ORACLE®

(intel®)

Modernize Data Management

Your Platform for a data-driven future.

Insights from an independent global survey of 730 senior IT professionals revealing that, in the cloud, companies gain a greater depth of data insight.

Longitude | THOUGHT LEADERSHIP SPECIALISTS

Introduction:
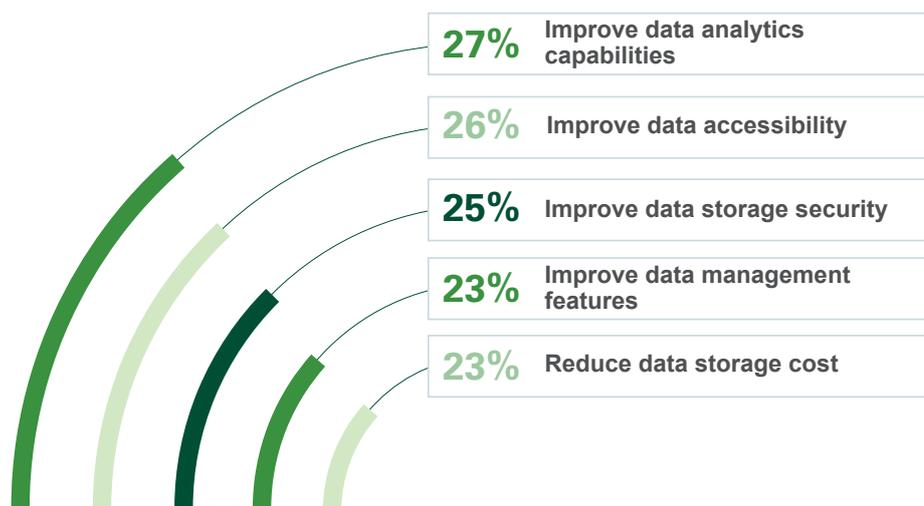# Is Data Management
Transformation Worthwhile?

Data analytics has the power to transform the enterprise. Without an effective database management strategy in place, however, any analytics strategy will struggle in the face of the predicted data deluge.

This is borne out by survey analysis from Longitude Research, which shows that effective cloud-based data management is improving the way the enterprise uses and exploits data. For instance, eight in 10 cloud-mature companies say they now have a greater ability to conceptualize and experiment with different data models because of cloud's ability to create new environments and multiple databases quickly and cost-effectively. 77 percent say they also enjoy better insights from their data—and this is their primary reason for moving their data management into the cloud.

In addition to increased experimentation and better insights, cloud-based data management introduces another powerful feature: automated processes. Automating operational database-management tasks allows companies to shift resources away from mundane database maintenance, and ultimately, extract more value from their data to drive innovation, business growth, and efficiency.

What factors motivate you to conduct data management to the cloud?

27%	**Improve data analytics capabilities**
26%	**Improve data accessibility**
25%	**Improve data storage security**
23%	**Improve data management features**
23%	**Reduce data storage cost**

What were/are the key motivators driving you toward conducting data management in the cloud?
Respondents selected up to three out of 10 possible motivations. Chart above shows most frequently selected responses.

Tackling Transitional Issues

Before businesses can fully realize the potential of the cloud and automation, they have to address key transitional issues and misconceptions about the fundamentals of cloud-based data management. For example, the decision to move data management to the cloud is hindered by the perception that migration could lead to a loss of control over the data management process; a quarter of companies in the survey voice concerns about a loss of business continuity.

To address these fears, proactive companies are asking providers of cloud-based data management solutions for near-seamless integration across different platforms, IT environments, and legacy software systems.

They also demand security and scalability, the support of structured/unstructured data and real-time data analytics, the ability to consolidate all existing and new databases, and increased data accessibility. Critically, they also expect providers to deliver these solutions via a private/public cloud combination or hybrid model.

Need for speed.

The majority of companies say their main priority is to move their databases and data warehouses to the cloud. Speed of deployment, however, remains an issue: the quicker an enterprise can launch its database in the cloud, the sooner it can delve into data to discover essential insights.

As a result, companies are partnering with cloud providers that offer a suite of database cloud services, including migration services. These make it possible for companies to quickly, and at a reduced cost, move their most valued assets—their data and data warehouse—to the cloud, while creating new ones rapidly. They are also enjoying secure access to their data, as well as the familiar analytics tools that enable them to start data mining immediately.

Reaping
the Rewards

The survey shows that the majority of respondents using cloud-based data management—especially cloud-mature companies—experience better performance.

