Whitepaper
Hybrid Cloud Solutions

Pulsant
Business Unlimited

The future of hybrid cloud

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WHITEPAPER

1. Introduction

Cloud has come a long way since the birth of the concept in the late 1990s. Yes, it has been around a lot longer than that (since the 1960s), but only really started to make its mark once bandwidth started to grow. Then Salesforce.com was launched in 1999 and the rest…

While history plays a role in our understanding of the present, does it have a similar impact on the future? What can the history of cloud computing tell us about the future of hybrid cloud? Quite a bit actually.

We've seen the development of different cloud services in the as-a-service approach, rhetoric on different models (public, private, multi-cloud), and a lot of comparison between hyperscale public cloud vendors like Amazon Web Services (AWS), Microsoft Azure and Google Cloud Platform (GCP).

For the longest time, hybrid cloud has always been positioned as the ultimate solution to address the argument of which cloud model was better — public or private. Hybrid cloud allows users to get the best out of both worlds, depending on the needs of the business, regulations and the data that's being hosted.

That basic premise is still the same. That hasn't changed. It's the way we're consuming cloud that has changed and the expectations we have around the technology. We've largely overcome the barriers around adoption (security and cost remain the top concerns, according to the RightScale 2018 State of the Cloud Report)[1] and we're now looking to get the most out of the investment we've made and optimise its usage for the benefit of our business.

Is this the future of hybrid cloud?

This whitepaper will answer this question by looking at what hybrid means now, what public cloud vendors are doing in terms of offering hybrid services, what's on the horizon and what cloud adoption going forward is likely to look like.

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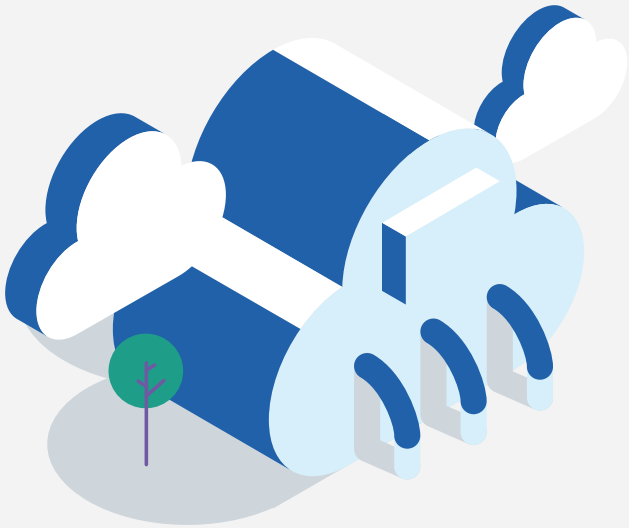

2. What does hybrid actually mean?

The first point to make is that cloud, in all its forms and approaches, is good. It has matured and developed over the years and is well positioned to deliver significant benefits to businesses of all sizes, in all industries. In fact, many believe we're not far away from cloud being the norm, the standard.

This attitude is demonstrated by new start-ups and businesses today typically choosing to go straight into the cloud, taking a "born in the cloud" approach.

The second point to make is that cloud is continually evolving, which is evident in the fact that we're now talking about hybrid cloud or multi-cloud models, and the rate of services being launched is driving the as-a-service model. Just think about the number of services AWS offered in 2018 — 1,400 more than the year before. [2]

The term hybrid has made its way into everyday vernacular and applies to almost anything — cars, animals, music, plants… the list goes on. The one thing these items have in common is the fact that different elements have been combined to make something new.

In the technology world, as mentioned previously, this is the basic idea behind hybrid cloud; a combination of things to bring maximum benefit to users. But there is a lot more to hybrid cloud than that.

The problem with the term is that there is no single, all-encompassing definition; and that's because it means different things to different people.

Hybrid is an umbrella term that encapsulates our approach to delivery. It's the way we host and serve different things in all ways possible so that we're doing what's right for our customers.

The MSP and the hybrid approach

Managed service providers (MSPs) use their abilities and capabilities and leverage their resources, like datacentre assets, private cloud, public cloud and service management to deliver the best possible service.

Gartner[3] defines it as: "policy-based and service provisioning, use and management across a mixture of internal and external cloud services."

