

THE AI REVOLUTION IN BANKING



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EXECUTIVE SUMMARY

Banks have been trying for years to implement artificial intelligence (AI) programs to improve their client experiences and fend off increasing competition from new entrants outside the traditional financial services industry. Most of these efforts have found only modest success so far — in large part because the programs haven't cut broadly enough across the enterprise. Some of the biggest potential benefits of AI for banks are in revenue improvement, yet most firms are not capturing them.

But a small handful are making real progress. We call them AI trailblazers, and they are drawing a map for others to follow as they try to protect and gain market share from potentially disruptive fintech and big tech rivals.

We have identified four pillars that the most successful banks in AI transformation are following. First and foremost, they are seeking to develop AI everywhere — not just in client-facing applications but across their enterprises. Second, they are emulating the very tech companies they are trying to defeat: Instead of thinking like banks deploying technology, they are thinking like tech companies getting into banking. Third, they are committing full bore to improving and modernizing their data practices — not only by moving to the cloud but also by bolstering governance and data stewardship. Finally, the trailblazers are creating AI factories — internal centers of excellence brimming with talented workers — that they then can deploy across the enterprise.

In the pages that follow we will share the secrets these trailblazers are revealing and create a new roadmap for banks to follow as they embark on, or begin to course-correct, their AI journeys.

INTRODUCTION

Artificial intelligence holds the promise to revolutionize the banking industry — but banks might not be the ones that reap the biggest rewards. So far, the track record has been spotty. The first wave of AI adoption over the past decade has been marred by embarrassing misfires stemming from biases against certain groups of borrowers that are baked into the historical data on which AI algorithms are based. The task of scrubbing those data sets and remediating the algorithms is gargantuan, and many banks aren't yet up to the challenge. Getting there, and seizing the broader promise of AI across an organization, requires dramatic, firm-wide commitment to improving both technology and talent. In fact, the players making the biggest strides in AI for banking aren't banks at all — they are technology companies. The largest financial institutions still enjoy an edge in data, marketing power, client trust, and distribution — but it is quickly eroding.

Oliver Wyman's [State of Financial Services 2022 report](#) examines several dramatic changes that have taken place within the banking sector in recent years. The biggest: established players are facing increasing pressure from newcomers, particularly fintech and technology companies. With its benefits of time- and cost-saving processes, AI offers potential to be a strategic solution, setting the stage for dramatic differentiation across banking enterprises while also benefiting customers. To reap these rewards, however, banks must first be equipped and willing to take part in the AI transformation themselves.

The timing couldn't be better. Regulators are increasingly favoring new interventions that drive innovation. At the same time, banks might soon be able to deploy cash flowing in from recent rises in interest rates.

Banks' ability to take advantage of these changing dynamics will play a significant role in their capacity to remain regionally and globally competitive. According to Oracle Global Retail Banking Consumer Trends, 2021 report 56% of respondents would likely switch to a banking proposition provided by Google or Apple. Already, the sands of the regional industry landscape are shifting: as an example, Saudi Arabia recently awarded a banking license to two first digital banks, and more than 16 fintech providers of digital insurance and consumer loans have entered the fray. This marks the start of a critical evolution, and it is certain that the industry will witness even greater disruption going forward.

How can AI help banks regain their competitive edge? Following on from the wave of digital transformation that has been the hallmark of the past decade, AI makes it possible to minimize manual intervention in core processes — which, in turn, optimizes operations. AI further makes it possible to introduce hyper-personalized propositions, and can even transform key functions like risk.

For some banks that have embraced AI, the results have been impressive. Our recent work with a leading bank serves as a testimony of the financial impact that AI can deliver. As an example, the introduction of AI in selection of leads for marketing campaigns has had remarkable results: 10% of sales in the bank today for personal loans and auto loans are linked to AI campaigns. In yet another example, leveraging advanced data analytics to optimize pricing yielded up to a 5% increase in net income in personal loans. Application of AI in other areas, risk and call centre optimization, is underway with similar results expected.

