

MARKET PERSPECTIVE

As AI Redefines Data Management and Application Development, MongoDB Evolves Its Portfolio with AI at the Top

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EXECUTIVE SNAPSHOT

FIGURE 1

Executive Snapshot: MongoDB Is Evolving Its Portfolio with AI at the Top

This IDC Market Perspective reviews MongoDB's recent AI-focused product and partnership announcements and looks at how they map with the current app development and data management agenda as well as with developers' pain points and priorities.

Key Takeaways

- MongoDB's current product development and developer engagement efforts sharply focus on advancements made in AI, particularly generative AI (GenAI). The underlying vision behind these efforts centers on removing tedious and/or laborious tasks away from app development and delivery teams and help them focus more on creative and/or business-relevant problems.
- MongoDB's partnership with AWS should benefit both vendors as they engage with wider pools of developers or engage deeper with them. Ultimately, it should accelerate AI-based coding and the release of GenAI-based apps.
- Beyond net-new app development scenarios, MongoDB's new AI capabilities and its AWS partnership should help create faster/more productive developers as they undertake legacy database migrations and code refactoring, helping MongoDB create stickiness with devs in app modernization scenarios.

Recommended Actions

- **Push for GenAI technology simplification and lowering of entry barriers.** For developers to pick up Gen AI and embed that into their applications, the data operations behind Gen AI need to become accessible and less esoteric than they are today
- **Strive to improve developers' productivity.** Continue to drive productivity gains and operational improvements for data science and app dev professionals tackling GenAI use cases. Complexity in GenAI frameworks and data structures provides for plenty of workflow automation work ahead.
- **Integrate with other vendors.** Build strong catalog of third-party integrations and plugins for developers to seamlessly incorporate into the applications they build.

Source: IDC, 2023

NEW MARKET DEVELOPMENTS AND DYNAMICS

This IDC Market Perspective discusses announcements made by MongoDB in recent months. These include several product introductions and a major partnership that speak to the vendor's current and future portfolio focus, namely MongoDB's product investments to build AI capabilities into its suite of products and services.

These announcements relate to:

- Product enhancements/introductions revealed at MongoDB.local London at the end of September, including:
 - New capabilities, performance improvements, and data-streaming integration for MongoDB Atlas Vector Search
 - Generative AI capabilities in MongoDB Relational Migrator
 - Natural language capabilities in MongoDB Compass
 - Natural language capabilities in MongoDB Atlas Charts
 - Interactive-bot capabilities in MongoDB Documentation
- A partnership with AWS revealed in November, which involves:
 - MongoDB's participation in curated training for AWS' AI-powered coding companion Amazon CodeWhisperer
 - Integration of MongoDB Atlas Vector Search with AWS' Amazon Bedrock managed platform for GenAI foundation models

IDC'S POINT OF VIEW

MongoDB's key business objective with its recent launches centers on improving developer productivity and enabling dev teams to focus on higher-level, value-creation cognitive tasks, as opposed to having dev teams bogged down by technical routines that provide minimal to no differentiation for their organization. The new capabilities are designed to abstract away tedious technical workflows and procedures from developers, with the key benefit of giving them more time to resolve business problems and create innovative features and experiences for end users. MongoDB also aims to make it easier for developers to pair the power of large language models (LLMs) with their organizations' data to build GenAI-based apps that add value to the business.

IDC's 2023 *European Accelerated App Delivery Survey* points out that developers are overwhelmed by undifferentiated tasks and processes in their roles, resulting in (on average) 37% of workweek time being dedicated to creating new app functionality or resolving business change requests.

IDC research indicates developers are challenged to navigate tedious manual processes, understand and manage complex data structures and code dependencies, and keep up to date with the latest innovations happening in vendors' commercial offerings or in open source communities.

With that in mind and considering the massive interest among software engineering professionals in generative AI and its applicability in app development and data management scenarios, MongoDB's efforts to productize AI capabilities into its products is very sound and places the organization well in likely feature and capability battles moving forward. As per IDC's 2023 app development research, about eight in 10 enterprise developers are piloting or planning to pilot GenAI within their workflows and routines.

