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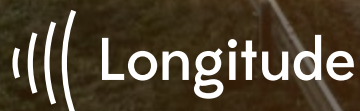


# Move Workloads to the Cloud

Your Platform for flexible migration.



Insights from an independent global survey of 730 senior IT professionals revealing organizations enjoy a significant positive impact on their business as a result of migration.



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# Introduction: Enhancing Innovation and Competitiveness

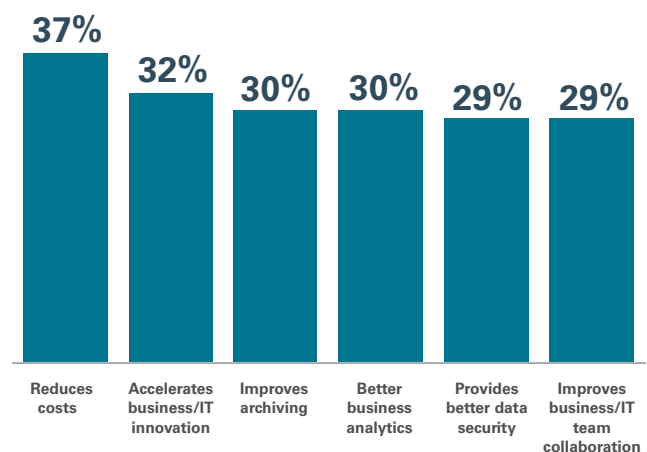
## What to move, how to move it, and when? For organizations migrating their enterprise workloads to the cloud, strategy and sound execution are key.

Whether they're looking to the cloud to meet specific operational goals (such as reducing dependency on the corporate data center) or to scale and accelerate innovation (by accessing resources on demand), organizations often worry about whether the public cloud will meet the enterprise requirements that sit behind their production and mission-critical applications.

Companies considering moving enterprise workloads to the cloud should be encouraged by the findings of the Longitude survey: the majority of organizations report a significant positive impact on their business as a result of migration. This was particularly pronounced—in application performance, governance and integration—among the 12 percent of organizations in the survey that are cloud mature.

The minority of organizations that have fully executed cloud strategies go further. More than seven in 10 of these organizations say that moving their applications and workloads, and incorporating the cloud as part of their DevOps efforts, are integral to their organization's competitiveness.

### Key benefits of moving applications and workloads to the cloud



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.

# Migration Motivations

Each business moves its workloads to the cloud on its own, terms and for a range of reasons.

Among all organizations in the survey, these were the top five motivations, chosen from a possible 12:

- To save on IT costs (33 percent)
- To improve IT resource management (32 percent)
- To update IT infrastructure (27 percent)
- To improve the speed of innovation (25 percent)
- To improve customer/client interaction (24 percent)

Among cloud-mature firms (those with, on average, 70 percent or more of their applications in the cloud), the main motivations are to accelerate innovation and improve IT resource management, which reflects a core shift in strategy rather than a tactical decision based on costs.

Databases that are partly in the cloud and partly on premises do not run effectively, so it is no surprise that priority workloads for migration are data-related: databases (55 percent for all organizations and 77 percent for cloud-mature firms), and data warehouses (52 percent and 64 percent respectively).

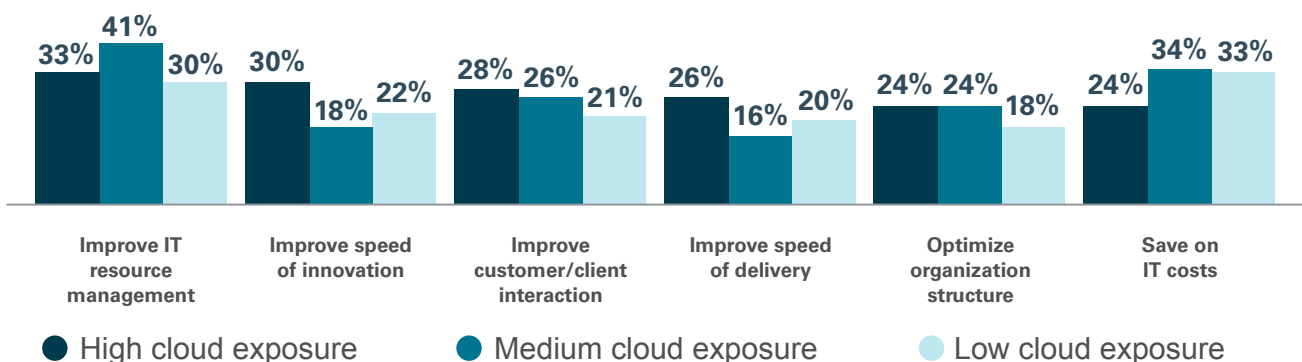
The cloud provides fast, easy access to scalable database resources, which companies can use both for production and as sandbox environments for further analytics or big data projects that are designed to monetize data.

