



The Know-Your-Customer Agentic AI Revolution

As costs rise and risks evolve, AI enables banks to reshape KYC — from ambition to execution.

October 2025

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Introduction – The Evolution in Financial Crime Prevention

Financial crime remains one of the most resource-intensive areas for banks. Despite years of heavy investment in KYC (onboarding and ongoing due diligence), screening, and transaction monitoring, these processes remain costly, operationally burdensome, and far from efficient (even at leading institutions, nearly half of client refreshes still rely on manual tasks).

After a decade of compliance-driven expansion, banks are now pivoting from pure regulatory adherence to striking a balance between strong effectiveness and risk coverage, combined with efficiency and sustainability. BCG benchmarks suggest that financial crime operations can represent up to 5% of total bank costs, prompting many to pursue transformation programs that blend risk-based process redesign with advanced technology, achieving up to 50% cost reduction (depending on starting point).

Winning institutions are redefining the balance between sustainability and risk coverage — ensuring that smarter operations do not compromise control.

Among the financial crime domains, KYC (onboarding and ongoing due diligence) stands out as both the most resource-intensive and the ripest for transformation. This paper focuses on how AI, with the most advanced agentic solutions, can reshape KYC across onboarding and ongoing due diligence.

AI in KYC – from Hype to Impact

AI in KYC has sparked both excitement and misunderstanding. While early adopters have proven its potential, misconceptions persist — from overestimating what AI can automate to underestimating the organizational discipline required to scale it.

Our discussion here centers on three transformative technologies. Predictive AI leverages analytical models to quickly generate insights from vast amount of data. Generative AI (GenAI) accelerates the processing of structured and unstructured data and supports analysis and synthesis. Agentic AI, the next wave, introduces autonomous decision-making and orchestration across interconnected systems.

Together, these technologies move beyond isolated use cases to enable true end-to-end process transformation across the KYC value chain. Yet, in our experience, success depends less on the tools themselves and more on disciplined execution — embedding AI into the fabric of operations.

Leading institutions are focusing on four dimensions of execution excellence:

- **Re-imagine processes:** move from incremental automation to AI-native design, where processes are built around data, intelligence, and human judgment — not retrofitted for them
- **Prioritize for impact:** sequence use cases carefully to balance ambition, complexity, and risk
- **Build for scale:** adopt a common delivery lifecycle, modular components, and shared data products to enable cross-BU leverage and learning

- **Embed trust and governance:** ensure explainability and compliance “by design,” in close partnership with Risk, Cyber, and Data Privacy teams

This marks the emergence of a rebalanced human–machine partnership where sustainability, quality, and explainability coexist and reinforce each other.

Humans at the Core: Designing the AI-Enabled KYC Organization

The KYC organization of the future will **fundamentally redefine how people, processes, and technology interact — replacing manual repetition with human judgment amplified by AI.**

Re-designed, risk-based processes channel human expertise toward the complex, judgment-intensive areas where it creates the most value, building lean teams of specialized exception managers. This evolution shifts KYC organizations from traditional pyramid structures to hybrid intelligence models — smaller, highly skilled workforces powered by networks of digital agents and intelligent systems.

Delivering this model requires a major shift in people capabilities, built around two complementary roles:

- AI developers and trainers – SMEs who design and refine digital agents to automate KYC tasks like data collection and quality control.
- Analysts, supervisors, and front office staff – experts who oversee AI outputs, validate results, and ensure compliance throughout the client lifecycle.

Both roles required targeted upskilling to understand data flows, model behavior, and make AI recommendations. Analysts in particular will evolve from manual file handling to supervising AI-enabled workflows, focusing their expertise on exceptions and high-risk decisions.

Increasingly, decision-making in KYC will rely on AI’s ability to process data at a scale and granularity far beyond human reach — detecting subtle relationships and emerging patterns across vast datasets. The role of the human shifts from operator to strategic partner, guiding and challenging the machine’s insights, and stepping in where context or judgment are essential.

Over time, the organization itself learns alongside the machine — continuously refining its models and rules, and proactively responding as new risks and behaviors emerge. This is the defining hallmark of next-generation KYC: a dynamic human-machine partnership that is resilient, explainable, and continuously improving, with humans firmly at the center of trust and decision-making.

