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Chapter 6: Delivering hyper-personalized banking experiences with real-time artificial intelligence-powered customer interaction engines

6.1. Introduction

Although financial services have entered the “digital era”, their focus has remained on rational and functional aspects such as speed, efficiency, and utility. Digital-first banking has yet to realize its potential to reshape financial services into hyper-personalized everyday tools that extend banks’ engagement beyond simple transactional activities. However, these hyper-personalized banking experiences are made possible by emerging “real-time” financial and contextual data, as well as artificial intelligence. These new offerings create banking experiences that are empathetic to customers’ identities, emotionally satisfying, build loyalty, and improve customers’ quality of lives. In this essay, we outline why and how as the next chapter in digital banking engages emotion as well as logic. We present a vision, an architecture, this new class of banking experience requires. This is our call to arms for financial service leaders (Guendouz, 2023; Ghosh, 2024; Ekwe, 2025).

Unlike banking in the pre-digital era, which communicated feelings of trust, safety, reassurance, comfort, loyalty, and emotional connection, and specific thinking-driven actions, stagecraft, and experience design, digital-first banking is devoid of emotional resonance. Instead, banks prioritize interactions defined as fast, easy, and after the fact, as seen in today's banking apps. Here, experience is limited to risk mitigation through warnings, functionality reminders, and after-the-fact experiences, as in credit scores, and problem solving of transaction- and fraud-related issues. Activities engage a sterile transactional now, where only data about identities, actions, and payments matter. Interactions and experiences pay little attention to empathizing with consumers’ real lives, resonating emotionally, or maximizing involvement via creating enjoyment. Digital banking is in a logic-first mode that emphasizes convenience and security and reduces banking to an at-transaction moment when things happen.Customers have been conditioned by these data mines for years. So what does hyper-personalization mean for

retail bank CX? It means an acceleration of the shift toward every customer being treated as an individual. Rather than receiving transactional prompts to buy a new credit card or investment product, customers receive offers that resonate specifically with them, personalized journeys that are not only relevant to the customer but also help them achieve their life goals (Patil, 2024a; Patil, 2024b).

Fig 6.1: Hyper-Personalized Banking Experiences with Real-Time AI-Powered

6.1.1. Background and Significance

Advancements in Artificial Intelligence (AI) have spurred a new wave of hyper-personalization in retail financial services. What is hyper-personalization? Hyper-personalization employs sophisticated predictive analytics to deliver the right experience to individuals according to their unique profiles, preferences, needs, and behaviors, at precisely the right time in their exposure journey. These experiences not only anticipate customer motivation but, ideally, help customers reach their goals-a perspective promoted as journey-centric CX. Few know customer journeys better than banks and

credit card companies. Data from customer spending habits, deposits and withdrawals, loan payments, and credit history are repositories of individual calling cards. Every human on the planet with access to banking is a walking, talking, smiling, and sad emotional beacon for banks to enrich with AI. Hyper-personalization done right does not just provide recommendations to customers. It also acts as a customer advisor that uses real-time data to determine the right action the customer should take. If a customer walked into a bank branch, the experience they had would be a guided consultation rather than simple transactional services. The technology now exists to replicate that process, and its increasingly common deployment by retail banks has the potential to reshape customer expectations across the banking ecosystem. How can retail banks achieve this vision? Not by simply pouring more resources into more contextualized upselling of financial products. Doing so would yield diminishing returns.

Rather, initiating customers on a more meaningful, dialogue-driven, journey-centric relationship requires modernizing the tools and techniques that retail banks use to better understand their customers on an individual level and to optimize CX for each. Nevertheless, in many banks, the existing CX playbook is already outdated. Banks have invested vast resources in data management, data mining, and customer segmentation, leading to dryer, more mechanized Bank CX experiences.

