LeanTech®

ARTIFICIAL INTELLIGANCE
IN Banking

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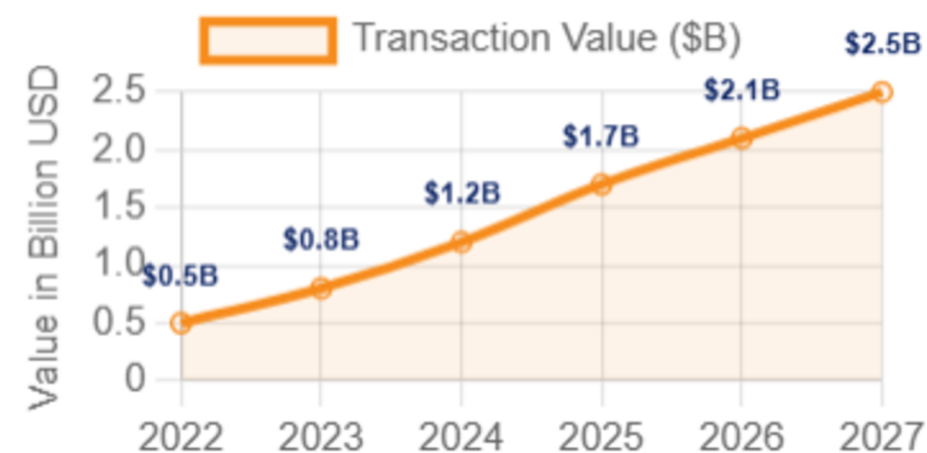
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Introduction

Core Drivers of AI Adoption in Banking

A perfect storm of consumer demand, economic pressure, and data proliferation is accelerating the integration of AI into every facet of banking.

Surging demands for Instant Services

The Middle East is the world's fastest-growing real-time payments market, fueled by a young, tech-savvy population that expects seamless, mobile-first banking experiences.

Transaction Value ($B)

$0.5B · $0.8B · $1.2B · $1.7B · $2.1B · $2.5B

Value in Billion USD — 2022, 2023, 2024, 2025, 2026, 2027

The Economic Imperative

AI is a powerful engine for economic growth, with projections indicating a massive contribution to the GCC economy through enhanced productivity and operational efficiency.

Est AI contribution by 2030 (in $billion)

Saudi Arabia	UAE	Total GCC
135	180	320
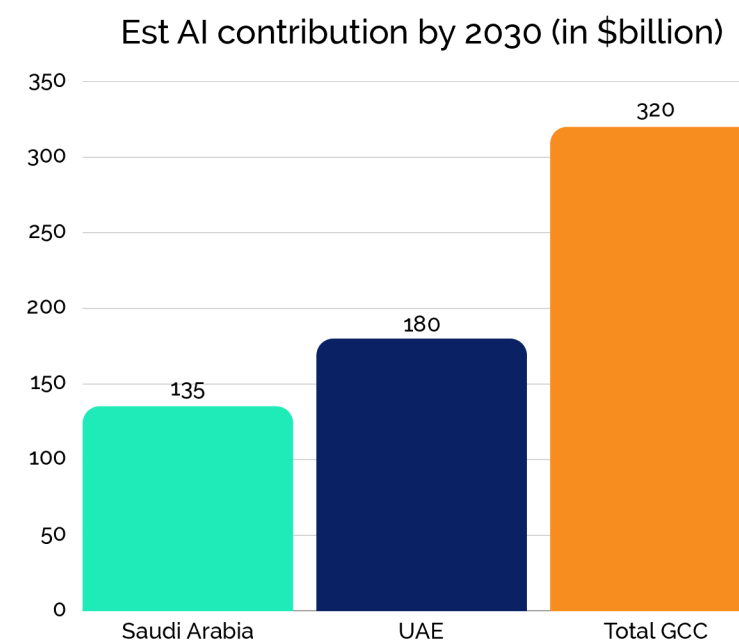
The Data Explosion

The exponential growth in digital transactions creates vast datasets. AI is crucial for transforming this data into personalized customer insights and competitive advantages.

70%

of retail transactions in Saudi Arabia were electronic in 2023, exceeding Vision 2030 targets.

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Tackling Fraud and Compliance Head-On

The digital boom brings heightened risks. Financial institutions are turning to AI to navigate the complex and costly landscape of financial crime and cybersecurity.

