

# ORGANIZING FOR THE CLOUD

Your business is ready to reap the rewards of the software-defined cloud era. Is your IT organization ready to deliver?

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## Executive Summary

Business leaders look at the cloud model and see new ways to accelerate innovation, create competitive advantages, and drive new business models. IT executives look at private and public cloud models and see a host of new possibilities for positive IT outcomes, including:

- Optimized CapEx by cutting unit costs for software-defined data center (SDDCTM) infrastructure
- Lower OpEx through streamlined and automated data center operations
- A better security-to-effort ratio through security controls that are native to infrastructure
- Higher uptime thanks to high-availability, resilient infrastructure and proactive IT operations
- Improved service delivery times through app and infrastructure delivery automation

But all too often, a critical aspect of harnessing the cloud is overlooked: The organizational impact of moving to the cloud model.

The fact is, the transition to the cloud model often requires an evolution in roles, skills, processes, and organizational structure. Yet many IT leaders become so focused on the vision or the technological requirements of the cloud that they lose sight of whether their IT staff is properly prepared for the new world.

Organizing for the cloud cannot be an afterthought in the formulation of an effective IT transformation strategy. When IT is in transition, roles and responsibilities are more important than ever. The right people, with the right skills, in the right places and serving the right roles, or the transformation strategy will fail. On the other hand, proper preparation and a well-thought-out organizational structure can accelerate the implementation of your cloud strategies—and ensure the level of buy-in and support that spells the difference between success and failure.

This paper looks at the organizational impacts of transformation from multiple perspectives and provides insights and advice about how to prepare for—and execute—a winning transformation strategy.

**KEY FIRST STEPS**

- Define the Expected Benefits
- Assess Operational Readiness
- Determine the Degree of Change Needed
- Prepare the Organization for Change

**Traditional IT vs. Cloud-based IT: What's the Difference?**

If you believe form follows function, you'll easily see why there's a significant difference between "IT as usual" organizations and organizing IT for the cloud.

The function of traditional IT has been primarily operational: deliver the infrastructure needed to support projects and key business processes, maintain core operations, enforce policies and procedures, cut costs, and keep production running. And IT has traditionally been organized accordingly: heavy on siloed functional teams, lots of project-driven activities, lots of manual tasks. That is why IT is often perceived as a cost-centric technology supplier rather than a source of innovation; an implementation mechanism for business strategy rather than a partner and catalyst for business innovation, or an inhibitor rather than a business enabler.

On the other hand, the cloud is all about agility, flexibility, rapid scaling, and being more responsive to the business. Clearly, the same IT organization that delivered "IT as usual" is not going to have the same structure and skill sets as a cloud-ready organization regardless of a private or public cloud strategy. It is going to need to become service-driven: more efficient, fully automated, less restrictive, and with a higher value on innovation – providing IT at the speed of business with a laser focus on adding business value. Or, as CIO put it, "IT organizations must become internal service providers supplying business-enabling solutions that drive innovation and deliver value."

The question is how. The following sections provide answers based on the collective experience of VMware Professional Services consultants in real-world engagements.

**First Steps on the Road to the Cloud Model**

Once key stakeholders and the IT organization have made the decision to evaluate a move to the cloud environment based on SDDC, the following steps are recommended:

**#1. Define the Expected Benefits**

Every company's motivations for adopting an IT operating model focused on delivering cloud-based services are different, but whatever they are, they should be clearly defined, documented, and communicated to all stakeholders—along with expected results from a business perspective and a technical perspective. Some of the most common business impacts of the service-oriented model includes:

**Higher agility and efficiency**

Cloud initiatives enable automation and orchestration of key IT services, which in turn make it possible for IT to deploy services the business needs faster, with less cost and risk. A cloud based on SDDC can also bring predictability, control, and choice to service delivery so IT can respond to the needs of business units and repatriate their "shadow IT" projects. In short, offering services in a cloud environment is the starting point for building alignment between IT and the business.

**Increased focus on higher value initiatives**

Establishing integrated IT teams organized around services, fosters focused and more operationally driven decisions about business-enabling services that drive value.

**Faster response to business needs**

The service-oriented model, with its focus on delivering services the business needs, driven by outside-in versus inside-out thinking, can help streamline everything from the service definition to the service delivery process. This directly impacts the speed with which IT can respond to changing business needs.

**Improved ability to meet service level agreements (SLAs)**

With the service-oriented operating model the focus is on managing proactively, so services can be delivered reliably and predictably by resolving issues before they can impact services.

