

IT Executives' Guide To Developing An Enterprise Cloud Strategy

Planning for your
infrastructure's
journey to the cloud.



**By 2018, we expect
50% of large enterprises to
have a production workflow
running in the cloud.**

Dave Bartoletti, Forrester

Only a few years ago, cloud computing was just appearing on the business radar. Today, it's proving itself as a powerful operating model. That's what industry commentators like IDC refer to as an imminent shift 'from exploration to optimization.'

Cloud, like the internet before it, is changing how business gets done. It's the new model for producing and consuming IT services. Now it's impossible to imagine doing business without the internet, and before long we'll think the same way about cloud.

This paper looks at how the cloud landscape is rapidly evolving to address the needs of critical enterprise applications. On the way, we'll highlight some common cloud misconceptions. Finally, we'll set out how IT leaders can create a clear, robust enterprise cloud strategy for their organizations that enables digital innovation and business transformation.

As cloud's popularity has grown, so too has the number of solutions and vendors. There are now hundreds of Software as a Service (SaaS), Platform as a Service (PaaS) and Infrastructure as a Service (IaaS) providers to choose from, as well as a host of solutions spanning both private and public clouds.

But still, many organizations lack a coherent strategy to bring the cloud model to their data centers. With so many cloud options to choose from, how can IT leaders decide the best path forward for their organization – especially when there are conflicting priorities among different business users? Plus, there's the backdrop of shrinking IT budgets and increasing pressure to align IT with business demands. As a result, it's inevitable that as cloud ushers in a simpler environment, it also heralds a re-shaped IT function.

Before we get there, there's work to bring the agility promised by the cloud to the critical enterprise application portfolio. This is a challenging mission, especially with limited budgets, in-house skills and resources. But it's also a mission with great potential rewards: re-imagining the core of the business for the cloud era.

**Business changed because
of the internet. And it'll never
be the same, thanks to cloud.**

IDC forecasts public cloud Infrastructure as a Service (IaaS) revenues are set to more than triple from

\$12.6bn in 2015 to \$43.6bn in 2020.

Enterprise acceptance and adoption of public cloud IaaS will drive this 28.2% year-on-year growth, marking a shift from exploration to optimization.

Enterprise cloud: everything is changing

Business leaders now crave the agility and cost structures that cloud can offer. They want the new applications that cloud models can deliver. And they want greater transparency and granularity in what they pay for.

Unfortunately, most enterprise IT organizations were constructed in a different era, and with different goals. The business ran on a small number of critical, highly customized applications that rarely changed. Emphasis was placed on stability and high levels of utilization. The funding model was typically a corporate tax, designed to support all users equally.

Many IT leaders find themselves being called upon to lead a rational transition from this model to the cloud. And the journey is neither straightforward nor simple. The IT service delivery model changes. Roles and responsibilities change. Vendor relationships change. How IT is paid for changes. Indeed, the very system by which enterprise IT is measured and judged changes.

Redefining relationships

Frustrated by the perceived lack of action from their IT organizations, business leaders are taking matters into their own hands. Not for the first time either. If you think back to a time before application suites became commonplace, IT organizations faced a struggle to integrate a complex and confusing blend of applications. Application suites delivered an integrated, standardized set of business functionality that streamlined the IT landscape. In a way, this mirrors today's situation. Business leaders are selecting individual cloud-based applications to meet a short-term need, but this is creating myriad challenges in terms of governance and data integration.

According to a survey from the Harvard Business Review, 'The Impact of Cloud on the IT/Business Partnership': "New business-to-business cloud apps are typically marketed as being easy to use and easy to implement.

But 'shadow IT' projects, where business leaders bypass IT to implement cloud-based apps independently, often cause data integration and control problems. This is especially apparent when these public cloud apps attempt to integrate data residing within the corporate infrastructure."

Rather than simplifying IT, these shadow IT projects are creating new complexities around data security, compliance and the integration of business processes. Business users who are forging ahead – picking their own SaaS vendors and starting to use public clouds without IT involvement – have often ended up abandoning a public cloud service deployment due to issues involving data integration.

