

From building a digital bank to hyper-personalisation: strategies, governance and co-creation of value in the era of Open Banking

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Abstract:

This study explores how digital changes are impacting bank marketing, especially the connection between technology, how banks operate, customer views, and keeping customers. Using ideas about how businesses adapt and focus on serving customers, we looked at how modern tech setups and flexible work methods help banks offer very tailored experiences. We interviewed bank managers and customers and analyzed documents. We found that technology not only helps but also encourages banks to be more agile. While very personalized service makes customers happier, it also raises privacy worries, making trust crucial for keeping customers loyal. Also, Open Banking offers benefits but also makes customers concerned about privacy. Our research adds to existing theories about business adaptation and customer service in the world of digital banking. It also provides practical advice for banks to develop trustworthy and clear digital strategies.

Keywords: *Digital transformation; Cloud-native architecture; Hyper-personalization; Trust; Open Banking; Service-Dominant Logic; Dynamic capabilities; Banking marketing.*

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1. INTRODUCTION

Digital transformation has emerged as a pivotal driver of change within the banking industry, fundamentally reshaping value creation strategies, organizational structures, and customer engagement paradigms (Reis et al., 2023). Banks, traditionally characterized by their inflexibility, now face dual challenges: evolving consumer demands for highly customized and streamlined experiences, and the intensifying competition from fintech companies and neobanks, which leverage adaptable and scalable technological infrastructures (McKinsey & Company, 2023). Scholarly work emphasizes that digitization extends beyond the mere implementation of digital technologies; it necessitates a comprehensive overhaul of organizational workflows, governance frameworks, and stakeholder relationships (Verhoef et al., 2021).

Concurrently, the rise of Open Banking and the incorporation of Application Programming Interfaces (APIs) are reshaping the conventional function of financial institutions, evolving them into platform-based entities. This transition encourages a collaborative value creation ecosystem involving banks, innovative financial technology companies (Fintechs), and consumers (Gozman et al., 2018; Sia et al., 2020). While this trend generates novel possibilities, it also presents significant challenges pertaining to consumer trust, data security, and the perceived acceptability of highly tailored services (Bleier et al., 2020). These considerations are particularly pronounced in developing nations, where digital infrastructures remain unevenly implemented and cultural nuances significantly impact the acceptance of digital technologies (Ozdemir et al., 2020).

Based on the findings of (TagPay, 2021), the strategic pathways of certain digital banking institutions are illuminated. These institutions are demonstrably embracing cloud-native architectures, implementing microservices, establishing dedicated feature teams, and employing continuous delivery methodologies to expedite the innovation process. These operational shifts exemplify the dynamic capabilities discussed in scholarly literature (Teece, 2018), connecting technological selections, flexible organizational structures, and a focus on the end-user. Nevertheless,

empirical investigations examining the impact of these specific technological and organizational arrangements on the customer experience and value perception within the banking industry remain limited.

The increasing digitization of the banking industry presents significant strategic and promotional challenges. Firstly, established financial institutions are under pressure to implement contemporary technological frameworks, such as cloud-based systems, microservice architectures, and continuous deployment methodologies, to maintain a competitive position against emerging fintech companies and digital banks (Reis et al., 2023 ; TagPay, 2021). Secondly, these institutions must address evolving customer demands for highly customized services, greater openness, and a seamless user experience (Bleier et al., 2020 ; Verhoef et al., 2021).

While the existing body of literature acknowledges the impact of technological and organizational elements on digital transformation (e.g., Teece, 2018; Sia et al., 2020), a notable research gap remains. Specifically, there is a scarcity of empirical investigations that establish a clear connection between these strategic decisions and customer perceptions of value creation. Furthermore, the collaborative value creation inherent in Open Banking necessitates a re-evaluation of the relationships between established financial institutions, emerging fintech companies, and consumers. This collaborative model raises novel considerations regarding governance structures, the cultivation of trust, and the overall level of user acceptance (e.g., Gozman et al., 2018).

