

White paper Orchestrating Hybrid IT

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Introduction

Hybrid IT – the mix of public, private and managed cloud with traditional legacy – is the new reality for all enterprises. Analyst IDC predicts almost two-thirds (65 per cent) of enterprise IT organisations will commit to hybrid cloud technologies before the end of 2016. And Gartner says that nearly half of large enterprises will have hybrid cloud deployments by the end of 2017. This is a wake-up call for any organisation that isn't already doing or planning Hybrid IT. Now is the time to get started.

The first important step on this journey is to define the strategic goals for making the shift to cloud and Hybrid IT. Those goals will vary and need to be tailored to each individual company, its sector and its appetite for risk. There is no magic ratio of cloud to traditional IT. It's about finding the right balance for each business, whether that's a high-street retailer or an investment bank.

Once a business has identified those strategic aims – such as reducing cost, increasing speed to market or improving the customer experience – the transformational shift to Hybrid IT has more business relevance, rather than simply doing it because everyone else is. These goals can then be used to maintain focus and strategic alignment during your transformation journey, by acting as a reference point for tactical decisions.

The American singer and songwriter Tori Amos describes an orchestra as a creature and the conductor as “the dragon tamer”. It's an apt analogy for the world of Hybrid IT where orchestration is the key to taming the complex mix of cloud and traditional IT environments and getting real business value out of it.

In this context the conductor must bring together all the moving parts of Hybrid IT – the services, suppliers, security, processes and technology. Fast and legacy IT, analogue and digital must all be orchestrated to help the business create and deliver a seamless user experience across all platforms and channels.

Orchestration is the key to this. In this white paper we will explain how businesses can drive value and efficiency from their hybrid infrastructure through orchestration.

First steps

While orchestration is increasingly being talked about in the context of managing Hybrid IT environments, few enterprises are actually doing it. In practical terms orchestration of Hybrid IT is not just about striking the right balance between traditional IT and the cloud. It is also a balancing act involving many other factors. Agility, fast delivery, automation, compliance and security all need to be catered for when designing the right service.

Orchestration doesn't follow the traditional 12-month cycle of constructing an IT plan, from getting the budget to presenting back to the board a year later. Instead, it is a business and IT enabler, helping to drive more value from all of the component parts. Without orchestration you would gain less agility and you would not be in a position to take advantage of market-leading innovation to bring competitive advantage to your organisation. Put simply, you will gain a higher return on investment from your component solutions if they are all joined up, controlled and managed – in short, orchestrated.

Here at Fujitsu our definition of orchestration is simply making everything work together to deliver customer value. That means:

- The customer experience for both internal users and consumers is consistent, regardless of the engagement or delivery channel.
- IT services, whether cloud or non-cloud, are integrated to drive value.
- Each application, workload and service is optimised and executed on the right platform.
- IT processes are aligned with the business needs to deliver the required outcomes.
- Security and data protection is inherent.
- The supplier ecosystem delivers cost-effective services aligned to the business requirements.

The 6 key areas of orchestration

1. Service orchestration

How do you deliver quality of service across the different platforms in this new disaggregated, Hybrid IT world? How do you track which technical components are being combined to deliver each of your IT services? Should you care? Here, orchestration is key to maintaining a seamless service and customer experience to the end user, whatever makes up the technical solution.

Take, for example, the requirement of the business to increase the speed to market. To support this we replace the traditional large, slow and unwieldy IT project approach with an agile, outcome-driven approach, where there is 'just enough' functionality in the initial delivery to meet the functional requirements of the business. Additional features can be added or changed in iterative stages after that.

In this context, service orchestration is vital to making sure there is a linkage from the release and change cycle to the service desk and the service delivery experience to ensure that the consumers receive the very best experience.

Service orchestration is also about using context-sensitive information so the application and service automatically know who the person consuming it is and can tailor the experience accordingly. It ensures a consistent look and feel for everyone accessing the service by giving each user the information that he or she specifically needs.

¹IDC FutureScape: Worldwide Cloud 2015 Predictions

²Gartner: Private cloud matures, hybrid cloud is next

Customer examples of service orchestration

Large retail chain: Fujitsu orchestrates a single service, which comprises multiple processes, technologies and suppliers for a multi-brand retail chain. In this environment, Fujitsu manages and integrates the end-to-end service landscape and simplifies the access to these services through a coherent channel.

