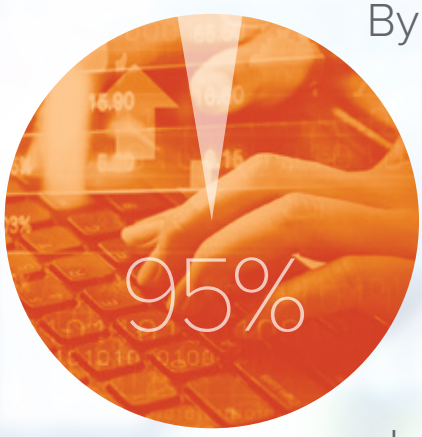
PREDICTIVE FINANCIAL TECHNOLOGY

Driving business performance and
optimizing customer experience



By 2020, 95 percent of customer banking interactions will be digital[1]—and that should raise a red flag for traditional banks that aren't enthusiastically building a more datacentric customer experience.

In the era of big data and customer-centricity, consumers expect that their commercial interactions will be customized, cohesive, and consistent across physical and digital touchpoints, on demand. However, the retail banking industry is failing to meet those expectations, as suggested by a recent Accenture survey of more than 4,000 banking customers in North America.[2] The survey showed that customer experience has become a key differentiator: 40 percent of respondents said they consider personalization a primary driver of bank loyalty, and 11 percent said they had left their bank in the past year in search of more simple, seamless transactions.

1 "How banks upgrade their IT for the future," Bain & Company, September 16, 2015

2 "2016 North America Consumer Digital Banking Survey," Accenture, 2016

Given the overall commoditization of banking services, it is predictable, and possibly inevitable, that failing to differentiate around customer services will drive consumers elsewhere. The "recent bank switchers" in the Accenture survey flocked to digital banking startups, boosting signups for online/virtual banks by 11 percent while driving a net 15 percent decrease in accounts among more established large regional or national banks. Another eye-opening Accenture study evaluated the gaps caused by disruption and their aggregate revenue impact and concluded that slow-responding community banks were at risk of losing as much as 15 percent of their revenue to financial technology (fintech) startups, GAFA (the collective acronym for the four Internet giants Google, Apple, Facebook, and Amazon), and other banks launching digital transformation programs.

To compete in this new landscape, legacy banks need to make their service more simple, seamless, and personalized. This requires them to remember customers' past experiences and predict, in real time, what those customers will want next—something they can only do by adapting their infrastructure to create a predictive enterprise. This paper sets out a roadmap to achieving that level of innovation through artificial intelligence (AI) in the form of a truly predictive banking platform.

TRADITIONAL BANKS HAVE HOBBLED THEMSELVES

By 2012, banks had already enhanced many of their customer-facing front-end operations with digital solutions in a push to link legacy systems and eliminate errors caused by manual data entry.[3] Today, customer expectations are far higher, and so are the stakes of attempting to meet them. Exponential advances in computing power and artificial intelligence have created powerful new opportunities for companies to engage with their customers holistically. Forward-thinking organizations can now capture data about millions of customer interactions in every channel, score or assign value to each interaction, and analyze the results to tease out patterns about consumer behavior that allow them to target their marketing messages at a more granular level than ever before possible.

As trusted institutions with longstanding relationships, traditional banks have a wealth of data they can transform into strategic benefit. By and large, though, financial institutions have failed to take full advantage of these opportunities.

The problem isn't lack of awareness. Traditional banks know quite well that natively digital competitors are clawing away significant market share by leapfrogging past them with entirely new approaches to creating satisfying customer experiences. But systemic barriers are preventing legacy banks from implementing new technology that would allow them to level the playing field.