$85B

Annual cost of financial crime compliance in the EMEA region in 2023

183%

Year-on-year increase in DDoS cyberattacks in MENA (Q1 2024)

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The Compliance Dilemma

Financial institutions face the dual pressure of adhering to expanding regulations while trying to reduce soaring compliance costs. AI provides a powerful solution to bridge this gap

● Other ● FIs Prioritising Cost Reduction

81% of Institutions are prioritising compliance cost reduction

https://ibsintelligence.com/ibsi-news/emea-faces-85bn-annual-financial-crime-compliance-costs-study-shows/

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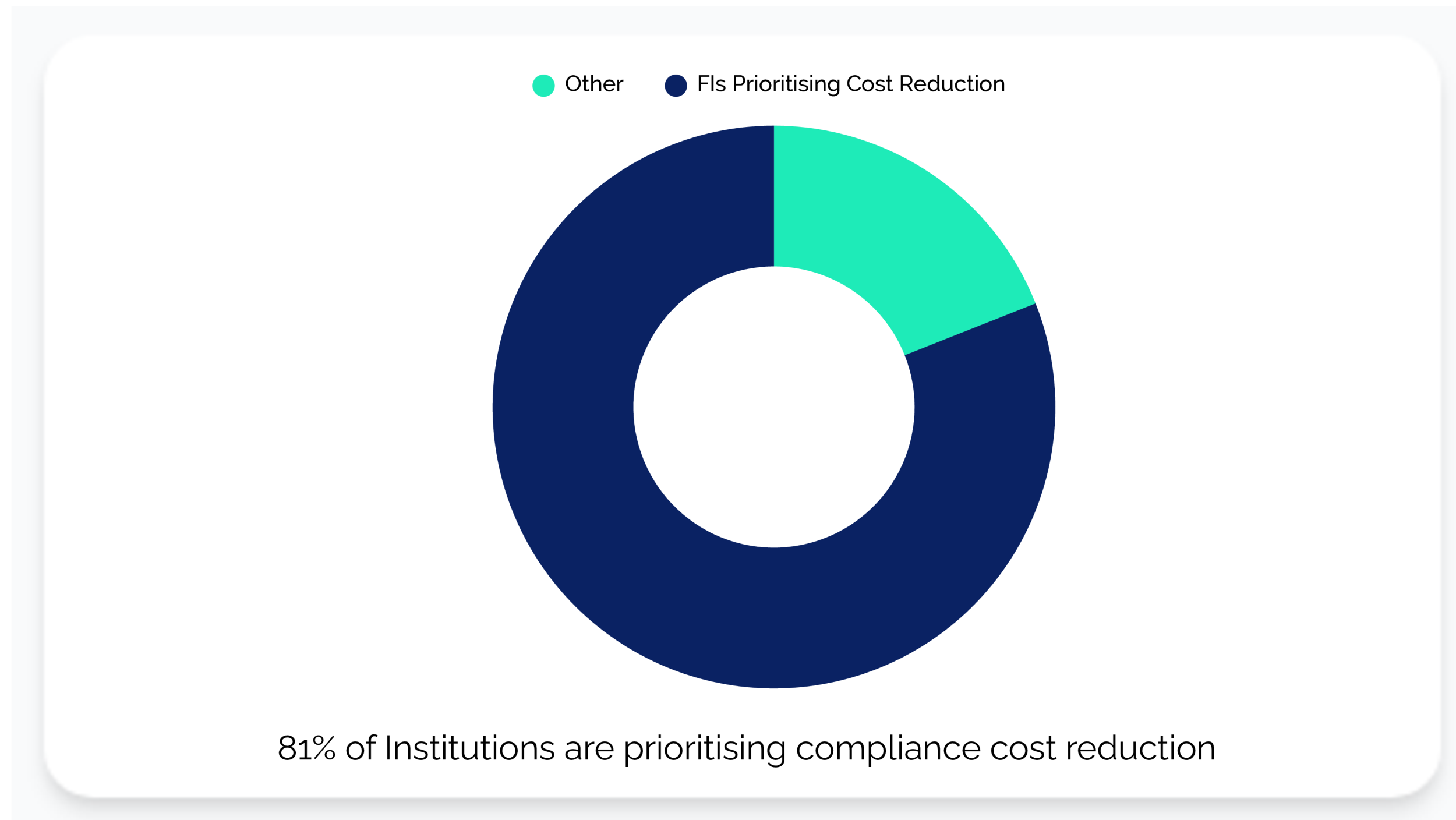
AI is now a strategic layer across all banking functions, not just a tool. Banks applying it across retail, risk, and compliance are seeing stronger margins, better compliance, and deeper customer engagement.

