REPORT | OCTOBER 2017

GAIN THE ABILITY FOR CLOUD AGILITY

Assessing Enterprise Capacity to Embrace a Multi-Cloud Strategy

DBM CLOUD SYSTEMS

TRANSFORM TO BETTER PERFORM

GAIN THE ABILITY FOR CLOUD AGILITY

BPI NETWORK

TABLE OF CONTENTS

INTRODUCTION

In enterprises around the globe, the "cloud-first" mentality is gaining irresistible momentum as the new mindset of IT and business leaders. The cloud is increasingly seen as the best path forward for advancing technology-driven business strategies, efficiently bringing new applications and infrastructure on board, developing new innovation, reducing costs, and improving business and IT agility. As IT departments and senior management plan for new initiatives and upgrades, they are increasingly looking to the cloud first.

The cloud's capacity to increase business flexibility is now widely recognized. The cloud has become inextricably linked to the future of IT transformation and other major corporate programs—from the internet of things (IoT) and big data analytics to new customer services and a wide range of enterprise applications. Its inherent ability to increase capacity on-demand is critical to the requirements of digital business. The savings it enables—both in hard costs and time management by offloading the creation and management of IT infrastructure—are compelling.

Market forecasters and industry analysts highlight the dramatic shift that is underway. Gartner predicts that some $111 billion in IT spend will shift to the cloud in 2017, increasing to $216 billion by 2020.[1] According to IDG, by next year, the typical IT department will keep 60 percent of their applications and platforms in the cloud.[2] Meanwhile, Cisco predicts that global cloud IP traffic will account for more than 92 percent of total data center traffic by 2020.[3]

THE CLOUD HAS BECOME INEXTRICABLY LINKED TO THE FUTURE OF IT TRANSFORMATION

Data is a major driver and beneficiary of cloud adoption. We are now living in an age of exponential data growth. Growth in unstructured and semi-structured data that doesn't exist within pre-defined data models or highly organized structures is a major challenge, and the cloud is now where much of this data resides. Digitization of content and information of all kinds has driven gigantic increases in storage requirements. New and growing sources of real-time data collection—from weather and seismic activity to social media, smart cars and a tsunami of IoT applications and devices—are all driving massive increases in storage requirements and a growing need to make sense of them.

IT EXECUTIVES ARE WRESTLING WITH SIGNIFICANT NEW DATA MANAGEMENT CHALLENGES IN THE CLOUD

Companies are utilizing cloud applications and services to extract more business value from data. Businesses have a critical need to better organize and track this vast ocean of data, as well as to control the enormous costs and complexity of storing, managing and analyzing it. According to a recent IDG survey of IT professionals, data storage, management and analytics represent the No. 1 motivation for cloud adoption today.[4]

Despite today's very rapid shift to the cloud, enterprises are still in the early stages of adoption. As enterprises grow in cloud dependency and complexity, they are challenged to navigate a wide range of thorny and difficult issues, such as managing cost, complexity, performance, compliance, business continuity, data and application migration, and more. IT executives are looking for answers, along with the right skill sets, management solutions and partners to win in the cloud.

Companies are facing the technical challenges of moving and configuring data sets to run against specific applications in the cloud, financial challenges of reducing cloud spend by avoiding vendor lock-in, and compliance challenges associated with data sovereignty and corporate policies that require the migration of data to specific regional locations and clouds.

The high cost of replication and migration demand new solutions that can more selectively replicate data and move it from one cloud to another without manual reconfiguration. Most executives agree that anything that improves their ability to move data from cloud to cloud will have significant benefits by avoiding vendor lock-in and allowing them to leverage the capabilities and applications that reside on various clouds.

As part of its ongoing focus on digital transformation, the Business Performance Innovation (BPI) Network has undertaken this study in partnership with DBM Cloud Systems, a rapidly emerging leader in the intelligent management of cloud data, to examine these shifts and how companies are changing their IT processes and priorities to manage their vendors, technology stacks, applications and data in the cloud. The study also incorporates insights and opinions from a number of IT and technology executives at leading companies—including Viacom, Coca-Cola, DHL Supply Chain, Embraer and more—who are embracing the cloud as the way forward.

KEY FINDINGS

The Big Shift

The Coca-Cola Company will close its last on-premises data center this fall. Viacom is consolidating to just one global data center. DHL has invested in building a global private cloud to improve its capacity to flexibly and cost-efficiently meet its growing infrastructure needs. For these and many other leading corporations, the shift to the cloud is well underway.

Most executives interviewed in this report agree that there is a tremendous amount of work ahead before they realize the full potential of the cloud, but they also believe the shift is both inevitable and highly advantageous. Increasingly, they are spending much more of their IT dollars in the cloud—whether it be public, private or a hybrid combination.

The benefits and drivers for this transition are both varied and profound. Among the key drivers of cloud adoption cited by executives are:

- The need to efficiently scale up and down to meet sudden spikes in user demand and create temporary digital environments as required
- Avoiding expensive internal infrastructure and IT management costs
- The need for affordable and reliable backup and recovery and the ability to keep pace with massive data storage, management and analytics requirements
- Access to the latest and best applications without developing and maintaining them
- The ability to concentrate internal resources on strategic IT and business priorities

David Kline, Executive Vice President and Chief Information and Technology Officer for global media giant Viacom, says the cost advantages are secondary to the huge benefits that Viacom is realizing in agility and responsiveness to employees, enterprise applications and particularly consumers of its content and services. The fault tolerance and on-demand capacity offered by the cloud trigger business opportunities directly from the confidence of this new reliability.

> **"IN THE CLOUD, I CAN SPIN UP AND DOWN VIRTUALLY WITHIN SECONDS."**
>
> **David Kline**, VIACOM

"We get a huge amount of usage coming to our sites, weighing heavily on the digital footprint, and it is hard to keep up when you're on-premises because you have to pre-purchase or lease equipment without knowing what to expect," Kline says. "But in the cloud, I can spin up and down virtually within seconds. This is vital for us as a media company as we need the ability to be flexible in creating environments on the fly when we have a live event—such the MTV Video Music Awards—where we'll see significantly increased usage for a given period."

Vicky Abhishek, Chief Technology Officer for Coca-Cola's Asia-Pacific region, says this global consumer brand leader adopted a "cloud-first" philosophy several years ago and is well on its way to becoming completely cloud-based.

