O'REILLY®

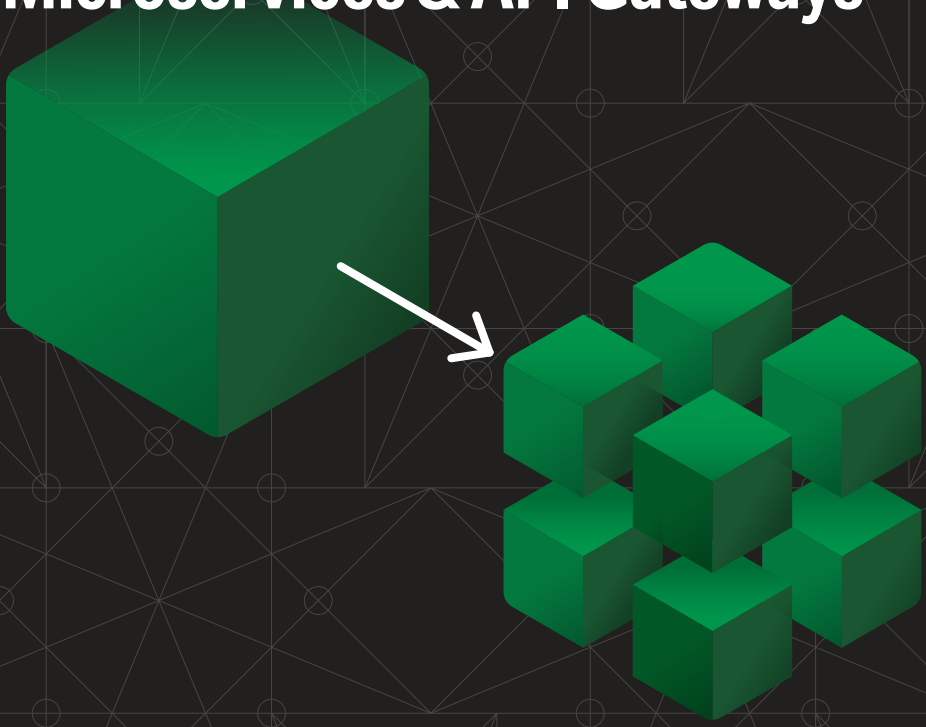
Compliments of NGINX

Laying the Groundwork for Cloud

A Blueprint for Enterprise Leaders

Mark Preston

The NGINX Application Platform powers Load Balancers, Microservices & API Gateways



Load Balancing

Microservices

Cloud

Security

Web & Mobile Performance

API Gateway

FREE TRIAL

LEARN MORE

Learn more at nginx.com

NGINX

Laying the Groundwork for Cloud

A Blueprint for Enterprise Leaders

Mark Preston

Beijing • Boston • Farnham • Sebastopol • Tokyo O'REILLY®

Laying the Groundwork for Cloud
by Mark Preston

Printed in the United States of America.

Published by O'Reilly Media, Inc., 1005 Gravenstein Highway North, Sebastopol, CA 95472.

O'Reilly books may be purchased for educational, business, or sales promotional use. Online editions are also available for most titles (*http://oreilly.com/safari*). For more information, contact our corporate/institutional sales department: 800-998-9938 or *corporate@oreilly.com*.

Editor: Virginia Wilson
Acquisitions Editor: Melissa Duffield
Production Editor: Nicholas Adams
Copyeditor: Jasmine Kwityn

Interior Designer: David Futato
Cover Designer: Karen Montgomery
Illustrator: Rebecca Demarest

August 2018: First Edition

Revision History for the First Edition
2018-08-08: First Release

This work is part of a collaboration between O'Reilly and NGINX. See our *statement of editorial independence*.

978-1-492-04601-1

[LSI]

Table of Contents

Foreword

The emergence of cloud as a critical engine for application development and delivery is among the most important trends in information technology, ever. And the move to cloud is still going strong today, with no end in sight.