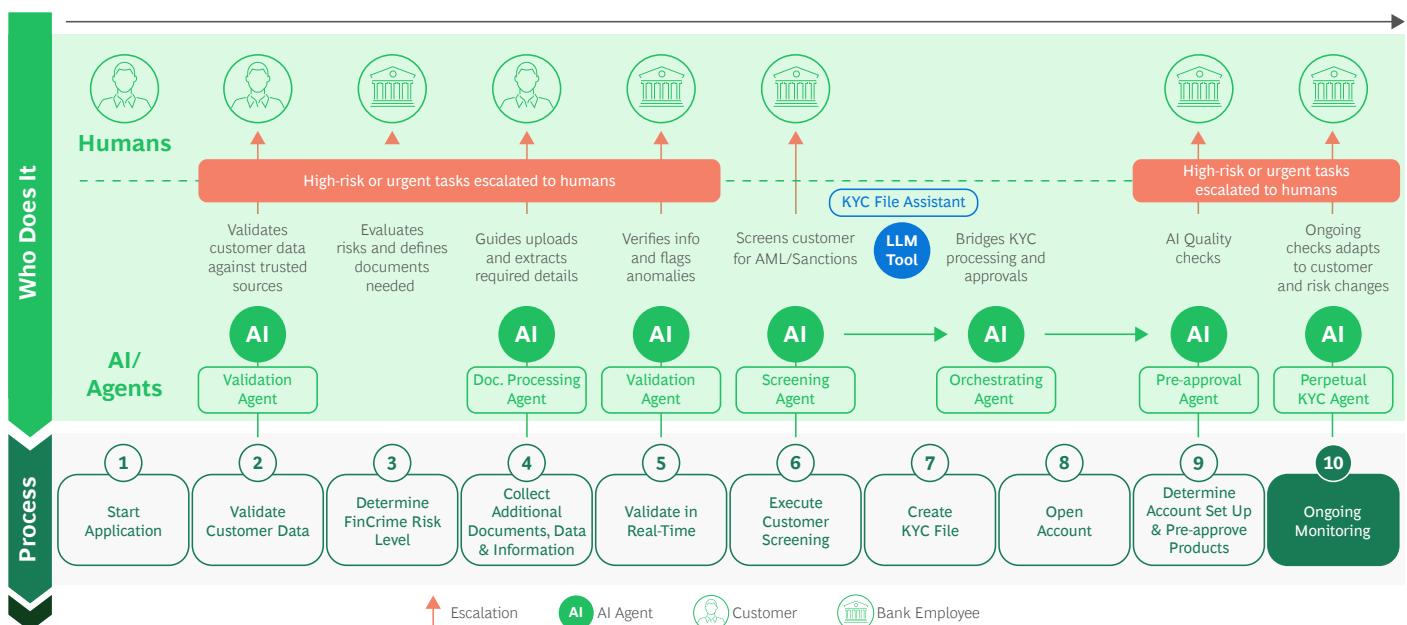
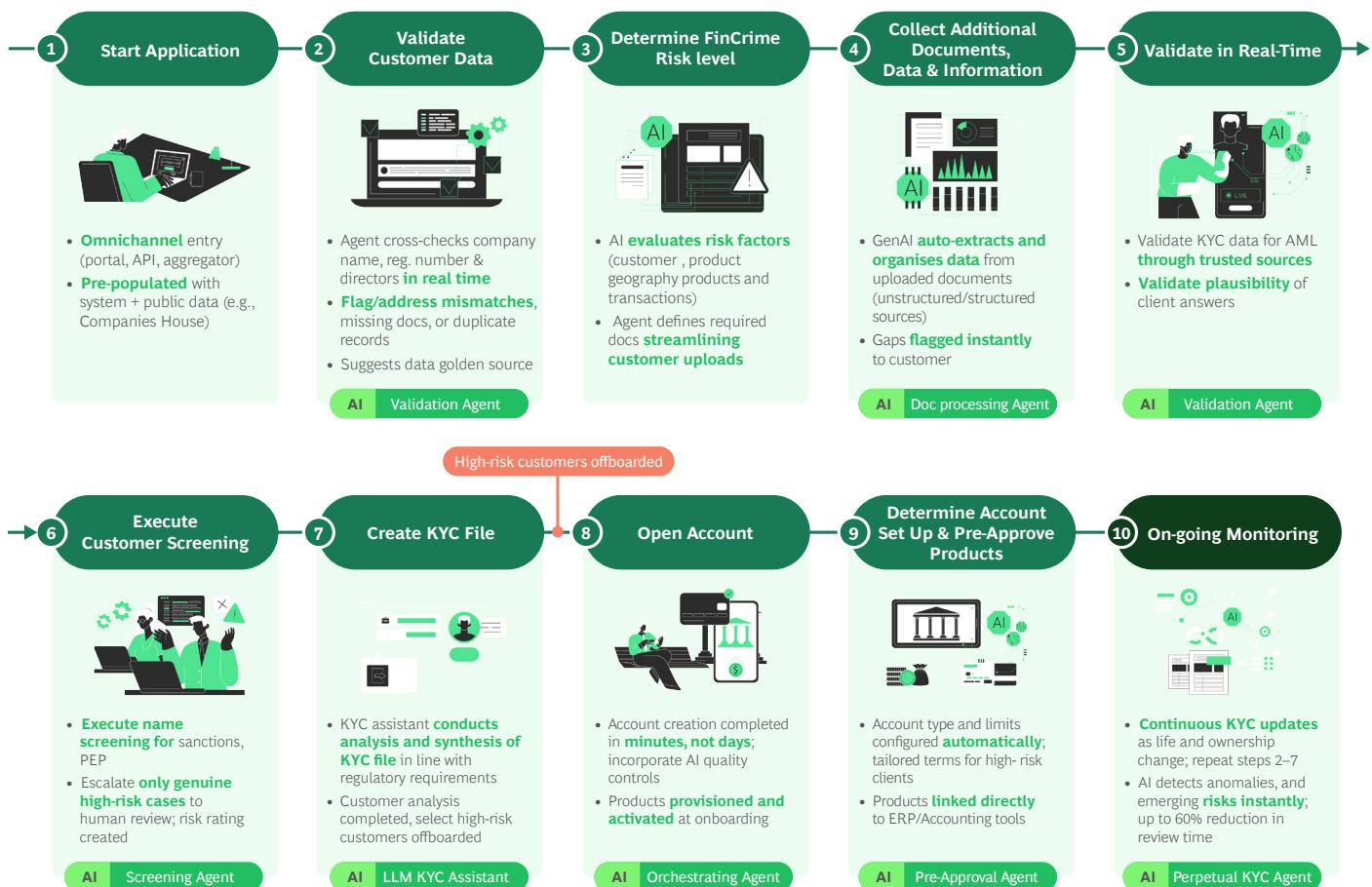
Where Innovation Meets Impact: Leading AI Use Cases in KYC