The connectivity, standardized analytical toolsets, and predictive intelligence offered by cloud providers enable the enterprise to use both structured and unstructured data to garner insights that would otherwise remain hidden in on-premises, siloed systems.
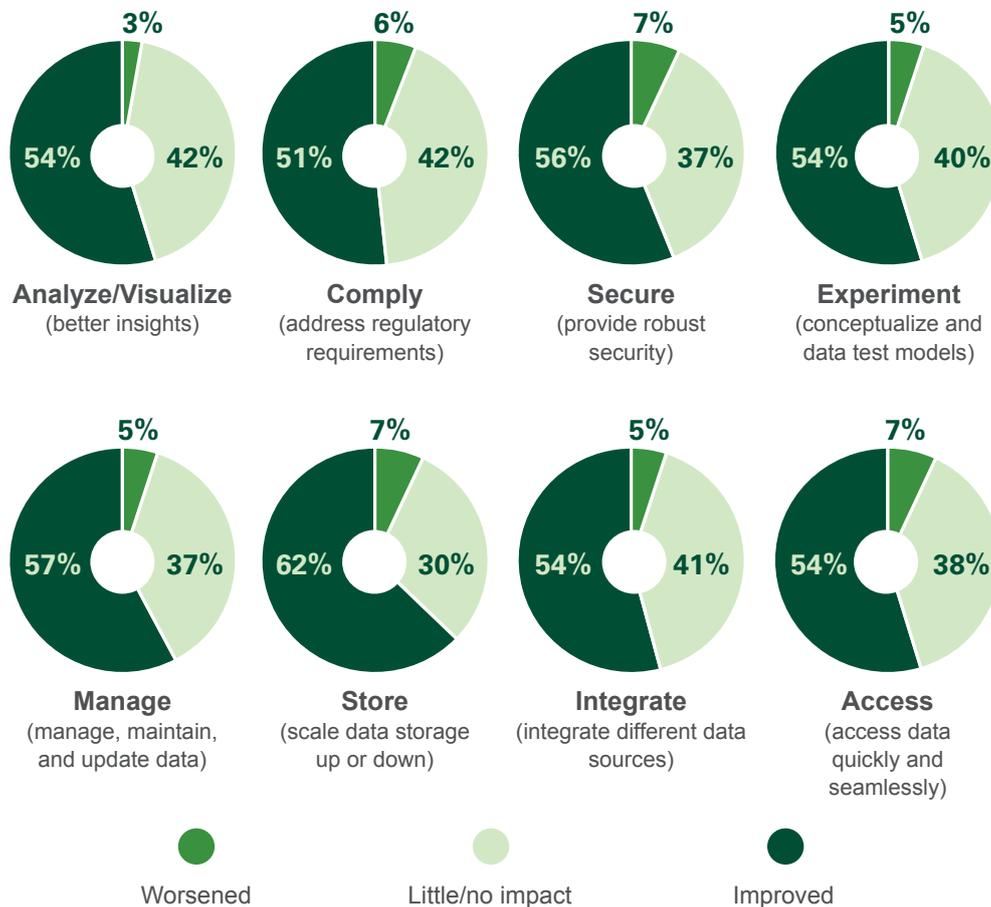
"There is wisdom hidden in data," says Monica Kumar, Oracle's vice president, database and big data cloud product marketing. "It can help companies reduce costs, make

data-driven decisions more quickly, be more competitive, be more innovative, improve the revenue streams, and improve customer satisfaction."

According to the survey, 51 percent of organizations say that managing data in the cloud has improved their ability to address data privacy and regulatory requirements. This is because data access itself is more efficient. "It's not always just about the performance of products and services, but how fast customers can connect to the cloud," says Kumar.

That speed is now more accessible than ever: some providers are making the move from an on-premises database model to the cloud easier by using portal interfaces and customized suites of APIs.

Cloud data management impact (total*)

3%	6%	7%	5%
54% 42%	51% 42%	56% 37%	54% 40%
Analyze/Visualize (better insights)	**Comply** (address regulatory requirements)	**Secure** (provide robust security)	**Experiment** (conceptualize and data test models)
5%	7%	5%	7%
57% 37%	62% 30%	54% 41%	54% 38%
Manage (manage, maintain, and update data)	**Store** (scale data storage up or down)	**Integrate** (integrate different data sources)	**Access** (access data quickly and seamlessly)

● Worsened   ● Little/no impact   ● Improved

*All the respondents in the sample who were qualified to answer this question.

The research reveals other areas where companies with high cloud exposure benefit from cloud-based data management: development and innovation; scalability, speed and self-servicing; security and maintenance. It can also help move valuable members of the workforce from micro work to macro.

"Part of the 'lift and shift' strategy that really makes sense for us is that developers aren't locked into complex means of gaining access to data," says Michael Sherwood, director of innovation and technology, City of Las Vegas. "We now have the freedom and flexibility to work on our systems and provide data to our customers from anywhere in the world."

Development and innovation.

More than six in 10 companies say their innovation levels have risen, or are expected to rise, since they moved development to the cloud. "Huge data opportunities are emerging from advances in areas such as artificial intelligence and automation, and companies really need to be in a position where they can experiment quickly and cheaply," says James Stewart, independent consultant and former deputy chief technology officer for the UK government. "This becomes possible if you've done your cloud migration right."

At the heart of these changes is the way the cloud can spin up new environments quickly and provide new databases to support development testing, analytics, and big data projects. For example, it enables companies to standardize agile app development and create proofs of concept. This, in turn, means they don't have to procure costly hardware internally or build new infrastructures; instead, they can roll out and test concepts quickly in the cloud.