6.2. The Evolution of Banking

If someone were able to travel back in time to present-day London, they would be likely to stumble across an interesting series of shops and vendors, and a bustling crowd of people -- travelers, merchants, professionals, and adventurers. Most of these people would carry coins, or bullion, or other forms of currency and trade, and many would be using the services of these vendors to exchange, lend, or borrow money. The people who were trusted by these travelers and merchants to securely trade in money, silver, copper, or gold nuggets would be considered the "bankers." While it would be difficult to recognize amidst the modern world of digital banking, these ancient services are the start of what is now recognized as banking. In fact, many historians argue that banking is the oldest financial service industry, beginning in the ancient civilizations of Mesopotamia, with the establishment of temples and palaces as storage for commodities, silver, and copper.

Banking has come a long way since those ancient days: from Mesopotamian temples housing provisions, livestock, and gold and silver nuggets; to Greek moneylenders practicing at temples or dedicated shops; to Roman innovations of interest-bearing loans and a central bank governed from the emperor's palace. The Hindu temples of medieval India further built on this foundation, and it was the Florentine bankers, and the later Italian "merchant banks," who developed the sophisticated modern system of double-

entry bookkeeping. Amidst these initial developments, the credit crisis in the late 1800s triggered several significant banking innovations, including the establishment of Specialized Commercial Banks. These fundamental changes laid the foundation for the current banking system.

6.2.1. Research design

In our investigation of the banking of the future, we adopted an exploratory approach. During the past few years, many technological evolutions and revolutions have influenced the banking function, some of them in a disruptive way. The increased awareness of technologies like Artificial Intelligence, machine learning, big data, and augmented and virtual reality, in a world dominated by intense digitalization, built up the bank customer needs. Thus, the first purpose of this section is to clarify how customer needs have changed along with the technological evolution and how banks should answer to these changes in terms of the exploitation of innovative technologies for re-assessing their offer. This approach has had two specific tracks: the first, based on the philanthropy of innovations, consists of detecting, on one side the innovative technologies that are today shaping the banking function, and on the other side the reactions of banks to cope with these innovative tools. The second track is focused on a different side of the same coin: the impact of new technologies on banks' perception by customers and on the banks' ability to create value. These results should help banks to understand how important it has become to create and maintain value for customers to increase their loyalty. The need for banks to exploit innovative technologies for creating value for customers through a hyper-personalized and innovative banking experience is the focus of the second part of the work. The analysis for the second track has been accomplished through interviews of banking business executives - mainly Technology, Innovation, and Digital Officers. Their point of view is very interesting, as they develop strategies and define the innovative technologies that banks know can be adopted for creating value from the offer perspective.

6.3. Understanding Hyper-Personalization

Very recently, hyper-personalization has become that hot topic. It is starting to find its way into every business strategy, products, customer channels, and customers' lives. Hyper-personalization creates a much deeper bond between customers and the business and strongly eliminates any information asymmetry prevalent in marketing and sales. As used here, it is extremely important to note what the definition of hyper-personalization states. Hyper-personalization takes personalization to the next level, letting companies tailor content for individuals in real-time based on their preferences, traits, behaviors,

and contexts. The goal is to narrow audience segments and go beyond basic demographics to help organizations identify consumers in the zero-moment of truth. Through hyper-personalization, companies can boost customer loyalty and sales. How important hyper-personalization has been recently best expressed by a usability author, “The future is for apps that really know us and what we need”.

Fig 6.2: Hyper-Personalization

These and other hyper-personalization promises resonate extremely well with the financial services industry and especially in hyper-competitive markets with already extremely low-interest margins, like retail payments and transaction banking have become. Hyper-personalization indeed becomes the strategy backbone of retail banking and retail banking IT in the future. And there is no empty rhetoric when a CEO stated: “Winner will be the one who focuses the most on our customers. The more we can listen to them, build trust and relationship, know their needs, the better we’ll be than the others.” And how is this benefiting customers? Research and innovation asked almost a hundred senior retail banking IT executives during the past three World Financial Services Congress and supported their statement that selling new products would without doubt be the most important role of retail banks in the future and this be no matter whether they offered the product or were just transacting the cross-selling. Hence

the motto for hyper personalized banking experiences should be: “know me, serve me best, and don’t bother me”