Use Cases

Retail Banking

Corporate Banking

Wealth Management

Risk & Compliance

AI Tools and Enablers

Machine Learning

Natural Language Processing

Predictive Analytics

Chatbots & Virtual Assistants

Fraud Detection

Outcomes

Operational Efficiency

Revenue Growth

Risk Reduction & Compliance

What are the Industry Leaders Saying?

" Digital innovation is key to transforming SME lending, enabling us to drive financial inclusion and support economic growth.

Abdullah AlTuwaijri (CEO - Consumer, Private & Digital Banking)

" AI has the potential to unlock smarter and faster access to credit for SMEs which is a critical step for economic growth.

Mohamed Abdel Razek (Sr VP & Group Head of Technology, Transformation & Information)

The above quotes are from the Panel Discussions that took place in 2025' Dubai Fintech Summit

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What are the Industry Leaders Saying?

" I think ten years from now, you could get a completely AI-powered bank—a platform where each individual customer actually creates their own AI version of the bank. So, the sky is the limit in terms of where you could go with this.

Piyush Gupta(Chief Executive Officer)

" AI is central to the bank's next phase of growth.

Dave McKay (Chief Executive Officer)

https://www.cdomagazine.tech/aiml/rbc-launches-ai-and-digital-innovation-team#:~:text=CEO%20Dave%20McKay%20described%20AI,including%20Nvidia%20CEO%20Jensen%20Huang.
https://www.mckinsey.com/about-us/new-at-mckinsey-blog/an-inside-look-at-how-mckinsey-helped-dbs-become-an-ai-powered-bank

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What are the Industry Leaders Saying?

" We're investing in foundational AI capabilities... which will enable us to accelerate and expand AI utilisation across the bank

Stuart Riley (Group Chief Information Officer)

HSBC

" There will be more reliance on AI and robotics as adopting generative AI promises improvements in decision-making, profitability, fraud detection and prevention, and better risk management.