Thus, the central issue can be formulated as follows:

How do technological architecture and innovation organisation choices in digital banks influence customers' perceptions of personalisation and trust, and to what extent do these perceptions condition value creation and retention in the context of Open Banking?

Research questions

Based on this issue, we have formulated the following research questions:

- What organisational mechanisms (feature teams, MVP, continuous delivery, community building) facilitate the adoption and evolution of digital banking solutions?

- How do technological choices (cloud-native, microservices) influence banks' ability to deliver an offering that is perceived as personalised and agile?
- To what extent does the perception of hyper-personalisation affect customer trust and retention intentions?
- What role does Open Banking play in the co-creation of value between banks, fintechs and customers, and how does it influence the perception of the legitimacy of digital services?

Based on the preceding literature review and the identified research problem, the present study proposes the following hypotheses:

H1. The implementation of cloud-native and microservice-based architectures enhances the innovative capabilities of digital banking institutions, thereby fostering a heightened perception of organizational flexibility among customers.

H2. The establishment of agile organizational frameworks (including cross-functional teams, continuous deployment methodologies, and collaborative co-creation practices) positively impacts the perceived quality of the digital customer experience.

H3. Customers' perception of advanced customization in digital banking services exerts a positive influence on their trust in the banking institution.

H4. Customer trust acts as a mediator in the relationship between perceived advanced customization and the intention to remain a customer.

H5. A bank's involvement in an Open Banking ecosystem strengthens the value co-creation perceived by customers; however, this effect is moderated by their concerns regarding data security and privacy.

2. Literature review

2.1. Digital transformation and banks' technological capabilities

2.1.1. From legacy IT to cloud-native: a lever for agility

The modernization of banking systems through cloud-native architectures empowers financial institutions to enhance scalability, accelerate time-to-market, and improve the integration of external services (such as microservices, containers, and APIs). By transitioning from

monolithic systems to collections of independent services, banks can alleviate technical debt and bolster operational robustness, fostering iterative and accelerated innovation (TagPay, 2021). Empirical research and practical examples (e.g., transformations implemented by neobanks and DBS) demonstrate that adopting cloud technologies and microservices substantially reduces the development lifecycle of functionalities, while simultaneously streamlining experimentation and expansion. These observations underpin the notion that technical architecture constitutes a strategic dynamic capability for digital banking.

2.1.2. Micro-services and capacity for innovation

Scholarly discourse concerning dynamic capabilities and digital transformation highlights microservice architecture as a facilitator of organizational agility. The decoupling of functionalities inherent in this architecture allows for the independent deployment, correction, and removal of components without affecting the entire system. This, in turn, enhances responsiveness to evolving customer requirements, as demonstrated in the work of Teece (2018) and further substantiated by contemporary research on dynamic capabilities. In practical application, financial institutions that implement microservices are able to expedite the prototyping of highly customized offerings, such as scoring modules and personalized recommendations. This enhanced capacity ultimately contributes to an improved perception of agility from the user perspective.

2.2. Organisational mechanisms, product practices and continuous innovation

2.2.1. Feature teams, MVP and continuous delivery: organisation for innovation

Employing product-centric teams (characterized by feature teams and compact, cross-functional units) in conjunction with Continuous Delivery (CD) practices offers a strategic organizational framework for the systematization of experimentation – a cycle encompassing construction, assessment, and knowledge acquisition. This alignment of technical development with user requirements is increasingly recognized as pivotal in the establishment of contemporary digital banking institutions. Research in the fields of Information Systems and management substantiates that such

mechanisms mitigate deployment hazards and elevate the caliber of releases, while concurrently fostering user-centered iteration (as exemplified by DBS's case study; Sia et al.). Consequently, organizations that structure their teams around product responsibilities and abbreviated development cycles tend to observe an enhancement in the perceived quality of the digital experience.