According to PWC, many US retail banks are mired in integration challenges and organizational structures—particularly product silos—that actively hinder agility and prevent them from moving closer to a customer-centric

3 "Automating the Bank's Back Office," Joao Dias, Debasish Patnaik, Enrico Scopa, and Edwin van Bommel, McKinsey, 2012

model.[4] McKinsey notes that IT teams at large banking organizations often share neither the agenda nor the customer-centered business priorities of front-of-house functions.[5] Each of the global consulting firms reached these conclusions more than five years ago, yet consumer banks continue to lag in customer experience innovation, in part because new platform solutions continue to flood the market faster than banks can assess them. Rather than redesigning customer engagement from the ground up, banks have responded by pursuing a post-recession philosophy of incremental change that focuses on plugging technological gaps and improving existing processes.

In 2015, only 34 percent of consumers surveyed by Accenture reported having a seamless experience across in-branch, online, and mobile banking channels. In 2016, that dropped to just 27 percent.[6] It isn't that banks have actually made their customer experiences significantly worse over the course of one year. Rather, the 7 percentage-point drop in satisfaction among banking customers suggests that an influx of innovation improved customer service in other industries so much more rapidly that banking suffered by comparison. In other words, customers no longer compare their bank to other banks. Instead, they compare their bank to companies in other industries that are leading the way in leveraging connected digital services to transform the customer experience.

The higher the bar rises, the harder it becomes for banks to catch up. Yet retail banks cannot afford to end the decade the way they began it: by watching digital upstarts usurp their customer retention rates, brand perception, and growth. In an era of commoditized products, shrinking revenues, and rapid digitization, only dismantling product and data silos can optimize customer experience across all lines of business to deliver service that stands out.

If traditional banks fail to adopt new digital technologies to leverage transactional data in meaningful ways that enhance the customer experience, they will fall even farther behind their digital-only competitors. However, crisis is another word for opportunity. Banks now have a tremendous opportunity to partner with innovative technology vendors who can help them catch up with and even outpace their digital-only competitors.

4 "Getting to Know You: Building a Customer-Centric Business Model for Retail Banks," PwC FS Viewpoint, April 2011

5 "Automating the Bank's Back Office," Dias et al., McKinsey, 2017

6 Accenture, 2016

KNOWING WHAT CUSTOMERS WANT NEXT

The best customer experiences come from being able to deliver a seamless experience, not just across digital and physical touchpoints, but between past and future interactions. To do that, consumer banks need technology that enables them to unlock customer data stored in multiple silos and align previously conflicting priorities and incentives. Leveraging this data allows banks to do more than simply give customers what they want. By examining customers' past interactions and weaving in additional data from external sources, banks can actually *predict* what customers will want—maybe even before they know they want it.

The technology that unleashes this next step in customer-centricity is a predictive banking platform that integrates vast amounts of customer data and interactions from multiple sources as part of an enterprise transformation program. Predictive banking relies on AI to sift through and score each individual online and offline engagement. The more data the AI processes, the more it can train and refine its own optimization algorithms through machine learning to create a single cross-channel view of customer behaviors. Banks can then leverage the predictive banking platform's clear, actionable insights into past patterns of customer behavior to:

- Power amazing brand experiences across channels in real time
- Target messaging more effectively for both new and prospective customers
- Improve acquisition, cross-selling, and up-selling
- Increase the efficiency of internal operations

From credit scoring to analyzing Twitter streams for real-time market insight, startups developing AI for fintech received record levels of funding in 2016.[7] That's because AI is powering the next generation of customer applications and micro-services, and even setting the stage for a legitimate infrastructure for ledger-based transactions. Banks that haven't already begun to explore the potential of AI risk falling so far behind that they may never catch up.

7 "From Algorithmic Trading to Personal Finance Bots: 41 Startups Bringing AI to Fintech," CB Insights, 2016

CRITICAL CAPABILITIES OF PREDICTIVE FINTECH

ARTIFICIAL INTELLIGENCE

The platform must be able to find and analyze patterns in existing customer data and interactions across channels, and to use these patterns to predict future customer behaviors and act on them to optimize for a given outcome. As the platform's AI learns, its predictions must also adapt to changing customer behaviors to become more accurate over time, revealing new opportunities to further personalize interactions for more insightful and meaningful customer relationships.[8] The platform must also be capable of creating both global and campaign-specific mathematical models that incorporate thousands of attributes for precise targeting of customer groups and subgroups.