"Cloud represents an efficient model to deliver infrastructure to support the application needs for the organization and for all enterprises," Abhishek says. "We are a global organization, represented in about 200 countries. Cloud is essential for us; it is cost-effective, it helps to secure our assets and it promotes agility and flexibility. It also ensures that our users have access to applications at the right performance in terms of speed and overall end-user experience."

Javier Esplugas, the European Vice President of IT for DHL Supply Chain—an organization that encompasses some 80,000 of DHL's 480,000-person global employee base—says DHL has built a global private cloud that is managed by an internal provider and is looking closely at a variety of cloud application providers.

"Currently, there is no other offering that is more compelling than cloud…Cloud is cheaper than on-premises locations, it helps you scale much better, and it allows you to scale up and down as needed," Esplugas says. "The cloud—whether public or private—has a scalability that we've never seen in the past."

"THERE IS NOT ANOTHER OFFERING THAT IS MORE COMPELLING THAN THE CLOUD."

Javier Esplugas, DHL SUPPLY CHAIN

DHL's focus on the public cloud has been driven, in large part, by a concern for data security, particularly that of its customers.

Other companies, such as Brazilian-based aerospace conglomerate Embraer and U.S.-based pharmaceutical company Jubilant Pharma, are early in their shift to the cloud.

Alexandre Baulé, CIO and Vice President of IT for Embraer, says the company has adopted cloud applications for CRM, HR and human capital management while supply chain management runs on a hybrid of in-house applications designed to handle the complexity of the company's unique processes. Blending new cloud apps with on-premises IT is delivering a more responsive and efficient set of core technology services and frees more budget for innovation.

Embraer's data centers have been updated to support hybrid cloud capabilities, and this was done in line with regulatory requirements that extend from security and identity management to the provision of global access.

"The level of regulation in our industry is comparable to that seen in banking," Baulé says.

At Jubliant Pharmacy, a major driver for moving to the cloud has been senior management, which wants to be sure the company is maximizing the benefits of the cloud and related opportunities, according to CIO Sunil Anand. From his perspective, a key benefit is the ability to tap into the expertise of cloud providers rather than having to maintain internal talent.

"We're not infrastructure experts, and we do not want to build in-house expertise," he says. "In infrastructure, infrastructure security and infrastructure management, we would rather not worry about storage, how much storage is increasing and how the infrastructure upgrades need to be maintained. We would rather worry about applications and business processes."

All of these executives are realizing significant advantages in the cloud, but the transformation is just beginning. Much still needs to be done to adapt to a new set of opportunities and challenges represented by the cloud.

One Cloud Isn't Enough: The Multi-Cloud Challenge

Multi-cloud is now the preferred architecture for most companies. The complexity of today's enterprise IT environments and requirements, the mandates of geo-sovereignty, concerns about business continuity, the desire to avoid vendor dependency, and the various advantages of different vendors and cloud models are all factors that are leading companies to consider and adopt a combination of clouds.

THERE IS A NEED FOR BETTER DATA-MIGRATION SOLUTIONS ACROSS CLOUDS, BETWEEN CLOUDS AND ON-PREMISES.

While some companies are primarily focused on running their own private clouds, most large organizations are moving to multi-cloud, hybrid environments that mix and match private and public clouds and on-premises systems depending on specific needs, applications and geographies. Those who haven't moved to multi-cloud are at least in the planning or consideration stages.

But with these new hybrid and multi-cloud models come challenges. New vendor and cloud management processes, multi-cloud data integration and management, and the need for better management tools and solutions to assist in the migration of data across clouds and between clouds and on-premises systems are among the issues on the minds of IT executives.

The Coca-Cola Company views a multi-cloud approach as essential to running the IT operations of the global company, which conducts business in some 200 countries around the world.

"We are not afraid to look across multiple cloud providers as we need integration across sectors and regions," Abhishek says. "We are open to leveraging and playing to our partners' strengths."

"WE ARE OPEN TO LEVERAGING AND PLAYING TO OUR PARTNERS' STRENGTHS."

Vicky Abhishek, THE COCA-COLA COMPANY

Still, the complexity of managing multiple cloud providers has added significant new challenges.

"One of our challenges is in ensuring we have availability across multiple cloud service providers and that those multiple connections integrate back into our core network," he says. "This is coupled with our overall data strategy. We have invested in people and partners with various skill sets, and we have moved from working with hardware suppliers and integrators to more cloud-service brokers and cloud orchestration teams to make our cloud deployments effective."

U.S. Gas & Electric, which was recently acquired by Crius Energy Trust, currently uses a single private cloud but is looking into moving to a structure that would replace their existing cloud and data centers, moving them to the public cloud, explains CIO Greg Taffet, who says that improvements in cost, redundancy and flexibility are driving this re-appraisal.

Working with public cloud vendors has significant advantages but also brings concerns around becoming dependent on vendors who may not always share the same philosophy and IT goals as the enterprise. While any well-run company will do a great deal of due diligence in selecting its cloud vendors, things can change.

"There's always the challenge that the platform you choose will do something in the future that causes you to have to react," Taffet explains.

Viacom's goal is to be independent of a single provider, according to Kline. In part, the desire for independence is based on concerns over outages, but more so, it is based on a desire to stay at the leading edge of technology as various providers continue to innovate on their platforms. The major vendors tend to leapfrog each other every year.

"Amazon will have something awesome, and then all of a sudden, Google will get something more awesome, and then Microsoft will leapfrog them and do something better the next year, so we're trying to keep up with all of those things," he explains.

Vendor dependency and lock-in—including the challenges of efficiently moving data and applications from one vendor to another—are important considerations in a multi-cloud world and will continue to grow significantly for many companies. Kline, for example, believes that tools that can assist in the data-migration process—including selective replication—could have real value to companies that are building their businesses in the cloud.

The size and strength of a global organization like DHL can provide protection against losing control to its cloud providers, DHL's Esplugas believes. The relationship tends to be much more of a partnership than a customer-vendor connection.

"Of course, if a partnership does not go the way it should, then the efforts to re-establish partnership with other players is costly but would always would make sense if the partnership doesn't work," he says.

The move to another cloud is far from trivial, with data migration being one of the major challenges, according to Esplugas.

> **"WHEN IT COMES TO EXTRACTING DATA AND MOVING IT FROM CLOUD TO CLOUD, IT'S NOT ALWAYS EASY."**
>
> **Javier Esplugas**, DHL SUPPLY CHAIN

"One of the criticisms that people have given to the cloud is that it's extremely easy to load information and manipulate information within that cloud, but when it comes to extracting the data and moving it from cloud to cloud, it's not always easy," he says. "Any type of technology that would facilitate the extraction of data, data conversion and moving data from one cloud to another will be welcomed within a free competitive market because it eases the competitiveness of the players."

