MOZAIC

THE DIGITAL SHIFT

CLOUD - THE HYBRID MYTH

Many organisations are implementing partial shifts to public cloud environments, retaining on premise (private cloud) components for various reasons. Maintaining a hybrid model adds cost, complexity and risks to an IT eco-system. Mozaic believes that in almost all cases organisations will benefit from going “all in” with public cloud

11 July 2019

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Hybrid – best or worst of all worlds?

What is hybrid cloud?

Hybrid clouds consist of a combination of one or more on premise environments (in house, co-location, private cloud), alongside public cloud capabilities such as Amazon Web Services (AWS), Google or Microsoft Azure. Due to the multiplicity of hosting models in place, hybrid clouds require ongoing investment in the management, tooling and processes required to keep environments in step, secure and consistent.

Hybrid Cloud Market

The market for hybrid cloud services is being heavily supported by traditional systems integrators, data centre hosting business and software vendors. There is clearly much to be gained for each of these businesses in perpetuating on premise / co-location services and building the complex eco-systems which are required to manage them in conjunction with public cloud services.

While few now would doubt the value of public cloud to most organisations (agility, innovation, scale, cost and flexibility), many are maintaining a position that a mixed model of public and private cloud services has significant benefits. Given the background and level of investment made by these businesses in legacy technology that is not surprising. The longer they can squeeze value out of their legacy data centres, infrastructure management and tooling investments the better from their perspective.

The sheer weight of supplier supported hype around hybrid cloud can easily obscure the opportunities in true cloud adoption and can lead to achievement of business and digital goals being delayed and diluted.

Hybrid vs Pure play cloud

The businesses most lauded for pure play continuous development, customer obsession and digital excellence were built on pubic cloud. We hear much of the “pure plays” in case studies. Businesses such as Uber, Spotify and Netflix were all built in public cloud, and could only exist through the availability of massively scalable architecture and petabytes of available storage deployed at short notice. True business agility in delivery models is achieved through a single minded and uncompromising approach to building your digital future.

While traditional businesses looking to compete commonly have a legacy of on-premise infrastructure, there is no reason why they shouldn’t look to level the playing field by freeing themselves to operate in an environment of commodity computing. Just as businesses today wouldn’t dream of generating their own power, in the future the idea of having your own dedicated technology infrastructure will seem an antiquated concept.

So why aren’t more organisations taking the opportunities offered by a pure play cloud model? It can be the path of least resistance to accept the hype and limitations of a hybrid model. The promotion of hybrid cloud as a sustainable strategy is based on a number of factors. Let’s take a look at each and examine the validity of the claims:

Cost. When the full TCO calculation is taken into account, including space and cooling, DC staff overheads and infrastructure maintenance it is rare we see an on premise / private cloud service presenting a lower of equivalent cost to public cloud. Even when the costs are low (for example when infrastructure capex investments have been made and written down), only the most stable, predictable of businesses with inelastic demand and consistently high utilization can operate competitive levels. Evidence suggests that organisations rarely achieve greater than 60% server utilisation over time.
Any savings which can be achieved from retaining on premise capacity must be offset by the costs and complexity of maintaining a hybrid management and tooling model to ensure consistency and availability across the hybrid estate.
Another financial friction which often comes into play is the shift from a capex to opex model. This friction is vastly reduced, though, in a properly managed cloud environment. Tools can be used to automate resource instantiation and termination, even to the point where the application itself autonomously manages this process and no manual intervention is required. In this kind of environment, the TCO argument is usually swayed towards an opex model, even when taking capex write offs into account initially.

Security. The public cloud services have security services and accreditations well in excess of the means of most customer organisations.
Cloud providers provide many security capabilities and services to increase privacy and control network access. These include:

- Cloud network firewalls are built into the hypervisor layer, between the physical network interface and the instance's virtual interface, and web application firewall capabilities let you create private networks, and control access to instances and applications. An instance's neighbours have no more access to that instance than any other host on the Internet.
- Customer-controlled encryption in transit is available across all services
- Cloud vendors have connectivity options that enable private, or dedicated, connections from your office or on-premises environment
- Automatic encryption of all traffic on the public cloud global and regional networks between secured facilities is provided by cloud vendors

In addition, using a well architected public cloud environment allows your business to scale without many of the risks around maintaining accreditations, security standards and patching overheads necessary in on premise environments

Control and customisation. Public cloud provides a myriad of services, controls and customization opportunities, all available rapidly and at low up-front cost. Achieving these levels of control in private environments is incredibly difficult, especially in businesses with a degree of volatility. The levels of complexity and overhead in managing a hybrid environment (cloud, applications and data) should not be underestimated and present limits to the levels of control and customisation available.

