



Five challenges to cloud adoption and how to overcome them



Five challenges to cloud adoption

01

Data sovereignty regulations

Am I allowed to move my data to the cloud? Organisations are worried about what data they can legally move to the cloud, but there may be far less restrictions than many believe.

02

Security

Is my data safe in the cloud, and will others access it? The perception of reduced security in the cloud is a challenge for many organisations, but moving to the cloud may generally increase security, contrary to common belief.

03

Vendor lock-in

Will I be stuck with a single vendor or technology when I migrate? A concern for many organisations is the idea of being locked in to one cloud vendor, architecture or set of tools. Setting up the architecture to maximise portability is crucial.

04

Skills gaps

Does my team have the skills to migrate to and operate in the cloud? A pressing challenge to cloud adoption is the skills gap, and a clear upskilling and resourcing strategy is key to success.

05

Existing data centre investments

Will I reuse or lose all my data center and technology investments? Investments that have already been made in data centres are posing an adoption challenge for many organisations, but the Total Cost of Ownership (TCO) of moving to the cloud may be worth it, despite the initial investment and effort.

Global cloud trends

The COVID-19 pandemic has accelerated the need for cloud services as more companies have been forced to expedite their digital transformation. Global cloud spending rose by 37% during the first quarter of 2020 and industry analysts Gartner¹ have forecast spending to grow a further 18.4% in 2021, reaching \$304.9 billion by the end of the year. Qatar is no exception to this global trend, with both Google and Microsoft building major regional data centers in Qatar, the country is fast becoming a regional cloud hub.

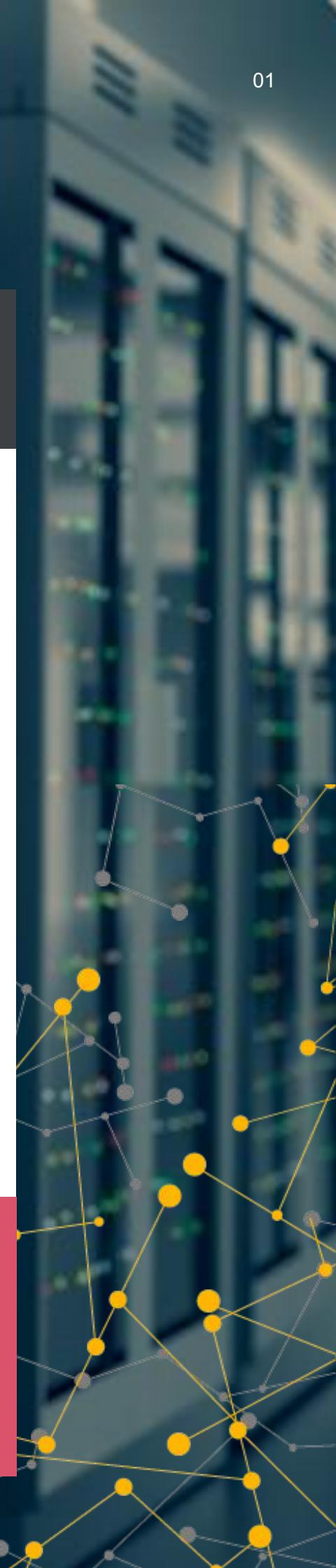
Even without the pandemic, however, cloud computing would likely be on the rise. Its many benefits, including reduced costs, improved service quality and increased flexibility, are driving a transformative new business model. In addition to this, by providing access to the newest technologies and innovations such as artificial intelligence and machine learning, cloud technologies help companies stay ahead of the competition.

However, despite these benefits, Qatar's private sector in particular has struggled to embrace the cloud with low adoption rates of just 3%, despite 76% of businesses being aware of its benefits. This is due to a number of challenges associated with cloud adoption. Here are the most pressing challenges we see - and how you can work to solve them.

¹Gartner, 2021, 'Forecast: Public Cloud Services, Worldwide, 2018-2024, 3Q20 Update'

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3%
embraced the cloud



01

Data sovereignty regulations

A commonly cited barrier to cloud adoption are data sovereignty regulations. Both companies and government departments within Qatar worry about what data they are legally allowed to move to the cloud. Yet although there are industry and government department specific policies, there is no blanket rule forcing data to remain within Qatar and far less restrictions than many companies believe. In an effort to alleviate these concerns, MoTC published an advisory paper in January 2021, on the various government regulations that are currently in place and transmission of data outside of Qatar. Whilst every industry and government department will have their own specific requirements, it is often cheaper to clarify these concerns by seeking legal advice rather than by doing nothing and potentially losing out on the many benefits offered by cloud technologies. Of course, with Microsoft and Google both building data centers within Qatar, this won't be much of a challenge in the years to come.