**#2: Assess Operational Readiness**

One potential pitfall in organizing for the cloud is cloud operational readiness. Many organizations discover that they lack the understanding, skills, or the best-practice guidance and training needed to move from their current organizational structure, culture, and mindset to one optimized for a service-oriented operating model. An early operational readiness assessment and a prioritized and actionable roadmap are essential to crafting a transition plan that minimizes risk and dramatically increases the chances for success.

**#3: Determine the Degree of Change Needed**

Once the operational readiness assessment is complete, IT leaders should understand the degree of change required to transition the organization to one optimally structured and skilled for a service-oriented operating model. They should undertake a skillset and career path assessment of their IT engineering and operations staff to determine who among the existing staff are best qualified and enthusiastic about change.

**#4: Prepare the Organization for Change**

Organizational change can be disruptive and is often met with inertia or resistance. To help overcome this, IT leadership must not only embrace and drive the transition but socialize and evangelize it within IT and line-of-business stakeholders. IT leadership also needs to consider ways to incentivize individuals to begin thinking more horizontally, both from a systems perspective and to foster greater collaboration. Modifying each individual's annual review criteria is a key technique to achieving this.

**What Does an Effective Cloud Organizational Model Look Like?**

A core requirement of preparing an organization strategy for supporting services in an SDDC-based cloud environment is to consider specifically what the elements of such an organization might consist of, what skill sets would be required, and how best to approach the transition. This section provides guidance.

In VMware's service oriented operating model, IT becomes much more customer focused. Organizationally, this is enabled through Cloud Service Teams. Typically, these include a team focused on delivering core cloud infrastructure services and multiple teams focused on cloud-based services that consume infrastructure services and produce services for consumption by IT's end users, as shown in the diagram below. Examples of services for which these teams be responsible include Infrastructure as a Service, Platform as a Service, DevOps as a Service, Digital Workspace as a Service, and Data Analytics as a Service.

“95% of IT leaders believe having an IT organization that has no silos and works together to deliver business-focused services at the lowest cost is critical. Yet less than 4% reported they currently operate like this”

2016 STATE OF IT TRANSFORMATION REPORT  
AN ANALYSIS BY EMC AND VMWARE

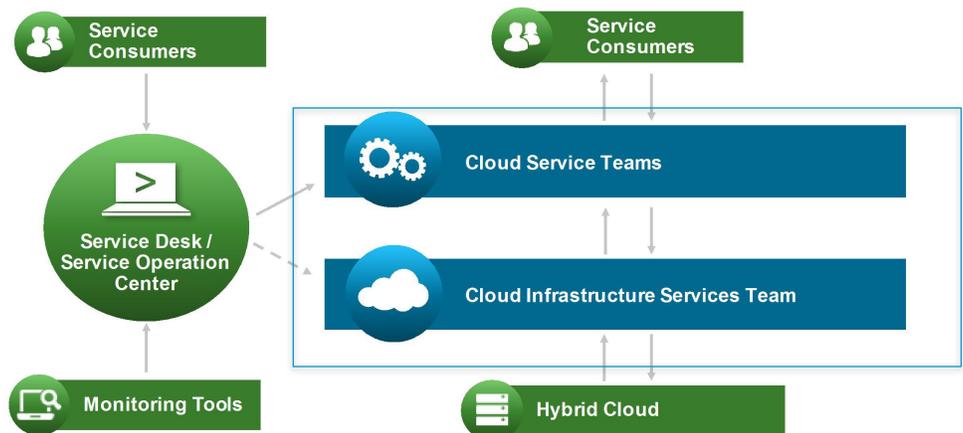


Figure 1: Overview of the Cloud Service Oriented Team Model.

These teams can be physical or virtual. While each team is ideally focused on a single service line they can also be responsible for multiple service lines. Single vs multiple service line responsibility is dependent upon criteria such as budget, service scope, criticality of the service to the company’s business, and rate of change for a service. Cloud Service Teams are responsible for defining, developing, delivering, and operating the service(s) for which they are responsible. They are held to the same customer service and satisfaction standards as for a Line of Business that interacts with the company’s end-customers directly.

The introduction of Cloud Service Teams impacts related IT functional teams. Service Desk and Service Operation Center (previously known as a Network Operations Center; another indication of the switch to being service oriented) teams must be able to route questions, events, and incidents to cloud service teams for level 3 troubleshooting. A given cloud service team may involve other cloud service teams from whom they consume services in the production of their service, such as the cloud infrastructure service team, in incident resolution. As such, the Service Desk and Service Operations Center should be included in the definition of all services for which they will provide level 1 & 2 support.