NGINX has played a critical role in this trend. Every piece of the NGINX Application Platform can run in and across clouds. That includes NGINX Open Source, NGINX Plus, NGINX Unit, and the NGINX Web Application Firewall (NGINX WAF). NGINX Controller, just recently released, already monitors and managers cloud-based instances of NGINX Plus right alongside on-prem instances.

With NGINX Open Source or NGINX Plus, a single piece of software plays a wide variety of roles. These include web server, reverse proxy server, caching server (NGINX is at the core of most commercial CDNs), application server (with an interface such as uwsgi), cache, SSL termination point, API gateway, microservices management tool, Kubernetes Ingress controller, and more.

However, the most important single function for NGINX to date has been as a load balancer. "Balancing computing loads across a potentially arbitrary number of servers, on an as-needed basis" is a solid description of why many applications (or entire organization IT workloads) are moved to the cloud in the first place. Yet traditional hardware load balancers have little or nothing to offer when it comes time to move to the cloud. Just try shipping a hardware appliance to a cloud vendor and asking them to run it on your behalf. Hardware is antithetical to the cloud.

On both AWS and GCP, the native cloud load balancer is called Network Load Balancer. The combination of NGINX with either the

AWS or GCP Network Load Balancer offering is fast, cheap, reliable, and well-supported.

NGINX is trusted by enterprises worldwide for all their application development needs, from proof of concept to mission-critical applications. IT Infrastructure and Operations professionals in particular take advantage of the portability of NGINX every day, as they can move configurations from on-premises to the cloud and back, across hybrid cloud setups, and from one cloud provider to another.

All of the success achieved by cloud solutions means that this book, Laying the Groundwork for Cloud, is a necessary tool for a wide range of organizations as they move to cloud. In these pages, Mark Preston tells you how to create a solid, application- or organization-specific plan for your own cloud journey(s).

Mark maps out the entire process from beginning to end. You can easily tailor his recommendations to any cloud platform, public or private; to any set of tools that you choose to use, notably including NGINX; and to any application or other deliverable that you want to develop and, well, deliver.

We hope you enjoy this useful and timely book, and we expect you will return to it many times along your own journey to the cloud.

— Rob Whiteley
Chief Marketing Officer,
NGINX

Introduction

This report is for senior decision makers in enterprise organizations who have started (or are about to start) a cloud transformation. The report will introduce techniques you can use to drive a successful transformation, and offers advice based on my experiences in working with various organizations who ran into trouble on their journey.

The report structure follows the path you should expect to take to transform to a cloud organizational and operating model, but this blueprint can be equally applied to your broader business or digital transformation initiatives. The report does not focus on how you would create your technical architecture or migrate your applications to cloud; the focus is to set you up for success before you embark on those initiatives.

I suggest that you consider cloud as the delivery of technology as a service in a standardized and flexible way, with an operating model that helps your business to leverage improved costs, performance, and agility. Think of digital as the experience that consumers get when interacting with all of your business services, from anywhere and using any device.

The scope of this report is broader than cloud and includes transformation of the operating model. Given the immense challenge to enable cloud and change the operating model, I have included techniques to manage the transformation itself.

Transformation is both complex and challenging. Your reasons to start the journey need to be clear and you need ongoing benefits to stay on track. Cloud must be considered as much more than a technology change; the flexibility it offers must relate to commercial

value by focusing on optimization of the services the business needs today and becoming more agile to react quickly to what the business needs tomorrow.

Successful cloud transformation should deliver a broad range of benefits related to commercial flexibility:

- Technology services that perform at, or close to, industry benchmarks in terms of performance.
- Services that may be brokered internally or from third-party cloud service providers, based on the best fit to demand.
- Access to third-party cloud service providers' global investments in capabilities and scale.
- Flexibility to rapidly scale services up and down to reflect changes in business demand, with tracked costs that also scale up and down.
- Ability to buy commodity services and retain focus and investment on building business differentiating services.
- Operating models that can benefit from the flexibility of cloud to enable business agility and support digital transformation.
- Outsourcing and service-based models that can drive suppliers to deliver the services that the business needs, rather than just the support around them.