According to a recent study of 34 major banks from around the world, all but seven had implemented some form of AI in their front office functions — whether in the form of a chatbot, digital adviser, or virtual assistance — and are on the front foot of reaping the rewards of enhanced cross-sales, better customer service, risk management, more informative customer insights, and speedier customer onboarding.

In contrast, while many banks have indicated both their willingness and intention to embrace AI, examples of players that have truly done so are thin. Banks are not failing to avail themselves of the benefits of AI due to short-sightedness. Instead, many remain too focused on day-to-day operations to invest sufficient time and effort on an AI transformation. Since attention to AI is limited, so, too, is the success of their interventions. This is why banks that move quickly to implement AI properly will have a distinct advantage over competitors.

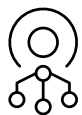
Implementing a successful AI strategy need not be daunting. Our work with AI trailblazers — early adopters of the technology charting a path of inspiration and impact — shows that the building blocks of an AI transformation journey may require several months of implementation and careful planning. But the benefits innate in automation, revenue improvement and significant cost reductions are clear.

Let us examine more closely the case for institution-wide adoption of AI.

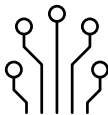
FOUNDATIONS FOR AN AI TRANSFORMATION — PUTTING AI FIRST

Ensuring that AI becomes part of a bank's DNA requires taking certain steps that will entrench it throughout the organization, encouraging all members to adopt an appropriate mindset and then implementing the right systems and processes. The pillars of a typical AI transformation journey can be summarized on Exhibit 1.

Exhibit 1: Pillars of the AI transformation



Deploy AI everywhere



Work like a tech company



Transform the tech behind the AI data brain



Build an AI factory that can deploy AI at scale

Source: Oliver Wyman analysis

Deploy AI everywhere: How does a bank envisage AI at work in its organization, from front office to back? Once the bank has this vision in place, the next step is to create a clear plan outlining how AI will be deployed throughout the organization, including timelines. They should start with applications that will be able to deliver value quickly, as this will win over the support of the team and thus hasten the adoption of AI in other areas.

Work like a tech company: Traditional banks' greatest competition no longer comes from other banks, but rather from technology companies. Therefore, it's time to start thinking as they do. What gives fintech companies an edge? What draws consumers to them? Often, it is the agile working methods they employ, which make them better to serve and answer their needs. In order to compete, banks need to mimic this agility. It may require a change in how they operate, but the results will be self-evident.

Transform the technology behind the data brain: At its very core, AI is about data. A successful AI transformation necessitates having high quality "raw material" available at the right time. This, in turn, means a bank must have the right data infrastructure in place. It may be necessary to move to the cloud to enable real-time AI applications; it will almost certainly entail establishing the necessary data governance, stewardship, and data-quality frameworks.

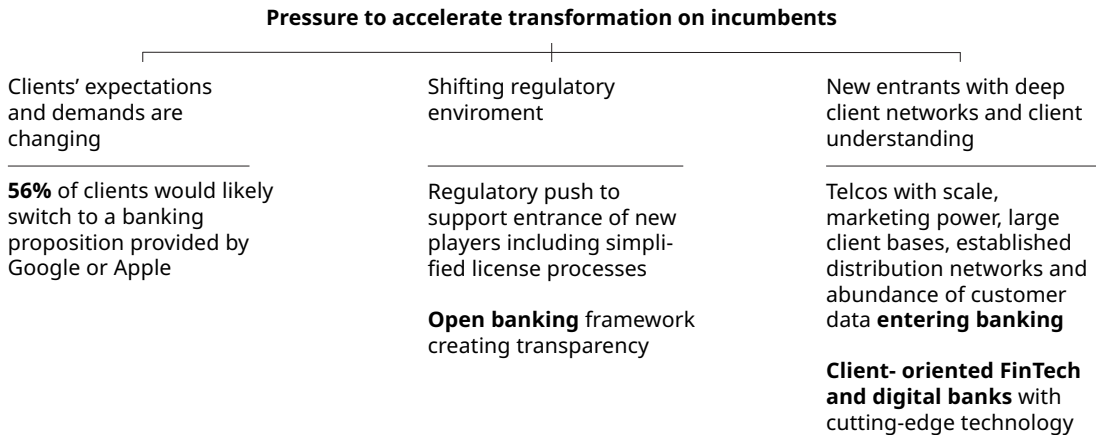
Build an AI factory that can deploy AI at scale: A true transformation will occur only if AI is deployed and institutionalized at scale. Assembling a team of high-caliber individuals and formalizing a center of excellence in the organization to drive the change is key. Crafting an attractive value proposition will help a bank attract AI talent — no small feat in an environment where these skills are in great demand.