Khaled Yousef Alshamlan, Group CEO

بيت التمويل الكويتي **KFH**

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AI Use Cases In
Banking

In the past 2–3 years, leading banks across the Middle East, Europe, North America, LATAM and Asia have accelerated adoption of Artificial Intelligence (AI) to innovate in **Retail Banking, Corporate/Commercial Banking, Wealth Management**, and **Risk & Compliance**. Below, we a few banks and highlight the AI use cases in each, the technologies applied, and the tangible business outcomes achieved.
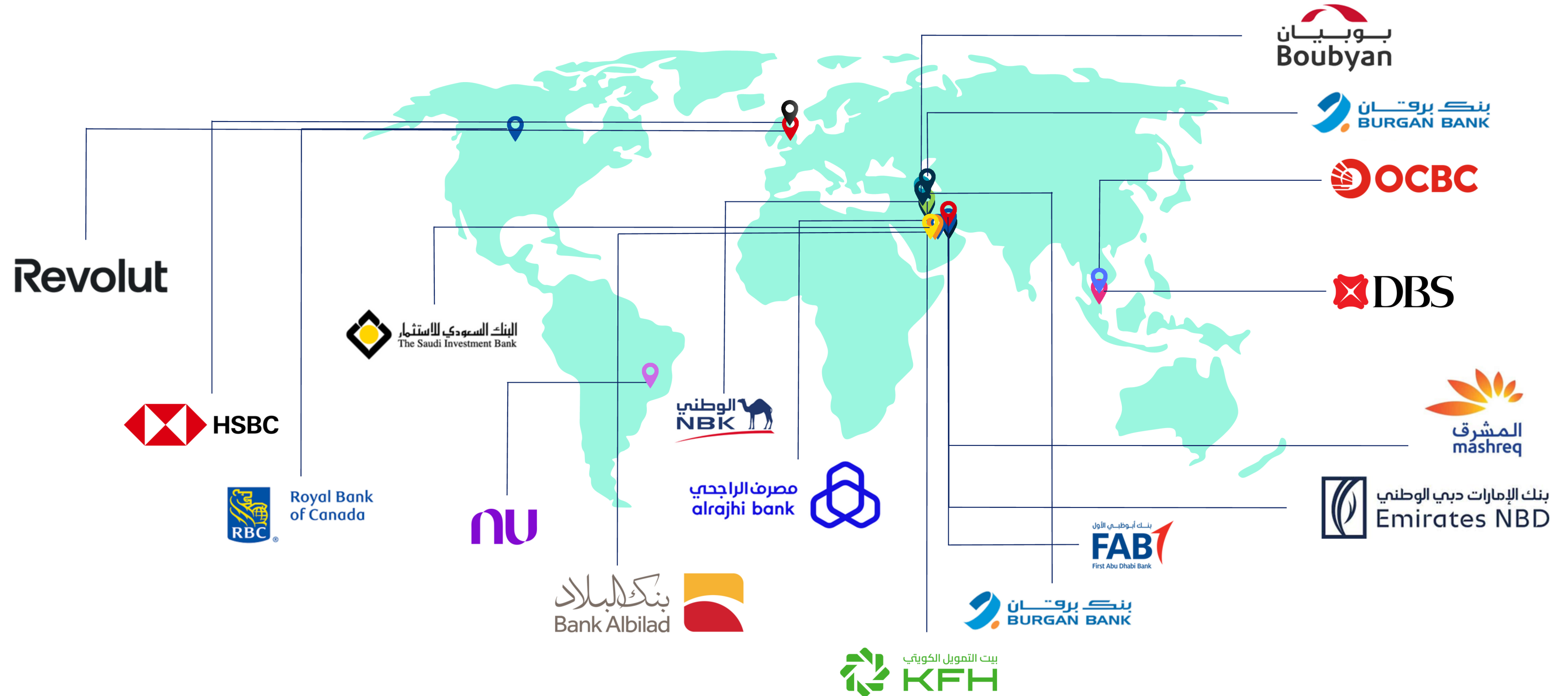
HSBC 🏛️

Focus: Financial Crime Detection

Enabling Technology/Partner 🤝

Google Cloud

Strategic AI Initiatives:

In 2024. HSBC Partnered with Google to co-develop the AI system known internally at as **Dynamic Risk Assessment** to check financial crime. It was earlier copiloted in 2021.

Impact

- **60%** reduction in false positives
- **2–4x** improvement in true positive case detection
- Enhanced scalability: system processes over 1 billion transactions/month
- Model earned HSBC "**Celent Model Risk Manager of the Year**" 2023

06 | AI IN BANKING
Harnessing the power of AI to fight financial crime - HSBC
CLOUD-BASED FINANCIAL CRIME DETECTION AT SCALE
Harnessing the power of AI to fight financial crime | Views

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Focus: Enterprise Upscaling

Enabling Technology/Partner 🤝

Strategic AI Initiatives:

- Partnered with **Intellect Global Transaction Banking (iGTB)** to deploy its latest cloud-based eMACH.ai platform. This powers corporate/SME products: liquidity management, virtual accounts, mobile cash management
- Launched **Musaed,** an AI-driven conversational chatbot, in 2018 to handle customer queries and transactions 24/7

Impact

- The iGTB **eMACH.ai** rollout has digitised Boubyan's trade & treasury processes, enabling straight-through payments and faster reconciliations
- In **2023** it was named "Best Islamic Bank in the World in Digital Banking Services"

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BURGAN BANK بنك برقان

🏛️

Focus: Personalised Retail Banking

Strategic AI Initiatives:

- Introduced **Burgan Robo**, an AI-driven robo-advisor that invites customers to complete a risk-profiling test and then uses machine-learning models to analyse market conditions and allocate their mutual-fund investments appropriately
- Burgan's ON Mobil channel partnered with **Dataroid**, an AI-powered digital analytics and customer-engagement platform
- Partnered with **SAP** for AI-powered HRM platform

Impact

- ON Digital Banking serves over **1.5 million** customers and that investments in AI and hyper-personalisation are instrumental in delivering simplified, intuitive banking