2.2.2. Co-creation and community building as drivers of adoption

Marketing materials and the practices of modern banking institutions demonstrate the value of community building strategies – such as utilizing brand representatives, beta-testers, and user acceptance testing – in developing products that are more closely aligned with actual customer needs and in accelerating adoption rates. Specifically, TagPay advocates for the involvement of communities and iterative development based on user feedback. This approach aligns with the logic of value co-creation, as articulated in Service-Dominant Logic, and ultimately strengthens the perceived usefulness of the service, as demonstrated in the work of Vargo & Lusch (2016).

2.3. Hyper-personalization: marketing mechanics, benefits and risks

2.3.1. Definition and components of hyper-personalization

Hyper-personalization, according to Valdez Mendia & Flores-Cuautle (2022), represents a synthesis of robust data infrastructure, sophisticated decision-making processes (often utilizing algorithms), intentional design, and efficient distribution channels. This integration aims to provide real-time, individualized experiences tailored to each unique customer. From a technological standpoint, the presence of unified and reliable data resources (such as Customer Data Platforms or Master Data Management systems), alongside advanced analytics and artificial intelligence capabilities, is essential to convert customer signals into relevant recommendations and contextual offers. TagPay emphasizes the facilitative role of cloud computing and data services (including Business Intelligence and Machine Learning) in enabling highly personalized banking journeys. These perspectives collectively frame hyper-personalization as a direct outcome of both technological advancements and organizational capabilities.

2.3.2. Marketing effects: perceived usefulness, engagement and loyalty

Studies in digital marketing indicate that enhanced and tailored online experiences lead to greater consumer satisfaction, increased interaction, and may foster loyalty (Bleier, Harmeling & Palmatier, 2019). When hyper-personalization provides demonstrable benefits such as relevance, efficiency, and advantageous proposals it augments perceived value and consequently, the likelihood of customer retention.

2.3.3. Constraints and trade-offs: fatigue, bias, and perceived risks

While personalization offers clear advantages, academic literature highlights potential drawbacks. Overly tailored experiences, perceived as intrusive, alongside algorithmic inaccuracies or unsuitable suggestions, can negatively affect user experience and undermine trust (as reviewed in studies on personalization and privacy). Therefore, policymakers and practitioners must carefully consider the balance between providing relevant content and safeguarding individual privacy.

2.4. Trust, confidentiality and mediation between personalization and retention

2.4.1. Trust as a strategic resource in digital services

Trust plays a vital role in the acceptance and continued use of digital banking platforms. This trust is built upon perceptions of security, transparency, and the functional quality of the service itself, influenced both by regulatory safeguards and the increasingly sophisticated expectations of users. Research, such as that conducted by Verhoef et al. (2021), alongside findings from various academic disciplines, identifies trust as a central mediating factor influencing the relationship between digital experiences and user behaviors.

2.4.2. Empirical and operational evidence

Empirical investigations within digital marketing have leveraged confidence assessments and repurchase intentions to illustrate comparable mediating effects. Specifically, when personalization strategies are perceived as considerate and advantageous, they bolster consumer trust. This enhanced trust, in turn, fosters customer loyalty. Conversely, should personalization be viewed as overly intrusive, trust diminishes, thereby weakening or even negating its positive impact on customer retention.