Foundational Data Infrastructure Capabilities to Build GenAI Applications

Enhancements announced for MongoDB Atlas Vector Search are expected to accelerate developers' time to build for applications powered by generative AI engines. MongoDB Atlas Vector Search was

announced in Preview in June as a unified capability to process data for GenAI-based apps. It helps developers aggregate and filter data faster and more seamlessly, leading to increased accuracy in retrieval of semantic structures and reduction of hallucinations in GenAI engines. A key capability that comes with MongoDB Atlas Vector Search relates to automating complex and laborious tasks associated with indexing data for querying and retrieval. The document data model powering MongoDB Atlas Vector Search is built as a fully managed environment, enabling easier and faster indexing by developers. MongoDB indicates that its latest enhancements have led to a performance improvement, where the time taken to build an index was reduced by 85%.

Furthermore, MongoDB's release of a connector to Confluent Cloud provides developers access to Confluent's managed event streaming platform, enabling them to seamlessly ingest data streams flowing from Confluent into MongoDB Atlas Vector Search and further feed those into their AI applications.

MongoDB Atlas Vector Search is noted as a critical capability in MongoDB's emerging platform for building AI-based applications. As developers are already overwhelmed by deeply intricate workflows and technical stacks, the foundational capabilities of MongoDB Atlas Vector Search are expected to considerably lower key operational challenges (e.g., indexing, hallucination control, configuration/integration with event-streaming frameworks) facing developers as they build GenAI apps.

Intelligent Automation Capabilities for Faster Application Modernization

New AI capabilities built into MongoDB Relational Migrator are aimed at helping developers to automate laborious conversion tasks for SQL queries when migrating apps from legacy databases to MongoDB Atlas. These new capabilities rely on intelligent schema capabilities and code recommendations to help developers accelerate application refactoring, leading to a fast transition away from legacy code bases and data structures. These newly introduced capabilities are especially important in the context of deep complexity in data hierarchies and data schemas, considering the importance of application modernization for improving app development agility in enterprises. IDC research indicates that modernizing the app estate and reducing the legacy database and code footprint is a top 2 priority for senior IT leaders and architects and a top 3 priority for developers.

Smarter Coding for AWS Devs Handling MongoDB

MongoDB's partnership with AWS around the latter's AI-powered coding assistant Amazon CodeWhisperer focuses on increasing the sharpness of code recommendations when developers are manipulating MongoDB artifacts and MongoDB environments. Under the partnership, MongoDB is feeding highly curated training content and code as well as best practice-based tasks and use cases into the Amazon CodeWhisperer engine. It also participates in evaluating training output so that developers handling MongoDB get enhanced code recommendations when building new apps or modernizing legacy apps. Capabilities embedded with the MongoDB-enhanced Amazon CodeWhisperer include built-in security scanning and citation of source and licensing information when code suggestions resemble publicly available training data.

The announcement around the integration of MongoDB Atlas Vector Search and AWS' managed GenAI foundational model platform Amazon Bedrock centers on helping developers to build GenAI apps that marry data living in MongoDB environments with a variety of foundational models hosted, managed, and provisioned by AWS as APIs.

IDC welcomes the two AWS partnership announcements as they set the scene for accelerated adoption of AI in application development and application modernization, particularly given the number of developers that AWS – a major cloud platform – pulls. The partnership also ultimately speaks of MongoDB's stated objective to raise developer productivity and give developers back time to focus on creative and business-relevant efforts.

Apps and Business Insight Visualizations Built with Natural Language

IDC believes that interacting with systems and tooling to build apps via natural language will be big moving forward. In fact, IDC predicts that "by 2028, natural language will become the most widely used programming language, with developers using it to create 55% of net-new applications."

