

BANKING ON AI TO DIFFERENTIATE







“In less than a decade, a whole new Generation Z will join the millennials as the most important customers of banks. These customers, beyond being tech-savvy, will be tech-innate, juggling five screens at a time, communicating with images, and shunning text and touch interfaces in favor of the instantaneity of voice-based commands. Understanding and serving their needs will require more than the average human ability. It will require man and machine to work together more symbiotically so people can then prepare for roles and jobs that don’t yet exist – like product predictors, customer-trend readers, maybe even managers of digital currency portfolios. The possibilities are only just beginning to emerge.”

– An Infosys viewpoint

INTRODUCTION



In 2014, when the Millennial Disruption Index was published, banking was at the top of the list of industries most vulnerable to disruption. About 70 percent of the millennials surveyed claimed that the way they accessed money or paid for things would totally change in the next five years; about a third went so far as to say they wouldn't need a bank at all. Most were eagerly anticipating innovative products and services from technology giants such as Apple, Amazon and Google, not from their banks.

Three years later, banks are battling more than the mercurial millennial customer. Macroeconomic conditions remain soft, regulatory costs are up and interest rates are down, putting immense pressure on profitability. Digital technologies continue to challenge the industry by resetting customer expectations, creating agile new competition, increasing the risk of cyber attacks, and exposing the inadequacies of traditional banks' legacy systems.

But the same digital technologies are also defining the future state of banking where the customer

is the focal point, decisions are driven by insights and automation is rampant in banking operations. Artificial Intelligence (AI), including machine and deep learning, predictive analytics, natural language processing and Robotic Process Automation (RPA) will play a key role in this next wave of banking transformation.

As part of its study *Amplifying Human Potential: Towards Purposeful Artificial Intelligence*, Infosys commissioned independent research to investigate the approach and attitudes that senior decision-makers in large organizations have towards AI technology and how they see the future application and development of AI in their industries. Within that research, 10 industries were surveyed, including Financial Services, Fast Moving Consumer Goods (FMCG), Utilities, Retail, Healthcare, Pharmaceuticals and Life Sciences, Manufacturing, Telecoms, Automotive and Aerospace, and the Public Sector.

What follows are the findings specific to the financial services sector.

INTEREST OUTSTRIPS IMPLEMENTATION



The research shows that the financial services industry is committed to AI and, at an average AI investment of US\$14.6 million, spends much more than other industries. The key drivers of implementation are a desire to gain more insight from big data (49 percent), save cost (19 percent), and automate processes (18 percent). 56 percent of the organizations deployed AI based technologies between one and three years ago. 23 percent of the companies that have fully deployed AI say it is working as expected. Hence it is somewhat surprising that the sector has not come as far along the AI journey as others; when ranked by AI maturity, financial services was placed an unimpressive eighth among 10 industries.

Thus far, deployment has been dominated by data-centered initiatives, led by big data automation (64 percent), predictive or prescriptive analytics (56 percent), and machine learning (48 percent). Banks are keen to leverage these technologies to gather, sift and analyze the immense data within their reach and use the insights organization-wide to address various challenges and opportunities, such as identifying suspicious patterns of activity to prevent online fraud or understanding individual customer requirements and fulfilling them with highly personalized services.

To what extent do you agree that AI is fundamental to the success of your organization’s strategy?

Agree	47%	Disagree	7%
Completely agree	26%	Completely disagree	2%
Neither agree nor disagree	16%	I don’t know	2%

What are the key drivers for your organization in implementing (or planning to implement) AI technologies?

Automate IT processes	61%	Improve decision making	49%
Boost employee productivity	57%	Improve customer experience	47%
Automate business processes	54%	To increase innovation	46%
To increase revenues	53%	Improve go-to-market time	42%
Cost savings	51%	Augment employee knowledge and skills	40%

AI FOR ENGAGEMENT



Banking customers — millennials in particular — are probably the most demanding in the world and in survey after survey have expressed their willingness to shift providers for the sake of service and experience. Luckily for banks, AI is proving more than capable of serving customers and keeping them happy, often outperforming their service staff.

This has prompted rapid adoption of smart virtual assistants and chatbots. Since 2016, Erica, an intelligent virtual assistant, has been using predictive analytics to advise and guide Bank of America's

45 million plus customers. In the Bank of Tokyo-Mitsubishi's downtown Tokyo branch, a humanoid called Nao attends to customer requests spoken in Japanese, Chinese and English.

Financial institutions are also using advanced analytics to target marketing campaigns at early adopters and virtual advisors to answer basic queries, and if need be to connect customers with relationship managers to take the conversation forward.