The future of KYC is already taking shape. Leading banks are re-imagining the end-to-end KYC journey, applying AI to transform onboarding and ongoing due diligence. Across the market, financial institutions are moving beyond pilots toward industrialized, AI-enabled KYC models that combine automation, intelligence, and regulatory robustness.

The “North Star” vision (**Exhibit 1**) illustrates this target aspiration: a seamless, data-driven process integrating document collection, validation, risk rating, and perpetual monitoring — all orchestrated by AI at every stage.

EXHIBIT 1 AND 2

A vision for end-to-end transformation — where AI and human expertise combine to deliver faster, safer, and smarter KYC



Source: BCG project experience, BCG analysis.

Case Studies | successful use cases deployed by leading banks across the KYC value chain

Data Intelligence & Accuracy

- *Redefining Accuracy:* **Data Gathering & Validation** – a global G-SIB is deploying automated data collection and validation across multiple internal databases and external registries. The solution significantly reduces manual data-entry effort and improves data consistency/quality across client files, automatically recommending the best “golden source.”
- *Smarter Risk Insights:* **Segmentation and Anomaly Detection** – a large EU bank has deployed advanced machine-learning models to perform customer segmentation and anomaly detection. This dynamic approach enables a process bifurcation – with an efficient “happy-path” and STP for customers with no anomalies; and enhanced risk coverage for customers with detected anomalies vs. a relevant peer-segment.

Process Orchestration & Client Engagement

- *Next-Generation Engagement:* **Agentic AI for Client Outreach/RFIs** – a global G-SIB is planning to deploy an AI-driven system to formulate and dispatch requests for missing information, through a dynamic, two-way dialogue with clients that greatly reduces the analysts’ effort and improves the overall customer experience.
- *From Data to Narrative:* **File Auto-Summarization and Case Synthesis** – a large EU bank has implemented a GenAI-powered KYC Assistant to automatically compile and summarize client files at onboarding and refresh. The solution more than halves the time required to analysts to aggregate data from structured and unstructured sources, produce regulatory-ready narratives and provide recommendations on client management (e.g., risk rating downgrades).

Quality & Assurance Excellence

- *Raising the Bar:* **First Line Quality Control** – a global G-SIB is deploying an AI-based quality control solution that checks task completion, validates file integrity, detects recurring errors, and identifies root causes. Unlike traditional rule-based QA, the system interprets error patterns and recommends specific corrective actions, reducing human effort by more than 50%.
- *Assuring Integrity:* **Second Line Quality Assurance** – a large EU bank deployed an AI-enabled quality assurance framework that uses sophisticated analytics to challenge and validate first-line review results. The system independently re-tests KYC outcomes, ensuring higher assurance and consistency across portfolios while reducing human effort of up to 30%.