For MongoDB's developer ecosystem, the natural language capabilities introduced in MongoDB Compass are a first step in that direction. Infusing natural language capabilities in MongoDB Compass enables developers to generate complex, data-heavy query syntax. That artifact can then be incorporated into larger application logic, helping developers to ship data-driven applications faster and with less effort.

MongoDB's capability to enable data visualization and generate dashboards using natural language is another step in that direction. Through natural language input, developers get to query the MongoDB Atlas environment for complex business data analysis and representation. This will likely simplify query workflows for developers, optimize business data visualization and consumption for the relevant stakeholders, and result in faster time to analysis, serving the business quicker with insights. In the process, this frees up precious developer time, and devs can dedicate more attention to other business requests.

Personal Learning and Troubleshooting Assistant

Within MongoDB's documentation portal environment, the company introduced an AI-powered chatbot that developers can interact with by asking questions and receiving answers. The chatbot was defined as an open source project. It was designed to help developers more easily navigate MongoDB's documentation, troubleshoot and surface best practices and relevant technical knowledge that fit specific scenarios, discover useful code snippets, and ultimately learn. Furthermore, by leveraging curated content and documentation, the bot retrieves answers for developers based on their specific context.

This capability is particularly useful for developers as they deploy new MongoDB features into their codebase or as new developers get onboarded to MongoDB's environments. It also emerges as a personal assistant and trainer.

App dev/delivery practitioners indicate that a portal where developers can congregate, exchange knowledge, and share best practices is the number 1 capability to have to drive a compelling, streamlined developer experience. Furthermore, the third-most important capability for achieving such developer experience is the strong presence of documentation, guides, and tutorials. With the chatbot, MongoDB's product efforts around its documentation and troubleshooting environment maps well against prime capabilities that developers cite that drive a solid dev experience.

Data Operations Efficiency and Optimization

IDC research indicates that a use case for AI (particularly GenAI) identified early relates to operations and governance, as organizations want to build experience and business value using less risky operational data. With ever-increasing data volumes and AI projects, data processing capabilities highly impact costs and carbon footprint. A developer data platform helps organizations minimize copies of data, avoid unnecessary data movement, and spin up smaller instances to meet their specific use case. The way MongoDB brings in observability capabilities and data efficiency into its platform helps organizations include their data platforms into broader FinOps and GreenOps initiatives.

Closing Thoughts

Many European organizations are either exploring AI use cases or already rolling out AI projects. Data management is critical for AI projects, making data platforms strategic. Capabilities such as developer data experience, data governance, access to real-time data, and the ability to search data and

federate data are all becoming core functions that organizations seek to become data driven. This makes MongoDB's platform and its ongoing feature innovation relevant to its customer base to deliver on their business outcomes.

Looking across the data management domain, MongoDB's early GenAI capabilities position it in an innovator's space while making its offerings richer and more attractive for developers. MongoDB has been coming in strong in the modern data management and application development market in Europe recently, including its 78% growth in public PaaS data management in Europe in 2022 versus 2021. That performance puts it in the hypergrowth segment, being the only cloud data management vendor in the top 4 that grew above 50%.

MongoDB's latest announcements should sustain its attractiveness with its existing base of developers, while providing the background to facilitate new developers to start consuming MongoDB's products and PaaS services.

LEARN MORE

Related Research

- *Market Analysis Perspective: European Developer Cloud and Modern App Development, 2023* (IDC #EUR150779023, June 2023)

Synopsis

This IDC Market Perspective discusses IDC's key application development and data management takeaways from MongoDB's recent AI-related product and partnership announcements, with a view on the EMEA market. It analyzes how these announcements fit the market context, particularly with a view on developer attitudes, challenges, and priorities.

"Large language models are set to profoundly transform digital experiences and change how users interact with their applications, leading to a new class of applications powered by generative AI. However, building those applications is not easy as developers and data operations professionals are still faced with different challenges. MongoDB's investment in building up a GenAI data infrastructure platform is a welcome step in reducing complexity and lowering entry barriers for developers to start embedding GenAI into their applications," said George Mironescu, IDC research lead, App Development/Delivery in EMEA.

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