Case Studies

In my role as a consultant I work with organizations on cloud transformation around the world. These organizations are typically large enterprises with significant technology investments and operating models that were born long before cloud. Throughout the report, look for the "Case Study" sidebars where I will highlight some of the challenges they have faced on their own cloud transformation journey. These case studies are real but to protect the privacy of the organizations involved, details have been adjusted.

Figure P-1 visualizes the transformation journey; this is your navigator to the report structure, but I hope it's also a useful tool as you consider where you are on your journey and where you go next.

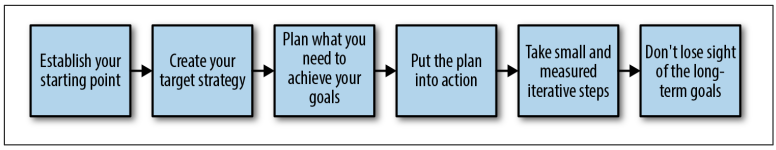


Figure P-1. Cloud transformation journey

CHAPTER 1

Establish Your Starting Point

All journeys begin at the starting line. Having a crystal-clear picture of your business's starting point and the challenges you're facing will motivate you and your team throughout your transformation. In this chapter, I'll explain how transformation horizons can help you pinpoint where you are on your journey, so you can set your sights on the right target. We will identify the aspects of your starting point you need to define, in order to establish the motivation to change. We will look at setting transformation objectives and handling both future performance and past legacy investment.

Define Your Transformation Horizons

"Horizon" implies that your focus is on what you can see ahead, and as a result, what you will implement next. Defining transformation horizons will help align your business benefits by unlocking value with efficient investment in change, which avoids stranded investments that do not yield benefit. Horizons should be aligned to increasing performance targets.

Each horizon should be manageable, focusing on achieving small but meaningful targets. Later horizons should reflect longer term goals, strategies and targets. Let's look at four possible transformation horizons you may be working toward.

Cloud Ready
: The cloud is operational and ready to either build new services or migrate old ones.

Cloud Enabled
: The cloud operating model has been optimized for agility aligned to DevOps and efficiency using automation to improve key performance metrics (e.g., fulfillment and assurance).

Digital Ready
: The cloud is extended to handle a partner ecosystem and engage customers in different ways.

Digital Enabled
: The service and application experience has been optimized with more advanced processes and tools (e.g., analytics driving service optimization). Figure 1-1 shows the alignment of key projects by scope and horizon.

This report is designed to support you on your entire journey but assumes that you are either about to start or are some way toward the cloud-ready horizon.

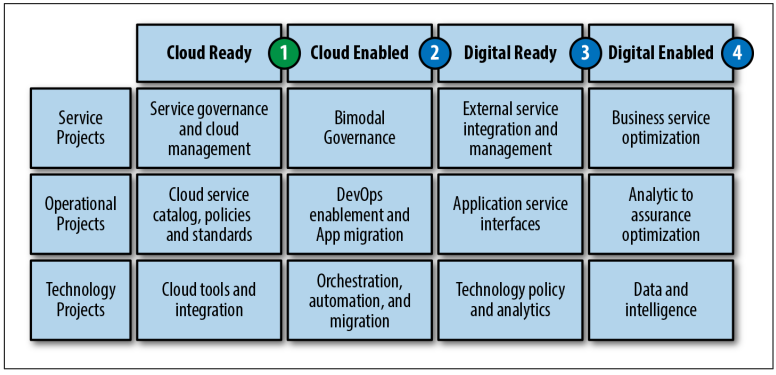


Figure 1-1. Transformation horizons with a cloud-ready initial target

Establishing your target transformation horizons will define the scope of the transformation layers, modules, and low-level capabilities. One challenge in defining the horizons is establishing what related projects need to deliver within the same horizon.

NOTE

Remember to highlight and communicate your successes but accept that there will be some failures along the way. In the event that you fall short of a goal, adjust your transformation plans and establish new goals as needed.