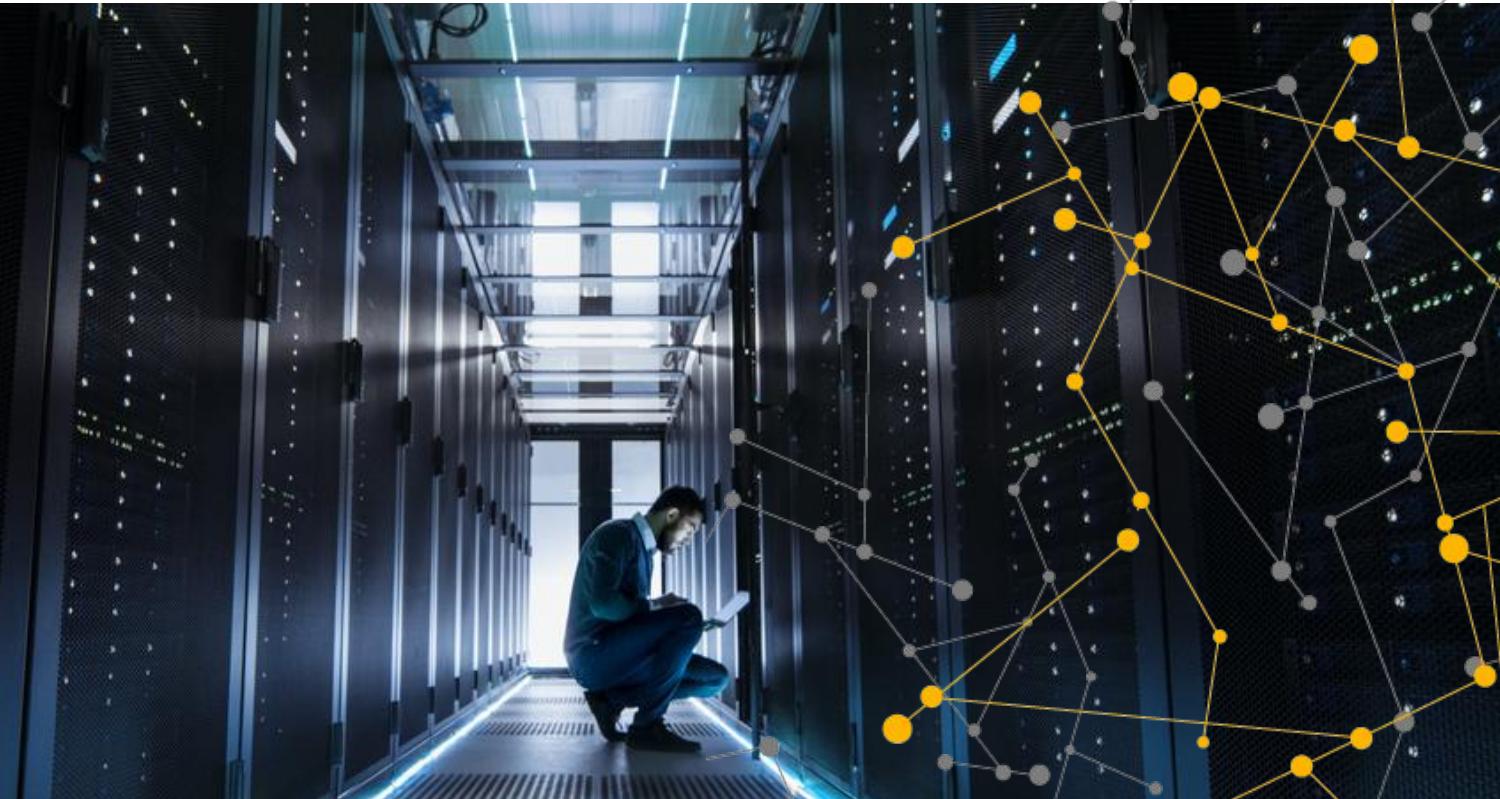


02

Security

66% of IT professionals consider security to be a major challenge to cloud adoption². We find that the perception of reduced security is the biggest challenge. The reality is that public cloud service providers invest far more in their security than any individual company or government department ever could. A move to the cloud doesn't decrease security - it increases it. Microsoft for example, invests \$1 billion every year in cybersecurity for their Azure cloud platform - a platform that successfully fends off 7 trillion cyber threats a day. Amazon and Google make similar investments, all to ensure the security of personal and corporate data. Overcoming this challenge is less about new security infrastructure and more about a cultural shift. It's about asking the question 'how can my company or government department become comfortable with cloud technologies?' In our experience, the best way to do this is to start small by moving a few workloads to the cloud and seeing if you are satisfied with the results. Third party assurance reports can often help with this, ensuring you are confident in how your cloud service provider is handling your data. As you become more confident, slowly move more of your workloads, transitioning from a hybrid cloud model, where your data is stored in both the public cloud and your own data centers, to a full public cloud model. This is an approach favoured by many governments, who choose to keep sensitive defence data in their own private data centers whilst moving other services to the public cloud.

²LogicMonitor, 2018, 'Cloud Vision 2020: The Future of the Cloud'