2.5. Open Banking, ecosystems and co-creation of value

2.5.1. Open Banking: emerging roles and reconfiguration of value

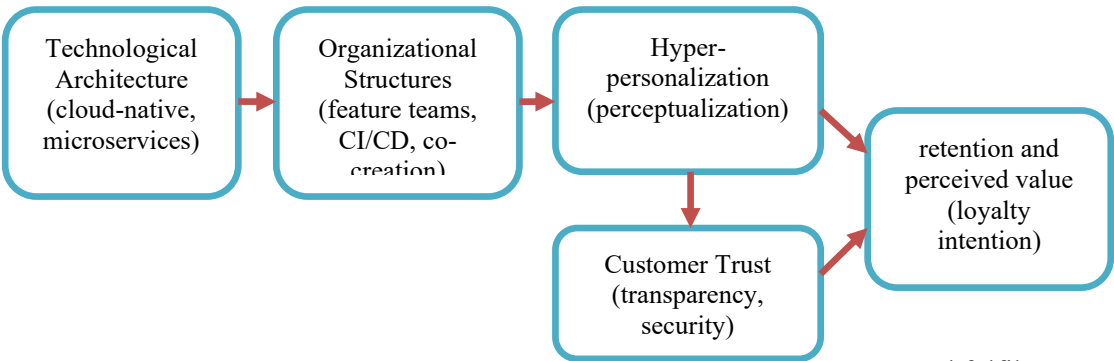
Open Banking is changing the standard banking model into a networked structure. This shift is enabled by using APIs to integrate services from external financial technology companies, fostering collaborative value creation (Gozman, Hedman & Sylvest, 2018). While this platform approach broadens the variety of options accessible to customers, it also raises fundamental issues related to oversight. Specifically, it prompts questions about ownership of the customer relationship and methods to guarantee protection and adherence to regulatory requirements.

2.5.2. Moderation due to data concerns

Scholarly investigations increasingly suggest a dual effect of data sharing initiatives. While open data practices demonstrably enhance advantages such as improved customization and the development of supplementary services, they simultaneously amplify anxieties concerning privacy. Consequently, the advantageous influence of an Open Banking strategy on perceived value co-creation is likely to be negatively moderated by consumer data protection sensitivity. Specifically, heightened apprehensions regarding data security tend to diminish the perceived value generated by an open ecosystem.

2.6. Conceptual summary and implications for the proposed model

Fig 1 Conceptual Framework: Digital Transformation and Marketing Performance



Source: personal fulfilment

2.6.1. Technology architecture (cloud-native, microservices)

Adopting cloud-native and microservices-based architectures provides benefits such as increased modularity, improved scalability, and accelerated deployment cycles (Reis et al., 2023 ; Nordli, 2023). These technological decisions form a foundational layer that supports and enables agile organizational methodologies.

2.6.2. Organisational practices (feature teams, continuous delivery, co-creation)

Empowering cross-functional teams through feature teams, coupled with the rapid and verified deployment capabilities of continuous delivery (CD), fosters a shift in organizational culture. These combined strategies encourage ongoing experimentation and adaptation (Sia et al., 2020 ; Teece, 2018).

2.6.3. Hyper-personalisation (customer perception)

Leveraging data analytics and artificial intelligence, digital banking institutions have the capacity to deliver individualized services in immediate response to customer needs. Research indicates that relevant customization strategies can enhance customer satisfaction and foster greater engagement (Bleier et al., 2020). However, the efficacy of personalization efforts is contingent upon the customer's perception of legitimacy and the extent to which their privacy is respected.

2.6.4. Customer confidence (security, transparency)

Trust serves as a crucial mediating factor. It is cultivated through openness, data safeguarding, and the dependability of offerings. In the absence of trust, individualization can be viewed as invasive and generate a contrary outcome (Verhoef et al., 2021).

2.6.5. Retention and perceived value

By intertwining pertinent individualization with a robust sense of assurance, organizations can cultivate customer retention and collaborative value generation. This connection occupies a pivotal position within service-dominant logic, which frames loyalty as a consequence of sustained and mutually advantageous interactions between a service provider and their clientele (Vargo & Lusch, 2016).

The depicted framework highlights the following interconnected relationships:

- Technological infrastructure shapes organizational approaches, which, in turn, facilitate advanced personalization.
- Advanced personalization directly impacts customer retention; however, this effect is moderated by the level of consumer trust, which acts as a significant mediating variable, either enhancing or diminishing the personalization's influence.