For Pulsant (based on our more than 20 years in the industry, technology experience and working with customers to deliver successful cloud transformations) it's an umbrella term that encapsulates our approach to delivery. It's the way we host and serve different things in all ways possible so that we're doing what's right for our customers — whether that's heritage on-premises hosting and colocation, or leveraging services within dynamic public cloud (AWS, Google, Microsoft Azure or Pulsant Enterprise Cloud) and private cloud. And the key element here is in the way we bring that all together in a single user experience.

It's also worth mentioning that the approach that's right for one customer isn't necessarily the same for the next. Hybrid effectively means using the right mix of capabilities and resources — for each and every customer.

Except we take it one step further. For us, it's more about hybrid services, and how we deliver them to customers in the most cost-effective, secure and compliant way.

Evolution versus transformation

Much like the definition of hybrid cloud, digital transformation has many meanings, depending on your business, your drivers, your objectives and even the technology you're using. In this context, hybrid refers to the technology aspect of digital transformation and underpins it. But, we've moved beyond thinking about how many virtual machines or servers we need; now it's about capabilities and outcomes, and how technology like cloud, can help us get there. But what makes hybrid cloud effective?

As with anything technology related it's about taking the right approach. When it comes to hybrid environments there are a number of possibilities. You can go full throttle into adoption, focus on transforming your organisation, embracing methods such as DevOps and automation and changing your business model. Or you could take a more sedate approach, evolve over time and maximise your current investment in infrastructure, upskill staff and ensure the business experiences minimum disruption.

There are multiple ways of beginning your transition; the first (and perhaps most important) is understanding your organisation's current state and defining your cloud aspirations. This can be done in several ways, including conducting a cloud readiness assessment, which determines your organisation's current state and what's needed to start your journey.

Once your starting position is understood, and you have eyes on a vision and goal this will formulate a cloud adoption transformation programme.

The aspiration of hybrid

When you're considering a hybrid model, what are you aspiring to?

- Begin your cloud transformation journey
- Leverage immediate benefits of platform (PaaS) and software (SaaS) based services
- Seamlessly extend apps and data to the cloud
- Write apps consistently and deploy anywhere
- Control resources securely, wherever they are

At Pulsant we assess and baseline our customers against a Cloud Maturity Matrix. The matrix acts as a guide to determine which cloud services are best suited to your business.

At Pulsant we assess and baseline our customers against what we call a Cloud Maturity Matrix. The matrix acts as a guide to determine which cloud services are best suited to your business, by looking at how far along the migration journey you are. This includes looking at the various cloud services you're already using, where you aspire to be, and then helps you plot a path forward, essentially helping you manage the process.

Working with a cloud partner can be invaluable here, not just in terms of drawing on their expertise and capability, but also about determining which solution is best for your organisation, your outcomes and your requirements. Even if cloud isn't necessarily the answer for your business, taking a transformative approach and developing a roadmap to drive IT efficiencies can help. It also determines the future capabilities your organisation can adopt alongside a scale of determined change and, more importantly, your return on investment.

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3. What hybrid needs to succeed

On this journey to adopt hybrid services it's important to realise that it's not necessarily just about cloud. Cloud adoption isn't just a technology update; it affects your staff, your processes and your wider business. Importantly, migration requires a change in attitude and mindset across the entire organisation to make sure it's successful.

If you consider that the journey should be more of a digital evolution rather than a transformation, it becomes clear that while technology is important, the journey and the process of change incorporates so much more.

Once this is acknowledged, your organisation can evolve at its own pace or, depending on your needs, you can transform the way you develop and deliver services and change your business model.

The thing about hybrid is that it can be used in many ways. It's a good staging area, a good platform for building confidence in cloud, developing a transformation programme on and carrying it out. In the same vein, it may be a deployment model that must be used, either for compliance, regulatory, risk, latency or data sovereignty issues. Regardless, the benefits will depend on your objectives and why you actually want to use it.

When it comes to change of any kind, we need to understand where we are, where we're going, how we're going to get there, and what we need to get us there. These are the basics in migration and technology change — people, processes, technology.

While there is the general expectation that cloud can solve all business ills and transform an organisation in terms of cost, flexibility and agility, the reality is that it's not always beneficial to move everything to the cloud. But having an aspirational goal — like complete migration or adopting a cloud-first mentality — is a good starting point to determine what you need to do and how you go about doing that. This is especially true considering most organisations are already using hybrid cloud in some way; just think of Microsoft Office 365.