8 "Amplify You: Banking Technology Vision 2017," Accenture, 2017

PRIVACY COMPLIANCE

The platform must comply with all relevant regulations. This is a critical requirement in the highly regulated banking industry, where noncompliance risks financial and legal penalties as well as lasting brand damage. To further mitigate the risk of accidental privacy breaches, the platform should avoid using personally identifiable information (PII) directly. Instead, it should go through an external vendor that provides access to PII depositories or clearinghouses.

CORE INFRASTRUCTURE

The platform should be a leased or licensed solution to keep the burden of maintaining current technology in a fast-changing market squarely on the vendor, while ensuring that the bank maintains full ownership of its data and can easily move it to a different solution if necessary. At the same time, the platform should operate on infrastructure owned and managed by the solution's vendor to increase the likelihood that the vendor can ensure a high level of security for customers' sensitive personal and financial information. It also helps the vendor minimize downtime, which in turn keeps the bank's own operations running smoothly. In addition, the platform cannot truly break down data and product silos unless it can integrate with the entire technology stack.

FIVE STRATEGIC IMPERATIVES FOR ADOPTING PREDICTIVE FINTECH

Today's technology produces such a vast volume, variety, and velocity of data about consumer behavior that artificial intelligence is key to harnessing, managing, and deriving insight and value from that information. For banks to thrive in this new digital era, they must connect their entire ecosystem to leverage all the data at their command.

IDENTIFY PEOPLE, NOT DEVICES

Multichannel and device consumer usage thwarts traditional targeting. Predictive fintech creates a universal ID for each customer or household and ties all transactions and interactions across products, channels, and devices to that ID, both online and offline. The resulting holistic customer view powers AI's ability to predict additional ways to deliver a personalized customer experience.

CREATE REAL-TIME MODELS, NOT BASIC DEMOGRAPHIC SEGMENTS

Audience segmentation is no longer enough. Traditional banking is segregated into silos by channel or product line. Predictive fintech allows banks to break down those silos for a holistic view of customers across channels and incorporate transactional moments in real time to model, predict, and offer the next best action.

CREATE DATA SELF-SUFFICIENCY

Leased data doesn't differentiate your brand. Third-party data from devices, websites, smart appliances, social media, and other sources helps banks refine their marketing target—but the foundation on which predictive fintech builds is first-party data generated by interactions between banks and their customers and owned by the banks themselves. Leveraging proprietary current insights into current and prospective customers is the key to creating unique strategies and innovation for the future.

OPTIMIZE FOR THE FULL, NONLINEAR CUSTOMER JOURNEY

The marketing funnel is overly simplistic and inaccurate. A conversion or new account is just the beginning of an ongoing, nonlinear, omnichannel relationship between bank and customer. Predictive fintech helps banks anticipate customers' future actions and the most effective mode and method of response to engage, up-sell, and retarget in real time.

BASE DECISIONS ON DYNAMIC INTELLIGENCE, NOT STATIC DATA

Data alone doesn't solve problems. It needs to improve over time via recursive learning in real-time environments. AI learns continuously, allowing predictive fintech to automate early stages of decision-making and speed the entire decision management process. Combining strategic knowledge with the power of machine learning improves outcomes continuously, freeing business leaders to focus on choosing among the best of multiple positive options.

PREDICTIVE ENTERPRISE TRANSFORMATION:
AREAS FOR INVESTMENT

IDENTITY MANAGEMENT AND ANALYTICS

Companies need a platform that can connect accounts, experiences, and interactions at the touchpoint level across lines of business, in both digital and brick-and-mortar channels, and map them to devices, households, and actual people. This creates a single, holistic view of every current and prospective customer, from the first website visit or phone call to the most recent account transaction—the foundation for truly customer-centric service. At the same time, the platform must be able to differentiate data that is and isn't personally identifiable to support compliance with data privacy regulations.