6.3.1. Definition and Importance

The term hyper-personalization has been defined in different industries but is certainly not new to finance from a theoretical perspective as banks have actively concentrated on individuals' expected contributions for a long time. However, the increasing sophistication of technology enabling a seamless delivery makes it possible to rise from a push to a pull personalization strategy, in which every consumer is offered a unique service tailored to specific situations, preferences, and needs within a defined time frame. Hyper-personalization is commonly understood as the next level of banking personalization, going beyond offering personalized products or services and collecting voluminous amounts of data, but instead relying on advanced algorithms to actively adapt service features or modify service offerings over time. This adds to the importance of natural language processing, machine learning, predictive analytics, sentiment analysis, real-time integration, and sensor enrichment in the offering process. Banks implementing hyper-personalization maintain permanent access to the profiles of individual customers built on continuously updated AI-based behavioral predictions, gaining insights into newly arising customer needs and service optimization parameters, such as service delivery timing, possible product and service cross-selling combinations, optimal delivery channels, and service settings. Having permanently available relationships is essential for creating hyper-personalized banking experiences because the banking customer only tastes willpower and freedom, which are the two keys to active banking success, by having direct and almost effortless access to their bank. Mainstreaming digital economy customers into this active group of empowered individuals creates an unparalleled loyalty potential for banks and credit institutions.

6.3.2. Benefits for Financial Institutions

It is widely acknowledged among professional financial institutions that hyper-personalization promotes customer loyalty and revenue growth through deeper engagement, greater share of wallet, and improved cross selling. Furthermore, enhancing the customer experience is positively correlated with lowering the client churn rate as machine learning based solutions automate increasingly complex customer interactions through conversational AI, NLP, and dynamic FAQ customer support solutions. The concept of hyper-personalization is even more important to the banking and financial services sectors than other industries with highly developed customer touchpoints. Banking products are often designed to meet life goals, such as saving for retirement or

buying a house, and if implemented successfully, hyper-personalization can provide a considerably enhanced customer experience. Hyper-personalization for banks not only enables contextualized communications, but also dynamic product innovation, innovative enhancement of decision making, and even proactive management of customer satisfaction and experience optimization.

Advanced hyper-personalization for financial institutions offers the potential for innovative engagement built on automated social relationship management systems that help bank clients define their life goals and objectives, purchase and save for major purchases at the appropriate times, implement risk management strategies when appropriate, and consider investments for growth once adequate cash flow and revenue have been created. As the banking relationship becomes fully embedded in a holistic view of the client's life and financial goals, implemented using advanced machine learning and real-time management of customer preferences, affinity with product offering will increase dramatically, potentially lowering commission expenditure for managing customer relationships. Hyper-personalization further enhances marketing analytics capabilities, allowing banks to identify the customer segments for which a particular product or service will have the maximum impact and develop sophisticated marketing campaigns tailored for just these segments. On the compliance side, proper analysis of large data volumes can provide financial institutions with early warning of unexpected changes in customer behavior, such as increased turnover in deposit balances, which might be indicators of potential money laundering activity.

6.4. AI in Banking: An Overview

Artificial intelligence (AI) is the simulation of human intelligence by technology. It is defined as the study and design of intelligent agents - any device that perceives its environment and takes actions that maximize its chance of successfully achieving its goals. AI technologies are already technology-agnostic technologies. They build on any technology, and their deployment and customization leverage this technology. Many third-party enrichment solutions provide existing datasets of trust through data integrations, either through estimates or through the collection of original datasets through various data partners.

The use of various AI technologies will continue to grow, adding excitement and pressure on corporate workforces to adapt. Natural language processing (NLP), the speech recognition subdomain, has become a routine part of daily life for many consumers. Countless AI products help organizations boost productivity, improve the customer experience, and increase profitability. The adoption of sentiment analysis and intelligent process automation using natural-language capabilities has accelerated the use of AI technology across industries. Banking institutions are leveraging these

techniques in a variety of ways. Some are using chatbots to enhance customer service by handling inquiries and account management, while others are using more complex people-monitoring systems for compliance actions such as knowing your customer and anti money laundering.