> "Whether it's speed in launching new applications, reaching into new geographies, or making the most of deployed infrastructure, faster time-to-market is a huge benefit of the cloud"
>
> Jeff Wittich
> Director of Cloud Service Provider Business
> Intel Corporation

Scalability, speed, and self-servicing.

Faced with the huge increase in data expected over the next decade, even cloud-mature companies are questioning how they can continue to grow user bases while keeping their costs in check. But cloud's versatility gives businesses a data management infrastructure that is scalable—capable of being ramped up during busy periods and scaled back when it's not needed. 78 percent of the cloud-mature companies in the survey report improved access to data using cloud. And instead of budget-sapping fixed costs, companies only pay for what they use.

To aid database optimization further, advanced cloud-based database solutions use algorithms to maximize performance according to how databases are used. As a result, companies benefit from a data management platform that is automatically tailored to their specific needs, on a rolling basis.

Security and management.

Security is a traditional concern surrounding cloud-based data management—organizations worry that the online space is fraught with risk compared with a traditional on-premises model. In reality, the opposite is true. The research finds that cloud-mature companies consider their ability to provide robust data security has improved or will improve by managing data in the cloud.

With autonomous database cloud, patches and security updates are applied automatically and not put at risk due to oversight or human error. "We believe that the same data security rules, the same speed, the same reliability, the same availability rules apply to cloud data management as they do in on-premises data management systems—because that's what customers expect," says Oracle's Kumar.

Cloud-mature companies also benefit from new adaptive security and management tools that use machine learning algorithms to predict and detect threats, rapidly troubleshoot performance anomalies, and address capacity planning for project-based and seasonal changes. Critically, these algorithms not only ensure peerless security and performance, but can also carry out automated provisioning, backup, patching, updating, and regular maintenance without incurring any downtime.

For example, Oracle's Autonomous Database Cloud, which is built on the next-generation Oracle Database18*c* software, uses adaptive machine learning to automate database management and tuning. Not only does it automate many manual tasks, it also guarantees customers 99.995 percent availability, with planned and unplanned downtime kept to an average of less than 2.5 minutes per month—or 30 minutes per year.

"We're seeing an increasing trend in the automation of software," explains Kumar. "As more data is being managed in the cloud, we expect to see many traditional database operations such as patching, updating and upgrading, tuning, and monitoring to be performed autonomously rather than manually."

In turn, this will free up IT and DBAs to focus on innovations rather than database creation and maintenance—not that such roles will be negated. "Given that the volume and variety of data is exploding, there will still be the need for DBAs, but they won't have to waste time on mundane and manual database creation tasks, which can take months," says Kumar. "They can literally do it in a few hours, if not minutes."

From micro to macro.

Automation of database management is already helping businesses move away from the time-consuming, resource-sapping demands of data maintenance. This shift will become even more relevant for business strategy optimization and development in the future. The research suggests that database management will be used as part of mission-critical policy-making for business growth.

The benefits of stripping away "busywork" via automation is filtering down to individual employees. As the cloud permeates every aspect of data management and analytics, it frees up personnel who have been shackled to database management and maintenance. Now, they can focus on higher-level aspects of their roles, increasing productivity, extracting more value from their data, and generating innovation for the benefit of the business.

"The cloud is maximizing our efficiency by allowing our employees to work on the things that matter," says City of Las Vegas' Sherwood, "and spend less of their time on day-to-day operational and maintenance items or managing hardware and hardware-based applications."

Case study: Dodream System

The opportunity.

Korean IT service developer Dodream System wanted a new database platform to streamline the management and delivery of its electric library system to overseas customers.

How data management got better.

The Oracle Database Cloud Service freed up Dodream's in-house IT personnel to focus on improving core information systems, while Oracle handles routine database chores, including the automation of database administration tasks.

The move gave Dodream improved reliability for critical applications, lower deployment, labor, and maintenance costs, and a four-fold decrease in the

computing resources required onsite. The company has also experienced an increase in the memory and storage capacity of its e-library system, and has lowered the operating costs for 100 customer sites. Critically, Dodream now has room to grow, because it can manage up to 400 customer sites as and when required by exploiting Oracle Database Cloud Services' scalability.

> "By migrating to Oracle's cloud platform, we have increased e-library system capacity by four times and improved the reliability and efficiency of our service delivery"
>
> Tae-Seok Lee
> Chief Executive Officer
> Dodream System

Source: www.oracle.com/customers/dodream-1-dbcs.html

Conclusion:
Ready for the
Data-driven Future

The research shows that cloud-mature companies have plotted a course to database management success and are preparing themselves for the data-driven future. The real challenge now is what less cloud-mature companies should expect from a potential provider as they consider transitioning fully into the cloud.

Only the most progressive cloud providers can overcome clients' barriers to cloud implementation. They will do this by offering rich portfolios of skills and toolsets that are flexible enough to cater to clients' exacting needs. The research reveals that by allowing the cloud, automation, and providers to "take the strain," companies gain a greater depth of data insight, increase innovation, and streamline existing workflows and processes. Ultimately, cloud platforms leave the C-suite free to focus on what it does best: running a successful and growing business that is fit to face the future.

For further information,
visit: oracle.com/goto/yourplatform

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