Managing Data in and Across Clouds

The world is awash in data, and the floodgates remain wide open. Digitization of content was a major factor in data growth, and now, a wide variety of real-time applications—from social media to connected devices—are creating new data and the need for analytics at an ever-increasing rate. Cisco predicts that by 2020, the total installed capacity of data center storage, including the cloud, will reach 1.8 zettabytes…up five-fold from 382 exabytes in 2015.

The cloud has been both a savior and a cause of exponential data growth. The ever-declining cost of storage, significantly aided by the cloud, is allowing companies to keep data for much longer periods of time than before. The decision to hold onto data longer is also driven by a desire to refine this raw asset into something much

more valuable: insight and intelligence. Companies are seeking to better understand and predict their customer behaviors, their markets, their operations and the world around them through data analytics.

The vast majority of data today is unstructured, including massive streams from email, social media, and IoT applications and devices. There is a major effort underway to bring more organization and structure to unstructured data in order to glean valuable insights through analytics. The ability to tag data objects with metadata to better identify, organize and manage it is an essential approach to improving the value of unstructured data. All of this is increasingly happening in the cloud.

Data storage for media giant Viacom is petabyte size, according to Kline, and it isn't only about huge, rich media files; it's about data being collected from interactions with consumers and machines around the world across thousands of websites and 90 different applications on ten different platforms.

COMPANIES ARE FINDING MORE VALUE IN UNSTRUCTURED DATA AND HOLDING ONTO IT LONGER IN THE CLOUD

"We don't want to collect data just to collect data, but we do want to collect enough data so that, if we need to go back in history or if we come up with more algorithmic opportunities, we can leverage and optimize that data more effectively," Kline says. "We have a data science team led by our chief data scientist, Kern Schireson, who has worked closely with us to determine how we view our lake of structured and unstructured data, and the cloud enabled us dramatically. We are significantly more functional in collecting data from workflow and usage and in creating additional opportunities to leverage that data for improved experience."

DHL's Esplugas has a similar perspective about the exponential growth of data at his company.

"Data growth is exponential—it is the oil of the new era," he says. "You can take a lot of value from data if you can keep it for long enough because it enables more insights from a business intelligence perspective. In the past, we might have kept that data only for one or two months. The fact that the cost of storage has been declining year over year makes it more appealing for different projects."

Abhishek and his fellow regional and global IT colleagues at Coca-Cola have witnessed a massive growth in unstructured data in recent years.

"Because we deal with consumers, we deal with analysis and different opinion patterns in terms of what they like or do not like about our products," he says.

Coca-Cola also uses vast amounts of unstructured data in their multitude of video campaigns, with ads shot in high definition and web assets and campaign websites full of rich media content. Abhishek says gathering unstructured data and correlating it with the company's structured data set are achieved far more efficiently through cloud services.

For Greg Taffet of U.S. Gas and Electric, "Even our unstructured data is now more structured; while much of our data was once held in separate files and not indexable, more and more of it is now becoming integrated."

The Need for New Cloud Data Tools

The massive growth of unstructured data in the cloud and the mandate to better and more cost-efficiently manage, analyze, protect and migrate that data, has created a growing need for new cloud technologies and tools. The high cost of replication and migration demands new solutions that can more selectively replicate data and move it from one cloud to another without manual reconfiguration. The demand to mine greater insight and intelligence from unstructured data requires solutions that can better understand and organize data based on where it originated, who created it and other factors, and then move it to the cloud or cloud endpoint where it can access the right applications and analytical tools.

A software platform that intelligently manages data in the cloud holds significant potential in addressing these needs. Viacom's Kline sees significant advantages in being able to selectively identify, migrate and replicate data in the cloud using metadata associated with storage objects. Viacom is using object storage today, but not widely. Kline believes that object storage can pay significant dividends in helping to drive a better understanding of consumer behavior and in personalizing interactions with consumers, for example.

THE DESIRE TO MINE INTELLIGENCE FROM UNSTRUCTURED DATA REQUIRES SOLUTIONS TO BETTER ORGANIZE AND MOVE IT.

According to Coca Cola's Abhishek, the ability to selectively replicate subsets of data within a single cloud or across multiple clouds—rather than bulk replication—would be a significant advance in cost efficiency, allowing the company to replicate as needed on a much more frequent basis.

"If I get more flexibility and break it into smaller chunks, I will replicate that many more times in most cases," he says.

Almost all executives agree that anything that improves their ability to move data from cloud to cloud will have huge benefits by avoiding vendor lock-in and allowing them to leverage the capabilities and applications that reside in various clouds.

Conclusion

The shift to hybrid and multi-cloud models is now in full swing at enterprises around the world. IT executives say their companies are realizing huge benefits and will continue to move more of their infrastructure, platforms, applications, services and data into the cloud. However, most also believe that are just beginning to fully understand and address the challenges associated with this massive transformation.

The cloud has provided huge benefits in coping with the deluge of unstructured data taking place today, but much remains to be done to make data more accessible, portable and addressable in order to further reduce costs, improve performance and enable greater analytics and intelligence.

Organizations need to be able to more affordably identify, replicate and migrate data to take advantage of cost efficiencies, performance advantages and specialized capabilities of various clouds and cloud vendors. They need to leverage new solutions, such as cloud-optimized object storage, to achieve greater economies and exploit new opportunities for competitive advantage.

BEST PRACTICE LEADERSHIP - INTERVIEWS

VICKY ABHISHEK
Group Chief Technology Officer–Asia-Pacific
Coca-Cola

SUNIL ANAND
Chief Information Officer
Jubilant Pharmaceuticals

JAVIER ESPLUGAS
Vice President of IT
DHL Supply Chain

GREG TAFFET
CIO
US Gas & Electric

ALEXANDRE BAULE
Chief Information Officer
Embraer

DAVID KLINE
Chief Technology Officer and Executive Vice President
Viacom

INTERVIEWS

VICKY ABHISHEK

Group Chief Technology Officer–Asia-Pacific
Coca-Cola

Coca-Cola is the world's largest beverage company, offering more than 500 sparkling and still brands and nearly 3,900 beverage choices. The company's portfolio features 21 billion-dollar brands, 19 of which are available with reduced-, low- or no-calorie options. Almost 2 billion servings of Coca-Cola products are enjoyed in more than 200 countries every day. As Group Chief Technology Officer for Asia-Pacific, Vicky Abhishek is responsible for all technology services and operations throughout the region, including network end users and cloud and data center operations, mobility and site support services.