Network Latency. This subject has exercised the minds of the public cloud providers more than many. It is true that some applications may suffer from latency issues when deployed over public cloud. However, evidence and history suggests that well architected applications perform extremely well in a thoughtfully designed cloud environment. Improvements to design, use of edge locations and the many optimisation tools available provide the answer for most.

Flexibility. Again, the levels and degree of flexibility in public cloud (due to the breadth of services and economies of scale) are hard to match. The benefit of being able to burst capacity to the public cloud is more easily and flexibly achieved in a 'all in' cloud environment. Long term flexibility is maximized by a wholesale move to the cloud.

Legacy Applications. Some mainframe users feel that their application sets are unsuitable for virtualised or cloud deployment. However, advances in available patterns for migration and hosting (such as automated refactoring, reverse engineering and emulator re-hosting) mean that more and more workloads can take advantage of the benefits of cloud computing. These patterns can have the added benefit of bringing experienced mainframe resources along on the cloud journey.

Skills. Organisations often feel they do not have access to the necessary skills to design and manage a well designed cloud architecture. There is a big skills gap in many organisations and really good infrastructure, application and security architects are a rare breed. Many of these organisations already have the necessary skills, and combination of education and incentivisation can bring great success in helping architects to get to public cloud which enriching careers.

When considering your future model for infrastructure provision, your starting position should be to go “all in” on a migration of services to Public Cloud. Identify which of your needs can be met by SaaS offerings, and how best to leverage PaaS and IaaS to deliver the remainder. Design a set of principles to support the “Cloud First” model and be single minded in making choices when the inevitable challenges come from those most invested in the traditional model – both within the organisation and outside.

Mozaic believe that delivering a successful and sustainable shift to cloud can be best achieved by is the development of a Cloud Operating Model. As with most endeavours, when embarking on this journey you should spend time up front working out your destination and identify some key checkpoints on the way. Consider the journey for your current set of services, which will persist, which retired and which upgraded or re-engineered to take advantage of new agile capabilities and cloud services.

Think about your current organisation and capability model – which skills will be needed in a cloud first model? Where are the gaps? Which areas will come under pressure? Consider governance and change practices and how they need to improve. And perhaps most importantly consider business strategies and goals, and how business needs can be better met through leveraging the agility benefits of cloud, always considering what is needed to keep services safe, performing well and providing the core capabilities needed for business success.

Summary

There is a huge amount of hype around hybrid. Service providers, systems integrators and software vendors have much to gain by perpetuating the hybrid model. Organisations should question this model and ask, “why can’t this be delivered in cloud?”, and relentlessly pursue a cloud first policy to achieve the full benefits of commodity computing and achieve the levels of agility and customer obsession required to succeed. There are certain organisations that cannot immediately move fully to cloud; and for them hybrid may be a useful compromise; but it should not be seen as the final destination. For most “all in” to cloud is the ideal approach.

How Mozaic can help

Mozaic have developed a series of operating model principles and templates which support and de-risk the digital shift. These include approaches to achieve an “all in” approach to cloud migration.

Applying these allows organisations to achieve a planned and predictable model for cloud migration and management, working seamlessly with traditional enterprise management practices. Mozaic are partners to the primary public cloud providers – AWS, Microsoft Azure and Google Cloud – and provide a variety of services designed to ensure the best model and commercial terms are in place.

Our proven methodology provides rapid, actionable insights and a clear case for outcome delivery, allowing customers to achieve a safe and value added shift.

Moziac can also provide advice and expertise in Tooling and Process design, Cloud service selection and negotiation and in supporting the migration of applications and data.

About Mozaic

Mozaic is a specialist independent IT Consultancy. We offer client-side advice and operational support, always acting impartially to best serve our client’s needs.

Please drop us a line at info@mozaic.net or call us on +44 (0)203 709 1626 to discuss your thoughts on our white paper, we would be delighted to discuss further.