### Cloud Infrastructure Services Team: Roles and Responsibilities

Cloud infrastructure Services is an integrated team of cloud infrastructure and operations specialists and an ecosystem of related functional groups, as shown below. It serves as the focal point for all decisions and actions involving cloud virtual infrastructure and its operations. It includes a set of cross-domain roles aimed at creating a much closer relationship among architecture, engineering, and operations teams.

The goal is to create tighter collaboration across the traditional plan-build-run IT paradigm. This is a necessary step to achieving agility and the operationally-driven decisions needed to support proactive management of an SDDC environment.



Figure 2: Cloud Infrastructure Services Team and ecosystem.

The charter of the cloud infrastructure services team is to continually develop and implement innovative ways to architect, design, deploy, and operate cloud infrastructure services in the most cost-effective way possible—while satisfying the operating level agreements (OLAs) for providing those services to other cloud service teams. These infrastructure services could be sourced from multiple cloud providers in addition to the on-premise cloud, in which case the cloud infrastructure team also acts as a broker for cloud infrastructure services to abstract the need for detailed cloud provider knowledge from the other cloud service teams or line-of-business users. The primary roles and responsibilities include:

#### Service Owner

Overall responsibility and accountability for cloud infrastructure services throughout their lifecycle. Also responsible for actively evangelizing the activities, successes, and impacts of the cloud infrastructure services team.

#### Architect(s)

Sets the overall cloud infrastructure services architectural standards and is responsible for developing and maintaining related architecture and design documents; works with enterprise architects to make sure that the cloud infrastructure services architecture is aligned with enterprise architectural standards and strategies. Responsible for working closely with architects from other cloud service teams to make sure the underlying cloud infrastructure architecture and technical decisions support their cloud services, service tiers, and OLAs needed to meet business needs.

NOTE: Ideally the cloud infrastructure services architect role is responsible for all aspects of the Cloud Infrastructure Services architecture and relies on specialized cloud infrastructure services engineers for subject matter expertise, it could also include specialized roles such as, for example, Network Architect and Security Architect if VMware NSX® provides virtual network and security capabilities or Storage Architect if VMware vSAN™ provides virtual storage capabilities depending on the size and scope of the cloud infrastructure services.

**Engineer(s)**

Responsible for designing, building, and testing the cloud infrastructure services components comprising the cloud infrastructure as well as providing level 3 support.

NOTE: While the core cloud infrastructure services engineer role is responsible for all aspects of the Cloud Infrastructure Services design, implementation, and testing, it could also include specialized roles such as, for example, Network Engineer and Security Engineer if NSX provides virtual network and security capabilities or Storage Engineer if vSAN provides virtual storage capabilities.

**Analyst(s)**

Proactively monitors the performance, availability, and capacity of cloud infrastructure services and works with ecosystem members to act on events before they adversely affect the services; works with analysts from other cloud service teams to understand their demand forecasts for cloud infrastructure services.

NOTE: While the core cloud infrastructure services analyst role is responsible for proactively monitoring the Cloud Infrastructure Services, it could also include specialized roles such as, for example, Network Analyst and Security Analyst if NSX provides virtual network and security capabilities or Storage Analyst if vSAN provides virtual storage capabilities.

**Administrator(s)**

Administers, audits, and manages as well as provides tier 3 support for the cloud infrastructure services and components comprising the cloud environment; responsible for working with developers and other teams to implement integration with external systems.

NOTE: While the core cloud infrastructure services administrator role is responsible for all aspects of managing Cloud Infrastructure Services it could also include specialized roles such as, for example, Network Administrator and Security Administrator if NSX provides primary network and security capabilities or Storage Administrator if vSAN provides virtual storage capabilities, as well as, for example AWS or Azure if these external cloud providers are used.

**Developer(s)**

Responsible for cloud infrastructure services automation and integration development.

**Cloud Business Manager**

Responsible for managing and supporting all the business aspects of the Cloud Infrastructure and other cloud service teams to help the business be accountable for better management of their cloud spend, rate cards, showback, chargeback, service tier options, and fair recovery of IT costs. This role drives a new business management discipline within IT to lead a comprehensive cloud business management practice leveraging the IT investment and enable running the cloud like a business.

## Cloud Service Teams: Roles and Responsibilities

Cloud Service Teams focus on the lifecycle of specific services offered for consumption in the cloud-based environment. As described previously, cloud service teams would exist for services such as: Infrastructure as a Service, Platform as a Service, DevOps as a Service, Digital Workspace as a Service, and Data Analytics as a Service. They could develop these services themselves as well as act as brokers for services provided by external cloud providers.