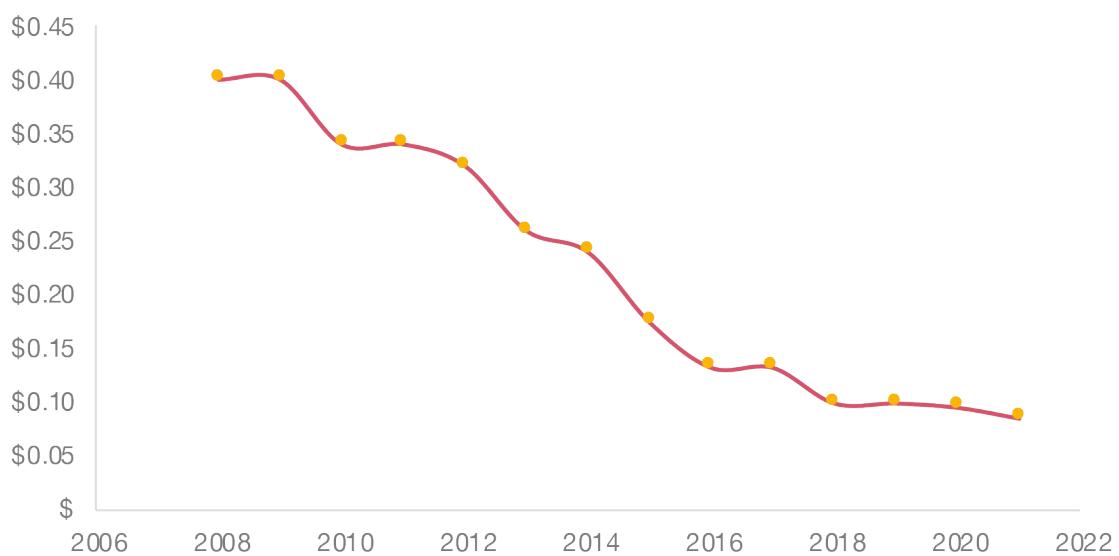


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Vendor lock-in

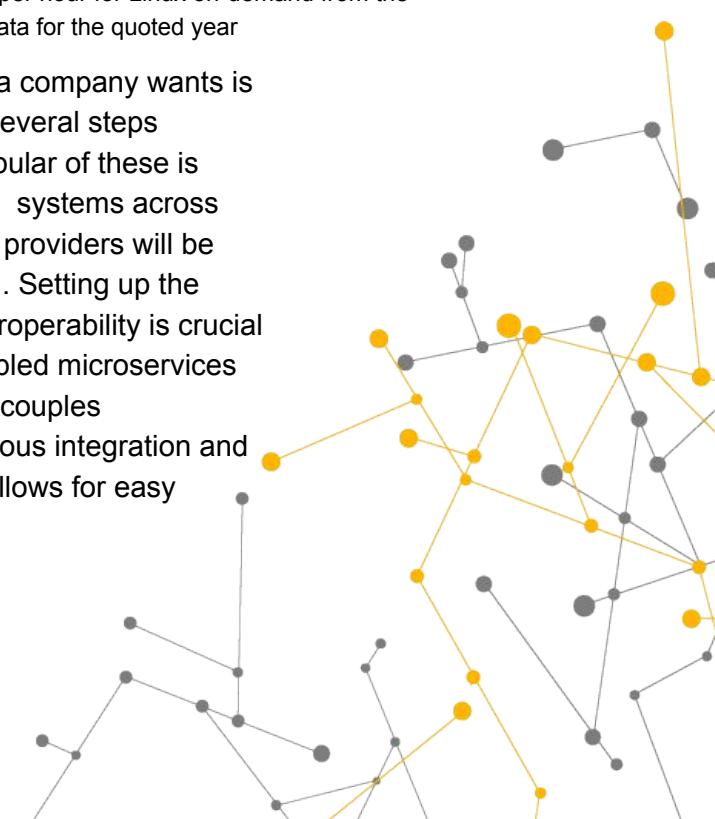
Vendor lock-in remains a serious concern for many companies. The worry is that once all systems have been moved to the cloud, the company will be bound to the same vendor even if their prices increase. This is especially important given the steadily decreasing costs of cloud services globally. Jeff Bezos, Amazon's founder, famously defined 'Bezos Law' as the prediction that the cost of cloud computing will be cut in half every 18 months. As the below graphic demonstrates, we've found this to be true.

Cost of 1 hour of Cloud Computing Resources



Source: AWS pricing, PwC Analysis. All prices are USD cost per hour for Linux on-demand from the us-east-1 region in the earliest available archived month of data for the quoted year

With these constantly falling prices, the last thing a company wants is to be tied to an uncompetitive vendor. There are several steps organisations can take to avoid this. The most popular of these is implementing a multi-cloud solution. By spreading systems across several cloud platforms, moving between service providers will be more feasible if better opportunities are presented. Setting up the cloud architecture to maximise portability and interoperability is crucial to enabling this. It is recommended to use decoupled microservices architecture patterns involving containers. This decouples development and deployment allowing for continuous integration and continuous delivery, whilst the use of containers allows for easy interoperability.



04

Skills gaps

One of the most pressing challenges to cloud adoption is a skills gap. How can a company move to the cloud if it doesn't have the right people to make it happen?

In a 2020 PwC CEO Survey, 77% of CEOs were worried about the availability of key skills. The survey also found that those organisations that focused on expanding their employees' skills were ahead of their peers in many ways and were more confident in their future. A proven way of expanding your employee's cloud skills is by developing a cloud center of excellence within your company.