UK infrastructure company: Fujitsu has implemented a single service solution that caters for all components of the Hybrid IT environment. The level and depth of service orchestration varies across the solution to meet the customer requirements, per service and per supplier. For this customer, Fujitsu provides the end-to-end coordination from service concept and design, through to agile implementation and ongoing management.

Key takeaway advice:

- Focus on business outcomes, not technical options.
- Focus on the end-user experience to ensure that your users receive a first-class service.
- Don't be distracted by the perceived need to provide a complete solution on day one if the business does not require it. Delivering business value quickly should be your aim.

2. Supplier orchestration

In a Hybrid IT environment that includes both cloud and legacy platforms, businesses have a choice of significantly more suppliers than before. In fact, some progressive organisations using SaaS are operating with well in excess of a hundred vendors. Managing those contracts and relationships is complex and demanding. With such diversity, maintaining control is a constant challenge and shadow IT – end users adding unofficial suppliers or services to that long list – is a reality.

IT and procurement departments are trying to pull different suppliers together, dealing with the contractual limitations of each one. Supplier orchestration manages this complexity and embraces autonomy while reducing the risk of shadow IT. This is achieved with clear policies and by aggregating the visibility and management of every supplier, regardless of which department signed the contract.

At the beginning of the lifecycle, supplier selection is a crucial component to supplier orchestration, and choosing the absolute best supplier for each business scenario is essential. Each project, department or use-case will have its own priorities – such as security, cost, data residency or scalability – for each service, application or workload. Fujitsu simplifies this selection process with an automated comparison engine, which forms part of cloud brokering. Getting this right enables you to take advantage of the best possible service on the best possible platform at the best possible price.

Supplier orchestration is not something to underestimate. It is far more difficult than traditional service integration and management because the Hybrid IT environment can be more disaggregated and often has more interdependent platforms. The disaggregated supplier model still needs to act like a joined-up 'single' team with the aim of supporting and enabling the business. The role of the supplier orchestrator in this context is to add that sense of collaboration across the various supplier organisations.

This includes the on-boarding and off-boarding of suppliers and managing multiple different suppliers, contracts and commercial relationships and removing that pain from the customer. Here we combine Fujitsu's significant buying power with our access to innovative intellectual property to drive improvements and to provide you with better ways to enable your business.

Customer examples of supplier orchestration

UK infrastructure company: Fujitsu has extended its contractual envelope to encompass suppliers that were initially engaged and managed by the customer. This has helped to reduce the burden on the customer, enabling it to focus on its business goals and also to improve supplier orchestration through Fujitsu's direct engagement, management and dialogue with service providers.

European credit management organisation: Fujitsu supplies a web front-end for a European credit management group, where Fujitsu is providing an orchestration service and has taken on another third-party supplier's contract, billing cycles and commercial negotiation. Fujitsu used its large buying power to take this 'pain' away from the customer.

Key takeaway advice:

- Take note of your supplier contracts and strive to achieve a unified service level regime.
- Simplify by allowing your service orchestrator to manage the suppliers on your behalf to deliver your required outcomes.
- Use your cloud broker to advise and assist in the comparison of suppliers to help you select the right match for your business.
- Disassociate the service to your business from the suppliers of the technical solutions, to avoid vendor lock-in.

3. Security orchestration

Taking advantage of a multi-platform environment presents business benefits but it also presents a security challenge for organisations. Security orchestration makes possible the safe use of your data regardless of the underlying platform, be it robust legacy IT or fast IT.

The initial questions posed to organisations adopting a Hybrid IT model are: Which data should be located in my public cloud?, Which data should be private? and How will I unify the data in an integrated manner between these disparate environments? Security orchestration is necessary to help identify the right platform to meet any prevailing compliance and data residency requirements.

It is clear that by having data in multiple physical and virtual locations, the requirement for rigorous identity and access management is essential to manage the business risk of unauthorised data access. Security orchestration federates access controls to present a cohesive user security experience for all of your enterprise systems.

It is essential to be assured of compliance on all of your platforms, and the automation and integration between your platforms must also be compliant. Data encryption of the production environment, within the backup environment and during data transit between the multiple platforms, is crucial. This is especially so where compliance obligations are present that mandate such controls, for example, with Payment Card Industry regulations.