Taken together, these innovations show that AI in KYC is moving from experimentation to transformation. Market leaders are benefiting from increased speed, quality, and assurance at scale — setting the foundation for a truly adaptive, AI-enabled control environment.

It's a Marathon, not a Sprint – Scaling AI in KYC

Transforming KYC through AI is not a single leap forward, but a sustained journey of disciplined innovation. While the “North Star” represents the art of the possible, leading banks are realizing it step by step — through targeted implementations and deliberate sequencing.

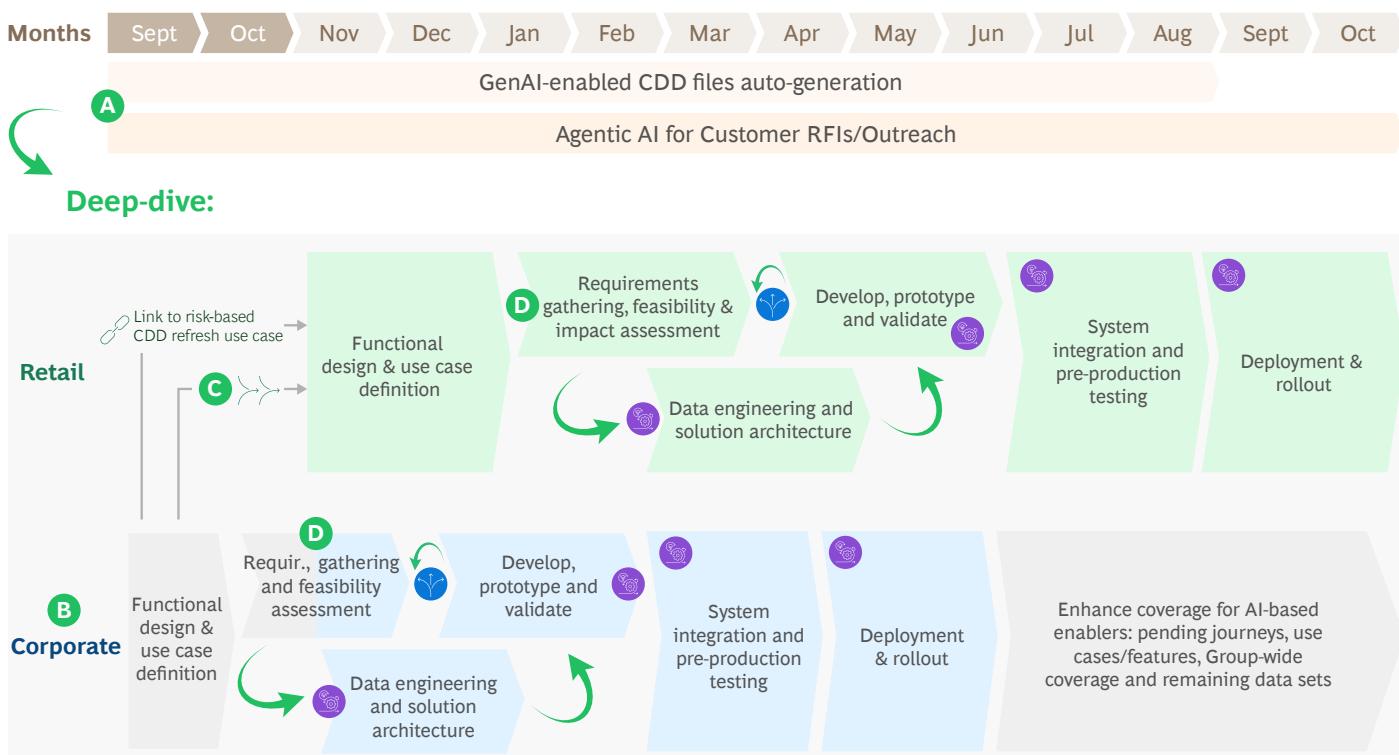
Most institutions begin with high-impact, lower-complexity areas, capturing early wins that prove value and build confidence. This measured approach helps manage implementation risk while strengthening data foundations, governance, and organizational muscle required for scale.

As maturity grows, banks progressively expand toward more advanced GenAI and agentic AI applications, embedding automation and intelligence across the entire KYC value chain.

Ultimately, success depends on endurance and learning — treating AI in KYC not as a one-time program, but as a capability that continuously evolves to deliver safer, smarter, and more sustainable compliance.