The charter of cloud service teams is to continually develop and implement innovative ways to govern, design, develop, release, provide access to, and proactively operate the cloud service(s) for which they are responsible throughout its lifecycle. Following is a general description of the roles on a cloud service team. They would be specialized to the subject matter requirements of the cloud service for which they are responsible:

### **Service owner**

Acts as the product manager of one or more services. Responsible for the overall definition, marketing, and delivery of the cloud-based service offering(s), collaboratively works with service stakeholders to define the cloud-based services; determines a price for their cloud-based service offerings; provides real-time information on service level attainment.

### **Service architect**

Translates the service definition into technical requirements for service development, architects and designs the service, and works with the developer and administrator to implement and test the service. Works with the Cloud Infrastructure Services team architect to understand and convey infrastructure implications of their cloud service.

### **Service developer**

Works with the service architect to understand the cloud service's technical requirements and develops new cloud services blueprints as well as their automated provisioning process. Works with application developers to develop service blueprints and automated provisioning processes throughout the application development life cycle when bespoke or third-party applications are part of a cloud-based service offering.

### **Service QA**

Develops test plans as well as tests and accepts services as fit for release to production as well as post-release validation; works with the service developer to define automated tests for the cloud service as part of the service's continuous delivery process.

### **Service analyst**

Develops and maintains service capacity forecasts, responsible for the day-to-day capacity and proactive monitoring of the cloud service. Proactively monitors the cloud service as it moves through continuous integration and delivery/deployment, in addition to production itself.

### **Service administrator**

Manages the on-line portal information, parameters, and characteristics for their cloud service. Works with their cloud service team developers(s) and other teams to

implement any required integration with external systems. Works with their cloud services team QA role to release services into production. Provides level 3 support for their cloud service.

### Creating a Collaborative and Agile Service Oriented Culture

The goal of VMware's service oriented operating model from an organizational perspective is to create customer-driven, cross functional teams responsible and accountable for the lifecycle of specific IT services that add demonstrable business value. This requires a cultural and mind-set shift in how IT interacts with its customers as well as how IT defines, develops, delivers, and manages services for consumption. Three key cultural shifts are described in this section.

#### Customer Focused Service Oriented Culture

IT must shift its the culture to one that is ruthlessly focused on delivering demand-based, high-quality services to their customers at the speed with which those customers need them. A key aspect of this shift is becoming demand-based; that is, delivering services customers are asking for rather than services IT believes customers want. This requires an increased focus on business or customer relationship management by IT; having deep and collaborative relationships with their customers. It's about regularly working with customers to understand their service needs as well as forward-looking demand for existing services. It's about actively including customer stakeholders in the definition of a service as well as a having a mechanism for receiving and acting on customer feedback.

#### Collaborative Culture

The team design recommended by VMware's service oriented operating model is intended to explicitly enable a shift to a culture of collaboration. Team structure addresses collaboration across two vectors by bringing plan-build-run roles together into a service focused team as well as technical domain functional roles as appropriate for a given service. This approach creates teams streamlined to both develop and deliver services faster as well as react to changing business needs quicker. The model recommends establishing inter-service team working groups to collaborate on best practices and foster awareness of reusable service components, for example. Finally, it also extends to collaborating with IT's line of business stakeholders as described for Customer Focused Service Oriented Culture.

#### Agile-based Culture

Agile software development is based on a set of principles in which "requirements and solutions evolve through collaboration between self-organizing, cross-functional teams. It promotes adaptive planning, evolutionary development, early delivery, and continuous improvement, and it encourages rapid and flexible response to change." In VMware's service oriented operating model, this same approach is applied to service development.

## ACHIEVING A SUCCESSFUL OUTCOME

- Enlist an Active Executive Sponsor
- Market and Sell the Change
- Incentivize Individual Behavior
- Establish and Educate an Ecosystem
- Evolve to more Lightweight Processes and Governance
- Start with a “Minimum Viable Product” approach and iteratively evolve

## Key Success Factors in Organizing for the Cloud

Implementing cloud service teams can be both a transformative and a disruptive process. However, there are a few key factors that help achieve a successful outcome and avoid pitfalls.

### #1: Enlist Active Sponsorship at the Executive Level

First and foremost, IT leadership must realize and acknowledge that the biggest challenges they will face in breaking down silos are cultural and, likely, political. This is a common VMware experience when working with companies to break down their IT silos. And of the two, the political challenge can be more difficult to overcome. Which brings us to the first step in closing the gap: getting executive sponsorship—and not just any executive sponsorship but an enthusiastic, proactive executive sponsor for this kind of change.

Indeed, this kind of sponsorship is a number-one goal—an executive who completely embraces this idea and the change it requires, and who is committed to proactively supporting it. An active executive sponsor is critical to success in many ways, not the least of which is overcoming the cultural and political challenges. To overcome these challenges, the executive sponsor must have the dedicated support of those in the management chain of the organization in which the silos exist.

