The digital leader's guide to modern cloud

This guide brings together the latest cloud insights from our experts at Softwire

Softwire

Seeing through the clouds

The digital leader's guide to modern cloud

Welcome to our digital leader's guide to modern cloud. This handbook aims to bring together the latest cloud content from our experts at Softwire, to support you in driving a forward-thinking cloud vision for your organisation that will help you stay one step ahead of the competition.

As enterprise infrastructures change alongside an ever-evolving digital landscape, digital leaders need to shape and drive a modern and cohesive cloud strategy to fully realise the business benefits of cloud.

Cloud computing continues to grow at pace with many organisations now adopting a cloud-native approach to their deployments. According to Gartner, almost all respondents to its 2020 Cloud End-User Survey "indicated that their organisation plans to maintain or increase IT spending on cloud computing in the next 12 months"[1].

[1] 2020 Gartner Cloud End-User Buying Behaviour Survey,
https://www.gartner.com/smarterwithgartner/gartner-predicts-the-future-of-cloud-and-edge-infrastructure/

While cloud platforms are now well adopted by most global organisations, others are still on their cloud journey. Even for those early adopters, cloud technologies are constantly maturing and evolving, and with that, its possibilities become ever more exciting.

So, whether you're a cloud early adopter or still facing cloud resistance from internal business stakeholders, wherever your organisation is on its cloud journey, there are insights here for everyone.

Our guide will help you take full advantage of modern cloud technology and its endless potential to improve business outcomes and secure a competitive advantage.

We've created a contents table to help you identify the areas of most importance to you and your organisation.

Adoption

Why are we still talking about cloud?

We often come across this question and it's certainly true that cloud computing has already been around for many years. Over the last two decades, cloud computing in its modern form has been well adopted by enterprise organisations and is now an established IT model. But the reason we're still talking about cloud today is because as it matures and evolves, its potential to improve business outcomes continues to grow. The modern approach to cloud computing is to build applications natively in the Cloud using a component-based development and deployment model.

Previously, organisations were taking applications they already had on-premise and adapting them for the Cloud. But as our understanding of how the Cloud works and its possibilities have grown, today we can develop applications specifically for a cloud environment. Cloud-native focuses on how applications are created and deployed, rather than where they are built.

Will cloud-native improve my business outcomes?

Adopting a cloud-native approach allows you to take full advantage of advancements in cloud technology. It can help to reduce complexity in application portfolios by using the latest tools designed specifically for the Cloud, instead of trying to adapt to fit the environment.

You can also build, refine, and enrich your data using the latest cloud-native tools and techniques. This will ensure you have increased visibility of how your organisation is performing and can extract the data insights you need to make key business decisions.

Key benefits of cloud-native

- **Speed:** Increase development speed by using container-based platforms, microservices and APIs, reducing the time it takes to deliver new products and services
- **Scalability:** Enables scalable development without impacting the whole application
- **Flexibility:** Allows you to run applications on both public and private platforms
- **Reusability:** Allows developers to easily access and reuse existing components, freeing up their time for more bespoke development

Why, when and how should we use the Cloud?

Start small

If you're migrating to cloud for the first time, choose smaller, less business-critical applications first before moving larger, more complex applications. That way you'll learn what works best for your business as you go.

Consider the cloud providers

There are various options for sourcing your cloud, from the big names such as AWS, Microsoft Azure and Google Cloud to open-source alternatives such as OpenStack. One thing to note is that although they have effective parity across the main features, they have different levels of maturity in aspects of their services.

What about hybrid cloud?

If you're not ready to go fully cloud-native yet, hybrid cloud is still a great option for many businesses. With this approach, you can continue to host some applications on-premise and others in a public cloud, but still have them integrated and working together. A hybrid cloud approach can also decouple some of the risk associated with a cloud migration.

Managing data concerns

Some organisations will have specific compliance requirements surrounding the storage and use of their data. Relinquishing full control of that data can be a mental obstacle for some organisations to overcome. Every cloud provider has strict controls over who can access that data as well as the latest security to ensure it is safe.

How will moving to cloud impact my technical team?