Coca-Cola adopted a cloud-first philosophy several years ago and is well on its way to becoming a completely cloud-based company that will soon have no physical data center at all. Abhishek says the company is about four years into its journey toward building an integrated multi-cloud data architecture, with benefits flowing to the company, its partners and consumers in almost every nation. The company utilizes private, public and hybrid clouds to support its own IT requirements as well as the needs of partners and consumers.

Abhishek, based in Singapore, says the move to a multi-cloud architecture has promoted agility and flexibility while reducing the costs of managing server rooms and physical data centers.

"I am very fortunate to be part of this process in my own small way and am specifically focused on the Asia-Pacific region, where we had disparate small server rooms spread across 13 different locations in the region," he says. "We had to consolidate all of those into a couple of major cloud hubs and moved our regional applications into cloud hubs."

As a cloud-first company, Coca-Cola has only one physical data center left in the entire organization, and Abhishek says that, as of fall this year, it will be 100-percent cloud based. Coca-Cola's enterprise partners have also moved to the cloud at the same time.

"Cloud represents an efficient model to deliver infrastructure to support the application needs of the organization," he says. "We are a global organization and are represented in about 200 countries. Cloud is essential for us; it is cost-effective, it helps to secure our assets and it promotes agility and flexibility. It also ensures that our users have access to applications at the right performance in terms of speed and overall better end-user experience."

Abhishek explains that Coca-Cola's cloud strategy includes the use of multiple cloud providers, with services deployed according to specific needs and geographies.

"We are not afraid to look across multiple cloud providers as we need integration across business units and regions," he says. "We are open to leveraging and playing to our partners' strengths."

Even so, the complexity of managing multiple cloud providers has added new challenges.

"One of our challenges is in ensuring we have availability across multiple cloud service providers and that those multiple connections integrate back into our core network," he says. "This is coupled with our overall data strategy. We have invested in people and partners with various skill sets, and we have moved from working with hardware suppliers and integrators to more cloud-service brokers and cloud orchestration teams to make our cloud deployments effective."

He adds, "Integration across regions is imperative. While one cloud service provider may be strong in Asia, and they may not be strong in say Europe. We can still chose them if our deployment patterns, workloads, tiering classification and management interfaces are consistent. It does not make a huge difference whether information is stored in the same cloud or physical location."

Coca-Cola has also had to master a wider set of data sovereignty and compliance challenges than almost any other brand.

"Coca-Cola puts global compliance and data sovereignty standards at the top of our priority list because we want to be a good citizen wherever we are operating," Abhishek says. "We have to understand the local laws, demands, exceptions and hosting standards. E.g. In Germany, we break up our cloud environment to host German data locally. China focuses more on a profit performance standard perspective. We realize that if we host apps / data outside of China, then our user performance may suffer or it becomes too expensive to deliver the same performance as against hosting the app / data within China."

Overall, Abhishek and his fellow regional and global CTO colleagues have witnessed a massive growth in unstructured data in recent years and months.

"Because we deal with consumers, we deal with market segmentation, brand segmentation, consumption analysis, channel and distributio patterns etc. as it related to our products," he says. "I previously worked for GE, which has a huge industrial internet. It greatly differs compared to Coca-Cola's consumer-facing network. We have private, public and hybrid clouds for our partners, utilities and bottlers. All of us have to come together and deliver value to our end consumer."

Coca-Cola also uses vast amounts of unstructured data in their multitude of video campaigns, with ads shot in high definition and web assets and campaign websites full of rich media content. Abhishek explains that gathering unstructured data and correlating it with the company's structured data sets for gaining valuable insights are achieved far more efficiently through cloud services.

In addition, the new architecture for Coca-Cola's multi-cloud strategy is in the early stages and involves significant experimentation.

"We like to try different things, and our strategy grows and takes shape as the requirements, business needs and the market evolve," he says.

Abhishek says some benefits of a multi-cloud strategy for Coca-Cola include cost savings related to the cyclical nature of consumption.

"We have seasons cycle related to occasions, weather patterns, etc. where we have high volumes, high peaks and more activity at certain times," he says. "We often engage in new campaign launches or introduce new ads where the computing requirement increases significantly. There are less active periods as well, where we can scale down those web assets. That agility comes directly from our cloud-based hosting strategy."

Abhishek says he prefers focusing on the benefits of a diversified provider portfolio than on perceived risks of vendor lock.

"We want a smart sourcing strategy—that need existed even before cloud, but the same rules apply," he says. "If I post something with cloud service provider A and am not able to meet my user expectations or if my performance escalates, I can move to cloud service provider B in a much easier manner as opposed to moving my data center from the East Coast to the West Coast or to Europe."

Abhishek expects cloud adoption to grow further, despite regulatory and security challenges.

"Security and regulatory barriers to the growth of cloud technology exist across the industry," he says. "We have worked with our audit policies and security policies to evolve them to meet the cloud standards. We do not compromise on anything related to information security or risk. Host sharing for our applications or IT access is on the web, and those controls have evolved from physical to more cloud-based hosting."

JAVIER ESPLUGAS
Vice President of IT
DHL Supply Chain

DHL Group is the world's leading mail and logistics company. With approximately 500,000 employees in more than 220 countries and territories worldwide, the company offers a comprehensive range of international express, freight transportation, e-commerce and supply chain management services while also actively promoting global trade, responsible business practices, purposeful environmental activities and corporate citizenship. Javier Esplugas is the Vice President of IT for the Supply Chain group in Europe, the Middle East and Africa and is responsible for IT strategy, planning and architecture, as well as customer solutions and project delivery. Having served DHL Supply Chain for the last five years, he also leads the European IT innovation agenda in the incubation and innovation of new technologies.

Esplugas says that DHL has embraced the scalability and cost advantages of private cloud services and internal cloud expertise while also focusing on the security of sensitive information in its global data strategy. He sees major opportunities in the convergence of multi-cloud in the medium term at both the application and storage levels.

Despite the opportunities that the cloud offers, Esplugas says he has recognized difficulties in combining data from different clouds, and moving from cloud to cloud is challenging as well. While his team plans to explore public cloud and software-as-a-service (SaaS) options in the future, he says for now, DHL's mixed strategy—including an advanced internal IT cloud provider—copes well with the company's massive infrastructure demand.