However, despite these seeming incompatibilities and initial setbacks, it's not all bad news. On the contrary, the cloud is redefining the relationship between business and IT, and when approached strategically, is driving more effective collaboration between the line of business and IT manager.

Smart IT leaders are investing time in educating their business counterparts on core IT issues such as security, governance and the need for enterprise-wide integration.



Public vs. private: choice or dilemma?

The industry debate continues to rage on the relative merits of public versus private clouds. Beyond the noise, what's emerging is a strong case for both working together.

Proponents of public cloud models point to the ease and simplicity of consuming IT services as needed. Public clouds offer rich application and data services that are difficult to replicate in a data center setting. The business model evolves from a CAPEX model focused on building IT, to an OPEX model focused on using IT.

Proponents of private cloud models emphasize that, when fully utilized, they can be much less expensive than public clouds. IT can remain in control of critical enterprise applications and data, and handle predictable enterprise workloads more cost-effectively. Compliance, governance and auditing are far simpler, and users and computing resources can be co-located; delivering better performance in some situations.

Most IT leaders are coming around to the conclusion that both public and private clouds will be with us for the foreseeable future. For some parts of the IT landscape, it makes sense to partition certain workloads, and farm them out to individual cloud vendors.

Desktop and collaboration can be easily partitioned, as can standalone SaaS functions that don't need to integrate with the rest of the enterprise. Customer-facing mobile applications are another popular choice.

But most enterprise application portfolios are inherently tough to partition: they need to work closely together to provide the process backbone that runs the business. This reality creates a strong desire for both public and private clouds to work together as a single, integrated whole as opposed to disparate parts.

Public cloud vendors will make the case that it's possible to move entire on-premises enterprise application landscapes to their public clouds. Possible? Yes. Pragmatic? No. In many cases, this entails re-architecting, re-constructing and re-validating an established software portfolio in an entirely new operational environment; a task not easily contemplated.

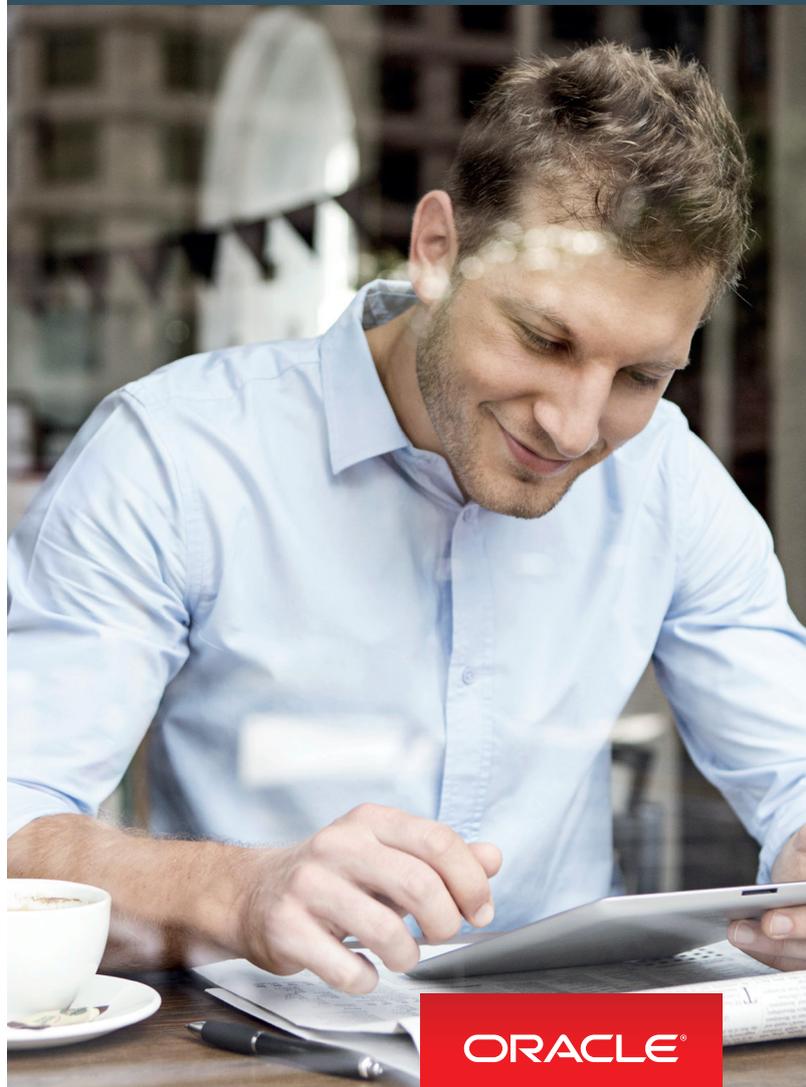
However, keeping everything on-premises is equally unattractive, but for different reasons. Typical private clouds are essentially traditional IT infrastructure masquerading as an infrastructure cloud. IT must plan, acquire, integrate and support capital-intensive infrastructure. Private cloud services are usually limited to simple IaaS with no rich developer or application services. And there is usually no compatible public cloud option should it be desired at some point.

