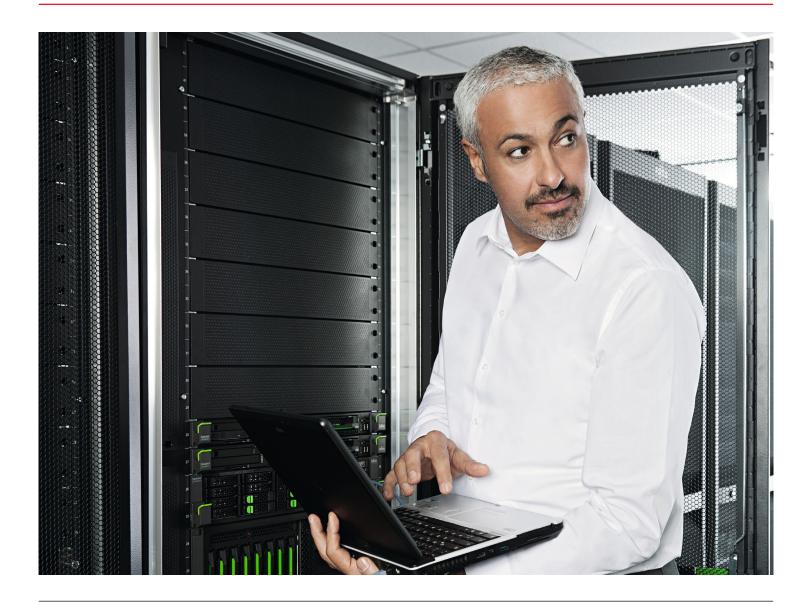FUJITSU

White paper
The future of the data center in the age of Hybrid IT

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Introduction: A new era for enterprise IT

The world of IT is changing. Cloud has come of age for the enterprise, bringing many opportunities and challenges for the IT organization when it comes to the provision of IT services and delivering value to the business.

However, this doesn't spell an end to what we consider the traditional data center. Every company will have different needs as it moves its IT infrastructure into the cloud and, for many, this will mean a continued need for legacy IT as well as software-as-a-service. The answer lies in Hybrid IT, which blends the best of the cloud and conventional IT to give organizations the flexibility to evolve with changing business needs.

This world of Hybrid IT has big implications for the data center. Today's legacy data centers simply aren't fit for purpose when it comes to supporting the new pace of business and providing the flexibility, agility and security the organization needs. Managing and operating an in-house data center in a Hybrid IT future will take new skills and approaches, and the demands will change as the legacy/cloud mix evolves over time.

For businesses, this will mean exploring new ways to exploit existing investments and working to ensure that the legacy data center world can join the new, digital world. Such a Hybrid IT data center will need to combine physical and cloud-hosted services, and provide an environment that can deliver information and applications effectively – and securely – to devices and people, wherever they are.

While businesses are increasingly moving even mission-critical applications into the cloud, they still face constraints. In many cases, some operations simply can't be moved into the cloud at this point, whether for cost or risk reasons, or because organizations are hamstrung by existing long-term contracts.

At the same time, businesses have moved beyond smaller cloud pilots to develop and test and mission-critical projects. For CIOs and IT director-level roles the key drivers for investment in the cloud are also shifting from the low-hanging fruit of bottom-line cost reduction to focus on the bigger prizes of modernization, innovation and agility.

The figures back up this seismic change going on in IT. According to analyst IDC there will be an 11 per cent shift of IT budget away from traditional in-house IT delivery towards various versions of the cloud as a new delivery model by 2016.

But it's not simply about everything moving to the cloud. Businesses still have huge investments in conventional applications and infrastructure to sweat, while some workloads are just not suitable for migration to the cloud for reasons such as application licensing or data security.

The challenge for CIOs in this new world is being able to ensure business units have the agility to choose and deploy the services and applications they need - increasingly cloud-based - but within a robust, secure environment that enables IT organizations the control they need to maintain governance and compliance.

Businesses also need to be ready to take advantage of trends such as the Internet of Things (IoT), mobile and Big Data - all of which will increasingly be cloud-native and place even more demands on IT infrastructure and networks.

