When to Use or Not to Use AI Agents

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AI agents hold great promise for all organizations, bringing AI and automation to the next level. Yet agentic AI still has limitations and is not a miracle cure for all use cases. AI leaders can use this research and the associated assessment framework to demystify AI agents and determine when to use them.

Overview

Key Findings

- There is confusion in the market about what AI agents are. Moreover, the phrase "agentic AI" is used in many different ways. Vendors use it to agent-wash many offerings that are not really AI agents. In contrast, others argue that agentic AI is only about more advanced AI agents or multiagent systems.
- AI agents can be powerful as they bring more flexibility, adaptability and higher levels of automation. But where are those traits really needed? For most organizations, it is a challenge to determine which use cases AI agents make sense for.
- AI agents may also have disadvantages, like limited reliability and transparency or high costs. For some use cases, AI agents may not be good enough, while for others, they may be overkill.

Recommendations

- Assess the capabilities of vendor-provided or self-made solutions to determine if they truly qualify as AI agents or agentic AI, and can actually deliver the expected benefits using the Gartner AI agent definitions and AI Agent Assessment Framework. This should also help reduce misunderstandings about the meaning of terminology like agentic AI.
- To determine the extent to which AI agent capabilities are needed, apply criteria regarding the complexity, dynamics and other relevant characteristics of each use case.
- Evaluate and keep an open mind about alternative delivery approaches — such as conventional workflow automation or robotic process automation (RPA) — to avoid using AI agents in use cases where they are not the best solution.

Introduction

AI agents and agentic AI are at the peak of the Hype Cycle and have great momentum in the current market. Standing on the shoulders of generative AI and other AI practices, agentic AI heralds yet another wave of progress. AI agents hold the promise to create great value for organizations, in particular by moving the needle of automation even further. Where conventional automation approaches — including workflow automation and RPA — could not go before, AI agents open the door to automation that is less brittle and uniform, and more resilient and contextual. An increasing number of complex processes and human tasks can now be (semi)autonomously carried out by AI agents.

No wonder that many vendors have lately accelerated the introduction of AI agents. However, they are often "agent washing" existing products or are inconsistently using "agentic AI" in their marketing. Many seem to narrowly associate AI agents with the use of large language models (LLMs), which appears advantageous, but also brings limitations. Consequently, organizations may be underwhelmed with what an agent can do, causing