



Leveraging Data and Cloud for Accelerated Business Results

To stay ahead of the competition, financial services institutions (FSIs) today focus on their ability to synthesize data and convert it into insights that drive customer confidence. They must foster a culture of using the cloud and innovating with data, thus making a data culture an ingrained part of their success.

For financial services institutions in Asia/Pacific, the competition is intense to bring new products to the marketplace and win new customers. Agility, elasticity, economies of scale, and cost savings give organizations the competitive edge to flourish in financial services and wealthtech. New data and cloud solutions offerings will continue to expand with new go-to-market strategies for the next three years and beyond. FSIs will further capitalize on the strengths of hosted cloud, hybrid, multicloud, and new data-as-a-service offerings.

IDC expects that by 2024, enterprises will have committed to modernizing over half (55%) of their existing applications from on-premises to the cloud for optimized accessibility. Therefore, selecting the right technology mix that offers the best value, plus compatible operational management tools, is essential to digital success. There will be expanded variations across multiple cloud offerings and architectures, and these will encompass on-site, public, private, and many different combinations. Selecting the best architecture and strategy will evolve and change over time. A diverse cloud strategy must navigate these dynamic conditions and changes. Reducing vendor lock-in constraints will help ensure more options and allow more flexibility. Challenges persist with the complexities of maintaining consistent environments, workflows, provisioning, monitoring, and security. The need for interoperability, portability, consistency, and operational tools to manage change will continue to converge and evolve.

Clay Miller, Senior Executive Advisor, IDC Financial Insights, Asia/Pacific, spoke to an industry veteran in digital wealth management, Joo Lee, Chief Technology Officer, Endowus, about how the company leverages data and cloud for accelerated business results.



Clay Miller
Senior Executive Advisor
IDC Financial Insights
Asia/Pacific



Joo Lee
Chief Technology Officer
Endowus

Q. Gaining a competitive advantage with data requires speed. What are some ways organizations can leverage data technologies to manage the volume and velocity of data?

A. Competition in the wealthtech market is unique, and quite different from the more significant fintech market. In wealthtech, there continues to be many new and emerging players that are growing rapidly, along with payments and cryptocurrency solutions. Therefore, the ability to leverage data is a must to gain a competitive advantage.

At Endowus, data plays a pivotal role and enables faster “time to insight” for our business users and clients. Capturing large volumes of end-to-end transaction data and storing it in an unstructured data

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repository underpins our digital strategy. Data volumes and transactions have grown exponentially over the past 12 months and are anticipated to continue their upward trajectory to petabytes of data. Endowus has standardized its solutions on Cassandra, an open-source, highly scalable, high-performance, distributed database that can handle large amounts of data across hosted and multicloud environments.

Traditional data management strategies depended on defining the data schemas, extractions, and output files upfront. Today, with advanced high-performance databases, all data is collected and stored as unstructured or semi-structured databases with even greater flexibility and speed. Leveraging Cassandra, there is no such thing as too much data, and it frees up our engineers from worrying about how much data is being collected.

An added business requirement is that all data and systems must be available 24 x 365. Therefore, resiliency and high availability cloud and data services are an operational imperative for Endowus. Selecting the right cloud partner and architecture, and making a conscious decision to avoid vendor lock-in and dependencies, drive the partner selection process.

Q. Wealthtech organizations are driving 100% digital platforms and creating an ecosystem for growth. How are you leveraging hybrid and multicloud to yield faster business results?

A. There is a profusion of archetypes regarding the cloud, and different organizations will classify themselves as cloud-first, hybrid-cloud, and multicloud. Endowus is 100% digital native and has been cloud-agnostic since its inception. We focus on the best solutions to meet the accelerated business demands. Open source and data-at-scale drive the data architecture and time to insight decision-making strategy. Cassandra provides maximum flexibility and modularity across different cloud providers and data repositories and continues to be highly optimized for performance. The advantages of open source and selecting industry-adopted standards enable outsourcing and hosted database models. However, the high demand for talent and the shortage of skilled professionals continue to create technical staffing challenges.

Governance, compliance, and local regulators shape the decision-making for the cloud and where and how data is stored. The different regulators and unique policies require, in some cases, that FSIs manage data on-premises and maintain data within the country. According to IDC Financial Insights, in 2022 and over the next few years, the guidelines from regulators in the Asia/Pacific region will be significantly more supportive of cloud, provided there is evidence of greater control and governance by the financial institution.