**“Among cloud-mature firms\* the main motivations for moving workloads to the cloud are to accelerate innovation and improve IT resource management.”**

Organizations such as the National Health Service (NHS) in the UK rely on good access to data and insights, as it can help with the services they provide, the costs incurred and, more importantly, patient outcomes—as Alistair McDonald, chief executive of the NHS Business Services Authority, explains.

“Data is hugely important to the NHS—it needs to understand where all its datasets reside. And we need to start sharing data more across the NHS,” he says. “We aspire to move up the value chain. We want to use our data and analytical capability to save money in the wider NHS. And we’re starting to do that, but our real aspiration is to make a difference in patient care.”

Chart showing motivations for cloud migration (cloud exposure\*\*)



\*Those with, on average, 70 percent or more of their applications in the cloud.

\*\*The research analyzes the proportion of respondent organizations' applications that are currently in the cloud—their “cloud exposure.”

# Get Selective

**As James Stewart, an independent consultant and former deputy chief technology officer for the UK government points out, it is tempting to migrate every workload in a “big bang” approach in order to get the maximum benefits straight away. But this is not practical. Instead, companies should answer critical questions that will determine their best starting point.**

They should evaluate the complexity, criticality, age, and relevance of each workload. Was it specifically developed for an on-premises environment? Is it virtualized or not? Then, they should ask how quickly they want to migrate those workloads.

The only way to do this is to measure the performance of the data, apps, and user experiences on premises, and ensure these levels will be achievable in a cloud or hybrid environment—with the goal of improving performance. This way, organizations can make adjustments as they move workloads to the cloud.

Jeff Wittich, director of Intel Corporation’s Cloud Service Provider Business says that the company looked at 20 categories of workloads and rated them against both business criteria as well as four specific technical criteria: performance, security, integration, and data volume. After answering specific questions about each workload—for example, “How important is latency?” and “How much data is stored in each application?”—Intel recommends a migration path (public or private) corporations should take for different workloads.

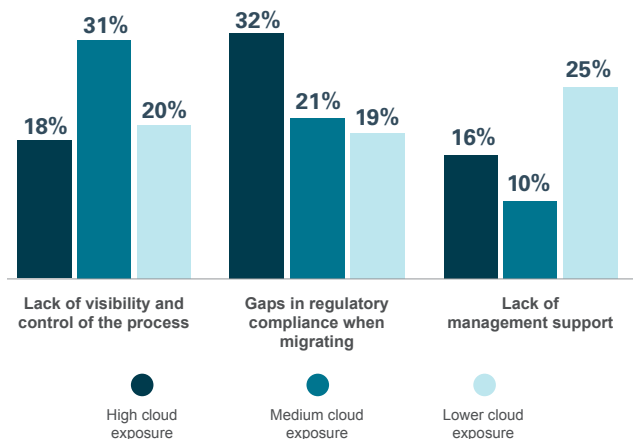
Every business is different. For Deutsche Telekom, usage is the key consideration. “Volume of usage is very different over the year, over the seasons, and also on a daily and monthly and weekly pattern,” says Michael Schlitt, VP service and operations management at Deutsche Telekom IT. “We’re asking how we can use the elasticity of cloud infrastructure to make sure that at any given point in time, we only use and pay for the infrastructure capacity that we really need.”



# Management, Security, and Complexity

Part of the planning and exploratory process is identifying a leader within the organization who can establish the goals of migrating workloads to the cloud, and the strategy to get there. Crucially, businesses need support from management—particularly as different divisions within the company will have to coordinate their plans, and may need budget to do so. Each division’s plan is likely to affect others.

## Barriers to cloud migration



Compared with the cloud-mature companies, a higher proportion of firms with lower cloud exposure cite lack of management support as a barrier to migration. This is unsurprising: to become cloud mature, a company would have needed that support from the outset—unless, of course, they were a “born-in-the-cloud” company.

Cloud migration is not a checkbox exercise; it must be seen as a huge business change that is not restricted to the IT department. Support from other C-level executives is essential: only by working together can the senior team come up with a timeline for the migration process and clarity on how each department will be affected.

The migration process could also be declined or derailed because of a lack of understanding of what the move to cloud computing means (a quarter of firms with lower cloud exposure point to a lack of skills to migrate to the cloud as a challenge) and uncertainty around costs and return on investment (a quarter of all organizations cite lack of visibility and control of the process as a potential barrier).