Encourage those who are the furthest ahead in their cloud journey to form the core of this and use it to encourage your other employees in their reskilling journey. An assessment of current and future business needs, a transformation of organisational culture and an identification of key skills gaps are needed to overcome initial cloud adoption hurdles.



05

Existing data centre investments

Existing data centre investments can be a double edged sword for cloud adoption. On the one hand, having already invested significantly in a data centre, companies are reluctant to move to the cloud. On the other hand, it's exactly the cost of existing data centers that push so many companies towards the cloud. Wherever you stand, the key benefits of cloud computing are long-term. Most businesses do not see significant savings in the short term, rather the benefits emerge as a capital expenditure based business model is replaced with an operational expenditure based one (CapEx vs OpEx). The elimination of CapEx costs means that cloud computing is cheaper in the long run.

To take advantage of this, many companies have phased cloud migrations, where the oldest parts of their data centers are migrated to the cloud first, in order to avoid the heavy costs of replacing them. Whilst this might look good on paper, caution should be exercised here, as the oldest parts of a business are often the hardest to move to the cloud. While phased migrations are a great way to overcome this adoption challenge, companies must be careful to ensure that the servers they start with are relatively straightforward and can provide high benefits. This can help ensure that the cloud journey keeps moving forward, and isn't slowed down during implementation. Companies need to first run automated discovery solutions and review application dependencies as part of a full cloud-readiness assessment of the discovered applications. This acts as an input to tried-and-tested workload assessment toolkits and decision tools to prioritise which workloads to move. When it comes to finally moving the workloads, we find that pilot migrations are a good first step and help to establish quick wins, helping the migration to gain momentum.



Through effective planning and execution, these common cloud adoption challenges can be addressed and overcome.

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