There's quite a paradigm shift in terms of the different operating models. Previously your ops team will have spent significant amounts of time fixing hardware, whereas with cloud you're going to need more orchestration and understanding the language of your cloud provider. They'll also need to adapt their mindset as they'll be more dependent on a third-party provider for key aspects of the business.

This is a summary of one of our TechTalks on Cloud, you can listen to the full podcast here: https://soundcloud.com/softwire_techtalks/tech-talks-cloud

How to overcome the common blockers to cloud adoption

While most organisations are by now on some form of cloud journey, many digital leaders will have come up against challenges from other parts of the business as they push for wider adoption of cloud.

To prevent these concerns leading to business and technical paralysis, it's essential for leadership teams to be able to make informed judgements about these objections. To help you overcome these potential blockers we've outlined some of the common concerns we hear from organisations and explore how you can move forward.

Aversion to risk

Concerns typically centre around loss of control over the workload being deployed to the Cloud. When software is on-premise, the IT department naturally has more control. Moving to cloud means handing responsibility to a provider that won't have the same understanding of your processes as an in-house team.

Aversion to risk can be heightened for certain individuals whose role it is to identify and protect organisations against risks, and for organisations such as public sector bodies.
"We don't support that technology"

Today, it is rare for an organisation to claim that they don't support cloud technology but there may be a mandate that only a pre-approved strategic cloud platform can be used, or that only certain services are authorised for cloud use. There can be different reasons for this such as the organisation doesn't have the internal expertise and would require training or outsourcing. Or there may not be a desire to create additional short-term workload.

Concerns from Legal

Objections from the legal team are also common and typically fall into two categories. Firstly, there are concerns around certain uses of the cloud violating regulatory requirements. Where a regulation or piece of legislation is given as the reason for not using cloud, investigate whether the workflow can be architected or configured so you can use the Cloud while remaining compliant.

Secondly, customer contracts may specify that data must be stored in a certain location. This may stem from client demands, or simply be a relic of long-established, outdated ways of working. Whatever the reason for the restriction, moving to the Cloud is likely to require contractual changes, and there's often a reticence to do this. The solution is likely to be a cost-benefit analysis involving your legal team. If the expected benefits of changing the contracts outweigh the costs of the process, the next step will involve working with customer legal teams to secure the changes.

Overcoming these challenges

While these blockers may be different in nature, the solution to all of them is two-fold:

- Secure buy-in for the use of cloud at the highest level of the organisation. Decisions over when, where and how to use the Cloud can have strategic implications for the business and the final decisions need to be made by its leaders.
- There needs to be a strategic articulation of what cloud will enable, and how and why certain roles will need to change to support the move.

With ultimate responsibility for strategic cloud-related decisions moving to business leaders, those in favour of cloud, and those concerned about its risks, must become trusted advisors to management. Those pushing for the use of cloud need to explain the benefits. And those concerned about risk must help decision-makers fully understand the potential drawbacks. Leaders should be clear that if the latter group identifies a potential risk that subsequently materialises, this won't have repercussions for them.

Empower the IT function to embrace cloud

If the technology team is reluctant to embrace cloud, first try to understand why. If skills shortages are the issue, provide the budget and time to train. Or if they're concerned about the short-term increase in workload, demonstrate the long-term benefits to them of moving to cloud.

Striking a balance

The Cloud is an important enabler of organisational success and key decisions around its use must reside with leadership. Those in management positions need to be empowered to make good decisions, by understanding both the benefits and the risks of using the Cloud. Getting the balance right will fast-forward your cloud adoption, enabling the organisation to gain a competitive edge.

Softwire's view on Private vs Public vs Hybrid cloud from Technical Director, Gareth Edwards

There are different ways to build and host your cloud environment. Here's our view on what works best.