This is why the concept of hybrid services is so important. It's worth repeating; it's not always about cloud.

Hybrid cloud, for example, is a broad concept, which means that selling the concept to the board, stakeholders and staff will be tough. More often than not, it's about a mindset shift, again thinking about the outcomes that technology can enable. Looking at the people element also requires analysing skills; what's needed, where the gaps are, and how you're likely to fill those gaps, either through upskilling or recruitment. For the most part this refers to your IT teams, but can also include other users who need specific functionality from the tech they're using.

On a wider level, you need to determine if your business is ready for cloud. Is it the best option? If so, how will migration affect your processes? Your operations? Which is why looking at your cloud readiness is vital. A move to the cloud will affect your processes, making them more complex, especially in a hybrid environment where you are managing both tangible assets and those in the cloud.

You also need to consider vital aspects like access, security and the change process when thinking about cloud migration.

One of the most important elements in adopting hybrid services is working with the right provider. There's a lot to consider from a technology, business and personnel point of view, so ensuring you have the right partner to guide you through the whole journey, offering expertise along the way, is a key indicator for future success.

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4. What are public cloud vendors doing?

It's no secret that the public cloud market is dominated by a few large hyperscale players — AWS, Google, Microsoft, Alibaba, IBM, Oracle… A look at their financials[4] says it all. But moving forward, is it really public cloud alone that will have an impact on the industry and these vendors?

The answer is most likely, no. While all vendors have a diversified product offering, it is the future of cloud that perhaps has the most potential. So, what are they doing to pave the way for a hybrid future? And does it look the same from all perspectives.

Microsoft Azure

With a heritage of developing enterprise software, Microsoft entered the cloud space at the beginning of 2010 with Azure, providing the market with software-as-a-service (SaaS), infrastructure-as-a-service (IaaS) and platform-as-a-service (PaaS) offerings.

Fast forward to 2017 and the company launched Azure Stack — the answer to the hybrid cloud conundrum. Developed in conjunction with manufacturers like Dell EMC, HPE and Lenovo, Azure Stack is an extension of Azure, allowing users to run an Azure environment from within their own premises or third-party datacentre. The benefit? Pay-as-you-go pricing, and the ability to develop applications in-house in an Azure environment that's the same as public Azure, which makes deployment quick and easy.

The key differentiator here is that Azure and Azure Stack services are fully integrated, with true portability between environments, and brought together under one umbrella for ease of management.

In a nutshell, users can create a private cloud with public cloud capabilities.[5]

Microsoft[6] says a hybrid cloud is:

"...the use of both on-premises resources in addition to public cloud resources. A hybrid cloud enables an organization to migrate applications and data to the cloud, extend their datacenter capacity, utilize new cloud-native capabilities, move applications closer to customers, and create a backup and disaster recovery solution with cost-effective high availability."

Amazon Web Services (AWS)

AWS was born in the cloud in 2006. Its parent company is Amazon, the world's largest online retailer. With a focus on innovation and continuous development, AWS has been supplying large-scale public cloud to the market for more than 10 years. In 2016 the tech giant partnered with VMware for the purpose of allowing VMware's customers to burst into the cloud from their virtualised environments.

But AWS has since taken the move to hybrid further with the recent announcement around EC2 being able to run on-premises with the Snowball Edge device, a hard drive for moving workloads between AWS cloud and client datacentres.

According to one publication:
"It also delivers a kind of inside-out hybrid cloud. Today most discussions of hybrid clouds expect that on-prem workloads will stretch into the cloud.

Google[11] views hybrid cloud as:

"a setup in which common or interconnected workloads are deployed across multiple computing environments, one based in the public cloud, and at least one being private."

AWS[8] says hybrid cloud refers to:

"The use of both on-premises resources in addition to public cloud resources. A hybrid cloud enables an organization to migrate applications and data to the cloud, extend their datacenter capacity, utilize new cloud-native capabilities, move applications closer to customers, and create a backup and disaster recovery solution with cost-effective high availability."

AWS' plan here is for workloads cooked in the cloud to be pushed out onto edge devices".