Year upon year, we see the remarkable growth of AI technologies in the banking sector. In addition to the first two layers of AI technology currently being used or tested, organizations are looking into the near-future deployment of other layers of AI capabilities: recommendation algorithms; analytics; visual graphics; facial recognition; and machine vision. Among the many ongoing trends in AI technology deployment, increasing ethnic diversity in facial-recognition programs has become a priority issue. The increasing visibility of privacy issues in people-monitoring systems is forcing banks to modify their practices as increasing numbers of customers refuse to interact with banks that they perceive as violating their personal privacy.

6.4.1. Types of AI Technologies

The first type of AI technology is Robotic Process Automation (RPA). RPA fits into the category of low-level automation where tasks are predefined rules or patterns that finish a specific process, such as data entry. It is a simple technology that improves administrative tasks involving clicks and data input, reducing the time taken to complete the operations, such as processing loan applications. Due to its limitations, RPA is often viewed as a stepping stone to cognitive automation.

Intelligent Process Automation (IPA) is the second technology. IPA, the next level of automation, combines RPA with AI tools and machine learning capabilities to enhance task execution with more data inputs. An example includes automatic archiving of customer email messages and devising a long-term strategy based on the analysis of such customer interactions.

Conversational Intelligence Technologies (CIT) is the third type of AI technology. CITs use AI techniques, such as natural language processing and natural language understanding, to facilitate the interactions between a human and a machine in the spoken or written language without requiring human intervention. Applications include chatbots. Chatbots can be either completely automated or enabled by a human for complicated requests. Typically, simple requests, such as checking account balances or transaction records, utilize automated chatbots that use NLP capabilities. More complicated requests, such as payment disputes or loan inquiries, would use online chat interfaces that employ both chatbots and human agents.

6.4.2. Current Trends in AI Adoption

According to a recent survey, the prominent impact areas for AI investment, adoption, or expansion in 2021 included fraud detection, loan underwriting, consumer banking or advice, and workforce management. The report also indicated that banks prefer large, established companies along with financial services-specific software firms to provide their AI technology. On the consumer side, banks in the Americas, Europe, and Asia-Pacific plan to spend heavily on customer preference prediction, chatbots, biometric security, AI-assisted trading, personal finance management, and link prediction for credit and lending decisions.

Estimates on investment growth rates tell a similar story. A Canadian bank predicted that global spending on AI technology and development will surge from $92 billion in 2023 to $1.03 trillion in 2030. From 2025 onward, it is estimated that AI spending will grow beyond 30% annually. Global investment in AI chatbots – such as the kind that banks and credit unions are turning to for front-end customer service needs – is expected to soar by 170%, reaching $1.3 billion in 2024, from $479 million in 2022. By 2024, banks will use chatbots to handle approximately 70% of bot interactions, representing 49 billion customer service inquiries. After 2024, banks will also spend heavily on AI bots that assist bank employees with knowledge management functions. Total spending on enterprise employee assistants would surpass $500 million by 2027.

6.5. Customer Interaction Engines

Customer Interaction Engines (CIEs) are conversation design and delivery systems providing a coherent user interface for NLP-based natural interaction services. CIEs implement common capabilities, such as multimodal user interface design and management tools, business logic design, execution, and runtime updates in a no-code fashion, hybrid task completion strategies return and process management tools, asynchronous and proactive interaction support, an extended user model capable of supporting multi-turn context management and task tracking, and modular connectors for all main communication channels. Financial institutions can manage all forms of customer user experience, both service-driven and automated sales, through a CIE. Customers can set and manage their bank service preferences. CIE updates ensure that service complexity is properly managed and business adoption timelines are within the financial institution’s day-to-day constraints. Business contacts are managed through pre-screening of service requests. In cases of clear intent detection failures or high throughput of both the customer or business side, CIEs steer the customer to a human operator through intuitive handover of the session. Customer-users present inquiries in any available service channel and can often expect CIE-guided assistance, proactively warning them of fraud or other emergency events. CIE services and processes support

real-time context updates from shared feeds with the institution's operational pillars, ATMs, branch offices, and backend transaction processing systems. They collect information from other self-service support systems to prepare for customer interactions. Fast daily operations delegated to CIEs serve as a source of revenue, even if they are not a dominant activity.