AI TO CURTAIL FRAUD AND MANAGE RISK



Under pressure from attackers trying to breach their systems and zealous regulators trying to mitigate risk, few things matter more to banks than security. Around the world, financial institutions are strengthening their authentication processes with a layer of AI protection. Whether it is Australia's Westpac or Santander in the United Kingdom, an increasing number of banks are employing visual and voice recognition to authenticate customers and activate transactions.

While analytics is not new to fraud management, machine learning is taking banks' defenses to an entirely new level. Able to consider hundreds and even thousands of parameters when looking for suspicious patterns of activity, machine learning is proving faster, sharper and more accurate at sniffing out fraud. For instance, an AI engine doesn't just pick out suspicious transactions for PayPal, it also knows a false positive when it sees one.

AI FOR AUTOMATING PROCESSES



There are three reasons, namely data, processes and regulatory compliance, why financial services industry is a great candidate for automation. Industry estimates say that RPA could save between 25 percent and 50 percent of the cost of repetitive banking processes, and also improve execution. The use cases are almost unlimited with everything from credit scoring to reconciliation processes being amenable to intelligent automation.

Hence insurance companies are using robots, costing barely US\$10,000-US\$15,000 a piece, to process five to 10 times the number of claims a human agent

can. Bank of NY Mellon Corp., which has deployed more than 220 bots to take over manual tasks, says that has helped it achieve total accuracy in account closure validation across five systems, 88 percent improvement in processing time, and US\$300,000 annual savings from just the funds transfer bots. India's largest private sector bank, ICICI Bank, was the first in the country to use software robotics in 200 processes across retail banking, agri-business, forex, treasury and human resources management operations. Gains included 100 percent accuracy and a 60 percent reduction in response time.

In which specific business areas is your organization using, or is planning to use, AI?

IT systems and security	54%	Risk management	35%
Data analytics	47%	Forecasting/business intelligence	32%
Customer service	47%	Production management	31%
Customer relationship management	42%	Marketing and advertising	27%
Data processing and management	40%	Operations/facilities management	16%
Business development	37%	HR/training and development	11%
Financial planning	37%		

ETHICS AND AI



When customers take their business to a bank, they also implicitly trust them not to misuse or misplace their data. This puts banks in an ethical dilemma because they know that increasing intelligent automation means increasing exposure to risk. Before taking the plunge, banks must think through such ethical issues, and especially the impact of automation on their employees who are concerned about handing over control, privacy and industry regulation.

The survey suggests that banks are reasonably cognizant of this. 41 percent of the financial services respondents agree that without stringently enforced ethics, AI would never reach its full potential. 36 percent believe that ethical concerns prevent AI from being as effective as it could be. Fortunately, 34 percent are of the opinion that their financial organization has fully considered the ethical issues relating to AI ahead of implementation.

One of the biggest issues is job security. As per the survey, 42 percent of the respondents fear the switch to AI technologies, while 36 percent are concerned that it would erode jobs. While AI will certainly impact employment, the banking workforce should take comfort from the fact that 39 percent of the financial services organizations are training employees in the use and benefits of AI. Importantly, 36 percent are planning to retrain employees for a new role or area in the organization, and 39 percent hope to redeploy them into a more valuable role within the same area. This means that just under two thirds of the organizations are planning to upskill employees whose jobs are impacted by AI, rather than relieving them. This is further evident from the finding that 37 percent of the organizations are already giving teams the freedom to experiment with new technology, while another 30 percent plan to do so next year.



CONCLUSION



AI is proving to be a major force in the banking industry. Automation, machine learning and analytics will be at the forefront of industry evolution and play a key role in augmenting business growth.

The Infosys study shows that financial services organizations are investing in these technologies to enhance the success of their organizational strategy. Many companies aim to address specific business areas such as IT systems and security, data analytics and customer service. About 58 percent of the financial services companies are preparing for AI deployment by investing in supporting IT infrastructure, 48 percent are working on building AI into the company ethos while 46 percent are developing employee knowledge and skills.

The potential of AI is immense, but ultimately it only exists to enable humans perform and live better. Banks know this too: in the survey,

45 percent of the respondents say that AI would bring out the best in their employees. This flies in the face of the “AI is out to eat your lunch” argument. By taking over repetitive, mundane tasks, AI will leave bank employees free to focus on high level skills that only humans are capable of — skills such as problem finding, innovation, empathy and creative thinking. In doing so, it will amplify human abilities and enable people to add value to their organizations.

Even as banks embrace AI, as they rightly should, they must not lose sight of its ethical implications. Banks must practice good governance and develop standards so that artificial and human intelligence can coexist and collaborate in the workplace. Organizations that aim to strike the right balance between doing well and doing right by keeping ethics front of mind when deploying AI will take a significant lead in the future.



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