In 2018, the company took things even further by announcing AWS Outposts. This service consists of fully managed and configurable compute and storage racks built on AWS hardware. It enables customers to run compute and storage on premises, while also easily connecting to the rest of the company's cloud services.[7]

Google Cloud Platform

Launched in 2008, the Google Cloud Platform provides users with a suite of modular cloud services. Built on the legacy of its search engine and email platform, Google Cloud made its official foray into the hybrid space earlier this year. The company extended its container and microservices technologies (like Kubernetes) from being used on the Google Cloud Platform, to being used on in-house servers or edge devices.[9]

In effect, this means:
"With its new Cloud Services Platform, though, the company is now offering businesses an integrated set of cloud services that can be deployed on both the Google Cloud Platform and in on-premise environments". [10]

5. Future focused

Gartner[12] says that by 2020, 90% of businesses will have adopted a hybrid infrastructure. To put that into context, the global hybrid cloud market is expected to reach £108.31 ($138.63) billion by 2023, showing year-on-year growth of 22.7%,[13] according to ResearchAndMarkets.com.

While that is what the statistics and figures say, what does the industry believe? There will be a number of elements that will shape the future of hybrid, including automation, security, outcomes and collaboration.

As we ourselves move our businesses into the future it stands to reason that we'll be incorporating more technologies. In much the same way as we're now thinking less about saving money using cloud, and more about making money with cloud, the use of IoT, automation and even DevOps will play a role.

This is particularly true when it comes to aspects of the environment that will bring the most benefit to organisations, such as self-healing. Self-healing is defined as: "…any device or system that has the ability to perceive that it is not operating correctly and, without human intervention, make the necessary adjustments to restore itself to normal operation".[14]

The incorporation of automation, machine learning and artificial intelligence into cloud platforms will influence, not only the deployment of new technologies and services, but also the way in which the environment is managed and maintained.

Self-healing is defined as: "any device or system that has the ability to perceive that it is not operating correctly and, without human intervention, make the necessary adjustments to restore itself to normal operation."

Self-healing has a role to play in security and compliance, optimising infrastructure to ensure both are maintained.

Of course, any talk of the future of hybrid environments would be incomplete without including security. One of the traditional barriers to adoption of cloud security, is still an important topic. While the cloud itself has proven to be secure and robust, we also need to consider the cyber threat landscape and how that's evolving. There will also still be concerns around compliance and cost, as well as culture and mindset. But in the future of hybrid cloud, one of the key challenges will be selecting the right vendor, choosing multi-cloud over hybrid cloud, and dealing with the cost and management implications.

But the future of hybrid cloud will most likely be focused around outcomes. How quickly do you want to (can you) move to a hybrid deployment and, perhaps most importantly, how do you effectively measure the benefit realisation and ensure your organisation is on track in terms of costs and objectives?

Collaboration will feature strongly in the hybrid future. Not just between providers and their customers, but between cloud service providers and cloud vendors, and between manufacturers, too. Orchestration is an important term here and it will be the likes of cloud service providers and managed hosting providers that will work together to create this harmony for their customers.

We're seeing a lot of collaboration already; just consider the cloud vendor partner programmes (such as the Cloud Solution Provider program from Microsoft or the AWS Partner Network) that are becoming more expansive with a wider acknowledgement that the cloud vendors themselves can't offer the end customer the deeper level of service, support and consultation that is required.

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Why Pulsant

We design, deploy and manage intelligent hybrid cloud platforms that enable your growth, spur innovation and support your success – while remaining secure and compliant.

We understand the industry in which you operate, the importance of your customers, and the IT challenges you face. We use a dynamic combination of technology, resources and our expertise to deliver hybrid IT services, solutions and consultancy to our customers. Our aim is to optimise your IT, streamline your IT environment and deliver on your security and ongoing compliance needs.

Our company has been in business for more than 20 years, accumulating the knowledge, drive and technology to help you overcome your IT challenges and realise the business benefits of cloud. Pulsant's skilled teams can help you with policy administration and identity management for a secure service, while also offering our own Continuous Compliance platform with a monitoring dashboard that enables you to manage your IT compliance requirements.

Our agile, end-to-end approach includes all aspects of managing hybrid environments, supported by strong IT consultancy services and dependable support.

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