Bylined Article

What will it take to keep up with Agentic AI?

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Technology and education are running at different paces – and AI agents are exposing this divergence.

There has been a light-speed evolution from the concept and early use cases of Generative AI (GenAI) chatbots. Generative AI-powered expert systems, using planning workflows for data insights, offer a greater impact than LLMs' improved natural language alone. This new step brings us AI Agents – autonomous actors working within complex systems.

By creating interfaces and protocols to connect individual agents among many expert systems, we are paving the way to expand from siloed Agentic ecosystems into a multi-vendor, multi-AI, multi-agent universe.

AI Agents have technology to automatically derive situational context, know what they need to do, learn on their own to adapt to changing contexts, and then execute their tasks to provide other agents (human or AI) with insights, decisions, or outcomes – this is the full agentic flow that takes AI away from the focus of moving or transforming information, to one of collaboratively creating and acting on information.

Getting down to the *nitty-gritty* – what are proactive AI Agents and what are they for?

Proactive AI agents are autonomous functions carried out with some level of machine learning as an enabler. They are becoming people's trusted assistants, proactively promoting problem-solving. They connect multiple, complex pieces of a dynamic workflow by emulating human detection and reasoning skills – moving beyond deterministic if-this-then-that automations.

For example, agents can join a meeting with humans and other agents, pick up when there are questions about a topic that they know something about, find the right data, analyze it, and bring back insights or recommendations that help progress the discussion. All without any express request or prompt – nobody asking the agent a question; nobody hitting enter. Agents are, quite simply, the next stage in complex workflow automation.

AI Agents can support different areas of work, such as communication support, field work support and cybersecurity testing:

1) **Communication Support**: AI can already be a fully-fledged team member. By following the conversational flow, the AI Agent is featured with **context memory** and **self-learning capabilities**, so it can understand which parts of the conversation apply to its expert skills (e.g., marketing campaign budgeting). As the agent picks up threads of the conversation related to its expertise, it plans a set of tasks it needs to carry out to contribute with relevant data, information, and insights. The level of logical reasoning achieved by combining these AI components goes far beyond the chatbot

style of GenAI responding to questions by pasting together copies of documents into a plausible answer. As a result, instead of various people taking actions to analyze the data and come back in three days when calendars align, the key insights they need arrive within minutes and decisions get made on the spot.

2) **Field worker Safety Monitoring (warehouses and factories, for instance)**: Generative AI technologies are enabling us to design automated agents that can perform complex reasoning tasks that combine basic actions such as detecting and classifying objects, measuring space and time, and ingesting requirements. The types of reasoning tasks humans manage all day, every day, in the blink of an eye. AI Agents can now autonomously generate the right questions to ask when objects are detected in a specific environment and to plan how to answer them. For example, the multi-vendor, multi-agent approach now enables us to automatically:
    a. Ingest workplace safety rules and regulations,
    b. Create the desired vision-system measurement and detection rules,
    c. Reduce the compute required to do the detection by filtering out most of the irrelevant video frames – where there is nothing that our safety rules apply to,
    d. Detect non-compliance, and
    e. Kick off a new agent from an incident management system to file an incident with all the information needed for both corporate reporting and for mitigation or education responses.

3) **Cybersecurity Testing**: The concept of specialized agents is applied in this case to the traditional penetration testing workflow. Specialized agents generate potential attack plans from threat intelligence reports. Separate agents take the same threat intelligence and the attacking agents' proposed methods, creating a virtual representation of the network as it applies to the given vulnerability or set of vulnerabilities. With that virtual environment, attacking and defending agents autonomously do battle. The defending agents score and propose the best mitigations. These agents work together to rapidly triage incoming threat intelligence to support an always overburdened workforce to reduce the threat-to-mitigation lifecycle.

What *real* good comes out of AI Agents?

The value of AI comes from its combination with other technologies. We know that GenAI is playing a huge role in the transformation of technology and business strategies everywhere. However, GenAI provides more real-world impact when it combines with other types of AI and is focused on specific challenges or questions.

We're quickly transitioning from GenAI creating content to GenAI powering autonomous agents that understand context, plan work, and provide timely decision support. And when we build those agents to collaborate, they help us solve complex tasks quickly and efficiently.

The top benefit to businesses is less "dead" time while you are waiting for information to flow through different agencies, different divisions and different people. The same applies for smaller organizations – if data is flowing automatically, you get to the decision faster.

It is a matter of turning from "I will go look up those numbers and get back to you tomorrow" to "Give me 2 minutes". **It's about getting better information, faster, and using it more effectively.**

And what's next?

I can see two future perspectives:

1) **AI for fundamentals of the universe and humankind – AI doing everything without any human intervention**: AI will enter the realms of quantum physics and genomics aiming for material and drug discovery, respectively. The biggest limitation is naturally around trust, because there is legal accountability involved.
2) **Physical AI – AI taking actions in the real world**: Right now, we are talking about workflow operation automation, and digital automation. But there is an upcoming agentic flow that will transcend into the real world, such as autonomous cars. Or a robot that goes down the sidewalk, fills a bag with the groceries I ordered and then brings them to my house.

So, the *one-million-dollar question* – what will it take to keep up with agentic AI?

The skillset of a fresh graduate to enter the workforce in roles related to knowledge transfer – ranging from collecting, digesting, preparing, to presenting data – will change dramatically. This is because AI Agents can do the equivalent work of an entry-level employee with a bit of knowledge and a bit of data, suggesting the need for reskilling of those who are getting started in the job.

While senior positions remain crucial for decisions, AI agents can drastically accelerate the preceding steps. However, even those experienced people need to be empowered with fit-for-purpose training to maintain their value as humans tomorrow. The bar is set higher than ever.

We need to be able to bridge the gap between what an education is and what employment needs. And it's not going to be an easy task, because technology is moving faster than both education and corporate life can catch up with.

Note: this article was written by a human being. However, given the topic, we asked an AI Agent to produce the same content to compare the two outcomes. AI is faster and gets it right. But a tech-passionate human brain gives it more personal touch.

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Carlos Cordero has studies in Medicine and Surgery from the San Pablo CEU University and has extensive experience of more than 30 years as a manager in the Information Technology sector. His professional career includes highly responsible positions in different companies, such as vice president and CTO of Iberia at Capgemini or Corporate Director of Alliances at Indra.