THE AI REVOLUTION

In any industry undergoing major change at pace, players are searching for a silver bullet that can help them not only remain ahead of that change but emerge as winners. This is particularly true for the banking sector, where the digital revolution has transformed the landscape across digital, mobile, and data. Where incumbent players once could count on established legacy and a generations-deep track record to keep customers coming back, digital newcomers are now gaining market share thanks to their ability to answer evolving customer demands. Regulatory changes are also eroding the boundaries, making it harder for those incumbents to hold their ground.

There is a caveat, however, and it speaks to banks’ ability to compete with those digital newcomers. If there is a silver bullet, it is the power to address customers’ longed for utility and provide swift, efficient service. This is precisely the sweet spot that AI offers. In other words, to curtail losing market share, incumbents need to boost their capabilities. And one such means is through embracing AI.

Exhibit 2: Disruption drivers of the traditional banking landscape



Source: Oliver Wyman analysis

Our research shows that if competition in the industry is difficult now, it is only going to become more so in the future as customer demand shifts. According to the Oracle Global Retail Banking Consumer Trends 2021 report, 56% of respondents would likely switch to a banking proposition provided by Google or Apple.

Regulators seem set on making it easy for customers to do so, with many helping to ease the entrance of new players by evolving application processes and requirements for banking licenses. We’re seeing this in countries like Singapore and Malaysia, where licensing requirements for digital-only banks have been simplified, as well as the United Kingdom and Australia, where measures implemented include the introduction of phased licensing processes. These countries have also welcomed open banking, as has the European Union and United States. From an industry outsider’s perspective, this makes sense: Opening the market to new entrants means greater financial inclusion, while increasing competition within the industry means players are forced to improve their service levels.

All of this sets the scene for greater disruption in the market — and customers are taking advantage. Around the world, digital banks and financial companies (even those that do not hold full banking licenses) are flourishing, and take-up of offerings like digital wallets has been significant. The banking value chain already looks very different, and more disruption is likely in the face of leaner technology stacks and non-traditional propositions. A look at countries like China and South Korea, where several new entrants have made their mark, shows us that big tech is more than capable of recalibrating the industry — and it’s just a matter of time until other markets follow suit.

Exhibit 3: Sample notable big tech and telcos in banking

Big tech and telcos are respectable challengers of traditional banks

	Players	Country	Overview
<ul style="list-style-type: none"> • Scale • Marketing power • Abundance of customer data • Loyal customer base • Distribution networks (Telco) • Technology edge (no legacy tech vs incumbents) • Deep pockets/ability to invest • Ahead in the AI road after many years of investment 	Ant financial	China	<ul style="list-style-type: none"> • China’s largest digital payment platform • 1.3 billion users in seven years • USD191 billion valuation in September 2021 • Comprehensive service offering: consumer lending, money market funds, wealth management, health insurance, credit
	Kakaobank	South Korea	<ul style="list-style-type: none"> • SK’s most popular chat app launched a digital bank • 13+ million of monthly active users • Second largest South Korea Financial institution by market cap
	K Bank	South Korea	<ul style="list-style-type: none"> • Digital bank launched by South Korea’s leading telco operator • 70 million accounts in the first two days of operation • Over five million customers in four years

Source: Oliver Wyman analysis

In such an environment, traditional players need an enabler — and AI provides answers.

LESSONS FROM THE AI-FIRST TRAILBLAZERS

Our AI-first cohort — those banks trailblazing what can be achieved through systemwide adoption — have very little in common with the banks of yesterday (even if this is where their roots may be), and more in common with companies we typically think of as technology players.