In summary, the proposed conceptual framework posits that:

- Contemporary technological architectures, such as those leveraging cloud-native principles and microservices, are foundational for the implementation of agile organizational practices. Examples of these practices include dedicated feature teams, continuous delivery, and collaborative development.
- These organizational practices, in turn, bolster a bank's ability to deliver what is perceived as a highly individualized customer experience.
- If this hyper-personalization is perceived as transparent and beneficial, it strengthens customer trust. This trust acts as a crucial intermediary in the relationship between personalization and customer retention.
- Finally, hyper-personalization may exert a direct influence on retention. However, this effect is contingent upon concerns regarding data privacy, which are particularly salient in the current context of Open Banking.

3. Methodological approach

Employing an exploratory qualitative methodology, this study seeks to elucidate intricate and developing phenomena (Eisenhardt & Graebner, 2007). The digital transformation of the banking sector encompasses a multifaceted array of technological, organizational, and relational elements. Therefore, this research necessitates an in-depth investigation into the viewpoints of relevant stakeholders.

This research adopts a constructivist-interpretive paradigm, emphasizing the understanding of meanings that individuals ascribe to organizational activities and digital experiences, in line with established scholarly perspectives (Creswell & Poth, 2018). The primary method employed is semi-structured interviews, conducted with banking executives and customers utilizing digital services. The study aims to ascertain the

organizational and technological processes that facilitate advanced personalization, and further, to examine their impact on customer trust and retention.

3.1 Sampling strategy

3.1.1 Type of sampling

To select participants, a theoretical and purposeful sampling strategy was employed. This approach prioritized individuals possessing direct knowledge or experience related to the digital transformation within the banking sector (Patton, 2015). The initial sample was further refined through the application of theoretical saturation. This iterative process involved continuously adjusting the sample until the collection of additional data yielded no novel or significant insights, thereby ensuring the comprehensiveness and depth of the findings (Glaser & Strauss, 1967).

3.1.2 Participant profiles

The target audience encompasses banking executives such as branch supervisors, individuals heading digital conversion initiatives, digital promotion strategies, or product development (including Project Managers/Product Owners), Chief Technology Officers, and individuals holding positions of innovation leadership.

The study's target audience includes digital banking consumers, both from digital-only banks and the digital arms of traditional institutions. These users have experience with personalized financial services like mobile apps and contextual offers.

3.1.3 Sample size

- Managers: 10–15 interviews (sufficient to capture diversity of practices and convergences).
- Customers: 12–15 interviews (allows exploration of perceptions of personalisation, trust, retention).
- Expected total: 20–30 interviews.

3.2 Semi-structured interview guide

The interview guide is organized around five key areas, which are directly connected to the underlying framework and the research ideas. Each area includes open-ended questions and potential follow-up prompts to explore the topic further.

3.3 Data collection

- Method: semi-structured interviews conducted via videoconference (Zoom, Teams) or in person, depending on availability.
- Duration: 45–60 minutes per interview.
- Recording and transcription: with the informed consent of participants.
- Ethics: anonymisation of data, signing of an informed consent form.

3.4 Data analysis

Our research employed thematic analysis, using both inductive and deductive approaches (Braun & Clarke, 2006). The process involved several key stages. First, we thoroughly familiarized ourselves with the data through careful reading and annotation. Next, we performed initial coding (open coding) using NVivo/Atlas.ti software. Following this, we grouped the codes into themes (axial coding), guided by our research questions related to factors such as platform design, behaviors, tailoring, assurance, and customer loyalty. Finally, we refined these categories and integrated them with our theoretical framework, drawing on service-dominant logic and dynamic capabilities. To enhance the robustness of our findings, we employed triangulation, comparing the results obtained from platform operators and customers, and further contextualizing these insights with the TagPay document as a case study.

4. Analysis of results

This section focuses on presenting and analyzing the practical findings from a qualitative study. We interviewed a group of bank managers (12 individuals) and customers who use digital banking services (14 individuals). The goal was to compare the viewpoints of those within the banks (managers) with the experiences of customers (clients) in relation to the initial assumptions made in our research (Hypotheses 1 through 5). The analysis involved thematic coding, a cross-interpretation matrix, and an updated visual representation of the research model.