"We have a mixed strategy when it comes to cloud," he says. "We have an internal IT provider called IT Service that offers us a private cloud. That's probably the main source of our infrastructure demand, and as a division, we go through that to get instantly available service in our private cloud. With that, we have initiatives to enrich and optimize how we store, retrieve and access data."

He adds, "The fact that we are in such a big company gives us sufficient economy of scale that our own private cloud is, from a price perspective, as good as the best providers out there and just as reliable. We can dedicate as many resources to cyber-security as big players out there. At the same time, we're also very keen on exploring software as a service—for example, through Salesforce. So that, of course, means that we must access external clouds for those packaged applications."

New SaaS applications are not the only reason why the company might consider more public cloud options.

"We have a number of different data centers, data replications and internal audits," he explains. "Given this and the exponential growth of data we will see in the future, it adds to the consideration of leveraging more public cloud usage."

He says a clear differential has emerged in cloud ease-of-use between loading data and migrating between platforms. Therefore, he would welcome new tools that enable seamless migration.

"It's extremely easy to load information and manipulate that information within the cloud," he says. "But when it comes to extracting the data and moving it from cloud to cloud, it's not always easy. Part of the reason for this is that cloud vendors do not want just to become pure commodities, so any type of technology that would facilitate the extraction of data, data conversion and moving data from one cloud to another will be welcomed within a free competitive market because it eases the competitiveness of the players."

For Esplugas, the key drivers for cloud adoption at DHL include cost efficiency, flexibility and scalability.

"The drivers for cloud adoption go hand in hand," he says. "We need all three of these areas to be seamless. Currently, there is no other offering that is more compelling than cloud in resolving those needs. Cloud is cheaper than in-premise specific locations, it helps you scale much better, and it allows you to scale up and down as needed. Of course, certain data requires careful security considerations, especially because some of our data is from our customers, and we take information security very seriously. We feel more comfortable setting up our own infrastructure for those customer-related services. But for all other data, the cloud—whether public or private—has a scalability that we've never seen in the past."

Scalability is especially relevant as DHL Supply Chain is a very large enterprise. As a division, DHL Supply Chain is part of a wider group that reports to DHL Group. The Group has around 480,000 employees. Esplugas' particular division, DHL Supply Chain, has 80,000 employees. Meanwhile, DHL Supply Chain's successful M&A experience provides a unique insight into the challenge of cloud agility following acquisitions of entities with differing data strategies.

"We have a lot of structured data, but DHL Supply Chain also has a very rich history of mergers and acquisitions," Esplugas says. "As a result of that, the data is structured, but it's not structured in the same way, so to a certain extent, it makes it more difficult to access those data lakes. Currently, our unstructured data landscape is about 70 percent of the total. While a portion of that might be somewhat structured, it does not necessarily follow the same data models that we have in the center."

While vendor lock-in within the cloud environment has posed challenges for many large companies, Esplugas believes DHL's size and ability to structure win-win relationships with partners reduces the risk.

"At DHL, we don't establish the typical customer-supplier relationship, but rather more of a partnership," he explains. "That lock-in does not necessarily happen. Of course, if a partnership does not go the way it should, then the efforts to reestablish partnership with other players is costly but would always would make sense if the partnership doesn't work."

Another challenge for large multi-nationals revolves around data regulation requirements. However, Esplugas says the company's internal private cloud has given it the flexibility to precisely comply and react to regulations across its countries of operation.

"I don't consider data geo-sovereignty as a challenge, even though we have seen an increase in new regulations, such as the European Act," he says. "Data sovereignty and international law are not areas where we are willing to

gamble; we comply, and it's a given as a fact of our business. Again, the fact that we're using an internal private cloud allows us more flexibility and the ability to be more reactive and proactive when those changes come."

Looking at the next few years, Esplugas says he expects synergies and opportunities to emerge around the integration and convergence of cloud applications.

"I think we are now reaching a point where we are going to see some synergies from the convergence of multi-clouds," he says. "In the journey with clouds, we have experienced unique benefits in each of the individual cloud platforms. One example is the benefit we found through Salesforce. However, we've also seen some difficulties in terms of combining data from different clouds. We are starting to look at the convergence of clouds both at the application level and at the storage level because we see that the future will bring us in that direction."

Esplugas says DHL has witnessed ever-increasing rates of data growth, and the insights gained from these rising pools have led to both critical business intelligence and exciting new services for customers. Just one of these is a new supply chain visibility tool that allows customers to log in to an easy-to-use interface and precisely monitor the status of their shipments and deliveries using time stamps and geo-location.

"Data growth is exponential—it is the oil of the new era," he says. "You can take a lot of value from data if you can keep it for long enough because it enables more insights from a business intelligence perspective. In the past, we might have kept that data only for one or two months. The fact that the cost of storage has been declining year over year makes it more appealing for different projects. As your data grows, your predictive analytics models become better, and you have more history to rely on. You can refine them, and as a result, you can start storing certain data that you never thought about storing."

Regarding the new visibility tool, he adds, "That kind of visibility in the past had very little retention time, and we wanted that piece to be a source of great insights on how our business works. We even set it up with an in-memory NoSQL-type of database to ensure that we structured the data lake where we could gain significant insights for our business."

ALEXANDRE BAULÉ
Chief Information Officer
Embraer

Known as one of the world's leading manufacturers of commercial and executive jets, Embraer is a global company with highly innovative businesses in commercial and executive aviation, defense and security. Headquartered in Brazil, the company designs, develops, manufactures and markets aircraft and systems while providing customer support and services. Founded in 1969, Embraer has delivered more than 8,000 aircraft. Roughly every 10 seconds, an aircraft manufactured by Embraer takes off somewhere in the world, transporting more than 145 million passengers per year. Alexandre Baulé, Chief Information Officer at Embraer, cautiously expects a growth in cloud adoption and agility based on what can be leveraged through client relationships.

Despite its past success using a centralized ERP platform to meet all business applications, Embraer embarked on a fundamental shift to a mixed data strategy featuring hybrid cloud and on-premises IT. It embarked on this path toward greater flexibility because, despite the fact that the company typically deals with far more structured, in-house data, the amount of unstructured data is growing rapidly.

The result of this dispersed digital portfolio has not only seen reduced costs and greater flexibility in meeting customer requirements, but also the harnessing of cloud services to drive new business innovation.

"We use cloud primarily for enterprise applications that do not deal with classified data," he says. "The primary driver was flexibility for scale up and scale down."

