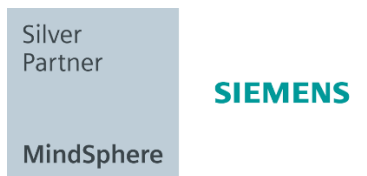IT Operating Model

Part 7 of 5 – Application Hosting and Cloud Strategy

This is part 7 of an introductory series of documents intended to assist your organisation in defining your Application Hosting and Cloud Strategy. Your organisation may already have such a strategy, in which case these documents will hopefully confirm you are on the right track or they may identify challenges your organisation faces.

IT Operating Model

MCSP

It is advisable to appoint a Managed Cloud Service Provider (MCSP) to assist your organisation in the management of services deployed in the Public Cloud. The scope of the MCSP agreement should include:

- Close monitoring of utilisation and optimisation of services to control costs;
- Subscription management;
- Management of the self-service framework consumed by projects;
- Provision of show-back & reporting;
- Provision of governance and application of standards for new deployments.

From an operational perspective this addresses some of the challenges, particularly around cost control and governance.

IT Organisation Implications	Appoint a MCSP to assist with the management of Cloud services.
	Capability to support a "virtual data centre" in Azure, AWS or IBM Cloud etc will need to be investigated with the Infrastructure service towers across other programmes.

DevOps

DevOps (Development and Operations) represents one of the biggest departures from established, historical working practices. It is most applicable to the Cloud Native style of solution discussed above (although it does not necessarily need to be applied to all Cloud Native Solutions). DevOps moves away from the traditional "waterfall" approach that involves upfront planning and large capital programmes to agile and perpetual solution development. Gartner defines DevOps as:

> "…a change in IT culture, focusing on rapid IT service delivery through the adoption of agile, lean practices in the context of a system-oriented approach. DevOps emphasizes people (and culture), and seeks to improve collaboration between operations and development teams."

Additionally:

- Rather than collaboration between Operations and Development, DevOps should be seen as a combining of these teams for a given solution or portfolio of solutions;
- Rather than just a change in IT culture, DevOps also requires change within the business as defined in most agile methodologies.

To summarise DevOps represents a change in IT and business culture, focusing on rapid IT service delivery through the adoption of agile, lean practices in the context of a system-oriented approach. DevOps emphasizes people (and culture), and seeks to combine operations and development teams aligned to specific business solutions or portfolio of solutions.

The criteria used to determine whether DevOps is appropriate for a given solution is as follows:

- Whether the solution will have a 'steady-state' at any given point;
- Whether it is anticipated that continual and incremental development over the foreseeable future will bring business benefit;
- Whether the pace of change of underlying PaaS services will either require rapid and frequent re-work;
- Whether new innovation and capabilities could be leveraged quickly to derive rapid business benefit;
- Whether the business unit is keen to work in a more agile way to help meet its own rapidly changing requirements.

Features of DevOps:

- Solutions developed in the Cloud Native model do not have traditional application vendors that can provide support, bug fixes and development, these activities are undertaken by a DevOps function working to a "backlog" of tasks;
- The traditional waterfall project lifecycle is not relevant; releases, upgrades etc are executed over short sprints with much more fluidity around changing requirements, timescales and re-prioritisation. This is essentially what gives the "agility" and capability to respond very quickly to forced technical changes associated with evergreen cloud services and changes in business needs associated with a 'fail-fast' approach;

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- There is a shift from project to product thinking, teams are aligned to products (or groups of products) and own the on-going lifecycle and development rather than project teams being mobilised for specific upgrades or changes;
- Business ownership and representation needs to be ever-present to constantly prioritise, develop and agree backlog items, this is a cultural shift from the traditional model where detailed requirements are developed and documented up front and agreed with stakeholders before entering a delivery phase;
- Changes to solutions are reliant on developer bandwidth/headcount (and therefore OpEx) rather than capitalised funding associated with purchasing new versions from a vendor and having a specific project to plan and implement the upgrades. Multi-year refresh cycles can no longer be an option; the business and IT must support continuous change.
- The cost of change in DevOps is typically a fraction of the cost if a true "lean" DevOps approach is adopted. There is potential to achieve much more with significantly less investment.

IT Organisation Implications	Your organisation's IT department will need to lead a cultural change within business units to support the agile DevOps approach.
	Financial models will need to be developed to account for the lifecycle management of Cloud Native DevOps managed solutions.
	Your organisation's IT department will need to develop alternative mechanisms to deliver continuous change outside of current waterfall gated project lifecycle processes.

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Summary of IT Operational Implications

IT operational implications are highlighted throughout this document, delivery of an effective Application Hosting and Cloud Strategy is reliant on fully addressing these implications. There is a need to establish a 2nd mode of operation to support cloud solutions alongside the traditional solutions, key challenges of this 2nd mode are:

- Funding model must be transformed to support continuous change, multi-year refresh cycles are not an option for cloud native solutions;
- Change management, testing and support processes must all become more agile and responsive to reflect the "evergreen" nature of cloud services;
- The nature of business engagement needs to fundamentally change from involvement up front as part of a project lifecycle to continuous presence and ownership of solution development. There is also a change in culture and attitudes towards risk to maximise the opportunities of cloud and adopt a more "fail-fast" approach;
- The project management/gated lifecycle is not relevant for the development of all cloud native solutions and so new governance and process is required to manage agile developments;
- New processes and governance are required to support the concept that everything is deployed as code, a "Cloud Service Catalogue" needs to be created and maintained.

The table below summarises all the references to IT operational implications.

IT Organisation Implications	Your organisation's IT needs to establish itself as a "cloud broker" that is trusted by business units to help solution selection and manage risks and maximise the perceived benefits of cloud.
	Appropriate governance, including effective configuration management, will need be in place to ensure that cloud services are deployed and managed in a cost-effective way to avoid "bill shock".
	A cloud service catalogue will need to be created with appropriate governance in place to ensure that deployments are using the patterns in the catalogue appropriately.
	New cost "show-back" processes will need to be developed to ensure business units have visibility of the cost of Private and Public Cloud based solutions.
	Mechanisms for realising savings associated with shrinking the on-premise environment will need to be established with new IT outsource providers.
	Your organisation's IT costs will be increasingly OpEx focused and this will need to be accounted for in financial plans.
	Alternative change, release, configuration management and testing processes will need to be developed for cloud based services and a similar shift in attitude towards change within business units will need to be established to account for "evergreen" services.
	Processes for service management will need to be developed to account for the different ways cloud services are supported and underpinned with fixed SLAs.

	Your organisation's IT department will need to establish a DevOps capability to develop & manage Cloud Native deployments.
	Your organisation will, at the earliest opportunity, agree on a mechanism with new service tower providers to drive out cost based on technology consolidation or technology change.
	Your organisation will need to appoint an MCSP to assist with the management of cloud services.
	Capability to support a "virtual data centre" in Azure, AWS or IBM Cloud etc will need to be investigated with the Infrastructure service towers across all programmes.
	Your organisation's IT department will need to lead a cultural change within business units to support the agile DevOps approach.
	Your organisation's IT department will need to develop alternative mechanisms to deliver continuous change outside of the current waterfall gated project lifecycle processes.
	Financial models will need to be developed to account for the lifecycle management of Cloud Native DevOps managed solutions.
	Your organisation will undertake a broader assessment of the impact of managing a hybrid environment across all functional areas of IT.

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www.rheinberry.com

info@rheinberry.com

Rheinberry Ltd
International House
24 Holborn Viaduct
London
EC4A 4AN
United Kingdom

+44 (0)20 3000 2660