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Software, AI Agents and Agentic in Banking: Competing or Complementing?

As banks race to scale these new technologies, what does the rise of agentic technology mean for traditional banking software?



INTRODUCTION

The capabilities of emerging technologies are rapidly evolving – from AI and GenAI, to more recently AI-powered agents and agentic architecture. As banks race to scale these new technologies meaningfully in their organization, a question arises - are agents and agentic workflows here to compete with traditional software systems; or could they complement and elevate what software already does?

In this paper, we break down what these new technologies really mean, how they differ and most importantly: what they mean for banks.

An Analogy

Let's begin with the definitions of concepts. Picture your morning commute.

You get in the car and start the engine. As the driver, you're in total control: you decide on the speed; you plan and follow the route.



Here, **software** is the **car's engine**: it powers the system, but requires manual control and decision-making from the user.

To find the best route to work, you decide to use a GPS. The GPS automates the navigation for you, helping you to focus on driving. With live insights on traffic and weather conditions, the GPS helps you find an alternative, faster route to work.



Think of the **GPS** as an **AI agent**. The GPS system interacts with the maps, the software interprets the data and provides intelligent guidance to assist you as the driver: helping to enhance your journey and get you to work faster.

The next day, you step into a self-driving car. Although you're still in the driver's seat, you give the car the end destination and it will automate everything for you. With its knowledge of your fuel levels, your preferred route, GPS insights and weather alerts – the car brings together these insights, plans the best route to take, and drives you there: all in time for your 9am meeting.



The **self-driving car** here is an **agentic workflow** - it orchestrates multiple agents (GPS, fuel monitor, weather service, route planner) to autonomously execute the task end-to-end.

IN PRACTICE

However, we're not in the automotive industry. How does this analogy apply to banking? Well, it's not dissimilar.

Traditional Software

Traditional software is a program built with code, rules (business logic), and a user interface. It's built for a specific task and will follow a fixed, deterministic path, producing predictable and consistent outcomes.

Software provides stable infrastructure (data, business logic, rules) and trusted analytical tools. Due to its deterministic nature, the output is auditable; every result is traceable and explainable. Software does all the heavy lifting where precision and trust are non-negotiable.

Traditional AI and GenAI can also be integrated into a software workflow to automate specific steps, but these technologies still rely on user direction and predefined paths to complete a task.

In Banking: Traditional credit risk software is purpose-built to calculate Probability of Default (PD). It follows a fixed, rule-based path: ingesting structured financial data, applying statistical models (like logistic regression or scorecards), producing a number – PD – as an auditable output.

AI Agent

In contrast, an AI-powered agent is a more advanced system. Moving from the passive assistance of AI and GenAI to active agency, an AI-powered agent operates atop the software foundation - not replacing the software, but navigating and activating it instead.

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An AI agent will execute a specific, goal-oriented task autonomously using the tools it's been given. In this case – tools are often various software components and calculation engines that produce a defined outcome. AI agents can use APIs to access these underlying software systems and tools - fetching data, triggering models, or processing results.

AI agents act as interpreters – not generating results from scratch, but interpreting outputs from analytical engines, connecting insights across systems, and adapting workflows based on new data or changing conditions.

As the user, you decide on the level of autonomy and guardrails assigned to the agent, and it will make decisions, complete tasks and run processes with minimal human intervention. This means an agent does not have a pre-determined path to complete the task – if you ask an agent the same question twice, the agent might select different paths to reach the desired outcome.

In this model, the software remains the source of truth. The agent brings agility and scale, but not at the cost of traceability.

In Banking: An AI agent embedded in a credit risk workflow can autonomously assess a borrower's financial health. It pulls relevant data from internal systems and external sources, triggers the PD calculation engine, interprets the output, and adapts the next steps based on the result.

For instance, if the PD exceeds a certain threshold, the agent might initiate enhanced due diligence or escalate the case to a credit officer. If the PD is low, it could proceed to auto-generate a draft credit memo.

Agentic Workflow

Agentic workflows take this even further – coordinating multiple, task-specialized AI agents across different stages of a process. Each agent plays a role: one might gather client data, another might score risk, another might generate compliance documentation. Together, they complete a full, end-to-end process.

This means an agentic workflow is fully autonomous and self-optimizing: capable of step-by-step reasoning, planning and breaking complex tasks into individual, manageable actions.