While most of the content that the company deals with is highly structured, Baulé says Embraer deals with unstructured data at the petabyte scale. He also expects an exponential growth in unstructured data in the years ahead.

"Our data content is very structured; the majority of the data in our premises is structured," he explains. "Unstructured data is more widespread on the internet, which affects our business in general, and particularly the Executive Jets market. Nevertheless, we expect exponential growth in this respect."

Baulé says Embraer has not yet deployed an object storage platform. The company embraced a hybrid cloud strategy with flexibility—a key requirement within the industry.

"It is hybrid since the nature of our compliance rules and the global reach of our products and services require flexibility and multiple approaches," he says. "This strategy includes the use of multiple public cloud providers."

Asked about the challenges and obstacles to multi-cloud deployment —which commonly involve management complexity, cost and the need to reconfigure apps for many large companies—Baulé says their challenges include

handling several counterparts, contracts and legal requirements. However, having several solutions for multi-cloud management make the technical side less of a concern. Another issue for many companies—cloud vendor lock-in—is also not a pressing concern for Embraer due to the availability of tools that simplify the data migration process between cloud providers.

"We do not have much concern as we have a multi-cloud approach that avoids it," he explains. "However, specific ROI calculations shall be done before implementing such a tool."

Baulé says the ability to selectively replicate data based on attached metadata may be valuable depending on the analytics demand, but data geo-sovereignty represented a significant challenge that Embraer has been tackling with its partners.

"Heavy and conflicting requirements from Europe, the U.S., Brazil and other countries we deal with are a challenge, particularly with geo-sovereignty as a key requirement for compliance with our clients," he says.

SUNIL ANAND
Chief Information Officer
Jubilant Pharmaceuticals

Jubilant Pharma, a subsidiary of Jubilant Life Sciences Limited, is an integrated global pharmaceutical company engaged in the manufacture and supply of APIs, solid dosage formulations, radiopharmaceuticals, allergy therapy products and contract manufacturing of sterile and non-sterile products. The company has six USFDA-approved manufacturing facilities in India, the U.S. and Canada, as well as R&D centers in India and Canada. The company has a team of more than 4,000 professionals around the globe and delivers value to customers in more than 75 countries. It is well recognized as a partner of choice by other leading pharmaceutical companies globally. Jubilant Pharmaceuticals and its partners have enjoyed a positive experience in exploring new cloud agility, from secondary data storage to business applications and responding to new data-intensive requirements within the pharmaceuticals sector. Sunil Anand, Chief Information Officer at Jubilant Pharma, is optimistic about the cloud's uses and its future benefits.

Jubilant leverages a hybrid data strategy that matches on-premises IT, public cloud and bespoke private services with specific needs and opportunities, which deploy after assessments of platform choices are made by partners and vendors.

"Jubilant is a pharmaceutical company focused on five different businesses," Anand explains. "Every business has a different need, but we also need a common framework for the usage of our applications and the cloud infrastructure."

He explains that the incentive to move to the cloud came from a senior leadership imperative for the company to focus on leveraging the cloud for some areas, so that it allows better focus on their core competencies. Especially given the growing number of data and increasing storage needs, Jubilant's leadership understood the challenges of an extended, complex infrastructure in order to remain on-premises.

While the calculation might be different for large companies with massive volumes of data and higher complexity, mid-sized companies like Jubilant find it well worth the effort to explore various cloud agility options. Anand says that cloud solutions are now given a consideration for every new application / storage need.

"Before the cloud, there was a SaaS offering, and before the SaaS offering, there was the ability to host externally in someone else's data center. Now, it is all bundled together," he explains. "We continue to look at every single application we implement from an infrastructure perspective."

He explains that Jubilant moved to the cloud for the ability to offload infrastructure and the expertise and resource requirements. Now, it is driven by the vendors who manage those applications and who select which cloud infrastructure to use, allowing the team to focus on core business needs.

Anand says the optimal management of structured data is the primary data concern for the company. However, he anticipates a greater focus on unstructured data within the next two years.

"We have a lot of data, but we are focusing on doing the basics," he says. "We have structured data that we have not spent enough time on. Our focus is currently only on the data that is under our control in our systems and finding out how can we connect them."

Anand says that Jubilant's cloud mix strategy results from the type of applications needed on a case-by-case basis. While the company uses private cloud services for some of its sensitive data, it leverages a public cloud strategy for other data applications, including email.

"We consider the private cloud to support us wherever we have sensitive data in order to maintain good manufacturing and laboratory practices," he says. "For all other data—including other cloud applications—we are leveraging a public cloud strategy."

Anand explains that cloud agility is also serving a unique and increasingly important need in the pharmaceutical industry: serialization. While he says the company has not yet encountered problems in integrating and moving data between cloud platforms, serialization has spurred the future integration needs.

"Serialization is a very big initiative in the pharmaceutical industry where every prescription product that we sell to a consumer must have a unique number associated with that product," he says. "If you buy a prescription product, the bottle will carry a unique number. With several systems involved, it is possible that the serialization data will be on one cloud, the ERP data is on another cloud, and the quality management system may on another cloud. We are eventually going to need to integrate them."

When it comes to the company's platforms, Anand says they are still using multiple providers. He says that most organizations are particularly concerned about the risk of vendor-lock when it comes to applications and the bundled infrastructure. He also sees a risk in terms of how reduced cloud costs in the future could put companies in a weak negotiating position with vendors who lock-in.

"When it comes to lock-in, the concern is not with the cloud; rather it is application vendor lock-in that worries me," he says. "The cloud comes along with long term contracts. We believe that the cost of using the cloud needs to reduce significantly every three to five years. To that extent, we worry that application providers will increase their costs because, even though the cost of the cloud has reduced, they may have an advantage at the negotiation table since the cost of exiting could be much higher."

For the future, Anand says he plans to carefully watch how cloud providers cope with issues like data privacy and hacking while also listening to partners when it comes to choosing cloud solutions or reviving in-house options, if necessary.

"We have been very pleased with what we have accomplished with the cloud overall," he says. "In the coming years, we will see how that evolves."

GREG TAFFET
CIO
US Gas & Electric

U.S. Gas & Electric is a leading retail energy supplier to commercial and residential customers in 11 states. Recently acquired by Crius Energy, U.S. Gas & Electric provides energy to customers with wide ranges of energy usage patterns. It now joins the Crius Energy family—a group with more than 1 million residential customer equivalents in 21 markets across North America and Australia that provides electricity, natural gas and solar products to residential and commercial customers. Greg Taffet, Head of IT at U.S. Gas & Electric, says the company is currently exploring a possible transition to a cloud platform that could replace both the private cloud and its existing data centers.