This is key because, while organizations are all too aware of the need to safeguard themselves against new entrants and gear up to meet changing customer demands — and some even recognize that AI may be integral to achieving this — on the ground, change has been slow and halting. Organizations continue to work in silos, and rather than introducing a comprehensive blanket approach to AI implementation, campaigns are often localized. Small wonder, then, that they don't achieve the desired results or unlock their true potential.

In instances when the implementation of AI has been successful, it is often because the bank has transformed itself into a platform, focusing on delivering personalized and dynamic experiences, as well as immersive customer journeys across channels. At an AI-first bank, service delivery is underpinned by efficiently automated processes and teams that work in an agile manner.

This vision is quite different from the reality of traditional banking institutions and closer to that of technology companies. Very few financial services organizations have gotten this right. Among current players, only Ant Financial and Ping An stand out for embedding analytics in their operating and client service delivery models, right from the design stage.

In the future, success will hinge on the bank's ability to see itself — and to function — not as a financial institution, but rather as a technology company. This mindset is apparent in all organizations that have successfully embarked on an AI transformation. Moreover, it is a mindset perpetuated by senior executives, who have said they see their banks first as technology companies operating in banking — a vision that has guided their transformation.

MAKING THE SHIFT: A PRACTICAL GUIDE TO AI TRANSFORMATION

Change is never easy. Changing a mindset is even more difficult, as it entails not only the imposition of new procedures and processes, but also reshaping internal company culture, and encouraging employees to view their roles in a different light.

While this may sound like an impossible task, AI transformation can be simplified if the journey itself is broken down into key building blocks. These are discussed below.

Exhibit 4: The four pillars of AI transformation

Transformation paradigm	Implications
Deploy AI everywhere	<ul style="list-style-type: none"> • Set a clear AI-transformation vision in which AI is deployed in your bank across front, middle and back-office • Prioritize applications that rapidly demonstrate value to the organization to secure support and align your organization around the plan
Work like a tech company	<ul style="list-style-type: none"> • Institutionalize agile to work like a technology company — this is a major change in your operations, but if successful you will boost your results with benefits visible across the bank
Transform the tech behind the AI brain	<ul style="list-style-type: none"> • Get the data framework right — data is AI’s raw material and needs to be available at the right quality to enable the transformation; ensure that the data governance, stewardship and data quality frameworks enables the transformation • Aim for scalability and real-time AI applications: move to the cloud to achieve this
Build an AI factory that can deploy AI at scale	<ul style="list-style-type: none"> • Build a true AI-factory that can drive the transformation and deploy AI at scale — this needs to be formalized as a center of excellence in your organization • Craft attractive value propositions to attract highly competed for AI talent

Source: Oliver Wyman analysis

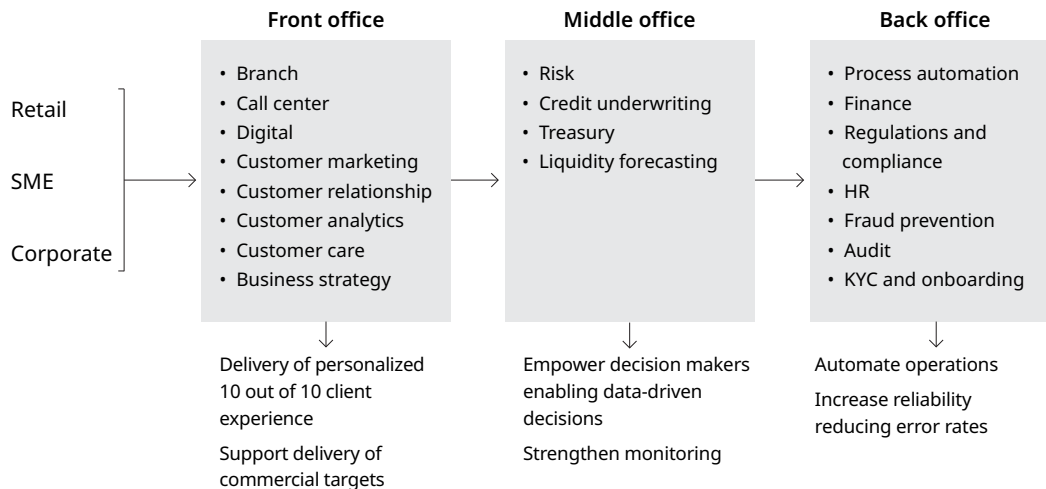
We understand that incumbents will face different challenges from those experienced by digitally native financial institutions. Thus, while the latter provide an interesting reference point, they do not make for a fair comparison — after all, since inception, they have had lean technology stacks in place that boost speed of delivery and increase the scope of possibilities. Nevertheless, these trailblazers may serve as inspiration in terms of what can be achieved by implementing a ruthless focus on building scalable capabilities, striving relentlessly to deliver a best-in-class customer experience, and mastering data. In short, they present an unassailable argument for the use of AI.