4.1 Sample description

4.1.1 Managers

The study group consisted of 12 managers. Specifically, there were 4 digital transformation leads, 3 Chief Technology Officers (CTOs), 3 digital

marketing managers, and 2 product owners. Most of them worked at established, traditional banks that had recently started a digital department. The remaining 4 participants came from newer, online-only banks.

4.1.2 Customers

We spoke with 14 customers who ranged in age from 25 to 55. All of them had been using online banking for over two years and reported being comfortable using mobile banking apps on a regular basis.

4.2 Visual summary of results

Comparative Analysis of Managers and Clients: Key Priorities

The analysis reveals a notable divergence in priorities between managerial and client perspectives. Managers emphasize the potential offered by technological advancements and innovative organizational structures. Conversely, clients prioritize aspects such as perceived quality, transparency, and concerns regarding privacy.

Revised Conceptual Framework Findings

The initial conceptual framework has been refined based on the data. Hypotheses H1, H2, and H4 were substantiated by the findings. Hypothesis H3 received partial support, indicating that the relationship between personalization and trust is contingent on the level of transparency provided. Finally, Hypothesis H5 was supported, with confidentiality identified as a moderating variable influencing the observed relationship.

4.3 Validation and robustness of results

The point of saturation was demonstrably reached, as no novel thematic elements arose following the eleventh interview with managerial personnel and the twelfth interview with customer participants. The principle of triangulation was upheld through the convergence of data obtained from both managerial and customer perspectives. Establishing credibility was achieved through a member checking process involving validation by three subject matter experts. Furthermore, methodological transparency was maintained by keeping a comprehensive research log, documenting all decisions and iterative adjustments made throughout the study.

5. Discussion of results

This research presents findings from a qualitative study involving bank managers and customers who use digital services. The goal is to compare

these real-world insights with current academic research to confirm, refine, or expand upon the initial hypotheses (H1–H5). This comparison helps us identify the theoretical and practical implications of the study for both researchers and managers.

5.1 Technological architecture and organisational practices (H1, H2)

Based on our findings, moving towards cloud-native and microservices approaches seems essential for organizations looking to become more adaptable and launch products faster. Leaders we spoke with emphasized that these strategies improve modularity and scalability. This, in turn, supports the formation of focused teams and enables quicker innovation through continuous delivery practices.

These findings align with research from Nordli (2023), which suggests that moving to cloud-based systems and microservices can substantially decrease technical debt and enable quicker innovation releases. Similarly, Reis et al. (2023) emphasize the need to pair technological advancements with appropriate organizational practices to create a lasting competitive edge. Lastly, Teece (2018) highlights the significance of dynamic capabilities, which allow for the ongoing restructuring of resources and processes.

This study's findings suggest that modern technological systems aren't simply tools for technology; they also function as organizational drivers. This directly affects how customers view a company's ability to innovate.

5.2 Hyper-personalisation: opportunity and ambivalence (H3, H5)

The findings of the study highlight a duality in attitudes towards enhanced personalization. From a managerial perspective, it is viewed as a valuable instrument for optimizing the relevance of provided products and services. Conversely, consumers, while acknowledging its benefits, simultaneously voice concerns regarding potential infringements on privacy and the gathering of their personal information.

The present findings align with research conducted by Bleier et al. (2020), which indicates that personalized approaches tend to enhance consumer satisfaction and engagement when perceived as germane. Conversely, these approaches may elicit psychological resistance if viewed as overly intrusive. Furthermore, Verhoef et al. (2021) emphasize the critical

role of perceived equilibrium between usefulness and the protection of privacy in fostering the acceptance of personalization strategies.

Our research offers a valuable addition to the existing body of knowledge by demonstrating that the efficacy of hyper-personalization within the banking industry is contingent upon certain preconditions. Specifically, its beneficial impacts are realized only when coupled with robust mechanisms that ensure transparency and afford consumers control over their data.

5.3 Trust as a key mediator (H3, H4)

The observed findings indicate a significant relationship between trust and the interplay of hyper-personalization and customer loyalty. Management perspectives emphasize adherence to regulatory standards, while customer perceptions link trust to transparent communication practices and their individual experiences.