The repatriation of data and applications among hybrid environments will be more mainstream. Future decisions to move critical services and business workflows will become part of a longer-term digital life-cycle decision-making process. Digital-native applications are optimized to enable portability across environments, and containerization and microservices further leverage portability between clouds.



Q. Microservices and containers: How are you embracing these to create lightweight, secure, and scalable applications? Share with us some of the benefits you see from leveraging microservices and containers?

A. Endowus adopted a 100% microservices architecture (MSA) from day one, and our MSA strategy is one of our key technology advantages. All applications run on containers, including back, front, and middle layers. We have 40–50 different containers and microservices that leverage container pods. The ability to co-locate and co-schedule optimizes the use of our shared container resources. Containers support the businesses' need for maximized uptime, scalability, and cost-effectiveness for client data and workflows. One practical example is our trading services; we initially had only two container instances supporting the business but could add a tenfold increase to support the rapid client demand. As we continue to expand into new markets and services, the scalability that containers and microservices provide will allow us to flex quickly and scale up.

The figures support our approach — IDC forecasts that by 2023, as a pillar of their IT multicloud approach, 70% of IT organizations will have implemented a strategic microservices and container strategy. The proliferation of microservices architecture will also break down applications into more efficient, deployable cloud components.

For 2022, our plans are to simplify our infrastructure management and move to a serverless architecture. The serverless benefits include scalability, infrastructure sizing, developer productivity, and reduced costs. The ability to break down applications into smaller and smaller pieces, known as decomposition, also provides better observability across all applications services. Cassandra can scale and support our growing data needs without the administration overhead for substantially increased data and transactions volumes. Our outsourced model is well suited to leverage the benefits of serverless and rapid deployments, and DataStax can scale accordingly to meet our business demands.



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Q. Today, data is structured, semi-structured, and unstructured. How are data flexibility and response times improving and driving business outcomes?

A. For Endowus, storing all data and not worrying about provisioning, performance optimization, or the future of how the data will be used is the ideal data strategy. And having a partner that can scale and support this strategy is vital to business outcomes. IDC figures show that unstructured and semi-structured data will grow to 35% by 2025, as organizations increasingly seek to become more data-driven and gain more insights from their data.

We can be flexible in our data schemas and make future modifications based on prospective data requirements.

Another Endowus technology strategy is to continue embracing open standards, and JavaScript Object Notation (JSON) and open application programming interfaces (APIs) are good examples. The importance of our partner's ability to support these standards is vital. Two critical business processes that leverage open standards are know your customer (KYC) and

anti-money laundering (AML) regulations. Cassandra is very flexible and scalable to support the fact that we store all data transactions and, in the future, will extract business insights as requirements evolve. The ability to defer the data structuring decisions is one of the most significant resource-saving benefits today.

Our selection of tools and partners enables our business users to become more data self-sufficient. Our experienced business users can leverage the analytics tools they are most comfortable with, and my technical team can assist with data readiness, preprocessing, and optimization. Cassandra is very popular in the industry, and our business users are knowledgeable using APIs, client-side applications, extraction, and analytics to support their business needs.

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About the analyst and featured executive

Clay Miller, Senior Executive Advisor, IDC Financial Insights, Asia/Pacific

Clay's areas of research and advisory are cloud, agile, DevOps, artificial intelligence, and core banking transformation. Clay leverages his 30+ years of experience to advise C-level executives in Asia. Formerly, he was the executive VP and chief technology officer of JP Insurance in Thailand. JP Insurance was the first Thai insurance company that operated 100% on the cloud and leveraged insurtech and leading-edge technologies. Clay also worked as CIO and chief human resource officer for luminary companies such as IBM, AMD, Motorola, Kulicke & Soffa, Lattice Semiconductor, and Paradigm Geophysical.

Joo Lee, Chief Technology Officer, Endowus

Having spent the last 13 years in the finance industry as a software developer for banks and hedge funds such as Macquarie, Alphadyne Asset Management, UBS, and Goldman Sachs, Joo embarked in a leadership role at a roboadvisor in Singapore and established himself as a veteran in the digital wealth management industry. Joo is attuned to the intricacies of a 100% digital wealth platform, especially in creating the most ideal ecosystem for growth, and an optimal and secure experience for clients.

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