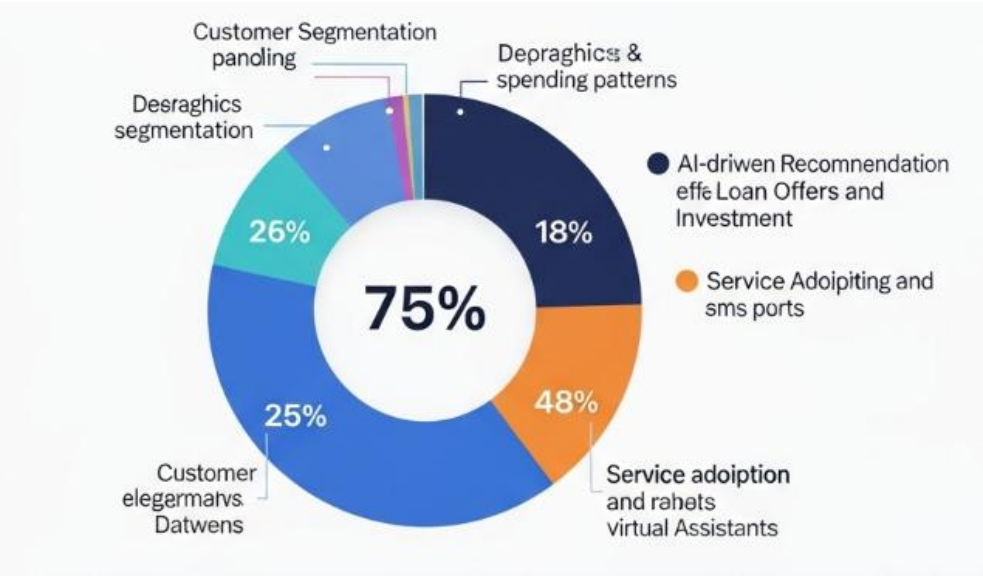

Fig : Real-Time AI-Powered Customer Interaction Engines

6.5.1. Functionality and Features

The breadth of technologies under the umbrella of AI delivers a variety of business value types for every banking service from customer support to security. Innovations such as robotics process automation, connected devices for asset management, intelligent budgeting, self-learning automation, advanced analytics and natural language processing for enhanced customer service and security, AI-generated interactive multimedia, AI-delivered risk, fraud and cybersecurity intelligence, AI-enabled sales and risk assessment recommendations, virtual consultations and advisory services, AI-delivered continually updated personalization of banking services – the list goes on. In banking the primary touchpoint for customers is within the mobile banking application. Provided that customer interaction engines are embedded there, they possess the greatest visibility and therefore engagement potential. Through transaction categorization with predictive analytics and machine learning and automation, smart notifications can remind customers about upcoming bills and their due dates. With data provided by cognitive decision tree flows and knowledge repositories, virtual agents can remind customers about such organized, pending tasks as sending new documents or refilling accounts

used for recurring transactions. From virtual assistance to proximate interaction, the personalization in the mobile banking app can heighten not only individual customer experience but also impact every aspect of banking services via emulating AI-delivered interfaces to all assets – whatever serves for customer interaction.

6.5.2. Integration with Banking Systems

Integration with Banking Systems Any user-centric technology such as a CE should be able to integrate with existing banking and financial systems to enable responsive and personalized service. Integration with existing core banking systems would typically be through APIs, as is common with any omni channel implementation. CEs can be deployed in the cloud and plugged into on-prem systems at the bank. Existing data can be cleaned up and transferred to and refreshed in the CE. Banking systems maintain an extensive historical record of customer data regarding engagements, transactions, product utilization, preferences, etc. Possible integration points between the CE and banks systems include: customer profile record creation and modification, request ticket routing and resolution tracking, service-level agreements tracking, feedback submission and tracking via the CE, referral creation and communication, sampled dual-authentication, for banking services such as logging in, digitally signing of requests, and approval of financial transactions, commission payment processing for referrals made via the CE, product status checks/transitions, etc.