DEPLOY AI EVERYWHERE

There is no single place where AI can be deployed within a bank’s operations for maximum effect. Rather, AI can make a substantial improvement in all areas of the banking value chain, from the front office to the back. We recommend embedding AI across all operations, as the stand-out trailblazers have done, giving them the advantage of financial and strategic value creation. A holistic approach to implementing AI will allow banks to excel in client experience, support their business goals, empower decisionmakers with more and higher-quality information, and automate operations.

Exhibit 5 illustrates how AI applications in these areas can continuously improve user experience and increase data available.

Exhibit 5: Deploying AI throughout the value chain creates extra value



Source: Oliver Wyman analysis

Examples of the power of AI abound. For instance, at one institution, the use of machine learning models leveraging social media information helped to quadruple digital cross-sell campaign sales. Another institution has reduced client service and support costs by implementing an in-app chatbot that is able to service millions of clients by automatically responding to up to 500,000 varieties of client inquiries. And yet another organization has improved the detection of fraudulent transactions by 200%, by deploying an AI-enabled fraud-detection engine.

That said, AI should not be viewed as an isolated element that can solve a specific business problem or optimize a specific metric; rather, its power is exponentially enhanced when it is holistically combined, in which case its impact becomes truly transformational. This is well demonstrated by one European trailblazer that achieved a perfect score for client experience once it embedded AI in its app. This made it possible for the institution to assess clients’ financial health (based on an analysis of expenses, debt, and saving goals). Using this information, it could offer tailored lifestyle-specific plans that improve customers’ financial health. The bank is also able to alert customers if they are about to run into overdraft, based on anticipated upcoming deposits, withdrawals, and expenses.

Exhibit 6: Examples of AI deployed by AI-first trailblazers and digital banks

Area	Use Case	Description
Front office	Chatbot	AI chatbot based on natural language processing (NLP)
	Intelligent marketing tool	Deep learning tool providing automated personalized offering in the app
	Real estate investment adviser	AI tool estimating real estate property prices and rentals
	NAV Planner	AI powered robo-adviser for market investment opportunities
Middle office	Credit score assessment	Free tool accessible online and in app for clients to assess their credit score
	Real-time loan	Using real time payment data and a risk management system to provide loans instantaneously
Back office	AI transaction surveillance	Real-time detection of abnormal payments and alerts users via mobile app

Source: Oliver Wyman analysis

Of course, deploying AI in every area is not an overnight process, nor should organizations aim to make it so. It must be viewed as a multistage, progressive journey, with rollouts taking place throughout the value chain on an incremental basis. Rather than building one large set of applications, it is more practical to launch, refine, and industrialize one application before moving on to the next.

It is equally important to ensure that all employees support the transformation. Achieving this buy-in may be easier if the bank first deploys applications that will make a notable difference through strategic quick wins, thus creating early engagement and enthusiasm for momentum.

Buy in is best achieved through delivery of tangible results. As our own experience demonstrates, building the right AI deployment journey factoring in expected financial impact, data availability, ease of implementation, strategic fit and leadership's support is critical for this purpose.