The best of both worlds?

In an ideal world, IT leaders could standardize on a single, enterprise-grade architecture that provided compatible and interoperable public and private cloud options. An architecture optimized for today's enterprise applications, yet providing a pathway to the latest generation of native cloud applications.

Oracle's view is that architectures not designed to make the transition to the new world of enterprise clouds will eventually have to be discarded, and replaced with designs suited to the new challenge at hand. Existing private clouds don't provide a pathway to public clouds. And most of today's public clouds completely ignore the need to run some enterprise workloads on-premises.

Historical shifts in IT architecture are nothing new; the challenge for IT leaders is to recognize the shift and re-align investment towards the new model, and away from the old ones.





of organizations' technology budget will be spent outside the IT department by 2020

Source: Gartner



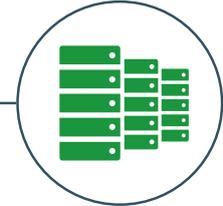
The amount hybrid cloud adoption grew by in 2016.

Source: Rightscale, Cloud Computing Trends: 2016 State of the Cloud Survey



Source: Rightscale, Cloud Computing Trends: 2016 State of the Cloud Survey

The number of clouds businesses have on average: three public and three private.



of IT and business professionals say it's important for cloud applications to access information stored in data centers today.

Source: Harvard Business Review

Oracle's approach to enterprise cloud

Oracle is uniquely positioned to offer a compelling answer to the challenges of enterprise cloud. Every cloud journey is different, and each organization's needs unique. Choice and flexibility are essential.

Oracle engineers its own complete technology stack, from enterprise applications to database to infrastructure. This same technology stack has been used to create the public Oracle Cloud, which delivers integrated SaaS, PaaS and IaaS. For on-premises requirements, Oracle delivers engineered systems that have precise equivalents in the public Oracle Cloud. And more recently, Oracle's Cloud at Customer portfolio delivers a public cloud experience inside the data center.

Oracle's public cloud and private cloud use the same architecture, tools, processes and so on. There's no need to invest in extensive integration or complicated support. In this way, the public cloud appears as a compatible extension of what already runs in the data center. Oracle gives you the option to choose your own path on your journey to the cloud, ensuring a smooth transition to a new, more agile cloud model.

In essence, the Oracle Cloud becomes a compatible extension of your data center.

5 paths to the future

Oracle's technology provides five attractive paths to evolving current enterprise application infrastructure towards a cloud model. What's right for your organization will depend on your starting point, the differing needs across your IT portfolio and the appetite for change.

1

Streamline enterprise application infrastructure with Oracle engineered systems

Some IT leaders aren't ready to act on cloud for their enterprise application portfolio. They want a streamlined, on-premises solution optimized for their most demanding applications, yet want to know that there's a compatible public cloud option should it be needed.

