



**Krungthai**  
กรุงไทย



**Total Experience of AI**  
**Across the Enterprise and**  
**Customer Journey**

ผศ. (พิเศษ) นพ. พลวรรณ วิฑูรกุลชิต





# ARTIFICIAL INTELLIGENCE IN FINANCE

Artificial intelligence in finance is transforming the way we interact with money. AI is helping the financial industry to streamline and optimize processes ranging from credit decisions to quantitative trading and financial risk management.

# Three highlights : Survey results of AI in financial Services

**1** AI is important to their company's future success.



**2** Over one-third of respondents say that AI will increase their company's revenue by 20 percent or more.



**3** Top use cases

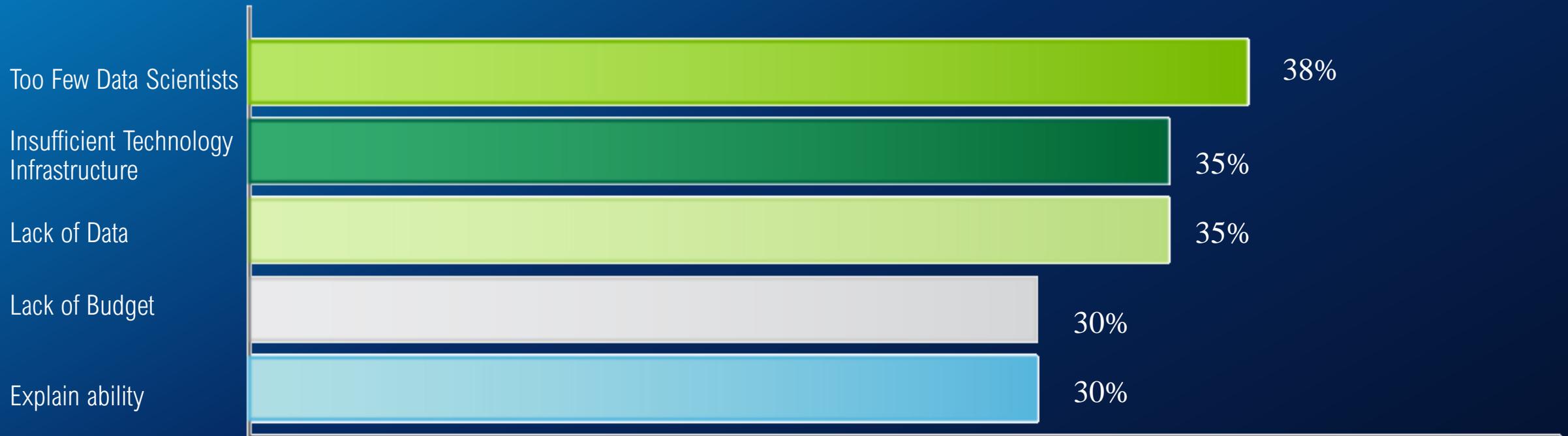
Most cited AI applications from fintechs and investment firms:

- > Algorithmic trading
- > Fraud detection
- > Portfolio optimization

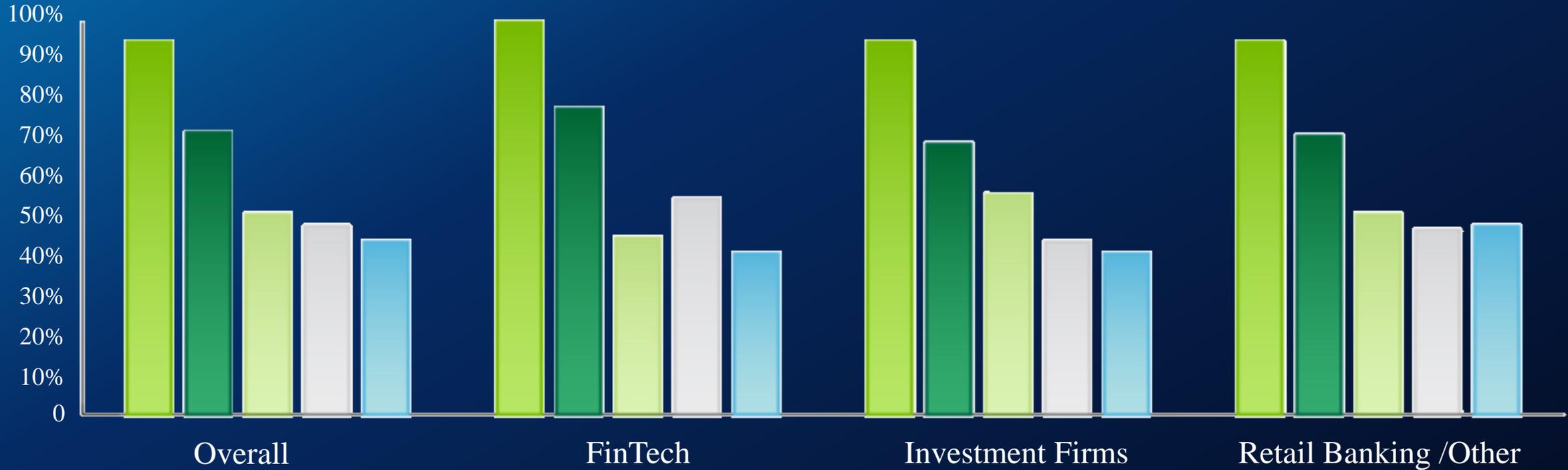
Most cited AI applications from banks and other financial areas:

- > Fraud detection
- > Recommender systems
- > Sales and marketing optimization

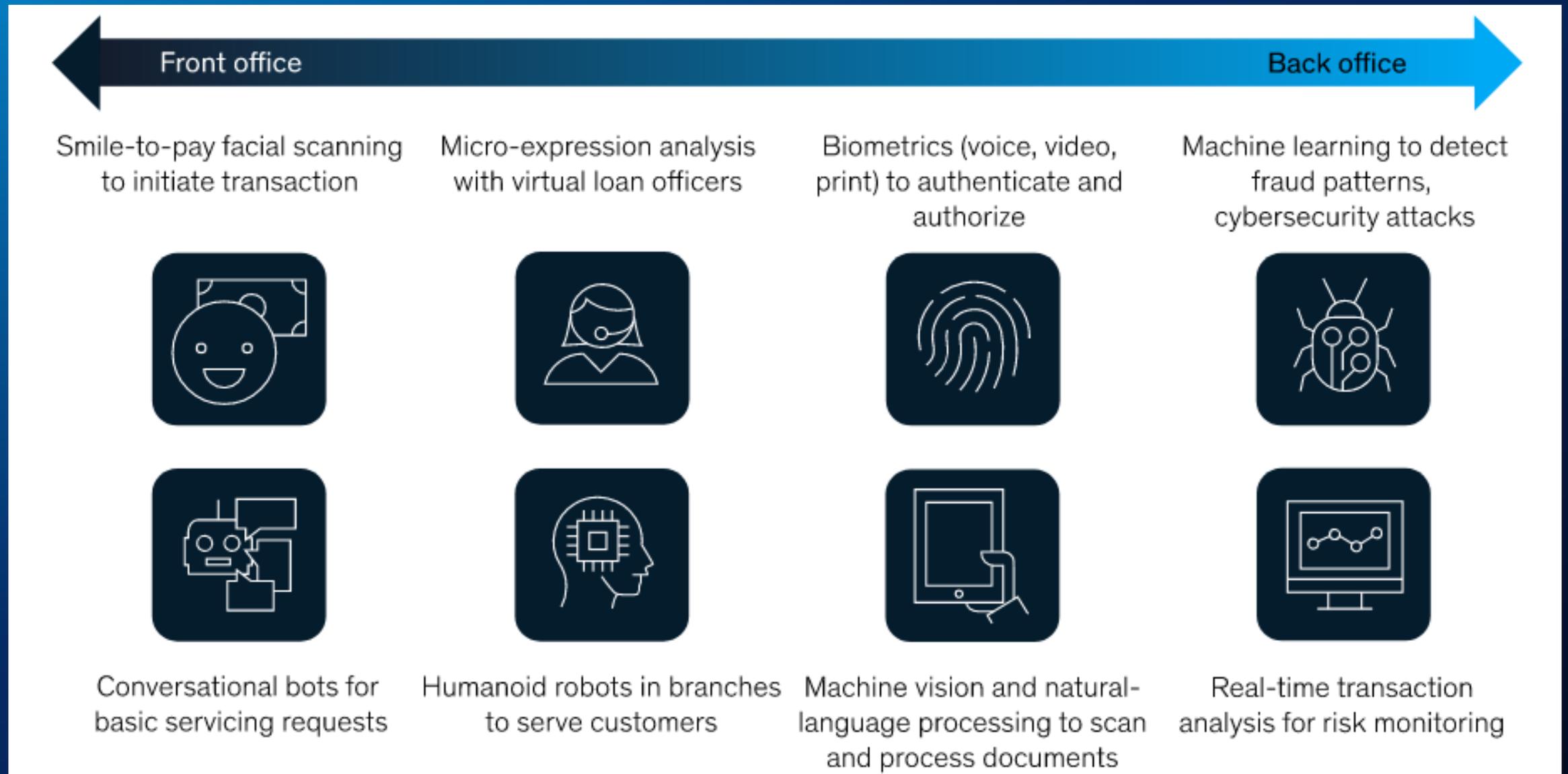
# What are the biggest challenges in achieving Bank's AI goals?