The CE database was designed to handle normal use of the CE by millions of retail and corporate banking customers. This required that the CE processor only enable the banking services requested by a customer. The CE opted to allow dual authentication of certain banking transactions via the customer's selected authentication mechanisms. Transactions would be executed as per request by the customer, after the CE processors have validated the dual authentication. A module was designed to enable integration with banking services. Built-in API calls enable banks to initiate calls upon request from the CE and receive responses. The module enables banks to manage response of the module; enabling banks to offer feedback or reward for submission or surveys completed via the CE. Further APIs can be designed to enable integrations beyond bank systems, such as credit rating agencies, ecommerce partners, marketing partners, and travel booking agencies. Integration with such external partners will enhance CE service offerings by providing tracking updates related to loan requests, ecommerce transactions, travel bookings via the CE, etc.

6.6. Real-Time Data Processing

Real-time information is constantly changing, and financial institutions must keep pace, absorb, distill, and make real-time data driven decisions that will affect both the customer and its financial performance. However, creating continuous customer and account models is challenging. Considerable volumes of transaction data from diverse sources, both historical and real-time, must be managed and processed on an ongoing basis. Decisions have to be made quickly, and the foundation has to be established for effective personalization at the right time. Furthermore, while many financial services firms are acquiring advanced analytics platforms and creating separate centers of excellence for predictive modeling and advanced analytics, relatively few are capable of embedding these advanced analytic capabilities in decision engines that support real-time interactions.

Real-time analytics enables making data driven decisions unprompted by any underlying triggers. Most banks use historical data to create predictive models to identify potential behavior or actions. For example, a bank segmenting customers to determine the best customer for a transaction account may use account balances, household income, and demographics to identify which customers are likely to open a transaction account, how much they will deposit, and the funds transfer activity on the account, which drives interchange and transaction fee income. However, for real-time activation, the bank must know in real-time which customer is in the financial center. It must be capable of instantly measuring the customer's likelihood of action and holding behaviors in a real-time customer model. The strategy must be built around dynamically modifying any of the many possible offers for a customer during a day or week customer visits. While traditional marketing practices rely on analysis of historical data and are executed at a certain point in time, real-time marketing utilizes real-time data inputs, cutting across borders to develop a current insight that helps in decision-making. In traditional marketing, messages are pushed onto consumers through channels, whereas real-time marketing involves the ability to pull in consumers based on current needs.

6.6.1. Importance of Real-Time Analytics

The demand for real-time analytics has soared along with the amounts of customer data available, requiring modern banks to extract insights from their immense information repositories faster than ever. More speedily and powerfully than other analytical tools, real-time analytics allow executives to access on-screen reports as they monitor performance in a wide-ranging array of areas, spanning from transaction processing to relationship marketing. While there has always existed a desire for instant, convenient access to information tied to real-time data, today's instantly-interactive, results-oriented, web and mobile applications – alongside sophisticated, multitouch hardware

interfaces – make the desire more pressing than ever. Meanwhile, the accuracy, clarity, and usefulness of the information being reported by dashboards and business activity monitoring systems are becoming increasingly sufficiently intelligent to warrant the moniker of real-time analytics, rather than merely reporting or business performance management.

Quality of service requires fast action. It is a central need for any organization that wants to maximize the strength and lengthen the importance of the relationships with their customers. By lowering the time it takes to act upon an opportunity, insight, or danger, real-time analytics help reduce the time before value can be obtained from a particular event. As a result, key metrics can become either more favorable or less unfavorable. In contrast, the tardiness with which most businesses acting upon data have operated hitherto most often has been able to act – e.g., making the decision to send a loyalty-promoting coupon to a likely customer – only a fraction of the time before the business permeated a product.

