Table 3. Collective assessment of Greek banking industry digital maturity

Key enablers	**Phase I Adaptation**	**Phase II Growing**	**Phase III Transformation**
	Completion	Completion	Completion
Strategy & Organization track	√	√	X
People & Culture track	√	X	X
Technology & Innovation track	√	√	X
Value Proposition	√	X	X

Rating is based on own research and perception and case study insights. Completion mark √ requires at least 70% of Development's parameters fulfilled.

6.8 Similar Studies Results

The hypothesis of the research is one of the first that refer to the Greek banking sector and its transformation journey towards digital maturity and, as such, it has a limited scope of matching when it comes to similar studies. Yet, it is notable that Kristiansen and Ritalia (2018) are also identifying and employing a conceptually similar set

of metrics that, untypical to the usual KPIs, are measuring digital transformation in businesses.

7. Paper Conclusion: Halfway There!

Any modern firm that stays behind in the effort of adaptation and exploitation of the digital technology will risk staying fully behind (King, chapter 4). By means of an empirical case study of a unit and its extrapolation to the remaining universe, we have examined the characteristics of the digital transformation journey of the Greek banking system, and we determined the phase it currently is, confirming at the same time the Q2 of our Hypothesis that assumed a framework of tracking indicators can be employed to follow digital maturity progress. In the transformation trajectory, we have placed the journey of the Greek banking industry at the early stages of the second phase, still building up their value proposition and culture but having made considerable movements in their strategy and technology paths, confirming also the initial Q1 of our hypothesis that the Greek banking system has a specific and traceable position in the DTJ.

We consider these findings can be of immediate use to bank management, even if used as a comparative panel for their own assessment of their progress. We propose extension of the work to several ideas that have sprung out of the study:

- Which is the optimum business model of phase three for the Greek banks? How aggressive should a change be? What will the cost of adaptation be?
- How can leadership tell the difference between business processes reengineering and genuine evolution?
- What is the right path for incumbents' change of culture? How does the industry's prevailing Job-for-life work ethic intervene with the new Ways of Working WoW digital business model?
- What are the factors that influence the pace of transition? Can institutions progress in the next phase without completing all enablers satisfactorily?

Analysts, commentators, some scholars, see a grim, if not downright dark, future for incumbent banks. We disagree. We see opportunities ahead for any financial institution that is ready to take advantage of the options available. Banking will remain a business of trust and credit, but the traditional way of banking is long gone. The Greek banks are given some extension to respond to the challenges of the new technology and what it bears. It is up to them to react.

8. Contributions of the Study

To the research on the DTJ of the banking institutions, the paper contributes in two basic ways: it develops a comprehensive, measurable model in assessing the trajectory of a financial institution's place in the journey towards digital maturity and it provides an assessment on the status and the phase that the Greek systemic banks are, offering a benchmarking point for practitioners and others who wish to identify their institutions' trail. Our framework helps build up to the rather limited literature on tracking digital transformation in incumbents and can be used for comparison purposes with research that aim for similar case studies in different countries or industries.

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