Focus: Phased Automation

Enabling Technology/Partner

Microsoft Infosys Informatica

Strategic AI Initiatives:

- Since 2019, built an **RPA Center of Excellence**, deploying 110+ software robots that executed 9.2 million transactions
- Partnered with Microsoft to create an **AI Innovation Hub**. It is migrating core systems to Azure (with help from G42's cloud unit) and leveraging Azure OpenAI services to develop new AI-driven banking services
- Also partnered with **Infosys** and **Informatica** to ensure the tech stack can support AI at scale

Impact

- This automation saved ~**1.3 million** hours annually (~AED 210m cost savings) by 2024
- FAB's automation drive cut average process times by **56%** and positioned it as an efficiency leader

https://www.linkedin.com/pulse/leading-ai-transformation-emirates-nbd-first-abu-dhabi-jitendra-kumar-aopff/

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The Saudi Investment Bank البنك السعودي للاستثمار

Focus: Phased Automation

Strategic AI Initiatives:

- Launched **Enterprise Data & AI** platform in 2024 as part of SAIB's digital transformation. This initiative built a centralised data lake and AI platform to drive advanced analytics and machine learning use cases
- Partnered with **Pure Storage** to modernise its IT infrastructure and support big-data workloads.

Impact

- The AI initiative has bolstered operational efficiency and risk management. Key outcomes include an **~80%** reduction in data processing latency, boosting transaction and analysis speeds

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OCBC

🏛️

Focus: Phased Automation

Strategic AI Initiatives:

- Deployed internal GenAI chatbot, **OCBC GPT**, in 2023 to all 30,000 staff
- Introduced a suite of in-house GenAI tools since 2022 to automate work: **OCBC Wingman** (AI coding assistant), **OCBC Whisper** (real-time call transcription and summary), OCBC Buddy (chatbot for internal policy Q&A), and **Document AI** (drag-and-drop tool extracting document info)

Impact

- OCBC Buddy receives querying **150k+ pages**; used **~30k** times monthly
- OCBC **Wingman** cut coding and debugging time by **~20%**, and the Document AI tool reduced information extraction time per document from **~30** minutes to **~1** minute

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Focus: Personalised Retail Banking

Enabling Technology/Partner

Strategic AI Initiatives:

- Deployed a real-time **AI marketing engine** that processes customer events instantaneously.
- Its Malaysian subsidiary partnered with **Feedzai** to deploy an AI-based RiskOps platform group-wide
- Partnered with **RATL Tech** to use a blockchain/AI platform (MUHIDE) for secure trade financing
- Uses **IBM Cloud Pak** on Red Hat OpenShift for rapid app development, and IBM's AI business tools for its digital platform

Impact

- By 2024, **95%** of active Al Rajhi customers were using digital channel, and **97%** of new customers were onboarded online
- **86%** of all personal financing is now done digitally

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Focus: Enterprise Upscaling

Enabling Technology/Partner 🤝

Copilot   intellect live your dream

Strategic AI Initiatives:

- Rolled out **Microsoft 365 Copilot** (GenAI assistant) to all employees in July 2025
- Expanded partnership with **Intellect Design Arena**, implementing an AI-powered front-end for corporate banking
- NBK's digital retail arm, **Weyay**, provides a testbed for AI features in a sandbox environment

Impact

- Executed **102 RPA** workflows with a **98%** success rate, saving over 200,000 staff hours, reducing paper usage by 6.3 million sheets, and improving turnaround times by **90%**
- About **97.9%** of all banking transactions were processed via NBK's digital channels in 2024

Focus: Personalised Retail Banking

Enabling Technology/Partner 🤝

Microsoft   LeanTech®

Strategic AI Initiatives:

- Consolidated risk data from 12 countries and built an in-house AI engine dubbed **RiskGPT** using Microsoft Azure AI services
- Launched **Fahad**, an AI-powered virtual employee and **Baitak Assistant**, a Robotic Process Automation solution, built for various customer needs.
- Launched **Group Service Center** that uses AI to streamline cross-border services
- Partnered with **LeanTech SG** to pair tech rollout with extensive employee upskilling and a culture shift toward digital agility powered by AI.