In this whitepaper we will explore the ways that businesses can address the challenges of Hybrid IT, take their first steps and identify the most suitable migration roadmap for their needs - because there is no "one-size-fits-all" approach to modernizing the data center.

Is your data center fit for purpose?

Legacy data centers have become something of a millstone for many organizations today. Most are simply no longer fit for purpose in an era of cloud and Hybrid IT. They are costly to operate, inefficient and generally not flexible enough to support dynamic and rapidly evolving business needs.

As well as the radical changes coming from the cloud, there is the continued impact of Moore's Law; stating that computer processing power doubles every 18-24 months. If a business were to sweat its IT assets over a lifespan of three years without a change in the workload then it would only need a quarter of the data center it started with at the beginning of that period. Sweat those assets over five years and Moore's Law bites even deeper meaning the business would only need an eighth of that data center.

Put simply, unless internal workloads are increasing, the business needs fewer data center resources and all the evidence points to workloads decreasing. Apart from many existing services migrating to the cloud many new workloads are cloud-native and go straight there, particularly around trends such as the Internet of Things, mobile and Big Data.

There is no turning back the tide. More than 50 per cent of organizations have already deployed some cloud in their business. In particular there is increasing adoption deeper with business functions such as marketing, finance and HR. In terms of benefits increased agility tops the list, cited by nearly two-thirds of businesses, followed by costs savings (53 per cent) and improved response to customer and market demands (44 per cent).

All this leaves data centers looking like a Swiss cheese as workloads that used to be located in them are migrated out to the cloud. The inefficiency is striking when looking at the physical footprint needed versus the workload that has migrated.

For large traditional enterprises the data center will not fade into the background. It will play a key role in the provisioning of IT alongside the cloud – but it will need to be optimized for the hybrid world. Data centers will need to become significantly more cloud-like in the way they are run. That means a lot more orchestration, automation and consolidation of infrastructure inside the data center to improve operational costs, along with a lot more flexibility to provision and de-provision services rapidly on demand. And this is true of all types of systems that could be seen in current data centers – including servers, storage, networks and building management systems. Put simply, the static behemoth of the data center will need to transform into a dynamic entity, which can respond to business change in a timely fashion.

There are also business drivers for modernizing the data center. At board level business executives are putting more pressure than ever on CIOs to improve efficiency and reduce costs. Inefficient legacy data centers are an obvious target for driving out cost and that can be achieved through a combination of running an optimized in-house data center or a hosted data center in conjunction with the cloud.

The way forward
We have already established that cloud is now a mainstream business IT provisioning method - even notoriously IT-conservative industry sectors such as banking are now embracing it.

Aside from the obvious benefits and opportunities of migrating workloads to the cloud it also poses challenges for the IT organization, not least of which is what to do with the existing investment in legacy infrastructure and the data center.

Something has to change and we need to re-think how we provision IT across the board. In the past the options were relatively simple and it was a choice between an on-premise or co-lo data center or outsource it all.

A survey of IT decision makers in North America and Europe shows that 49 per cent currently own their own data center facilities while 51 per cent don't. That is likely to change in the era of Hybrid IT. The percentage of IT budget being invested in data centers that businesses operate themselves is predicted to fall from 41 per cent to 38 per cent by 2016.

But that doesn't mean businesses are about to ditch all their own facilities and move wholesale to the cloud. In fact some three-quarters of CIOs are pursuing Hybrid IT strategies that go across traditional IT and the cloud, according to analyst Gartner.

Today in the world of Hybrid IT there is a whole portfolio of provisioning options that are interconnected across traditional IT and the various cloud models. These include:

- Software-as-a-Service (SaaS)
- Platform-as-a-Service (PaaS) / Infrastructure-as-a-Service (IaaS) public cloud
- PaaS/IaaS trusted public cloud
- PaaS/IaaS private cloud
- PaaS/IaaS hybrid cloud
- Privately owned data center
- Data center managed services that provide utility-based charging

And there are a variety of additional options such as Backup-as-a-service (BaaS) and Business Recovery-as-a-service (BRaaS).