2

Extend the private cloud model to enterprise application workloads

Many IT organizations have built private clouds to consolidate less-critical workloads, but haven't extended this model to their enterprise application portfolio. Oracle delivers private cloud solutions engineered for enterprise applications and databases, with compatible public cloud options.

IT organizations can now deliver an expanded set of private cloud services, using the same consolidation and operational model. Should a compatible public cloud option be needed at some point, it is readily available.

3

Deploy hybrid cloud for application development and testing

Many new approaches find their way into enterprise IT after being used for development and testing. And for some, this represents a logical way to introduce public cloud. Resource requirements are highly variable, making a strong case for a public cloud option.

Oracle offers fully-featured PaaS public cloud capabilities that dramatically improve developer productivity, resulting in applications that can be deployed on-premises, in the public cloud, or both.

4

Bring the public cloud model into the data center

For a few IT organizations, serious use of a public cloud can't be immediately considered for a variety of reasons. Yet, at the same time, there's a strong desire to evolve towards the agility and cost structure of a public cloud. The Oracle Cloud Machine, our first Cloud at Customer offering, is a repackaging of the public Oracle Cloud delivered behind the firewall: same functionality, same operational model and same cost structure.

IT organizations get many of the benefits of a public cloud model, without having to overcome concerns associated with using a public cloud.

5

Lift-and-shift to the public cloud

Some organizations are under immediate pressure to move their existing enterprise application workloads to a public cloud provider. Making this mandate more challenging is the usual presence of old, legacy code and limited in-house skills.

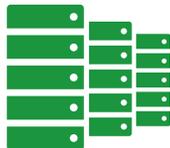
Oracle Consulting offers lift-and-shift services to the public Oracle Cloud: analysis, migration, validation and training of in-house resources. Enterprise workloads are redeployed with a minimum of time, effort, cost and risk.



A time for leadership

It's an uncomfortable situation: IT leaders that fail to get ahead of business demands for enterprise cloud will likely find themselves in tough spot – budgets reverted to business units, limited ability to govern IT solutions and investment, serious challenges with compliance and audit. Not to mention an intractable data integration problem. Undoing the damage will take serious time and effort.

CIOs are demanding a way to combine the best of the cloud with their own localized data centers



Wall Street Journal

IT leaders who allow the organization to attempt the integration of private and public cloud solutions may find themselves with an entirely different problem: any anticipated cost savings have been negated by the need for extra resources to integrate and support technology stacks that weren't designed to work together.

Challenge the critics...

Part of any successful strategy is engaging with your most vocal critics: usually, business unit leadership. This involves acknowledging that IT strategy has to change to keep pace with the business, but also sharing the set of executive concerns that might not be readily apparent to them. Creating the bigger, enterprise-wide picture is essential.

...then ask yourself

How much of the work people are doing goes away in a cloud model? Strong candidates: acting as in-house infrastructure integrators, creating customized workflows for basic automation functions, trying to create in-house versions of developer and application services readily available in the public cloud, and similar.

Take a look at your organization, and be honest: how many of your current people can make the transition to the next cloud model? One popular approach is segregating some of these people out, and creating a 'cloud team' that can move faster than mainstream IT without undue friction. Focus them on putting the cloud to work, and not attempting to recreate what's already available in the marketplace.

Finally, take a hard look at your current vendors. How many of them will be truly relevant in the cloud era? Ideally, you would start to shift investment away from vendors who won't be making the transition, and towards vendors who are able to deliver enterprise-grade cloud capabilities.

Organizational inertia can be difficult to overcome. It takes vision, leadership and persistence. Whether you consider cloud an opportunity, a challenge – or perhaps some of both – the inevitable industry shift has begun in earnest.

Only Oracle can offer a public and private cloud in a single architecture.



To learn more about Oracle's enterprise cloud solutions, please visit oracle.com/infrastructure

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