The preceding findings align with the research conducted by Palmatier et al. (2020), which demonstrates the pivotal role of trust as an intermediary variable in business-to-consumer relationships and its impact on customer allegiance. Furthermore, Ozdemir et al. (2020) emphasize that in developing economies, reliance on institutions is particularly crucial for the acceptance of digital services.

This research offers a theoretical contribution by confirming the mediating role of trust in the relationship between perceived customization and customer retention within the banking sector. Furthermore, the findings highlight a divergence in perspectives: while banking institutions emphasize legal compliance in their communications, customers place greater value on perceived transparency and educational outreach.

5.4 Open Banking and co-creation of value (H5)

Open Banking is viewed by management as promising, enabling broader service offerings through APIs and Fintech collaborations. However, clients express concerns regarding the potential for excessive data sharing.

Empirical observations align with the findings of Gozman et al. (2018), who posit that Open Banking, while offering potential for novel advancements, simultaneously amplifies vulnerabilities pertaining to data security. Similarly, Sia et al. (2020) suggest that the amalgamation of digital

ecosystems enhances collaboratively generated worth; however, this effect is contingent upon regulatory frameworks fostering a requisite degree of assurance.

From a theoretical perspective, this study introduces a significant refinement to our understanding of Open Banking. Specifically, the findings suggest that the value generated by Open Banking, as perceived by consumers, is contingent upon their belief that data management practices are both transparent and secure. This condition acts as a substantive moderating influence on the relationship between personalization strategies and customer retention.

5.5 Theoretical implications

Our research contributes to the advancement of dynamic capabilities theory. Specifically, we demonstrate how technological decisions, such as the adoption of cloud-native architectures and microservices, combine with established organizational processes to foster novel marketing capabilities focused on individualization (Teece, 2018).

Building upon the Service-Dominant Logic framework, the findings suggest that the collaborative value creation enabled by Open Banking necessitates more than simple interactions between participants (including banks, financial technology companies, and customers). The success and ethical standing of Open Banking also depend on the implementation of regulatory frameworks and transparent operational practices (Vargo & Lusch, 2016).

While numerous studies emphasize the advantages of hyper-personalization in literature (e.g., Bleier et al., 2020), our investigation suggests a more nuanced perspective. We posit that the benefits of this approach are contingent upon a critical element: trust.

5.6 Managerial implications

In the realm of technological governance, financial institutions face a critical imperative to invest in adaptable architectural frameworks, such as cloud computing and microservices, to facilitate ongoing innovation. Concurrently, these organizations must implement resilient security protocols to mitigate the accumulation of technical debt and ensure the

confidence of their clientele.

Organizational practices should evolve to support the adoption of feature teams and continuous delivery pipelines. This evolution necessitates cultivating a learning-oriented culture that embraces experimentation and integrates customer feedback throughout the development lifecycle.

Financial institutions should adopt a customization approach grounded in transparency and explicitness. This necessitates clearly articulating the utilization of client data while simultaneously empowering clients with the autonomy to manage their individual preferences.

Building trust extends beyond simply adhering to rules and laws. It requires improving how we educate and communicate with customers. By focusing on clear instruction and transparent interaction, we can change individualized approaches into lasting customer loyalty.

To ensure responsible open banking practices and maintain client trust, collaborations with financial technology companies must be guided by clearly articulated transparency charters and robust governance frameworks.

6. CONCLUSION

This research explored the influence of technological modernization on the marketing department in the banking industry. The investigation centered on the relationship between technological options (cloud-based systems, granular service design), organizational methods (cross-functional teams, ongoing deployment, collaborative development), advanced individualization, confidence, and client loyalty within the framework of open financial services. A qualitative inquiry, encompassing interviews with 12 administrators and 14 customers, yielded significant findings:

- Contemporary architectural approaches, such as cloud computing and microservices, establish a crucial groundwork that enables enhanced organizational flexibility and a faster pace of novel development.
- Agile organizational methodologies, encompassing constructs like cross-functional development groups and ongoing deployment strategies, demonstrably improve adaptability and streamline the assimilation of consumer input.
- While hyper-personalization can be seen as beneficial when it demonstrably improves outcomes for individuals, it also elicits anxieties

regarding the ethical use of personal information and perceived violations of privacy.