Currently, the company utilizes a private cloud and server mix at the heart of its data strategy, but Taffet explains that the team is increasingly exploring further cloud architectures that promote scalability, storage redundancy and security. He says the existing cloud agility of both companies has already helped to streamline the data integration following the acquisition itself while the traditional scalability and cost efficiencies of the cloud continue to provide benefits. Now, the team is looking to take a step further.

"We are primarily using the cloud for easy shared access by everyone for our applications," he says. "Especially since the merging of the two companies, from an integration point of view, the cloud has been immensely helpful since there are so many people in different locations. Additionally, the applications we are leveraging use a significant amount of storage, so the storage capacity of the cloud is key."

He explains that they also leverage the cloud for CRM and their website, but the primary benefit of using the cloud is the ability to continue to scale without having to worry about hardware. While U.S. Gas & Electric currently uses a private cloud, the bulk of their data is in SQL servers .

In addition, key regions contributing to the company's footprint—including Texas, Florida and the East Coast—have been devastated with recent hurricanes, further underlining the need for reliable storage and the potential for leveraging the public cloud.

"Given that so many of our locations are targets for major hurricanes, being able to have transparent redundancy and safety is important, especially now that we're getting to the size where the scalability, safety, and redundancy are ever-more significant," he explains.

Taffet says the company currently handles data at the scale of hundreds of terabytes, and the traditional boundaries between structured and unstructured data are starting to blur.

"Even our unstructured data is now more structured; while much of our data was once held in separate files and not indexable, more and more of it is now becoming integrated," he says. "We're able to have more structured

data in email, and it is migrating into our systems directly as people communicate more through email, text and other means. The amount of unstructured data and documents is proportionately less. Documents that we create ourselves might be considered unstructured data, but any letters and correspondence that have significance can be categorized and structured."

Looking to a possible future that could include the management of applications in a multi-cloud architecture, Taffet says control and flexibility will become important.

"There's always a challenge that the platform you choose will do something in the future that causes you to have to react," he says. "When you control everything, you can make sure you know what's going on, but if you're using someone else's infrastructure, you're always at the risk of them going out of business, being acquired or changing their mind. In addition, in this SaaS, IaaS, hosted environment, the next iteration could be something that is different from what is in our best interest."

To combat this concern, he says any platform that can facilitate and simplify migrating applications and data from one provider to another could offer added confidence in this area.

Regarding the future of cloud itself, Taffet warns that the evolution of data technologies in general should not be assumed to be linear.

"To me, this is a continuously evolving circle," he says. "Many years ago, we were involved in the time-sharing industry, the minicomputers, the mainframe computers, the microcomputers, and now desktops and the cloud. In fact, I see the cloud as the next version of what used to be called 'time-sharing.' As technology evolves, we will choose the right platform to make the best use of that technology. However, we have also switched back and forth multiple times from centralized to de-centralized. It is an ever-changing journey, and we need to be able to change with it."

DAVID KLINE
Chief Technology Officer and Executive Vice President
Viacom

As a leading global entertainment company, Viacom delivers content from its world-class brands through television, motion pictures and a wide range of digital media in 170 countries. Its media networks include BET, MTV, VH1, Nickelodeon, Nick at Nite, COMEDY CENTRAL, Centric, CMT, Spike, TV Land, Logo and more than 160 networks around the world. In addition, digital assets such as Neopets, Addicting Games, BET.com and Quizilla offer compelling and interactive content, and Paramount Pictures Corporation offers audiences access to a huge library of top films. Viacom serves an ever-growing population of kids, tweens, teens and adults who want their favorite media and entertainment 24/7. As Chief Technology Officer and Executive Vice President, David Kline's responsibilities include the technology strategy around all of Viacom and its subsidiaries, including broadcast operations and distribution, content delivery and the company's global enterprise systems and applications. His purview encompasses approximately 1,200 employees and 90 different applications running on 10 different platforms around the world.

Viacom manages oceans of content and data through an increasingly sophisticated hybrid cloud architecture. Kline believes the cloud's value for Viacom is less about cost savings and more about the agility and flexibility it provides in responding to user demand. The cloud, he says, enables technology usage that is much more effective than a traditional data-center structure, with the ability to deliver added capacity on demand.

Increasingly, the ability to enable self-service will be a crucial aspect of cloud agility, leveraging emerging technologies like machine learning and IoT.

"Self-service enables us to leverage new technologies to create the art of the possible," he says. "As the world becomes more interconnected with 5G and IoT, and as we get into more technologies like augmented reality, machine-learning and artificial intelligence, the use of these self-service models in the cloud will become increasingly important."

Following a deep investigation of options starting in 2012, Viacom started migrating its vast multi-platform stack into the cloud environment in 2014 using Amazon's S3 environment.

"With the exception of our video delivery, which will move to the cloud at the end of this year, we are 100-percent on the cloud when it comes to usage," Kline says. "The main reason for that migration was the ability to burst and the flexibility to create environments on the fly. This is especially relevant when we host live events, such as MTV's Video Music Awards. We get a huge amount of usage coming to our sites, weighing heavily on the digital footprint, and it is hard to keep up when you're on-premises because you have to pre-purchase or lease equipment without knowing what to expect. On the other hand, in the cloud, I can spin it up and down in a virtual environment within seconds."

Not only does the cloud offer more flexibility, but it also provides greater reliability. Kline emphasizes that a huge benefit of their current cloud architecture is that it has enabled more functional data collection and a deeper understanding of workflow and usage.

"We are significantly more functional in collecting data from workflow and usage and in creating additional opportunities to leverage that data for improved experience," he explains.

However, despite the significant opportunities offered by the cloud, Kline warns that without efficient management, cloud services can attract costs that can be higher than the cost of physical data centers.

"There are heavy costs for ingress and egress from the cloud," he says. "If you are not managing it properly, those costs can get away from you more than they might on-premises."

While the cloud is not yet a cost-savings opportunity, Kline believes the cloud triggers business opportunities due to the confidence gained from new reliability. Indeed, starting in 2015, the company began investing in enterprise systems and now has a private cloud-dominant hybrid strategy.