PREDICTIVE MODELING PIPELINES

The right predictive modeling platform can turn device metadata into a variety of mathematical models capable of projecting future actions, such as device usage, purchasing behaviors, and media consumption habits. While this may begin by driving marketing campaigns, banks can leverage marketing's use of AI for broader AI competency that anticipates demand for future applications and services and builds long-term business strategy around them.

JOURNEY MANAGEMENT TOOLS

Feeding modeled data into appropriate analytic applications can reveal patterns that deepen customer engagement. The bank can then influence behaviors through "liquid experiences"—highly curated and contextually aware combinations of physical and digital experiences that machine learning can refine in real time. As AI knits together data from connected machines and objects, it will create customer experiences that are tailored to the individual customer and become the core driver in transforming customer experience.

AUTONOMOUS DATA CAPTURE, STRUCTURING, AND ENRICHMENT APPLICATIONS

Proprietary applications that leverage the latest advances in natural language processing and deep learning help automate the data tagging process. This ensures data continues to make sense after capture and allows it to be enriched and transformed into deeper insights.

DECISION SYSTEMS

Finally, intelligent applications allow business users to work with data on their own through informed recursive learning features that help them optimize supply and demand, create insights on the fly, and drive exponential efficiencies.

PREDICTIVE FINTECH IN ACTION

Deploying predictive fintech can help a consumer bank achieve multiple operational and customer experience goals at once: reducing customer churn, up-selling existing customers across a product portfolio, finding new high-value customers in an existing market, and providing best-in-class customer analytics to enhance performance throughout the business. The following is a detailed example of how that might work.

Meet Sally, a GenX working mother of three school-age children whose husband recently received a promotion. The family has been eager to move out of their starter home, and with this boost to their combined household income, they can afford something larger at a higher price point. Sally starts looking at four-bedroom houses on Trulia.com. She also begins to research mortgages on multiple financial websites, including the site of the bank where she has her current mortgage and her checking account.

To optimize customer experience, the bank recently implemented a predictive banking platform. It collects Sally's mortgage-related activity both on and off the bank's website, makes a contextual guess from other online activity that her household income has risen, and concludes that she's in the market for real estate. Knowing that the mortgage lifecycle is typically up to 180 days, the platform automatically includes Sally in the bank's current paid media campaign for its best mortgage rates to ensure that she's thinking of it when she's ready to make an offer on a house.

The nudge works. When Sally and her husband find a house that suits their requirements, her first call is to her bank's mortgage hotline. The process of preapproval goes smoothly: the predictive banking platform associates the incoming call with Sally's phone number in the bank's customer relationship management (CRM) system and pulls up her record in real time for the customer service agent taking the call. In addition to viewing Sally's current account balance and mortgage information, the agent can see which mortgage rates Sally has seen on the bank's website as well as on third-party and owned channels. This gives the agent an opening to discuss what Sally is looking for, make an appealing offer, and negotiate details.

The closing documents indicate the family's actual household income and show that their new home has more square footage and more rooms than the old one. Now that it has this information through a first-party relationship, the banking platform is allowed to use it. The AI predicts that Sally will soon be shopping for new furniture and instantly triggers an incentivized email for a new travel rewards credit card with a high threshold sign-up offer. The offer persuades Sally to sign up for the card.

Predictive fintech delivers results that help the bank improve customer service not just for Sally, but for other customers like her. As it serves Sally as an individual, the predictive banking platform allows it to connect Sally's actions across channels to create a seamless experience that not only persuades her to remain a mortgage customer, but enables the bank to up-sell her an additional product. Sally becomes an even more high-value customer as a result. In addition, Sally is one of many anonymized collections of data points in the bank's aggregate database of customer information. The predictive banking platform can tease out and score predictive behavioral attributes, correlate them to similar attributes across the customer base, and create a probabilistic model: typical GenX parents who are looking for or have recently taken on a mortgage. When the platform identifies high-value potential and new customers who have similar behaviors, it can tag them as members of that demographic so the bank can create marketing messages tailored to that audience. The results further optimize the bank's marketing models in real time so it can better anticipate customer needs.