Enabling a true Hybrid IT model for your organisation can lead to worries that your data is less secure and therefore your organisation may be viewed as a target. Security orchestration is reinforced by ongoing monitoring of all systems and services within the environment for current and historic cyber security problems that allow the organisation to react faster and close the gap between discovery and resolution of security issues. To enable a proactive response, security orchestration must also provide advanced cyber threat intelligence to help organisations predict current and future threats to their enterprises. Key to this is ongoing monitoring of established communication channels, social media and further afield in the dark web outside of organisational boundaries.

Customer examples of security orchestration

UK hospitality company: Fujitsu provides security orchestration using cyber threat intelligence and security monitoring to enable a proactive view of threat and risk within the environment. The solution informs the business of both potential and active threat actors operating against its assets within the Hybrid IT environment. Business risk decisions are readily informed and mitigation strategies can be formulated proactively when intelligence and monitoring are orchestrated in this manner.

Global optical product company: Fujitsu provides security orchestration using advanced authentication. This solution manages all users' access and authentication before they go to any applications and ensures that all the identity and entitlement functions are consistently managed across the enterprise. The result is consolidated identity and access management to all of the consumed cloud services.

Key takeaway advice:

- An orchestrated hybrid cloud can provide your organisation with more effective security protection than you previously achieved with legacy infrastructure.
- Security is mandatory but should be orchestrated to support business usage and exploitation of your enterprise systems. It should be appropriate to your risk profile, rather than being unnecessarily prohibitive.

4. Compliance orchestration

Compliance has become the epicentre of a Hybrid IT service model. With a multitude of services, systems, suppliers, technologies and interfaces, remaining compliant is increasingly challenging for most organisations. You must have standards, controls and policies in place to remain compliant and also to take advantage of this complex landscape.

Policies at an internal organisational level, or those that are needed based on external legislation or industry standards, are essential to ensure that your organisation remains in control of its governance. By setting a comprehensive set of policies, you are able to prevent many compliance breaches through automation and you are also able to detect compliance breaches that still occur, so you can take immediate action.

Staying compliant could be as simple as using a cost optimisation policy of shutting down unused workloads during periods of low demand. Policies can also increase in complexity to cater for data residency compliance and other geo-specific standards that are becoming more and more important.

A major European government: Fujitsu collaborated with a public sector organisation to move it to a new operating model. With this customer we have co-created a cloud delivery organisation to embrace cloud and data delivery services, creating a model that is powering it into a digital future. This has catered for everything, including the organisational structure, roles, responsibilities, policies and processes that are needed to remain compliant while optimising its Hybrid IT model. Completing this with the customer has given this organisation the control and autonomy to manage its own direction, while having the flexibility to bring services in and out of its environment five times quicker than previously possible.

5. Process orchestration

The successful delivery of Hybrid IT requires agile, process-centric IT organisations to seamlessly orchestrate a wide range of different technologies, service levels and business models. This can mean providing end-to-end fulfilment of user requests spanning multiple suppliers, providing a consistent view of changes in complex multi-vendor arrangements or empowering data centre engineers with real-time performance and sensor data on mobile devices. In all cases, IT departments must transform their service fulfilment, management and innovation processes to orchestrate value across an increasingly complex web of internal and external services.

Approval and governance procedures are also becoming more complex as an increasingly diverse group of business and IT stakeholders becomes involved in technology purchase and provisioning decisions.

Providing great IT services in this environment requires processes that join up the delivery of IT value from end to end, presenting complex 'digital supply chains' as single, integrated services, seamlessly provided by IT.

Achieving operational excellence therefore requires IT departments to clearly set out their business model, understand the necessary metrics and then implement and demonstrate the end-to-end control necessary to achieve them. Process orchestration provides the necessary capabilities for the CIO's own internal digital transformation, starting from the outcomes required by the business and working inwards to connect processes and systems to optimise their fulfilment.

Process orchestration provides the capabilities necessary to ensure appropriate approval and governance processes and to offer real-time reports on status and performance.

Finally, process orchestration makes it easy to link processes into all of the people, systems and data required to deliver innovation and to automate service – ensuring that outcomes are reliable, repeatable and fully joined-up. By using process orchestration, CIOs can become valuable partners to their businesses, automating processes to industrialise delivery and freeing the organisation to focus on business innovation.

Customer examples of process orchestration

Fujitsu: As part of its own digital transformation, Fujitsu is using its RunMyProcess platform to streamline and control self-service procurement processes with suppliers, for example, for corporate mobile devices and contracts. This work is providing an easy-to-use storefront for ordering phones, contracts and accessories for staff, removing significant manual authorisation and approval processes and automating the end-to-end fulfilment of orders across Fujitsu and its suppliers.