EXHIBIT 3

Acceleration roadmaps for AI use cases in KYC - an example



Key callouts

A
Iterative agile process followed for delivery, with features released incrementally (e.g., data collection agent internal vs. external, validation and plausibility checks)

B
CDD file generation prioritization to be modular by risk typology i.e. start with lowest

C
Initial deployment in line with Bank plan for BU1 considering data sets in scope, post which it will be enhanced (e.g., advanced outreach features) and extended to other BUs

D
Cross-pollination between BUs designs to create two distinct yet harmonized solutions leveraging prior learnings

E
Leveraging intelligence sharing framework & common data products to the extent possible, accommodate BU-specific nuances on data needs & systems

F
While core components are re-used where possible, data requirements/ sources, design & prototype, system integration, and deployment & rollout approach adapted by BU

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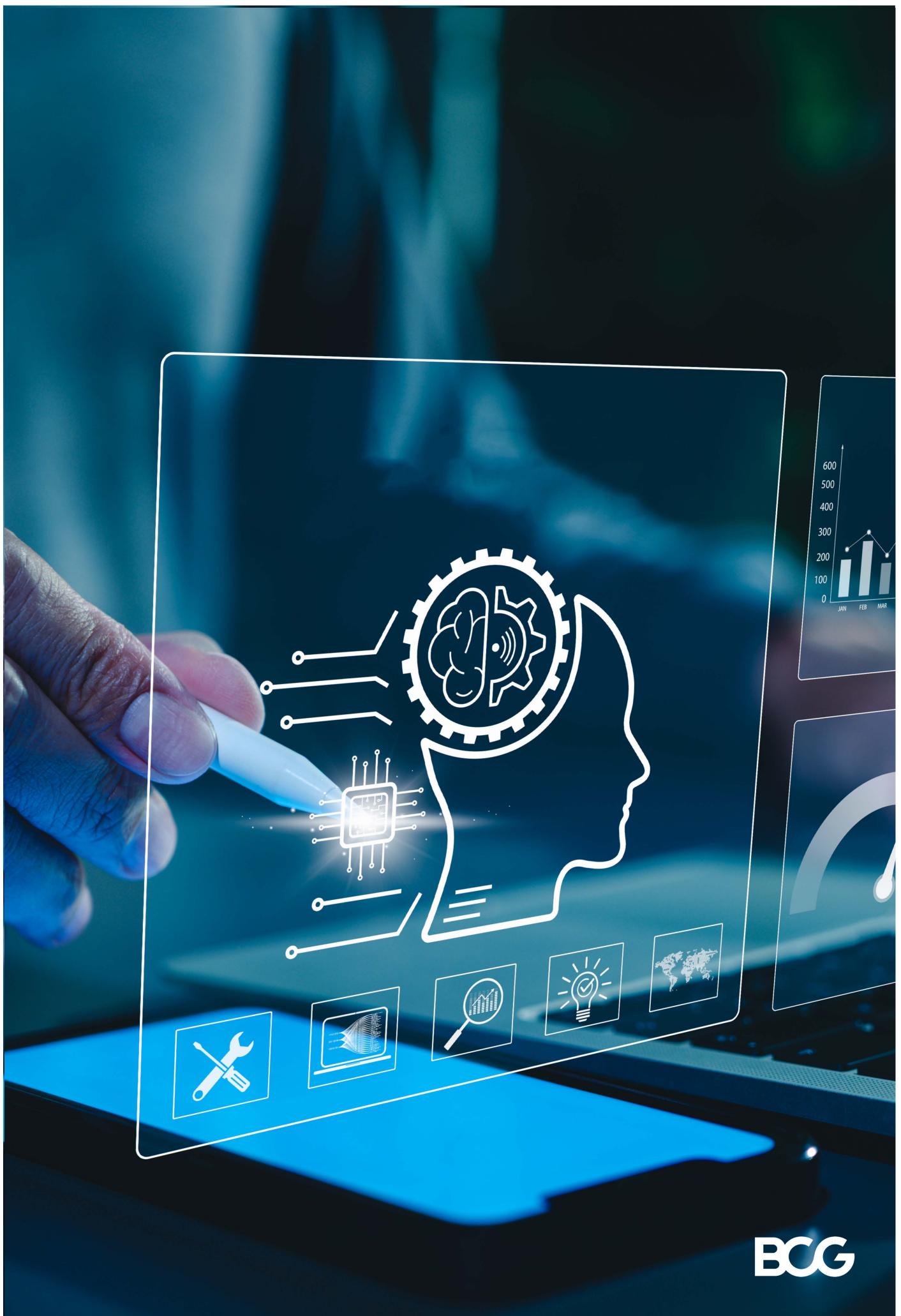
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