For a robust plan and effective transformation *governance*,[1] you need to align the business drivers to the transformation horizons. Include an ongoing benefits assessment against performance expectations. Benefits will often depend on related projects across your operating model transformation. Technology-driven projects, which without operating model and service performance alignment, are likely to isolate benefits with limited traceability to the business drivers (something most organizations have experienced and must now actively seek to avoid).

In Chapter 2, we will discuss accelerators, which are designed to speed up the definition of your current state, but also to help plan your future horizons.

Establish Your Transformation Objectives

In today's digital economy, business-to-technology alignment is becoming a key differentiator, as the pace of change accelerates along with the broadening of consumer expectations. Historically, technology organizations sought financial investment and aimed to create capabilities that the business needed, without always building a direct relationship between business strategy and performance. But as business needs have evolved, the cost and time lag of technology change opened up an even larger expectations gap. Your technology organization needs to lead the change in becoming service driven, but your supply chain also needs to become service rather than support focused. Although your supply chain may already deliver to established service levels, the supplier's focus needs to move away from the *support wrapper*[2] around what you need and toward the service itself.

The rapid growth of public cloud providers, such as Amazon, Microsoft, and Google, reflects the need for technology to provide a service, rather than just technical capabilities. Still, many in-house technology teams see public cloud as a threat, and some that have resisted change have been bypassed as business groups buy cloud services directly (often referred to as shadow-IT). Organizations

1 Governance relies on broad organizational empowerment to set and adjust the direction of the transformation management and delivery teams.

2 A support wrapper typically focuses on the support levels around a service rather than the service itself.

that experience this must recognize that this is a symptom of the problem with the business relationship and focus on the strategy to solve it. The solution must embrace a governance model that allows supply chain diversity, and positions internal technology as an effective and competitive provider. Teams that feel threatened need to be supported by competence models that help adjust their function. For instance, if you introduce automation to eliminate repetitive tasks, redirect those staff members to design the automation.

Technology has faced pressure to optimize cost for many years—deliver more for less is a common theme. If technology constraints are impacting business markets and revenue, then this only intensifies the problem and increases pressure to reduce costs further. For technology organizations, this cycle needs to be broken or the business will seek services elsewhere, and in doing so, reduce demand without necessarily reducing dependencies and the ability to reduce costs. The net result can lead to new cost centers for the business outside of the technology organization and even greater pressure to justify collective technology spend.

Your target operating model and transformation objectives must face up to this cycle and address it; your need to transform is not just driven by internal business partners, but by consumers and the competition. Make sure you capture the baseline and benchmark performance along with targets and use them to measure future success (or deviation from target).

Establish Your Performance Benchmarks and Targets

Building a hierarchy of services and value is not easy, but if a performance-driven transformation is to be successful, the parent services must see an improvement based on investment and improvement to the contributing child services. While your target strategy and use of horizons may help schedule change in the transformation plan, the business management teams are typically driven by performance benchmarks and targets. There could be a significant time lag from investment to operation to benefit which needs to be accounted for in any business case forecasts.

Case Study: Performance Alignment

A large global telecommunications organization I worked with had a strong and very public focus on customer performance and cost (what quality of service they received from the fixed and mobile networks). This was a very important measure against their competitors who are all fighting for market share, primarily based on the customer experience. They had much less performance visibility of the internal technology organization (how efficiently the service was delivered) other than the headline total costs.

It's easy to deliver a high-quality service with unlimited funding, but the reality is that customers want more services for less money, which forces the focus onto the cost of delivery. What they needed was the same internal focus on performance as they already had in place publicly.

To solve this in a sustainable way (rather than a one-off audit) they needed to set up a hierarchical view of services (what are all the building blocks we need that deliver the end service to our customers?). Then each building block needed ongoing performance measurement and scrutiny (using industry benchmarks to understand just how efficient they were at delivery). They could then prioritize and improve the least efficient services.