A large retail bank: Hardware decommissioning can be a huge burden in a large, regulated organisation, requiring strong control and record keeping to maintain compliance. Fujitsu used process orchestration to automate around 45,000 decommissioning processes a year, significantly reducing processing time, eliminating errors caused by manual rekeying and saving environmental and physical storage costs through an end-to-end electronic record.

A luxury goods provider: Fujitsu used its process orchestration to integrate different service management platforms to create a unified view of incidents across a complex and geographically distributed multi-source arrangement. By enabling the customer and all three suppliers to see the same information in real time, it accelerated the resolution of errors and eliminated the need for challenging daily synchronisation calls that consumed significant management time and attention.

Key takeaway advice:

- Good automation will not fix a poor process. Transform and integrate your processes from end to end to deliver better outcomes.
- Be adventurous with your targets. It is possible to automate entire workflows, achieving business outcomes without any human intervention.

6. Technical orchestration

This is the foundation that underpins all the other pillars of orchestration. The technology is the enabling platform while the value then comes from how the business and users consume that platform.

Technical orchestration covers the integration of the different public cloud, private cloud, SaaS and traditional IT environments. APIs, technical security, data portability and dynamic workload management enable the ability to flex and scale as needed without impacting the user. A key component of this is the ability to automate decision-making, based on codified business rules, to ensure that every workload, application and project is run on the right environment for the particular requirements, taking into account security, speed, scalability and cost. If requirements change over time, workloads can be moved automatically to the best provider.

Workload provisioning is also facilitated by technical orchestration. Here Fujitsu System Blueprinting provides the templates of each and every workload type, which can range in complexity from a web server to a three-tiered application or an entire service. This System Blueprinting increases speed to market, enabling an agile development cycle while also decreasing support costs by provisioning the same standard builds time and time again.

Technical orchestration is ultimately about organising technology delivery to integrate and seamlessly connect cloud and non-cloud environments to release business value.

Delivering effective technical orchestration turns technology into a business enabler, driving tangible value through improved time to deliver, standardisation, increased agility, flexibility and reduced cost.

Customer examples of technical orchestration

UK infrastructure company: Fujitsu has designed and implemented a technical orchestration solution linking together multiple cloud and SaaS solutions with on-premise core infrastructure. The hybrid environment consists of Amazon Web Services, Microsoft Azure, Office 365, ServiceNow and VMware vCloud Air alongside on-premise Active Directory and hosted applications.

Large retail chain: Fujitsu has taken on support of the technical orchestration forming part of the wider hybrid solution. The customer's solution is hosted in-house and functions as a private cloud with access to external cloud providers and services such as Amazon Web Services and Microsoft Azure. VMware's vRealize suite is used to carry out the orchestration functions and implement business rules.

Key takeaway advice:

- There are lots of technologies to take advantage of and to add value to your business. Embrace the variety, select the best components and use technical orchestration to integrate them into a business solution.
- Look for a technical orchestration provider that can give you access to any service from any supplier. Do not accept limitations or restrictions.

Summary

Just like a conductor who must decide which instruments best complement a musical score, then manage the nuances of tempo and volume while linking it all together so the audience hears a perfect piece of music, orchestrating a Hybrid IT environment is complex and challenging – but achievable. Businesses must choose the right partner to help navigate this roadmap.

The business value in orchestration is not in the technology. It's in the service, supply, processes, the people and how they all knit together to deliver a secure, seamless customer experience.

To help get you started, here are a few key dos and don'ts for Hybrid IT orchestration.

- Do be crystal clear on what the strategic business goals are. Is it to cut cost, to be a market leader or to be more agile and quicker to respond to market trends?
- Do seek advice based on your specific needs. Your organisation and the orchestration of its Hybrid IT environment is your unique fingerprint.
- Don't worry – there is no one-size-fits-all way of doing this but there is good and bad practice and there are global IT suppliers experienced in supporting you.
- Don't worry if you have not yet started your Hybrid IT journey. Take note of our advice in this paper on how to take those first steps and let us help you on the path to IT delivery that enables real business value.

Next steps

We can help you navigate the complex and challenging world of Hybrid IT and orchestrate your environment to deliver your business goals. Contact Fujitsu to find out how we can help you on this journey.

For more information on Fujitsu's approach and recommendations for orchestration in a Hybrid IT world, please contact us at:

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