Public	Private	Hybrid
	What Do We Mean?	
Cloud computing services offered by third-party providers over the internet and available to anyone	Building your own cloud-like environment within your own company's infrastructure	A blend of public and private cloud

Public	Private	Hybrid
	Pros	
Reducing the level of internal infrastructure management needed while leveraging a third-party provider expertise, freeing time to focus on higher value work Consistency across everything they provide Flexibility and scalability to flex as and when required	Control over your data Security is the main driver for using private cloud, but the security built into the cloud platforms by third-party vendors is tried and tested Can be a cost benefit if you only buy enough servers for what you need, but that makes it hard to scale quickly	Enables you to keep any applications or data you're not prepared to move off-premise, private Supports business continuity in the rare event a third-party provider has an outage Supports an incremental transition from private to public cloud
	Cons	
Sometimes viewed as less secure and relinquishing some control Can be harder to manage costs as pricing models are complex and hard to understand or predict	All other benefits of cloud are quickly diluted	Need to manage multiple vendors and platforms Increased complexity of working across two or more cloud environments

Softwire's view:

Ultimately every project is different, but the thought process should always be, "what's the simplest approach?". The simplest approach generally is to let a third-party vendor do as much of the hard work as possible, barring any specific use cases.

Hybrid cloud can be the best of both worlds, or it can be the worst of both. But it's often the best way to support a gradual transition from private cloud over to public cloud.

Optimisation

How to optimise your cloud platforms

Cloud now sits at the centre of almost every digital initiative but doing it wrong can lead to more problems than it solves. Here are some of the common cloud optimisation challenges we see and our tips on how to overcome them.

The most common problems of cloud optimisation

- **Analysis paralysis:** There are so many different components of cloud it can be overwhelming. Organisations rightly spend a lot of time thinking and planning their cloud optimisation. But at some point, you just need to get started.
- **Skills shortage:** It's tough to find enough developers with the right skills, particularly in the newer technologies like Kubernetes. But attitude and openness to try new ways of working is often more important than having a specific skillset.

How to manage expectations around cost savings

- Like for like there is always a cost-saving when moving to cloud, but cost shouldn't be the entire business case. If you want to realise cost savings, you need to control consumption and usage.

How to avoid increasing complexity in application portfolios

- Learn to manage complexity rather than avoid it: Often when you give people more powerful tools, they use the extra capacity to do more, which can result in increased complexity, but also leads to innovation.

How to avoid drowning in data

- Don't be led by the data. Ensure you're clear what specific information you need to know about your business. Then assess what data you will need to be able to answer your questions.

What tools are available to help with security?

- Don't be led by the data. Ensure you're clear what specific information you need to know about your business. Then assess what data you will need to be able to answer your questions.

What tools are available to help with security?

- Ensure you have multi-factor authentication enabled across the platforms you are using. Often organisations are not using the security features they are already paying for.
- Introducing Mobile Device Management (MDM) is now critical as people are working remotely more than ever before.

By ensuring that your cloud strategy is clearly aligned to your business objectives, you will alleviate many of these problems. It sounds obvious – but you'd be surprised how many businesses embark on a cloud strategy without detailed discussion and planning around how cloud will help them to achieve their business goals.

Softwire's view on Azure vs AWS vs GCP from Technical Director, Gareth Edwards

Microsoft Azure	Amazon Web Services	Google Cloud Platform
	Pros	
For organisations already operating a Microsoft ecosystem there are benefits including quick and easy login integrations and some cost benefits Wider suite of tools including Power BI, low-code offerings often included in the package of costs mean you can get quite a lot for low cost	Breadth of services - AWS offers useful packaged services that can give you want you want more easily If things aren't working as expected AWS support is the best of the three Most mature from a commercial offering for perspective	Specific use cases where GCP would be better i.e. some of the machine learning offerings. If you're running a Google ecosystem there'll be cost benefits.
	Cons	
Things work well if you do them the Microsoft way, but less flexibility if you don't Less mature in certain areas and doesn't feel like they've always had a cloud-first offering	Less clarity on pricing compared to Azure or GCP More challenging to integrate with Microsoft suite	Harder to use and less fully featured that AWS or Azure More geared towards Google's service offering More challenging to integrate with Microsoft suite

There is rough parity between the key features but once you start getting into the more specialised requirements there are quite significant differences between the three providers. You have to look at the individual use case before deciding on the most suitable provider, but in our experience, generally AWS comes out on top.