- Trust functions as a vital intermediary in the relationship between individualized experiences and continued patronage, significantly influencing the success of strategies aimed at tailoring offerings to individual needs.
- Open Banking enhances perceived value through fintech partnerships but hinges on transparency and robust data governance.

Theoretical Contributions

This study contributes to the existing body of knowledge in a number of significant respects. First, it enhances the dynamic capabilities perspective, originally proposed by Teece (2018), by providing evidence of how the combination of technological and organizational skills cultivates a marketing approach focused on individualized customer experiences. Second, it broadens the scope of Service-Dominant Logic, as articulated by Vargo & Lusch (2016), by showing that the collaborative creation of value in the banking sector necessitates not only the involvement of diverse parties, including banks, fintech companies, and customers, but also the presence of institutional structures that guarantee clarity and oversight. Finally, it offers a more nuanced understanding of hyper-personalization, building upon the work of Bleier et al. (2020) and Verhoef et al. (2021), by emphasizing its complex character as both a facilitator of positive customer sentiment and a concept reliant on confidence and dependability.

Managerial Implications

The results of this analysis provide practical recommendations for leaders in the banking sector.

First, allocate resources strategically towards technological advancement: The adoption of cloud computing and micro-service architectures ought to be considered a facilitator of marketing efforts, enabling flexible and adaptable personalization capabilities.

Second, integrate adaptable organizational structures: Feature-driven teams and continuous deployment methodologies should be implemented as standard governance practices to foster innovation within banking

institutions.

Third, maintain clarity in personalization practices: In addition to algorithmic optimization, banks are obligated to openly convey their data handling policies and provide clients with the capacity to manage their individualized settings.

Fourth, emphasize the cultivation of confidence: The creation of formalized trust guidelines and informative resources is critical to bolstering perceptions of credibility.

Finally, oversee open banking initiatives with diligence: Collaborations with financial technology companies must be based on well-defined frameworks for data governance and security.

Research Limitations

It is important to acknowledge several constraints pertaining to the present study. First, from a procedural standpoint, the qualitative nature of the methodology employed restricts the capacity to extrapolate statistical findings to broader populations. Second, with regard to scope, the emphasis on participants within the banking industry may circumscribe the transferability of these observations to different industry settings. Finally, regarding content, while technological and structural aspects were considered, the study did not fully investigate potentially relevant elements such as corporate ethos or the influence of generative artificial intelligence, thereby representing a further area of limitation.

Future Research Directions

Generative Artificial Intelligence in Banking Promotion

The increasing prevalence of generative artificial intelligence (AI) technologies, exemplified by sophisticated conversational agents, digital assistants, and automated assessment systems, offers potential advantages alongside associated challenges. Further investigation is warranted to explore its impact on individualized marketing strategies, consumer confidence, and ethical considerations (Huang et al., 2023).

Empirical Substantiation

A comprehensive quantitative investigation, utilizing structural equation modeling (SEM) techniques, could be undertaken to provide empirical support for the proposed theoretical framework. This research

should specifically address the mediating function of consumer confidence and the moderating influence of apprehension regarding data protection.

Digital change within the banking sector extends beyond simple technological implementation, representing a more intricate convergence of technical advancements, organizational adaptability, and interpersonal relationships. Highly customized service offerings and collaborative banking models present substantial possibilities for generating worth, yet their successful deployment relies heavily on trust as a core principle. This study emphasizes the necessity of an accountable approach to digital promotion in banking, where technological effectiveness is harmonized with ethical considerations and clear communication, leading to long-term benefits for all interested parties.

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