WORK LIKE A SOFTWARE COMPANY

In the new banking environment, it is not track record or history that helps an organization stand apart; rather, it is the ability to operate with the kind of agility characteristic of software companies.

That means it is not sufficient simply to focus on data and technology. To truly succeed, banks will have to change the way they work, uprooting entrenched behavior and encouraging a multidisciplinary approach that allows for greater speed and efficiency.

Our experience supporting clients deploying AI has helped us validate the importance of working in an agile setup in which data is only one part of a wider solution. Let us consider once more the institution that customizes plans for clients based on an assessment of their financial health: having analyzed all factors, the bank will need to call on the business to define the offer, while the marketing team will be asked to develop supporting communications, and digital support channels will be asked to communicate with customers. Even risk and finance support will be required to play a role in approving the financials of the offer. This is a multistakeholder undertaking. It is vastly different from traditional models that see functions working in a sequential, siloed manner and which — if employed in the new banking environment — would impede delivery and efficiency. This new approach requires greater cohesion, teamwork, and cooperation, as well as an openness to jointly forging solutions to problems.

One trailblazer introduced a 3-6-9 framework: Once a brief has been issued, the relevant team members are expected to convene in less than three days, develop a prototype in six weeks, and have a solution industrialized and embedded in the bank's operations in less than nine months.

Exhibit 7: Overview of 3-6-9 agile delivery approach followed by an AI-first trailblazer

3	Days to mobilize multidisciplinary team	Multidisciplinary teams, bringing together empowered representatives of all relevant units e.g., AI factory, risk, retail, marketing,...
6	Weeks to develop prototype	To deliver a product in agile sprints, with an MVP in only six weeks...
9	Months to industrialize solution	And focusing on missions that can stick at the bank — only start a use case if it can be industrialized/embedded in operations in nine months or less

Source: Oliver Wyman analysis

TRANSFORM THE TECHNOLOGY BEHIND THE AI DATA BRAIN

To deploy and embed AI across a bank at the scale of the trailblazers, an organization needs strong technology and a data stack that enables AI applications. However, this does not mean all technology and data elements must be in place before it can embark on the AI transformation journey. To the contrary, our experience has shown that the project is likely to be more successful if the bank first concentrates on launching use cases that demonstrate the benefits to be gained through transformation, as this will ensure support from the broader organization.

Our analysis shows that trailblazers have implemented data transformation programs that strengthen data governance, instil robust data management and data quality assurance frameworks, and overhaul their technology core. These transformations are not an end in themselves, but are accepted as a means to enable the deployment of AI applications. Institutions should run these in stages and in parallel to the deployment of specific applications to build and maintain momentum, targeting specific gaps as they become apparent.

Equal attention must be given to transitioning to the cloud: Cloud computing has emerged as the most efficient channel for building scalable capacity and the required computational power. This will be a years-long, potentially challenging exercise for incumbents; however, it adds value beyond measure by exponentially increasing AI possibilities.

BUILD AN AI FACTORY THAT CAN DEPLOY AT SCALE

Trailblazers understand the importance of building advanced data analytics capabilities — and consequently are prepared to invest significantly in creating a workforce with corresponding skills.

Exhibit 8: Comparative analysis of data and analytics team across top US, EU, GCC and selected AI-first pioneers — headcount based on LinkedIn information

	Data Full Time Employees (FTEs) over total FTEs	# Data scientists and engineers
US AI-first pioneer	5.5%	2,850
Asia AI-first pioneer	3.3%	800
EU AI-first pioneer	2.5%	2,800
EU bank 2	1.6%	3,700
US bank 2	1.2%	2,400
EU bank 3	1.2%	1,000
GCC bank 1	1.1%	82
GCC bank 2	0.9%	139
EU bank 4	0.7%	1,350
US bank 3	0.6%	1,030
GCC bank 3	0.5%	55
GCC bank 4	0.4%	60
US bank 4	0.3%	480
GCC bank 5	0.1%	45

Source: Bank's annual reports and LinkedIn

The failure to bring strong data analytics teams may be one reason why many traditional banks thus far have failed to harness the full power of AI: Rather than filling their teams with data scientists and engineers, who will be able to sustain the organization on its long-haul journey, they appoint small, at times under-skilled teams to develop use cases that are often disconnected from the broader organization.