In Banking: In loan origination, multiple agents could collaborate, share context, and escalate exceptions to users as needed – covering the full workflow from document collection, credit assessment, multi-level approvals, covenant monitoring, to regulatory reporting.

TABLE 1 Comparison of Software, AI Agents and Agentic Workflows

	Software	AI Agent	Agentic Workflow
Scope of work	Pre-defined tasks	Goal-oriented tasks/Jobs to be done (e.g. KYC agent)	End to end process, collaborative orchestration
Human involvement	Consistent	Tactical	Reduced
Predictability	Predetermined, fixed path to achieve the desired outcome	Variable ways to achieve the desired outcome	Variable, multi-step ways to solve a complex problem to achieve the desired outcome
Autonomy to adapt and optimize	None, manual customizations only	Task specific autonomy	Autonomous, self-optimizing, able to perform adaptive orchestration

COMPETING OR COMPLEMENTING?

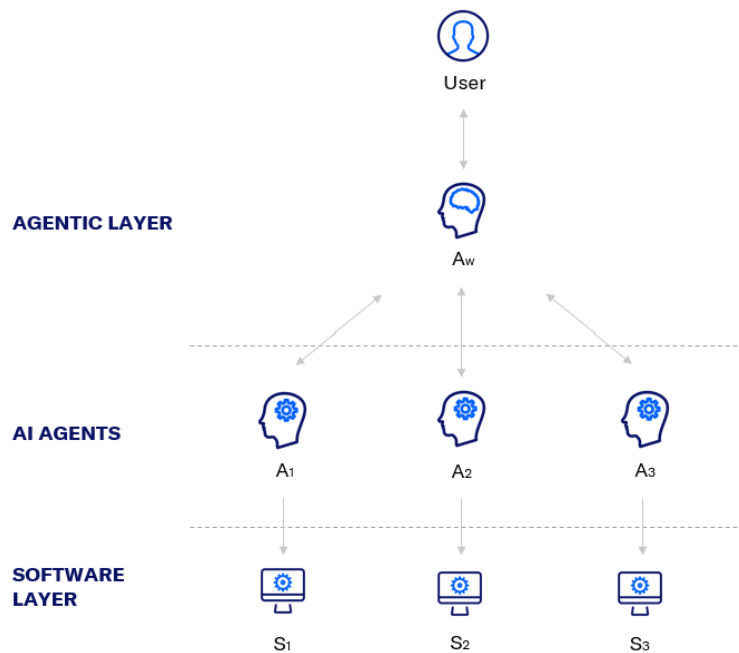
Now that we've defined these technologies and their application in banking, we return to our initial question: are software, AI agents and agentic workflows competing or complementing?

The short answer? Complementing. Whilst AI agents and agentic workflows have immense potential to reshape banking technology, software will not be replaced entirely. This is because software and analytical engines are the building blocks of agentic technology.

As seen in **Figure 1**, AI agents operate atop the software layer: navigating and activating the software systems to fetch data, run models and process results. By connecting insights across these systems, agentic technology orchestrates the software to deliver faster, automated workflows.

We therefore see traditional banking software workflows evolving with the new agentic era: becoming more automated, faster and more collaborative, and ultimately helping banks make better, faster decisions.

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FIGURE 1 Relationship between Software, AI Agents and Agentic Workflows

It's also important to note that in this highly regulated industry, changes to core systems and processes cannot be done overnight. As banks look to implement these new technologies, they should focus their attention on the areas where AI agents and agentic technology can bring maximum value. Successful implementation will require strong business alignment, robust data foundations and established governance frameworks. Any agentic technology – including their decisions, steps, tools and data points – need to be traceable and understandable.

By leveraging the autonomy, adaptability, and coordination of agentic architecture, as well as the reliability and transparency of software, banks can tackle their most pressing challenges – all while driving automation, efficiency, resilience, and growth.

At Moody's, agents are already supporting banking clients with tasks like entity verification, document validation, and compliance screening – all while being grounded with Moody's data and analytical engines.

To find out more about how Moody's agentic solutions are bringing automation and optimization to high-value banking processes, visit www.moody.com/agentic.

CONTACT US

Find out more about [Moody's Agentic Solutions](#).

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