# Which of the following technologies is FI using today?



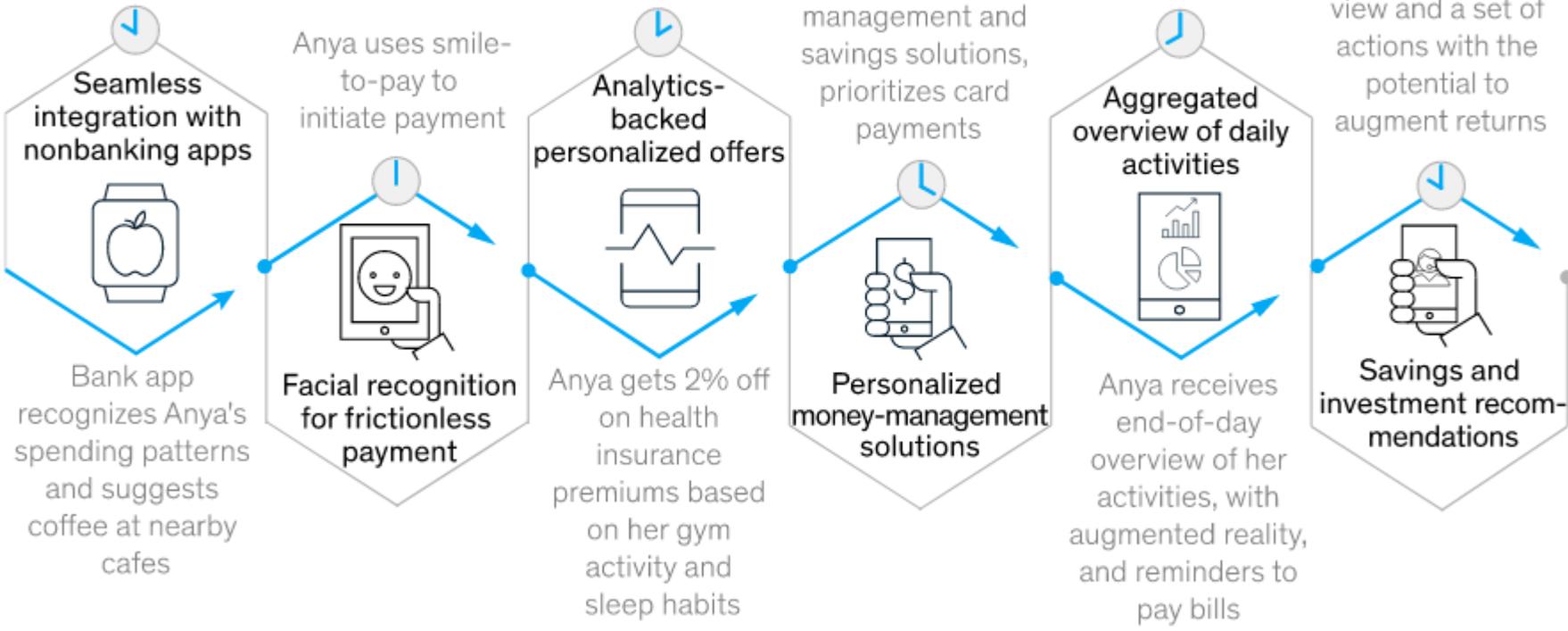
# Bank apply AI technologies to improve customer experience and back-office processes