### #2: Sell the Change

Work with the executive sponsor to craft a communication plan aimed at both the management chain and the organization as a whole. When building the communication plan, the intent for the change is ideally derived from a strategy and road map focused on transforming IT into a service provider to the business. This road map should have both executive and business support. If not, developing that IT transformation strategy and road map becomes step one.

The communication plan needs to focus on why IT is undergoing the change, why it is critical for the business, and what value embracing it has for the affected IT managers and employees—what they stand to gain as individuals. And individuals do stand to gain. For example, they can benefit through recognition, increased visibility, the chance to participate in something truly innovative, new career opportunities, and the acquisition of new skills that are highly valued in both the company and the industry. The goal is to make participating in the change aspirational. But enthusiasm only goes so far. They must also be provided with a safe way to modify their behavior as well as provide a little extra nudge to those in management who are still a bit reluctant to change.

### #3: Modify Behavior

Modifying behavior is a key step but one that is overlooked more often than not. This step involves modifying annual performance review criteria and bonus criteria (or job descriptions in some cases), if applicable, to reflect the desired outcome. If this review is not done, individuals will default to their incentivized behavior when prioritization decisions need to be made—or, for a few, as an excuse for not fully embracing the change. Modifying these criteria is absolutely vital for the management chain to help address the political challenge. It's also important for members of the silos whose walls are to be torn down.

#### #4: Establish the Ecosystems and Educate

Effective ecosystems are critical to success. Without an active ecosystem each group will become an island unto itself and will fail. Education is key to creating an effective ecosystem. Care must be taken to make sure that the functional groups comprising the ecosystems are not only continuously educated on the importance of their role but also continuously educated to ensure they have the requisite level of knowledge to successfully fulfill their role.

A proven, successful technique for establishing a collaborative ecosystem is to identify functional team champions. Champions are individuals who are incentivized, through annual review criteria or job description changes, to collaboratively work with cloud infrastructure services and other cloud service teams to make them successful, and to act as evangelists back into their functional groups.

As the SDDC-based cloud environment scales and becomes more critical to the on-going success of the business, these individuals also become prime candidates to fill corresponding functional roles within the cloud infrastructure services or other cloud service teams when appropriate.

#### #5. Know Your Processes

IT processes need to change and evolve to support the level of agility required when offering cloud-based services and operating the underlying SDDC infrastructure supporting the cloud. Heavyweight, high-governance processes slow down the speed with which IT must move to meet business needs in the highly dynamic world of cloud. When planning IT's move to becoming an internal cloud provider and implementing a highly agile and dynamic SDDC environment, take that opportunity to thoroughly review and update the IT processes to be more lightweight while providing the appropriate level of governance.

#### #6: Plan for a Pilot-Based Launch and Scale Up

Implementing cloud services and the supporting teams and processes defined by the service oriented operating model should be evolutionary. Any transformation is challenging. VMware recommends a Minimum Viable Product-based approach as a starting point followed by incremental expansion and refinement to limit risk and increase the probability of success.

### VMware: Ready to Help

Today's forward-looking companies are looking to the cloud model to spark IT's transition to service provider and true business partner. However, achieving the desired IT outcomes—such as dramatically lower unit costs for SDDC-based infrastructure, greater control for IT organizations, and faster delivery for IT services—requires a focus on the organizational impacts of the transition, including needed evolutions in roles, responsibilities, processes, and organizational structure.

VMware has built some of the largest and most successful private and hybrid clouds in the world, and we thoroughly understand the opportunities and the challenges. VMware brings that experience and insight to bring to market a complete solution that includes a full suite of the software products and services you need to gain the maximum benefit from cloud computing. This combination of software and expertise, delivered via services and education to customers of all sizes across all industries, is unique to VMware and its global ecosystem of partners.

To learn more about the VMware SDDC-based cloud solution, visit [www.vmware.com/solutions/it-outcomes.html](http://www.vmware.com/solutions/it-outcomes.html).

### About VMware Professional Services

VMware Professional Services transform IT possibilities into business outcomes. Our comprehensive portfolio of consulting and education services help you uncover and exploit the unique opportunities made possible by VMware technology and solutions.

Drawing on our unparalleled product expertise and customer experience, we collaborate with your team to address the technical, people, process, and financial considerations for your VMware solution to deliver results that are positive, tangible and material to IT and your business.

For more information on VMware Professional Services and how we can help you, contact your local VMware representative or visit [www.vmware.com/professional-services](http://www.vmware.com/professional-services).



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