6.6.2. Challenges in Implementation

There are several challenges in implementing real-time analytics in banks. Most banks must still deal with traditional systems. Some of these systems are decades old. Banks have invested heavily in these systems and have resisted new tech investments in the past. However, with the new age of startups gaining traction with their set of solutions, banks realize they have no choice but to adopt tech that keeps them on par with these newer entries into the market. This requires banks to gradually migrate their data to the cloud and disrupt their traditional data management practices. Often, banks have large legacy systems that may be closer to two decades old. Revolutionizing these systems isn't easy because most of them are closely woven into the fabric of bank operations and customer services. A large portion of consumer banking transactions are still done in common bank branches. A huge portion of branches continues to operate under cash limitations because many of their consumers are still accustomed to using this method. Because of these continuing limitations, banks can't follow through on a change overnight. Although folks in various branches are adopting tech and new methods at a healthy pace now, there are still many branches with teams that are slow to approve changes to conventional banking techniques. While the reception of these new initiatives is favorable among the banking staff, bank personnel at various levels of seniority are very cautious about actually implementing these new techniques into their daily processes. Parallelly, banks are working hard to implement new changes to their legacy systems to ensure that their data collection is faster and available in real-time. This is because many solutions today are created by financial analysts who have built standardized processes to speed up the time taken to integrate feedback from the various

operating points in the bank. However, banks still face challenges when data from transactions occur across various branches without the lack of time-sensitive integration policies in place.

6.7. Conclusion

Hyper-personalized banking experiences create digital journeys that rival the best of any industry. Those journeys will successfully transport customers and employees to a personalized and connected view of their financial lives. This new level of record keeping is only possible through the use of predictive AI with real-time triggers. These advancements provide insight to guide customers along their journeys, while giving banks and credit unions the knowledge required to transform customer engagement, improve member experiences, and dive deeper into their customers' needs through proactive outreach based on intelligent advice.

Over the last 30 years, the banking industry has engaged in a variety of trends to match customer needs with the products they need to solve evolving and often complex financial problems. Bank tellers without lines of sight to a customer's entire financial portfolio often had to be passive participants in a low-complexity exchange leading to a transactional relationship. As checking accounts evolved to become nearly free of service charges, banks and credit unions sought to make money through ancillary services like risk and fraud mitigation, international payments, and underwriting other banking products that come with fees and loan interest. Over a relatively short time, lending and wealth management have scaled to meet customer demand while essentially being detached from the day-to-day transactions occurring in the checking account. Mortgage brokering commissions exceed the amount made from service charges on a checking account by two to three times. Financial advisors help customers find a way to retire at age 55 or place their children in private schools and get college degrees. But traditional banking–the transactions customers conduct to get by from day to day and pay their bills–has largely lost its way. Is it possible that the next trend in banking would once again tightly couple daily transactions with long-term financial planning?

6.7.1. Emerging Trends

Some current trends, already put into practice, and some research initiatives have been creating, for some time, disruptive models where banking institutions and, more broadly, financial institutions in general, have direct interactions with retail consumers and are able to promote hyper-personalized offers, constantly changing in function of contextual information and real-time customer intelligence. Some of these initiatives are examples of traditional Wholesale Banking commercial efforts, where, for instance, credit supply

and working capital needs interact. Others, however, are presenting a sophisticated deployment of complex branch networks, with omnichannel capabilities based on the use of Artificial Intelligence and of Big Data analytics that are used to guide consumers in making progressively more complex and paradigmatic lifestyle choices, in terms of possible hyper-personalized financial offers. The former drives relationship context, while the latter launches the commercial context.

An example of hyper-personalized interaction is a service that helps customers understand how they can make the most of their money. It analyzes customers' finances, creates personalized recommendations, and sends alerts and tips to users to help them save money and build wealth. It features location-based tips and notifications that ensure customers get relevant recommendations at the right time, every time. Its unique connection, and capability to analyze multiple accounts from various institutions, supercharges its recommendation engine. It promotes targeted merchant offers to customers based on their financial activities. Its proprietary recommendation algorithms offer merchant partners hyper-targeted promotion opportunities in exchange for payment to bank customers for taking action. For banks, a revenue stream is created through targeted promotions for helping their customers make the right decisions.

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