# Using AI to transform the retail customer experience in banking



Name: Anya  
Age: 28 years  
Occupation: Working professional

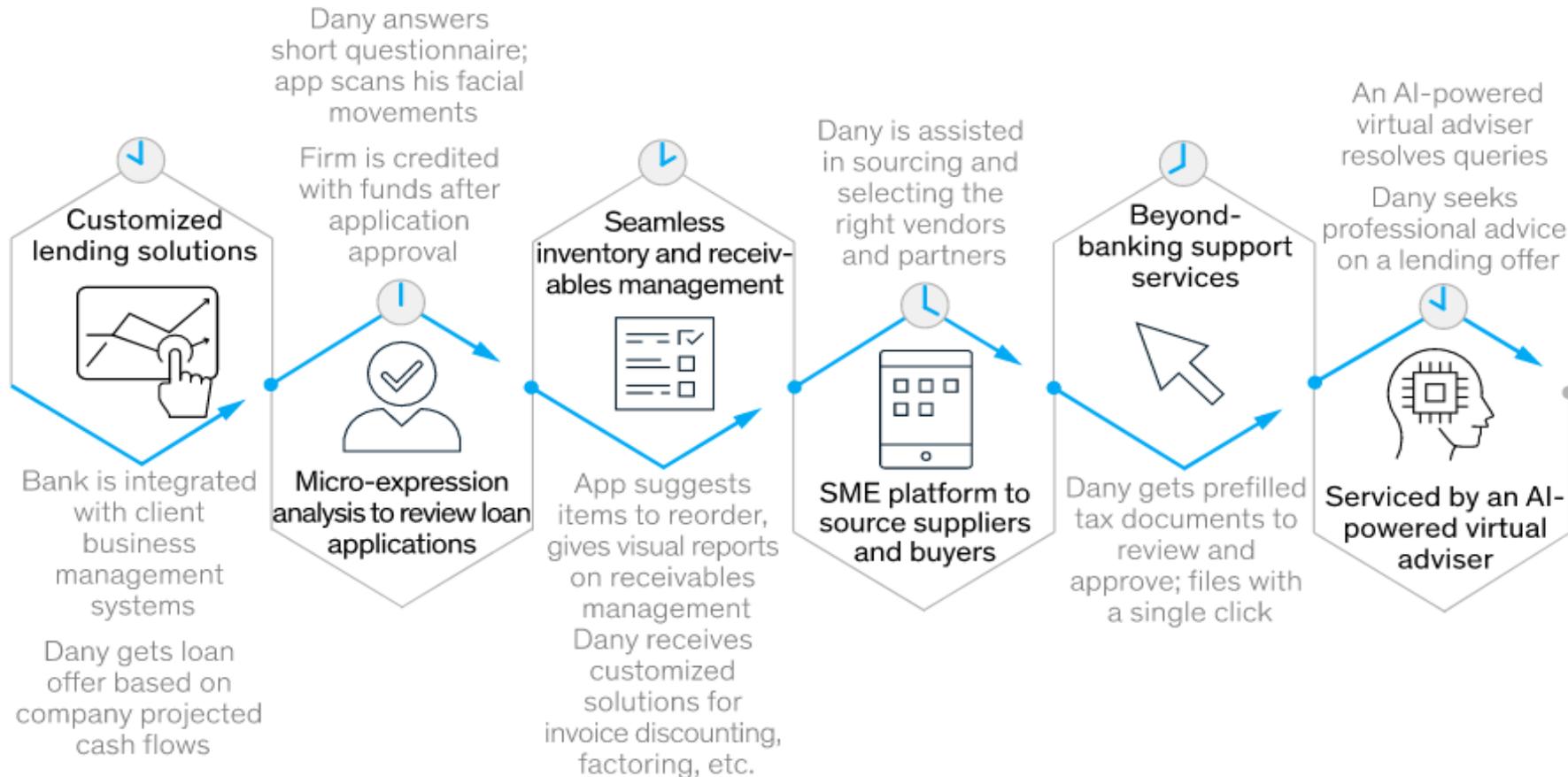


Intelligent | Personalized | Omnichannel | Banking and beyond banking

# Using AI to transform a small- or medium-size-enterprise customer experience in banking



Name: Dany  
Age: 36 years  
Occupation: Treasurer of a small manufacturing unit



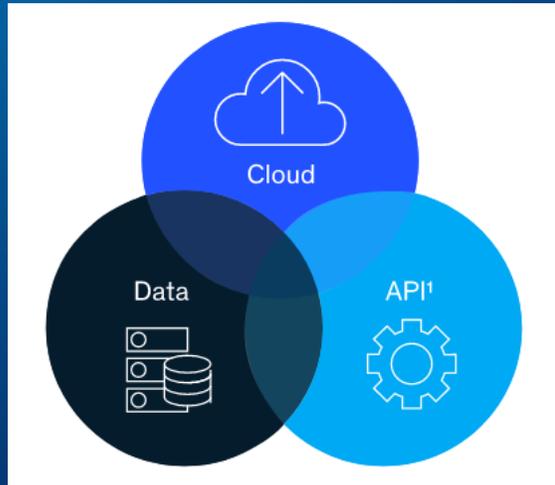
Intelligent

Personalized

Omnichannel

Banking and beyond banking

# Investments in core tech are critical to meet increasing demands for scalability, flexibility, and speed



## Challenges

Core/legacy systems **can't scale** sufficiently (eg, 150+ transactions/second)

Significant **time, effort, and team sizes required** to maintain infrastructure

Long **time required** to provision environments for development and testing (eg, 40+ days in some cases)

## How cloud computing can help

Enables **higher scalability, resilience of services and platforms** through virtualization of infrastructure

**Reduces IT overhead**, enables **automation** of several **infrastructure-management tasks**, and allows development teams to "self-serve"

Enables **faster time to market**; dramatically **reduces time by providing managed services** (e., setting up new environments in minutes vs days)



## Challenges

High **error rates**; poor **refresh rates**; lack of **golden source of truth**

**Hard to access** in a **timely fashion** for various use cases

Data **trapped in silos** across multiple units and **hard to integrate with external sources**

## How best-in-class data management can help

**Ensures high degree of accuracy** and **single source of truth** in a cost-effective manner

Enables **timely** and **role-appropriate access for various use cases** (eg, regulatory, business intelligence at scale, advanced analytics and machine learning, exploratory)

Enables a **360-degree view across the organization** to enable generation of **deeper insights** by decision-making algorithms and models



## Challenges

**Longer time to market, limited reusability** of code and software across internal teams

**Hard to partner or collaborate with external partners**; long time to integrate

**Suboptimal user experience**—hard to stitch data and services across multiple functional siloes for an integrated proposition

