

MARKET NOTE

Couchbase in an AI-First World

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EXECUTIVE SNAPSHOT

FIGURE 1

Executive Snapshot: Couchbase in an AI-First World

Couchbase announced Capella iQ, generative AI (GenAI) capabilities, into its database-as-a-service (DBaaS) product Couchbase Capella. The new capability enables developers to write SQL++ and generate sample data and application-level code more quickly by offering recommendations. Not only was it part of the announcement but it is also on the company's agenda to add vector search and vector embedding capabilities to Capella, making the strong bet that a multimodel approach can serve developers — and end users — better than single, point solutions and specialty databases for a significant segment of intelligent applications.

Key Takeaways

- While PaaS vendors are clamoring to add GenAI coding assistants, for end users, this is just the beginning of a sea change in terms of smart PaaS offerings.
- Companies like Couchbase will have a strong role to play in the AI-first era not only by adding GenAI capabilities but by being a technology of choice for serving intelligent applications.
- In this AI-first era, Couchbase will have a strong chance to win — in which four key themes play out. JSON will be a winning data format for AI. Vector search will not be a separate database category but rather a feature. Even if the customer is only interested in vector capabilities, it will be possible for multimodel databases (particularly DBaaS) to perform as good or better compared with dedicated vector databases. Mobile applications will become AI-powered applications, driving data creation and consumption.
- Development and engineering organizations with multimodel data needs for intelligent applications in the cloud and/or mobile devices will want to consider Couchbase and work with the company to provide feedback.

Source: IDC, 2023

IN THIS MARKET NOTE

Couchbase announced Capella iQ, generative AI (GenAI) capabilities, into its database-as-a-service (DBaaS) product Couchbase Capella (go to www.couchbase.com/press-releases/couchbase-to-advance-developer-productivity-by-adding-generative-ai-to-capella-database-as-a-service/). The new capability enables developers to write SQL++ and generate sample data and application-level code more quickly by offering recommendations. ChatGPT is the technology that underlies Capella iQ, but it is tailored for Couchbase databases, possessing knowledge about the specific schema structure the developer is working within. Capella iQ generates SQL++ code suggestions to query and manage JavaScript Object Notation (JSON) data and recommends indexing strategies based on the developer's intent. Capella iQ is being offered in private preview.

The company also announced the Couchbase AI Accelerate Partner Program (go to www.couchbase.com/press-releases/couchbase-launches-ai-accelerate-partner-program-to-advance-ai-powered-applications-for-customers/). The program is designed to support customers in building AI-powered applications with Capella by offering resources to integrate partner platforms and tools with Capella, thus reducing friction for customers and supporting integrations with the broader AI and data ecosystem.

IDC'S POINT OF VIEW

Vendors are clamoring to add GenAI coding assistants, and for end users, this is just the beginning of a sea change in terms of smart PaaS offerings. A whole collection of smart platform services is coming fast, resulting in the need to reframe the cloud market with an AI lens. In this ensuing AI-first era, Couchbase will have a strong chance to win in situations where the following four key themes play out:

- **JSON will be a winning data format for AI.** JavaScript Object Notation is known for versatility due to allowing data and additional metadata to be stored within the same document, such as time stamps and usage history, which can serve as prompts for AI models. JSON's strength lies in the fact that any document can contain multiple payloads, making JSON suitable for various types of data. JSON also supports arrays, including a recently introduced time series array.

In the SQL++ language, a special function exists to create and process arrays, which extends to graph connections. For instance, nodes can be linked by storing their identifiers (IDs) in an array. This approach can be applied to various scenarios, including graph relationships and vector data for search purposes. IDC believes that due to their multifaceted payload capabilities and ease of accommodating changes to data models, JSON databases will have a strong role to play in developing intelligent applications.

DBaaS players offering JSON databases include Couchbase and MongoDB, and the major cloud PaaS players' products, including Azure Cosmos DB, Google Cloud Firestore, and Amazon DocumentDB.

- **Vector search will not be a separate database category but rather a feature.** With the rise of vector databases including Pinecone and Weaviate, the question is, Where and who will win when it comes to database technologies for intelligent apps? For multimodel databases like Capella, which include key value, JSON, SQL, full-text search, streaming, change data capture, events, large-scale analytics, and time series, the natural move is to add vector embedding as another capability.

- **Even if the customer is only interested in vector capabilities, it will be possible for multimodel databases (particularly DBaaS) to perform as good or better compared with dedicated vector databases.** Inherent to success for multimodel databases is the ability to independently scale and tune the performance of each capability, for example, tune key value access to the requirements of the app or alternatively allocate single services to multiple nodes. Couchbase differentiates on its ability to optimize resources. If resource utilization and performance across both speed and cost can play out to be true, then it will be hard to argue as to why you need a good point solution.
- **Mobile applications will become AI-powered applications, driving data creation and consumption.** Developers are marching ahead to create intelligent, AI-powered consumer-oriented applications on mobile devices. These data-intensive, intelligent mobile applications will require edge capabilities and lightweight databases to deliver great user experiences. These types of applications will require embeddable mobile databases, such as Couchbase Lite, with peer-to-peer mobile syncing features and associated services for synchronizing data back and forth to the cloud, such as Cappella App Services. Location information and other mobile device-generated data are important contextual pieces of the AI puzzle. That data, along with user account profiles, all stored in JSON, will be another arrow behind the strength of the role JSON databases will play in intelligent applications.

Closing Thoughts: Role of the Developer

The remaining factor in the equation is developers, those who are using and making decisions around the database services. IDC research shows that developers report having a very high degree of, if not complete, influence on budget holders' decisions when it comes to AI/ML technology. Couchbase will need to continue to court developers along with its already strong messaging around performance and ROI differentiation. Acting early on embedding GenAI capabilities in support of developer experience and adding vector-based capabilities to its product are important. But even more important will be how Couchbase executes: leaning into a product-led strategy, garnering early feedback from developers via private previews, and acting on that feedback.

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Synopsis

This IDC Market Note discusses Couchbase's announcement of Capella iQ, generative AI (GenAI) capabilities, into Couchbase's database-as-a-service (DBaaS) product Couchbase Capella. The new capability enables developers to write SQL++ and generate sample data and application-level code more quickly by offering recommendations. While PaaS vendors are clamoring to add GenAI coding assistants, for end users, this is just the beginning of a sea change in terms of smart PaaS offerings. Companies like Couchbase will have a strong role to play in the AI-first era not only by adding GenAI capabilities but by being a technology of choice for serving intelligent applications. In Couchbase's case, this may hinge on the value proposition for the company's DBaaS Couchbase Capella multimodel database technology, the company's ability to add vector embedding and reach developers, and the Couchbase Lite version to power mobile intelligent applications. Development and engineering organizations with multimodel data needs for intelligent applications in the cloud and/or mobile devices will want to consider Couchbase and work with the company to provide feedback.

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