Highlights from a recent webcast on data in the cloud

DATA DRIVES MOVE TO THE CLOUD

Moving data warehouses to the cloud can drive improved business outcomes.

Global enterprises continue their digital transformation and moving more workloads to the cloud. Many are now focusing on moving their data warehouses. Data is the modern global currency, so enterprises need to optimize their data management and analytics practices to derive the most value from their data.

The cloud conveys clear benefits for enterprise data management, not only in storage capacity, flexibility and scalability; but it's also an efficient platform for advanced data analytics. "The move to the cloud is certainly not a secret, but it is now an accelerated move around data assets," says Mike Waas, Founder & CEO of Datometry. "This has been a big challenge, but now people have developed a level of confidence in the cloud. All mid-range businesses are developing a cloud first strategy. It's not a matter of if, but when."

Waas and other data management experts were speaking during a recent webcast, "Adopting Cloud-Native Data Warehouses, in Weeks, Not Years." Waas was joined by Sanjay Krishnamurthi, partner and chief architect, Azure Information Management at Microsoft; and Deepak Patel, head of products for Datometry.

The massive databases enterprises have gathered and continue to gather are now the focus of cloud migration efforts. "What we see from a data perspective is within the next 10 years,

the entire database market is going to be completely re-platformed," says Waas. "This is really about shifting the most important assets to the cloud."

Looking at organizations that continue to shift more workloads to the cloud, what were once stumbling blocks have since been resolved. "In the past, we've always seen security as a major concern," says Waas. "By now, I would call it a tactical copout. Cloud service providers have better security than data centers. Security is no longer a problem, but more an excuse for folks who are not ready to move to the cloud."

Cloud services have also matured dramatically since they were first introduced, and now boast increased capacity, scalability, and functionality. "Cloud databases are now serious contenders for enterprises to put their assets in the cloud," he says.

The Cloud as Digital Disruptor

The reasons for moving to the cloud, or expanding cloud migration efforts to include databases, are varied across different companies. Different organizations also move to the cloud at a different pace. Most do so for cost savings and to reduce operating expenses. There is also the ongoing desire to modernize the infrastructure to increase ease of use, increase scalability, and reduce reliance on on-premises data centers.

The explosive growth in the amount of data modern enterprises continue to

amass is also a driving force toward digital data transformation. "We keep hearing digital transformation and that's what is driving the move to the cloud, but what does that really mean?" says Sanjay Krishnamurthi. "Technologies are merging and changing day-to-day activities."

He offered several high-profile examples of modern companies that have experienced disruptive transformation. "Consider Uber—they've taken smartphone and GPS technology and linked those to a new business model. It has completely changed and disrupted that industry," he says. "Another is Netflix—they have officially ended up disrupting themselves. They've gone from sending CDs by mail and moved to mostly streaming."

The merging of technology with evolving business practices is fueling the growth of and the move to the cloud. "This level of disruption is causing the move to the cloud," says Krishnamurthi. "[Uber and Netflix] both adopted the cloud and leveraged the data from all these devices and smartphones."

It's not only the volume of data that continues to rise, but also the variety. And it's not enough to just place that disparate data into storage. They must also process that data with intelligent apps that can generate and benefit from the valuable insights contained within that data. "We have always had business insights coming from business apps, but

now we need to augment that with web data and data from Internet of Things (IoT) devices," says Krishnamurthi. "And that is driving data volume in the cloud."

Decoupling Storage and Management

Cloud-based data storage and management is essentially decoupling compute and storage resources. This level of flexibility is more critical than ever for businesses to remain agile and competitive. "Traditional data warehousing had been around for about 30 years, and it made lot of sense at that point. The challenge with that is storage and compute are coupled. You don't get the elasticity you need to bring in more data," says Krishnamurthi.

Adding storage capacity in that type of architecture required adding new hardware clusters and new servers. That led to expansion and migration challenges, and much less control over expenses. "Those [architectures] limit how you leverage traditional architecture to the cloud," he says. "That's why we are now seeing new architectures in the cloud that do away with a lot of these challenges from traditional data warehouses."

The decoupling of storage and compute is happening between the app and the database as well, which is facilitated by new technologies, as well as the cloud. "You know you want to go to the cloud, but how do you make that happen?" says Waas. "If you look back 20 years, the biggest revolution has been virtualization."

> ## "You know you want to go to the cloud, but how do you make that happen?"
> —*Mike Waas, Founder & CEO of Datometry, Inc.*

Virtualization helps enterprises move everything in the IT stack; from software-defined storage to software defined networking. "It has pried apart tightly bonded parts of the IT infrastructure," says Waas. "And every time this happens, when you put in an abstraction layer like a hypervisor, it opens up whole new capabilities."

This is now coming to the database arena. "The database guys had been sitting there with apps bolted to the database. We looked at that situation, and said 'The missing piece is virtualization,'" says Waas. "Someone needs to put a hypervisor like platform between the app and the database. We set out to be that abstraction layer; to be that hypervisor. We call this adaptive data virtualization, and it really lets people take apps and make them independent of the underlying database. Just move them to the cloud and tap into the benefits of the cloud database."

This is happening across the globe and across all industry sectors. On-line retailers have naturally embraced the cloud. Automotive companies are also considering it more seriously, especially as connected and autonomous cars emerge. Oil and gas manufacturing is another sector now embracing the cloud. "They generate an enormous amount of data," says Krishnamurthi. "[They can] get all the governance and security, plus the elasticity they need."

One market segment that has been behind in terms of cloud adoption is financial services. This is primarily due to security concerns, but those concerns are being assuaged. "They were worried about security, but now we are also starting to see some banks adopting the cloud," he says.

Understand the Journey

The challenges for global organizations are not just in terms of adoption, but also ensuring sufficient capacity and maintaining the scalability to ensure that capacity will be available when it's needed. And while moving to the cloud can be laden with risk and sometimes cost prohibitive, it's all in the steps an organization takes their understanding of the process. "You do have to understand your workloads before you move. This removes cost, time, and risk," says Waas. "That's really how we redefine the economics."

The cloud is not a destination or a starting point, but more of journey, says Waas. "You're not just taking your data to cloud. You're looking at what sort of business outcomes you can drive."

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