Impact

- RiskGPT slashed the average credit evaluation time from 3 days to about 1 hour (**96%** faster)

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Focus: Fraud Detection

Enabling Technology/Partner

THETARAY kore.ai

Clari5
A **Perfios** Company

Strategic AI Initiatives:

- Extended **electronic facial recognition** to corporate banking, enabling 100% paperless digital onboarding for large clients
- Partnered with **kore.ai** to launch AI virtual assistant for 24/7 customer service in 2021.
- Partnered with **ThetaRay** to deploy an AI-driven transaction monitoring solution for cross-border payments in 2022.
- Implemented **Clari5 Genie**, a generative AI platform for fraud investigation, into its platform in 2025.

Impact

- Streamlined KYC process has seen near-universal adoption (over **99%** of eligible onboardings) and high customer satisfaction (Net Promoter Score ~80)
- By deploying Clari5 Genie on-premises, Mashreq expects to accelerate fraud investigations by up to **70%**

Focus: Fraud
Detection & Personalisation

Enabling Technology/Partner

Strategic AI Initiatives:

- Implemented the **SAS** Fraud Management system on the cloud-based Viya platform, embedding machine learning models into its real-time fraud monitoring
- Entered into a collaboration with **Microsoft** to explore AI use cases across its operations in 2024
- Partnered with **Infobip** to integrate a conversational AI that handles common customer queries and service requests through WhatsApp

Impact

- The SAS implementation enabled **100%** of transactions to be risk-scored in real time leading to a **50%** reduction in false positive alerts.
- Achieved a **70%** increase in fraud loss prevention
- Mobile app user base climbed over **20%** in recent year

Royal Bank of Canada (RBC)

Focus: Embedded Predictive AI

Enabling Technology/Partner

BOREALIS Lumina Aiden

Strategic AI Initiatives:

- **NOMI:** An **AI assistant** launched in 2016, which now provides multiple features including insights, savings suggestions, cash flow forecasts etc.
- **Aiden**: Real-time AI-driven **equity trading optimisation** launched in 2020.
- **Lumina**: AI tool for personalised **wealth advice** to clients

Impact

- **900,000+** users of NOMI Forecast since launch
- Subscribers viewed over **10 million** insights from Nomi Insights
- Aiden was Named "**Most Innovative Trading System**" by The Banker 2021

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RBC Wins Best Use of AI for Customer Experience for NOMI
Most Innovative Trading System for Aiden, The Banker, 2021

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Focus: Ethical and Efficient AI Governance

Enabling Technology/Partner 🤝

In-house AI Industrialisation

Strategic AI Initiatives:

Since 2018, DBS has scaled AI using a unified platform (**ADA**), responsible governance (**PURE**), rapid-build tools (**ALAN**), and a 700-member Data Chapter to drive enterprise-wide impact.

Impact

- Over **800 AI models** delivered
- Reduced time-to-value from AI/ML from 18 months to **2 to 3 months**
- SGD 370 million economic value from AI in 2023, SGD **1 billion** economic value projected in 2025

Emirates NBD — بنك الإمارات دبي الوطني

Focus: Customer Engagement

Strategic AI Initiatives:

EVA chatbot: Piloted in 2019, now an AI-powered chatbot that handles customer queries across mobile and web.
Partnered with Silent Eight to automate **AML alert triage** with human-level accuracy

Impact

- EVA handles over **1.5 million** conversations/month
- **85%** reduction in manual effort for AML reviews

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Revolut

🏛️

Focus: Fraud Detection and Personalisation

Enabling Technology/Partner 🤝

In-house AI Industrialisation **⚡ Fourthline**

Strategic AI Initiatives:

- Implemented an AI-powered chat assistant (**AI Support**) to help customers 24/7 via in-app chat
- Launched an **AI-based scam detection feature** to combat the rising threat of authorised push payment (APP) scams
- Partnered with RegTech provider **Fourthline** to enhance digital onboarding with AI.