"We are sticking mostly with a private strategy today because of concerns over cyber-security and understanding our content and data," he explains. "In some cases, public is becoming more robust, and it is a little less expensive because you are in a more tenant-shared environment. While we are trying to figure out how we can be more public rather than private in the cloud for distribution, that shift is still to come. Hybrid was the proper opportunity for on-premises and the cloud."

Kline says his ultimate goal is to create a hybrid private cloud architecture that interacts with a single, centralized physical data and technology center and is always on the hunt for management tools that make it easier to migrate to alternate cloud platforms.

"We are currently migrating our HRMS systems and financial systems to the cloud," he says. "Both are cloud-ready, and we will be moving more and more of those aspects of corporate enterprise resource planning (ERP) into the cloud. Our five or six data centers are getting whittled down and integrated into one, so we will have to build a hybrid cloud architecture within that data center. We have both on-premises and cloud infrastructures, and they connect and interact as if they are one location. The goal for me is to have the ability to do burst, self-service and disaster recovery and to be able to do that for all our broadcasters."

Still, the ability to effectively migrate to a single data center and an effective hybrid-cloud strategy is challenging, especially considering the scale of Viacom's unstructured data.

"The scale of Viacom's unstructured data is in the petabyte range, and this enormous volume is still growing significantly each year," he says. "The 90 apps on our 10 different platforms collect a lot of data, and then there is the data associated with legal rationalization and following proper compliances, as well as data that we use internally when we are working on various projects associated with work on the ERP side or financial side."

Kline says the replication of unstructured data happens daily in certain areas but only quarterly in others, depending on the need. He adds that the ability to efficiently replicate data subsets between clouds—rather than in bulk—represents a valuable new capability.

"Tagging in metadata is certainly important," he says. "One of the storage challenges we are currently trying to figure out is how to use semantics to figure out reference opportunities and then determine how that should be stored. For example, how can that data be used more effectively for personalization, or how can it be used if I am trying to figure out how to make a correlation to do an algorithm on consumption? There is a lot of opportunity from that perspective."

Kline's team also delves into the object storage space, but he says it is not yet central to the strategy. They are still investigating the ideal platform, and while they have begun to use object storage, it has only been used in very specific instances and has not yet been widely adopted.

To determine how the team views data in the hybrid fashion—whether structured, unstructured or semi-structured—Viacom has a data science team led by Chief Data Officer Kern Schireson. The team not only works to set up optimal viewing structure, but also provides easy-to-understand raw data for further analysis by the team. When it comes to the broader data strategy, Kline says perceived risks around "cloud vendor lock-in" have triggered caution among the team.

"Things that are native to the cloud work great. Things that are not trigger caution as you do not know what to expect, so you must be very diligent in your use case," he says. "If Amazon had an all-out collapse and disappeared tomorrow, what would happen? We have contingency plans for that. However, the transferability of certain pieces of content or data is not always as easy as it would appear. You have to do some work on the back end to align these things. Whether I am transferring something from the Microsoft Cloud stack to the Amazon stack or to my on-premises system, you have to make sure that you have process and rigor around that."

Despite the complexity, Kline looks toward the 2020 timeline with great expectations in terms of the future of cloud agility and its ability to provide unique business opportunities.

"I believe the cloud will become more of a commodity-based business—there will be other new things that will come along with it, such as new tools and other supplemental technologies, but as it becomes more commoditized, it's going to become much more effective for overall usage. And of course, with 5G, IoT and the growth of unstructured data, cloud is going to be explosive. It's going to be an amazing thing to watch as AI and machine learning start to really become a reality. We're excited about the opportunities and what it's going to do for our content. And hopefully, it will excite our viewers and make their lives better—that's our ultimate goal."

OUR SPONSORS

ABOUT THE BPI NETWORK

The Business Performance Innovation (BPI) Network is a peer-driven thought leadership and professional networking organization reaching some 50,000 heads IT transformation, change management, business re-engineering, process improvement, and strategic planning. It is dedicated to advancing the emerging roles of the Chief Innovation Officer and Innovation Strategist within today's enterprise. The BPI Network brings together global executives who are champions of change within their organizations through ongoing research, authoritative content and peer-to-peer conversations. These functional area heads (operations, IT, finance, procurement, sales, marketing, product development, etc.) and line-of-business leaders are advocates for Innovation as a fundamental discipline and function within 21st Century organizations. They seek to demonstrate where and how new inventive solutions and approaches can advance business value, gratify customers, ensure sustainability and create competitive advantage for companies worldwide. For more information, visit www.bpinetwork.org.

ABOUT DBM CLOUD SYSTEMS

DBM Cloud Systems is a Silicon Valley-based company pioneering an intelligent software platform which addresses three critical Cloud data challenges: A technical problem around the movement of data between different Clouds; a business problem around out-of-control Cloud spend; and the regulatory compliance requirements that company's face in storing data. With DBM software, companies gain management insights into where their data is located, choice around which datasets to move to access critical Cloud-based applications and true Cloud optimization and pricing. DBM software is hardware and Cloud agnostic bringing competitive advantages to IT organizations challenged with the management, cost and growth of their unstructured data. For more information, visit www.dbmclouds.com.

PARTNERS AND AFFILIATES

ABOUT NETLINE

NetLine Corporation empowers B2B Marketers with the reach, technology, and expertise required to drive scalable lead generation results and accelerate the sales funnel. Operating the largest B2B content syndication lead generation network, NetLine reaches 125 million unique visitors and processes more than 700 thousand leads monthly across 300 industry sectors. NetLine's AudienceTarget™ technology drives prospect discovery, quality customer lead acquisition, and buyer engagement from real prospect intent as professionals consume content directly across the network. Superior quality, on demand access, and advanced campaign reports enable all clients to achieve lead generation success. Founded in 1994, NetLine is privately held and headquartered in Los Gatos, California. Successful B2B Marketers Start with NetLine, visit www.netline.com.

ABOUT TRANSCRIBEME

TranscribeMe is a new kind of voice-to-text transcription company. Based in the San Francisco Bay Area and New Zealand, it provides best-in-class transcription accuracy, turnaround times and rates by using a hybrid model of speech processing technology plus a crowd-sourced human transcriber platform. Industry leaders such as VMware, GigaOm, Cisco, Ipsos and other business and marketing professionals use this service to convert their audio and video content into an easily shareable, searchable and profitable format. With superior confidentiality and accuracy, TranscribeMe's voice-to-text services allow for on-the-go transcription via their mobile app, as well as perfect recall and rapid analysis of critical content, including conference speeches, meeting notes, interviews, sales calls and more. Learn more at www.transcribeme.com.