It makes sense to migrate machine data and the applications and security around it to the cloud, for a variety of reasons. First, since logs are voluminous and organizations require significant computing power to efficiently explore them, cloud is the best way to store this data so that it can be analyzed for operational and security reasons.

Second, while log data has been in use for some time, user experience and application configuration data is harder to collect and analyze, due to a need to change application code. However, next-generation systems management solutions have solved this issue, and are able to apply cloud-based machine learning to the entire dataset across logs and other data sources.

The benefit is that organizations can connect user activity to application activity and transactions—right down to the infrastructures that support them. Ultimately, this results in faster root-cause analysis and troubleshooting of both operational and security anomalies. Machine learning can also help organizations make better forecasts about operational performance and availability, or security vulnerabilities and future threats.

\*The research analyzes the proportion of respondent organizations’ applications that are currently in the cloud—their “cloud exposure.”

## A skills minefield.

Migrating to the cloud is a highly technical move.

It doesn't just require a skill set that's based on the actual act of migrating; it also demands knowledge of which workloads should be moved to the public cloud, and which should remain on premises. But these skills aren't readily available. Many IT professionals are attuned to the machinery of their company's own IT infrastructure—its own hardware, software, and tools.

"Now, when you look at cloud, many of those systems don't translate, or you have to do the same operations through a different set of tools, provided by a different vendor, that requires you learning from the ground up," Tom Bressie, vice president, Oracle Cloud.

For example, transferring a workload using a "lift and shift" may be unsuccessful if the underlying environment won't support the application as it was originally written. Avoiding this rework requires extensive knowledge of the workload itself, the new cloud environment it's intended to be run on, and the processes involved in migrating and maintaining it once it's migrated.

Even many of those who do have cloud knowledge may not have been involved in the migration process itself. Companies are tasked with finding both staff with the skills to migrate workloads, and project managers who understand the process.

Just under a third of organizations say that costs for training and consulting are a barrier to migrating workloads (along with the costs of cloud-specific tools). But this is a necessary investment if a company wants to avoid wasting resources in the long term.

## Security concerns.

Cloud computing inevitably sparks a conversation about security, compliance, and regulation.

The EU General Data Protection Regulation (GDPR) has given companies even more reason to make sure they're compliant with regulations. So it comes as no surprise that this was one of the biggest concerns for respondents—particularly those in financial services and cloud-mature firms—when migrating to the cloud.

For many, it meant moving data centers from the US to the EU. According to Conny Björling, head of enterprise architecture at Skanska, this should be easier in the cloud, especially with vendors that have the necessary presence.

This benefit comes from a broader strategic partnership between customer and vendor, which Björling advocates. "They [the vendor] can't just meet you once a year and sell you some licenses," he says. "You have the opportunity to work much more closely with them—to influence their roadmap and fully understand their approach to security."

This is just one factor for companies to consider when they choose a cloud provider. In addition to the compliance and support areas, businesses need to consider the service-level agreements offered by the vendor, as well as security.

Lack of visibility and control over the process can cause security issues. Without knowing where data lives, it may be harder for enterprises to identify when a breach has taken place, or how secure it is at any particular point. Nearly a third of C-level IT decision-makers (32 percent) consider this to be a key challenge.

**"For many, it [EU GDPR compliance] meant moving data centers from the US to the EU. According to Conny Björling, head of enterprise architecture at Skanska, this should be easier in the cloud, especially with vendors that have the necessary presence"**

## A third way.

When they are ready to migrate to the public or private cloud, companies should be aware of a third option: some workloads and applications can stay on premises, and others that may be more complex to migrate can be worked on after the initial workloads are migrated.

This approach demands sufficient deployment choices, compatibility between on-premises and cloud systems, and enterprise-level management capabilities. Organizations will have to carefully consider a vendor that can help them to migrate traditional workloads to the public cloud. Ideally, the cloud service provider will offer centralized monitoring and management tools that incorporate both on premises and cloud—thereby eliminating the need for specialized skills and training.

# Conclusion: No Standard Approach

The benefits of migration are hard to ignore. But that doesn't mean there's a benefit to migrating every workload or application.

Organizations have to undertake thorough analysis, considering cost, risks, security, control, usage, and performance for every workload or application.

Those with an intelligent, selective, long-term migration strategy, informed by the right expertise, will be able to divert more of their investment and resources from managing infrastructure on premises to what really matters: growing and developing their businesses.

For further information,  
visit: [oracle.com/goto/yourplatform](https://oracle.com/goto/yourplatform)

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