Impact

- Revolut's fraud-detection machine-learning models now scan over **500 million** transactions per month for signs of fraud, which prevented about **£475 million** in potential fraud that could have impacted customers
- Handled a **38%** surge in customers with only a **~5%** increase in support costs, thanks in part to AI automation

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Focus: Fraud Detection and Personalisation

Enabling Technology/Partner 🤝
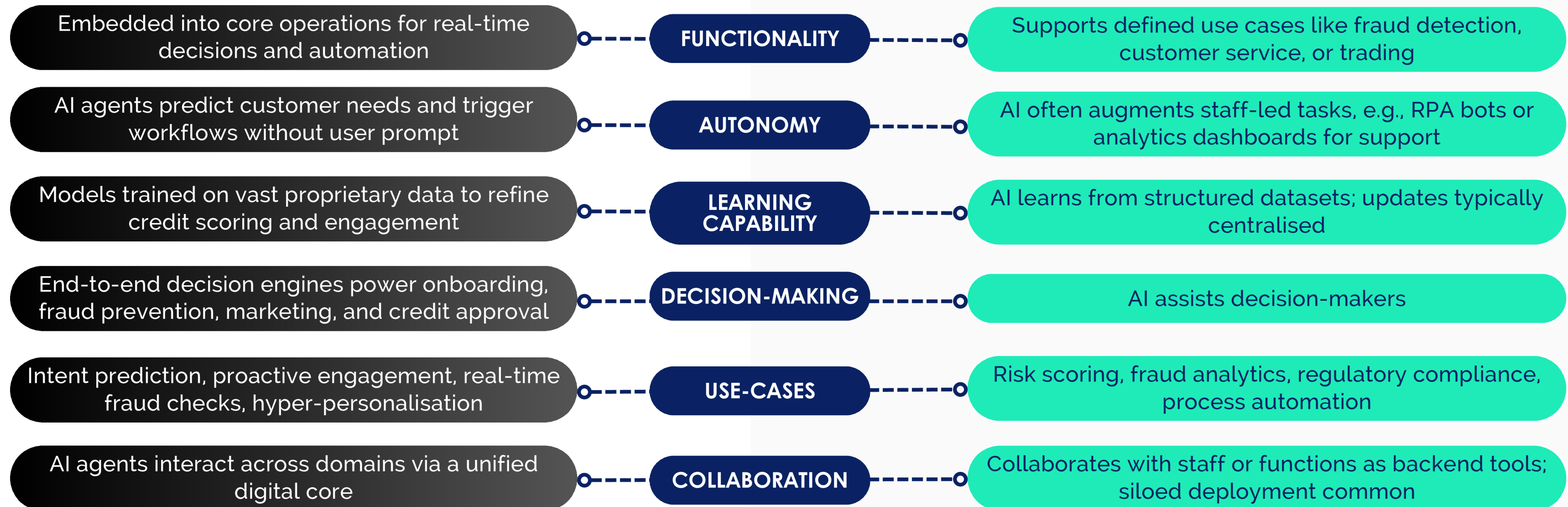
In-house AI Industrialisation

hyperplane

Strategic AI Initiatives:

- Integrated **Hyperplane** to train hundreds of bespoke models across domains like credit risk, collections, and marketing
- Launched an internal AI model, **Precog**, that treats customer app events (clicks, transactions, etc.) like a language to predict customer needs in real time
- Deployed foundation models on its vast troves of customer data to improve **credit risk scoring** and underwriting

Impact

- The AI models yielded a **+1.2** percentage-point AUC lift in predictive accuracy **– 2–3×** the typical yearly improvement of mature credit model
- Precog improved Nubank's ability to anticipate customer intent during service interactions by **50%+**

https://building.nubank.com/ai-at-nubank-how-one-of-the-largest-digital-banks-in-the-world-uses-artificial-intelligence/#:~:text=Precog%E2%80%99s%20success%20lies%20in%20its,service%20interactions%20by%20over%2050
https://international.nubank.com.br/company/nubank-acquires-hyperplane-to-accelerate-ai-first-strategy/#:~:text=Hyperplane%2C%20launched%20in%202022%20and,as%20risk%2C%20collections%2C%20and%20marketing

Embedded into core operations for real-time decisions and automation	**FUNCTIONALITY**	Supports defined use cases like fraud detection, customer service, or trading
AI agents predict customer needs and trigger workflows without user prompt	**AUTONOMY**	AI often augments staff-led tasks, e.g., RPA bots or analytics dashboards for support
Models trained on vast proprietary data to refine credit scoring and engagement	**LEARNING CAPABILITY**	AI learns from structured datasets; updates typically centralised
End-to-end decision engines power onboarding, fraud prevention, marketing, and credit approval	**DECISION-MAKING**	AI assists decision-makers
Intent prediction, proactive engagement, real-time fraud checks, hyper-personalisation	**USE-CASES**	Risk scoring, fraud analytics, regulatory compliance, process automation
AI agents interact across domains via a unified digital core	**COLLABORATION**	Collaborates with staff or functions as backend tools; siloed deployment common