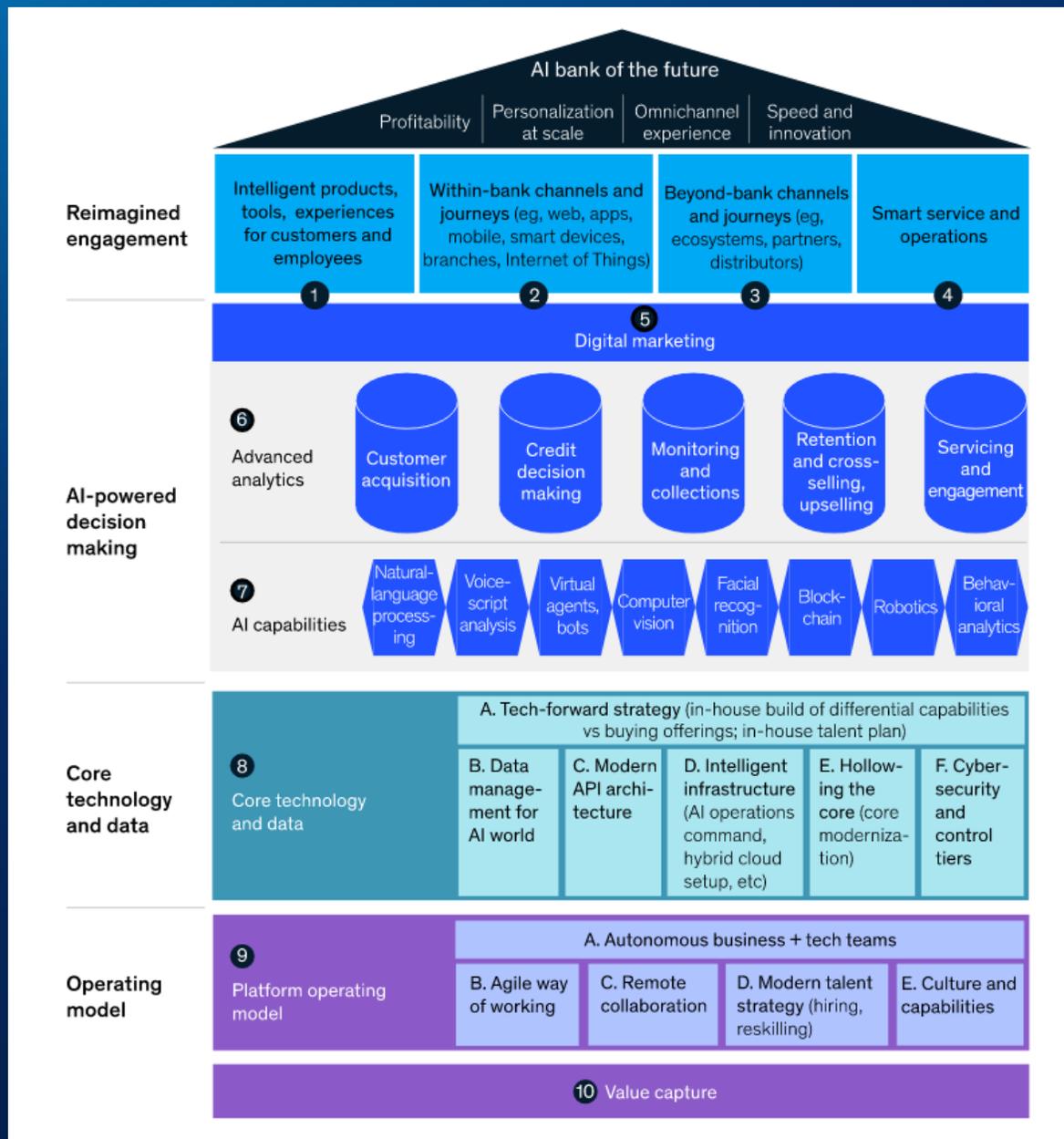
## How APIs can help

**Promote reusability** and **accelerate development** by enabling access to granular services (internal and external)

**Reduce complexity** and **enable faster collaboration** with external partners

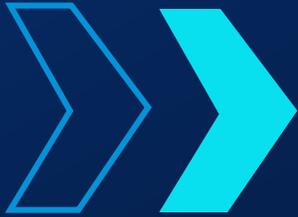
Enhance **customer experience** by **enabling timely access** to data and services across different teams; faster time to market due to **limited coordination, cross-team testing**

# To become and AI-first institution, a bank must streamline its capability stack for value creation





## AI in Financial



Artificial intelligence technologies are increasingly integral to the world we live in, and banks need to deploy these technologies at scale to remain relevant. Success requires a holistic transformation spanning multiple layers of the organization.

Most popular examples of AI in finance :

1. Credit Decisions
2. Risk Management
3. Fraud Prevention
4. Trading
5. Personalized Banking
6. Process Automation

# 1. AI and Credit Decisions

Artificial Intelligence provides a faster, more accurate assessment of a potential borrower, at less cost, and accounts for a wider variety of factors, which leads to a better-informed, data-backed decision. Credit scoring provided by AI is based on more complex and sophisticated rules compared to those used in traditional credit scoring systems. It helps lenders distinguish between high default risk applicants and those who are credit-worthy but lack an extensive credit history

Objectivity is another benefit of the AI-powered mechanism. Unlike a human being, a machine is not likely to be biased.