This is where the world is going but the danger for businesses is that without a clear strategy and careful planning for Hybrid IT some costs can inadvertently be doubled - such as when adding cloud provisioning resources without reducing traditional data center costs - and further stretch already tight IT budgets.

The value of data center transformation in a Hybrid IT world
Having the right balance of an optimized data center and traditional IT alongside public and private cloud enables the IT organization and CIO to provide users with enough options and choice to procure IT services for whatever they need in a way that's fast and flexible. But it also means that is done in a robust, controlled and secure environment.

This also addresses the challenge of so-called shadow IT - where business users and units bypass the IT organization and go directly to the cloud to procure the applications and services they need. That situation generally arises only when internal IT isn't flexible and dynamic enough to provide those services. A Hybrid IT environment, backed by a fully optimized and modern data center, means the IT organization is equipped to provide a portfolio of choices - internal or external - to business users that can be deployed and scaled as rapidly as needed.

The "special sauce" for bringing a legacy data center into the cloud era comes in part from the connectivity that can make the conceptual data center a reality. Another key ingredient lies with how Hybrid IT is managed and orchestrated, given the multiple-supplier ecosystem of the "New World" data center.

Hybrid IT also speaks to the demand from the board, in terms of seeing clear business benefits. It removes the inefficiencies of the old data center, driving out cost and lowering TCO. The optimized infrastructure

also gives the business the agility and speed it needs to compete in the digital world, enabling it to respond rapidly to customer needs, changes in the market or business drivers such as merger and acquisition.

Businesses get the best of both worlds with Hybrid IT. It's the best of traditional IT now fully optimized, run at the best cost point and protecting strategic or valuable workloads and data in conjunction with all the benefits of the cloud in terms of flexibility, scalability, innovation and cost.

First steps and a roadmap to Hybrid IT

It can be tricky for organizations to know where to start. Our advice here at Fujitsu - based on our methodology we use to help our clients - is to have a clear starting point.

The first step is to assess what is already there. That includes how many data centers the business has, where they are, how efficiently the IT is used, what is the opportunity to rationalize some of the application portfolio and what is the opportunity to migrate some of those onto the cloud.

It also means looking at workloads and data, working out what is strategic - the crown jewels - that needs to be kept in-house and what can be migrated to public or private clouds. Mission-critical workloads or ones where data security compliance is a factor are more likely to be kept in-house while others such as office productivity apps, email and cloud-bursting to scale for peaks in demand are likely to be more suited for migration to the cloud. Other factors might include data residency, how easy a service is to migrate, cost and even whether the application vendor has embraced the cloud for licensing.

Another factor is whether the organization has the skills internally to operate and manage this new Hybrid IT data center environment - and many don't due to the difficulty in hiring people with the broad range of skills now needed across networking, security, storage and the cloud, as well as general business awareness.

Having assessed and made sense of the existing applications and infrastructure, including what to do with current data center systems (migrate, retire, optimize) the next step is to create a compelling

business case to justify the investment in transforming the data center infrastructure for a Hybrid IT environment. This requires three key figures

- How much does it cost to run now?
- What is the cost of migration?
- What is the cost of running it in the future?

Ultimately it's about finding the right balance of provisioning for the business needs. A data center equipped for the Hybrid IT era blends the best of cloud and on-premise to drive innovation, enable better service delivery and still retain operational and governance control.

Summary

It is vital to make a start and that starting point consists of 5 key elements:

1. Understand your current estate
2. Envision the future
3. Formulate how the transformation will work
4. Put an ROI together to articulate the business value
5. And then, once you are happy, submit the budget request tha will make it all work

Next steps

Fujitsu has a consulting offering called Hybrid IT Transformation Blueprint that can analyze the assets in your data center and then, by taking on board your policies and strategic direction, provide you with fact-based advice on how you can move forward. It delivers steps 1 to 4, as outlined above, to give you the best possible start on your journey to capture the value of Hybrid IT, which then puts you in a position to budget for the transformation.

Once the planning and budgeting is out of the way, we can also help you to transform your traditional data centers to their more balanced Hybrid IT state.

We will be delighted to talk to you about this, so please visit our website at www.fujitsu.com/us

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