DIGITAL BANKS USING AI **VS** **TRADITIONAL BANKS USING AI**

Strategic Insights

1. AI Yields Tangible ROI and Competitive Edge: Leading GCC banks treat AI as a strategic business investment, and they are seeing clear returns. Emirates NBD, for instance, built 100+ AI models and a 70+ member analytics team in two years, and is on track for a five to seven times return on its AI investments through efficiency gains and data-driven revenue

Such high ROI potential underscores why AI has become a board-level priority, early adopters are gaining cost advantages, faster growth, and differentiation in customer experience.

2. Enterprise-Wide AI Integration: Success comes from integrating AI across the bank, rather than in silos. Top banks embed AI into front-office and back-office processes alike. Saudi National Bank, for example, has infused AI throughout its operations, 24/7 customer chatbots and AI-based fraud analytics monitoring customer behavior. Kuwait Finance House's AI push was driven from the board level to span multiple countries and functions

This broad integration ensures AI insights inform everything from service personalisation to risk management, creating a multiplier effect on performance.

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Strategic Insights

3. Enablers (Leadership, Talent and Partnerships): Strategic leadership and collaboration emerge as critical enablers of AI success. Banks that lead in AI invest heavily in people and partnerships. Emirates NBD's transformation was championed by top executives and involved reskilling staff alongside new hires to build an internal "AI factory"

Meanwhile, banks like NBK and FAB forged alliances with global tech leaders – National Bank of Kuwait's partnership with Microsoft brought generative AI (Copilot) tools to all employees, and First Abu Dhabi Bank launched a dedicated AI Innovation Hub with Microsoft to incubate new use-cases.

This combination of visionary leadership, skilled talent, and external innovation partners has proven essential for scaling AI solutions and embedding a digital-first culture in these institutions.

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The Road Ahead: Building Future-Ready Banks

As Artificial intelligence is reshaping banking, the real challenge is not adoption. It is alignment. Technology improves speed and scale but people drive outcomes. Banks across the GCC and MENA are moving fast but technology alone is not enough. Success depends on internal capabilities, cultural readiness, and leadership that prioritises learning.

As such, training your workforce is no longer a support activity. It is the starting point for transformation. Without structured programmes to upskill teams, AI investments will fall short. Leading banks are now focusing on data literacy, AI fluency, and customer-centric thinking. This shift is reaching all levels—from front-line staff to senior management. It is not about replacing roles. It is about evolving them.

LeanTech supports this journey. Our programmes are built for financial institutions and we help teams build practical AI skills, improve decision-making, and manage change with confidence. Banks that are prepared will lead. And that preparation starts with upskilling and reskilling your current workforce.

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Our Approach to Generative AI Upskilling

Business-Oriented

Business Executives

- ✓ Update on the latest AI trends and its impact on Banks
- ✓ Review real-world case studies of successful GenAI implementations in banking
- ✓ The role of leadership in driving GenAI adoption

Business Users

- ✓ Understand GenAI and its various applications in banking
- ✓ Identify relevant use cases for GenAI in banking (Front, Middle, and Back Offices)
- ✓ How can GenAI boost employee productivity through AI Agents/Co-Pilots

Technical-Oriented

AI Specialists

- ✓ Understand different generative models like GPT, GANs, and VAEs
- ✓ Train the teams on LLMs Training, Fine-Tuning, & RAG
- ✓ How to create & manage APIs that integrate GenAI functionalities with existing banking systems

Data Engineers

- ✓ Train in the latest trends in data warehousing, ETL processes, and real-time data streaming
- ✓ Establish more effective data engineering practices data preparation procedures
- ✓ How to prepare a modern data architecture for GenAI deployment

Lean Tech®

As a corporate training and consulting provider, LeanTech SG is on a mission to develop tech-driven leaders and create dynamic digital cultures that drives success. We help organisations lean on tech to combat disruption with confidence and become digitally transformed.

Advance your digital journey with us today.

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