Digital banks and loan-issuing apps use machine learning algorithms to use alternative data (e.g., smartphone data) to evaluate loan eligibility and provide personalized options.

Automobile lending companies in the U.S. have reported success with AI for their needs as well. For example, this report shows that bringing AI on board cut losses by 23% annually.

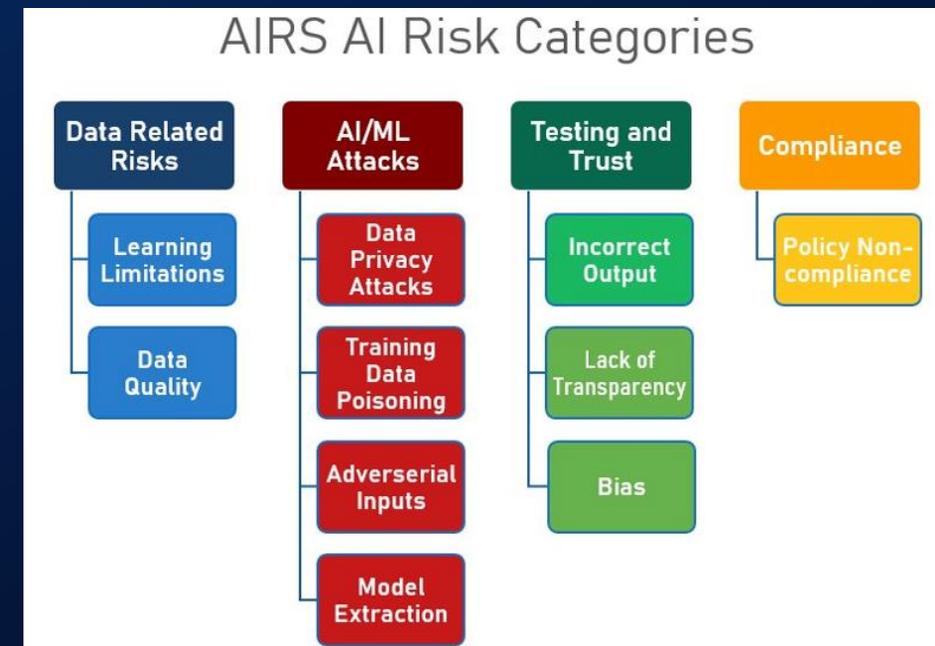


# 2. AI and Risk Management

It's difficult to overestimate the impact of AI in financial services when it comes to risk management. Enormous processing power allows vast amounts of data to be handled in a short time, and cognitive computing helps to manage both structured and unstructured data, a task that would take far too much time for a human to do. Algorithms analyze the history of risk cases and identify early signs of potential future issues.

Artificial intelligence in finance is a powerful ally when it comes to analyzing real-time activities in any given market or environment; the accurate predictions and detailed forecasts it provides are based on multiple variables and vital to business planning.

A US leasing company, Crest Financial, employed artificial intelligence on the Amazon Web Services platform and immediately saw a significant improvement in risk analysis, without the deployment delays associated with traditional data science methods.