Softwire's view:

A note on cost: The cost of cloud is always based on usage, and the pricing models are often complex and difficult to understand. Generally, cost is driven by the implementation decisions you make, how well you understand the platform you've selected, and the costs associated with the different services it provides. We'd like to see more transparency from the providers around cost to make it easier to judge if cost is a key driver for moving to cloud.

Cloud in practice

Why successful cloud strategies always have the customer at the heart

So far, we've mainly discussed how cloud can benefit your business, but one of the most transformative benefits of cloud is how it can benefit your end-users. A successful cloud strategy will always carefully consider how cloud can be used to improve the user experience of your customers.

Performance improvements

With cloud, new updates happen continuously, resulting in less bugs and a smoother user experience. Cloud platforms are also extremely scalable meaning that sudden surges in demand for a site or service don't result in outages. Today's end-users are used to seamless online experiences and poor site performance can quickly lead them to look elsewhere.

Personalised customer experiences

Cloud solutions and technologies break down the barriers to the flow of data, enable analytics capabilities and help unlock insights about your customers. These cloud-based data analytics are helping businesses to deliver new features and services based on granular customer insights. From these insights they're able to surface the content and services that are most relevant to each individual, connecting with their customers in a much more personalised way.

We work with a number of clients across multiple sectors, delivering transformation projects which improve both performance and the customer experience, as well as long-term growth and profitability. The following case study summaries demonstrate how we have successfully migrated various systems and applications to the Cloud, and the benefits our clients have seen as a result.

The BBC: Recognising that digital trends in music were changing, The BBC wanted to modernise its high-profile music portal to offer an enhanced interactive personal music experience for artists and users. We migrated the music portal to a cloud-based system to consolidate and simplify the platform, delivering a hugely improved user experience.

Read the full case study here

Cabinet Office:

The Cabinet Office wanted to modernise the UK's 'Register to vote' service to provide exceptional performance, even under significant and unpredictable demand surges. They also aimed to reduce hosting costs while ensuring high levels of security. The service is now capable of scaling to meet both the gradual and sudden surges in demand it will face. Hosting costs have been reduced and overall performance enhanced.

Read the full case study here

Metaswitch:

Metaswitch is a recognized leader in the development of ultra-high-performance, cloud native communications software. They commissioned us to provide a communications platform that powers the voice, data and unified communications services for some of the world's largest operators, delivering near-flawless communications to its customers and their users.

Read the full case study here

Softwire's view on cloud containers

If you're operating an infrastructure-as-a service model and want to manage your own servers but virtualise them, then using a cloud container approach makes sense. Kubernetes is the most used tool for this, originally created by Google but AWS also has its own version and there are others.

You can buy a Kubernetes cluster from a cloud vendor and deploy container images onto that, either by reserving a certain amount of capacity or using a pay-as-you-go model.

The pros: Facilitates a vendor agnostic approach, can run it in any cloud and it allows you to define your security boundaries in a different way to protect your data.

The cons: It's a lower level of support than say public cloud and you'll need to do a bit more of the work yourself.

Tools

How can you improve the performance of your cloud if you haven't got a baseline measurement? We've built two tools to help you understand where your organisation is now, and to identify the key steps you will need to take to accelerate your cloud maturity.

Cloud performance review	Cloud benchmark calculator
Our cloud performance review will identify key issues with your platforms and deliver a tailored report containing best practice recommendations on your use of the cloud.	Benchmark where you are on your cloud journey and start accelerating your cloud maturity.

Setting you up for success

We hope you found our guide to modern cloud insightful.

Assessing where you are on your cloud journey and developing a forward-thinking strategy aligned to your business goals isn't easy. Wherever you are on your journey, you will benefit from having the right partner to work with you to shape the right strategy for your organisation, and help you stay ahead of your competitors.

Because cloud is constantly evolving, organisations will always see greater benefits from working with cloud experts. Our clients often find that they need more specialist help, (not less) to take full advantage of new cloud tools and strategies.

We've covered a lot in this handbook, and if we've sparked more questions, why not Ask the Experts and speak to one of our cloud consultants?

You can also listen to our TechTalks podcast series to discover more insights from digital leaders. Are you a digital leader with stories to share? Get in touch with info@softwire.com.

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Taken care of.