This is a significant stumbling block. It can be overcome only by creating an “AI factory” in which high-caliber individuals drive high-performing teams. Within trailblazers, data teams include specialized units with staff members whose skills are regularly sought by the likes of Google and Facebook.

The ability to compete with such organizations requires a deliberate focus on accelerating the development of AI teams. For example, one trailblazer based in Europe acquired a specialized big data start-up to rapidly scale up capabilities. This acquisition was the start of what today is a 200+ member-strong AI unit that includes many PhDs.

Beyond AI-specialized and broader data capabilities, banks need to focus on upskilling and bringing the wider organization along the AI journey. One trailblazer has trained hundreds of resources across business areas, including the bank's leadership, in the fundamentals of data analytics. Trained employees act as AI ambassadors in their respective business units, scouting potential AI use cases and translating business needs into data applications.

GETTING THERE

There are many attributes that have contributed to the longevity of the current banking model, with incumbents enjoying advantages like scale, marketing power, client trust, large distribution networks, access to capital, and liquidity, among others. However, as consumers become accustomed to the superior value proposition made possible by AI, the value of such advantages declines — and rapidly. Banks cannot hope to remain relevant without harnessing the competitive edge made possible by AI.

This challenge is made more complex by the fact that digital natives have a significant head start when it comes to AI transformation. This should not serve as a deterrent, however. Rather, traditional banks should seek to emulate trailblazers. This means rejecting the practice of launching selective AI use cases and instead embracing a holistic approach to AI that sees the organization remodelled not as a bank but as a technology company operating within the banking industry.

This is a truly disruptive exercise, but one that can be made easier by putting in place the building blocks that are fundamental to any successful AI transformation. These include setting a clear ambition in which AI is deployed everywhere, transforming the technology and data brain, adopting the mindset and methods of a technology company, and seeking to build a true AI factory by hiring specialized AI talent.

Beyond these elements, AI evangelists should think about bringing the organization along with them to establish the right level of sponsorship and governance to succeed. Importantly, they should balance transformation-outcome ambitions and tangible rapid results to secure the buy-in of the organization that allows them to move ahead.

Encouragingly, once action is taken, results are fairly rapid, as has been demonstrated by one of our clients, when partnering with us to build an AI center of excellence and transform the bank (see Exhibit 9). As part of our collaboration, we are working with our client to develop and deploy AI use cases, working to generate impact while building key capabilities — an approach that has helped us secure support across business units and, in so doing, facilitated buy-in from the broader organization.

The time to act is now. As much as traditional banks are under pressure, there are also several factors in their favor, such as a relaxed regulatory environment and increasing interest rates. With AI as a compelling tool to stop the loss of further market share, AI-first incumbents can look forward to remaining relevant in a world of constant change.

Exhibit 9: The journey of our client, a leading bank, in becoming an AI trailblazer

Transformation paradigm	Transformation journey of a leading bank	Impact
Deploy AI everywhere	Focus on AI use cases delivery across all areas (corporate, retail, subsidiaries operations) demonstrating value generation in every use case and building momentum	USD200 million in value delivered in 12 months
Work like a tech company	Data works in an agile manner within the organization, bringing in stakeholders as required to fast-track delivery of use cases	Eight weeks to deliver an AI use case, from ideation to production
Transform the tech behind the AI brain	A comprehensive data transformation program including build up of key infrastructure blocks transformed the bank into a national AI leader	15 month transformation from laggard to national leader
Build an AI factory that can deploy AI at scale	Focus has been set on attracting and developing top young talent complemented by selective AI experienced hires	First AI centre of excellence built in the national banking sector

Source: Oliver Wyman analysis

Contact the authors to further exchange perspectives on AI transformation of your organization.

Oliver Wyman is a global leader in management consulting that combines deep industry knowledge with specialized expertise in strategy, operations, risk management, and organization transformation.

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