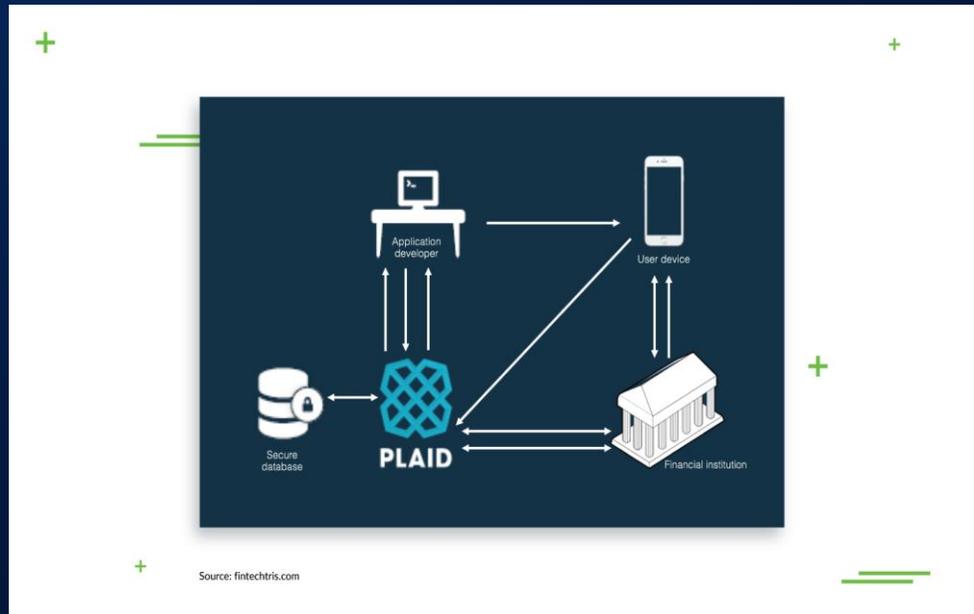


# 3. AI and Fraud Prevention

For a number of years now, artificial intelligence has been very successful in battling financial fraud and the future is looking brighter every year, as machine learning is catching up with the criminals.

AI is especially effective at preventing credit card fraud, which has been growing exponentially in recent years due to the increase of e-commerce and online transactions. Fraud detection systems analyze clients' behavior, location, and buying habits and trigger a security mechanism when something seems out of order and contradicts the established spending pattern.

Banks also employ artificial intelligence to reveal and prevent another infamous type of financial crime: money laundering. Machines recognize suspicious activity and help to cut the costs of investigating the alleged money-laundering schemes. One Case study reported a 20% reduction in the investigative workload.



# 4. AI and Trading

Data-driven investments have been rising steadily over the last 5 years and closed in on a trillion dollars in 2018.

It's also called algorithmic, quantitative or high-frequency trading.

This kind of trading has been expanding rapidly across the world's stock markets, and for good reason: artificial intelligence offers multiple significant benefits.

Intelligent Trading Systems monitor both structured (databases, spreadsheets, etc.) and unstructured (social media, news, etc.) data in a fraction of the time it would take for people to process it. And nowhere is the saying "time is money" truer than in trading: faster processing means faster decisions, which in turn mean faster transactions.

The predictions for stock performance are more accurate, due to the fact that algorithms can test trading systems based on past data and bring the validation process to a whole new level before pushing it live.

AI puts together recommendations for the strongest portfolios depending on a specific investor's short- and long-term goals; multiple financial institutions also trust AI to manage their entire portfolios.



# 5. AI and Personalized Banking

Artificial intelligence truly shines when it comes to exploring new ways to provide additional benefits and comfort to individual users.

In the banking sector, AI powers the smart chatbots that provide clients with comprehensive self-help solutions while reducing the call-centers' workload. Voice-controlled virtual assistants powered by smart tech like Amazon's Alexa are also gaining traction fast, which is no surprise: boasting a self-education feature, they get smarter every day, so you should expect tremendous improvements here. Both tools can check balances, schedule payments, look up account activity and more.

A number of apps offer personalized financial advice and help individuals achieve their financial goals. These intelligent systems track income, essential recurring expenses, and spending habits and come up with an optimized plan and financial tips.



# 6. AI and Process Automation

Forward-thinking industry leaders look to robotic process automation when they want to cut operational costs and boost productivity.

Intelligent character recognition makes it possible to automate a variety of mundane, time-consuming tasks that used to take thousands of work hours and inflate payrolls. Artificial intelligence-enabled software verifies data and generates reports according to the given parameters, reviews documents, and extracts information from forms (applications, agreements, etc.).

Employing robotic process automation for high-frequency repetitive tasks eliminates the room for human error and allows a financial institution to refocus workforce efforts on processes that require human involvement. Ernst & Young has reported a 50%-70% cost reduction for these kinds of tasks, and Forbes calls it a “Gateway Drug To Digital Transformation”.





# AI will help finance shape up for the future

“ Nowadays, Many banks, ensuring adoption of AI technologies across the enterprise is no longer a choice, but a strategic imperative. Envisioning and building the bank’s capabilities holistically across the four layers will be critical to success ”



**Krungthai**  
กรุงไทย

**THANKS**



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