As the bank continues to aggregate data about Sally and other customers like her, the AI in the predictive banking platform can analyze that data to reveal further insights about customer behavior. These insights can then drive additional offers likely to appeal to this specific market segment. For example, it could bundle products known to appeal to this demographic and offer the bundle to them with a financial incentive to sweeten the deal—thus improving the overall customer experience almost immediately by delivering what these high-value customers want before they even realize it's a possibility. This same offer also delivers long-term benefits by generating more revenue per customer over time while reducing the risk of attrition.

Predictive fintech builds the foundation for business intelligence. By combining marketing observations with proprietary data at the transactional level, banks can implement strategy at a highly granular level, such as understanding what types of services to offer specific customers via specific channels. They can also see broader patterns in customer information, even anticipating what new business models or solutions will be profitable in the future given current trends and customer demands.

Predictive fintech supports a wide variety of initiatives that cut across channels and create new opportunities to deliver the right offer to the right person at the right moment. These are just a few real-world examples:

A mobile payment company wanted to introduce its brand to an entirely new market, but to do so, it needed to educate consumers about the concept behind its product and the possibilities of mobile payments, then persuade them to download its mobile app and sign up for its service. With a predictive banking platform to help plan its messaging, the company was able to coordinate advertising across display and social media to achieve a daily cost per action (CPA) that was 40 percent below goal within the first two weeks of the campaign. After three months, the CPA was still 30 percent below goal, even as the campaign scaled by 250 percent.

A retail bank wanted to create a compelling customer experience promoting its new mobile banking app to existing checking account subscribers, while simultaneously driving new checking account acquisitions. Using predictive fintech to identify the most appropriate audience demographic, the bank created a tablet-only campaign that combined the portability and ease of a mobile application with a format that supported all the transaction capabilities necessary to open a new account. The campaign was so compelling that it beat the bank's click-through rate (CTR) goal by 30 percent and significantly exceeded its goal for new acquisitions.

A major credit card provider wanted to leverage data about its existing customers to better identify prospects and refine its messaging for better conversion and retention rates. Using more than 30 million records from its CRM system with 600 attributes each, the card provider used a predictive banking platform to create audiences that correlated to high lifetime value, then built models of desirable prospects based on those audience segments. After creating targeted online and media advertising to drive prospects to its website, the company deployed the model to better match which visitors received which online experiences and card offers. As a result, website visits increased by 31 percent, card application rates went up 24 percent, and application approvals rose 11 percent.

ABOUT ROCKET FUEL INSTITUTE

The Rocket Fuel Institute is a research initiative dedicated to the transformative field of artificial intelligence in digital marketing. The RFI aims to transform the digital industry, propelling it to the forefront of the global shift to artificial intelligence ("AI") by exploring innovation at the intersection of data, technology, and customer experiences. We seek ways to enable and sustain AI-based growth in marketing and across verticals by understanding how digital transformation and adaptive automation combined with human intuition accelerates over time. Our long term research goal is to converge academic research with applied sciences in machine intelligence to understand the nature of brand experiences. For inquiries into our existing or forthcoming work, or to discuss how you might partner with us, please reach out to:

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ABOUT THE PREDICTIVE VERTICAL SERIES

The Predictive Vertical series explores the way marketers in respective industry categories can gain a significant competitive advantage with best of breed solutions. The series covers in-depth macro trends that are shaping the global economy, defining the fate of companies and careers, while providing a sweeping perspective on the most advanced tools that are changing the way brands interact with audiences, and the way businesses achieve actionable insights to make more informed decisions in finance, CPG, retail, healthcare, and travel.

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