The advantage of defining services is your ability to test if performance targets are realistic, by comparing with available industry benchmarks for performance and cost. In a service-driven supply chain, the contracts can then focus on rewarding target performance improvement by measuring the baseline and benchmark performance metrics (or penalty if the trend opens up a larger performance gap).

Although looking to the future performance is key, you must also define your historical technology investments that will now be considered legacy.

Define Legacy

Internal technology organizations generally consider themselves in a challenging position, with higher expectations set against commercial pressure to reduce cost, and the increased overhead of

managing several layers of legacy technology. Here are some considerations for handling the challenge:

- The goals of the service portfolio and service definitions should help the business consumer understand what they are buying and at what service level. To do this, your technology organization needs to align the service strategy and investments to a service roadmap (this should help you define legacy). This may lead you to do a discovery exercise if your inventory is not in good shape.
- You need an approach that decommissions and releases the costs of your services (and legacy) when they are near end of life. Be sure to handle this roadmap with strong governance as it drives change and commercial impacts to the business and related services.
- You must take a pragmatic approach to phase out, rather than rapidly decommission. You can correlate this to a phased reduction in service level, or increase in cost to encourage change.

In some complex environments, it might not be strategically or economically viable to transform a legacy platform or technology capability. Legacy can, however, hold a value in terms of accounting book value or a technical dependency for a service. The roadmap for moving legacy systems to the cloud often depends on a slow removal of dependencies as application services transform. From a *target operating model*[3] perspective, the goals for operational agility probably do not apply to legacy—it's not likely to be changing much. As a result, there can be an advantage in outsourcing legacy support. When you consider how to transform the service support wrapper, focus on how the legacy platform can best be consumed by related services.

If outsourcing your legacy capabilities is not appropriate, perhaps due to scale or timelines, then consider an internal service support wrapper that prevents legacy constraints from blocking the overall goals of the operating model. While service orchestration and auto-

3 The target operating model (TOM) defines the strategic goals for the organizational structure, in addition to outlining services and how they are delivered. In the context of cloud, the target operating model should reposition from technical and organizational silos to service layers.

mation may not apply as much in legacy, the interfaces to legacy process need to support the target operating model. This may mean that an automated parent service depends on an interface or process that wraps around the legacy technology capability.

If you need to retain legacy for a longer period of time and it's holding back the operating model or performance goals, then you should undertake a broader transformation. This situation can be a difficult business case to make, and you'll need to define the performance and economics along with the cost of change. I strongly recommend taking all opportunities to transform your legacy systems as part of lifecycle events, including technology refreshes and application upgrades.

Summary

- Start to shape your future transformation horizons in context with your current state of operation.
- Use your current challenges to help drive transformation objectives and measure success on your journey.
- Apply performance analysis internally using service benchmarks to establish improvement opportunities and priorities.
- Have a strategy for your legacy technology investments, including outsourcing.

CHAPTER 2

Create Your Target Strategy

All journeys need a strategy that encapsulates the motivation to change and sets your direction so that you can navigate its course to a successful outcome. In this chapter, I'll explain how the cloud vision must identify and prioritize clear objectives that become strategic milestones along your journey. We will also uncover the alignment with the operating model and how to unlock agility and what that means related to automation and workforce efficiency. We will identify how accelerators and maturity models can help break the journey down into clear and manageable stages.

Establish Your Strategic Vision

Without clear vision, change within your organization is unlikely to gain traction. An important step in defining your strategy is identifying why cloud is important and what digital expectations lie ahead. A modern business landscape needs technology to enable business success.

To achieve your business aspirations, your technology organization needs to close gaps in customer expectation by embracing a service-driven target operating model (financial, experience, business agility). An operating model focusing on services drives efficiency and breaks organizations out of the locked-in supply chain. Competition drives change, and organizations that don't translate technology investment to business value face eroding markets.

To achieve the benefits of cloud you need a broad and top-down strategy. This is in contrast to a single technology change, which technology teams historically initiate from the bottom-up. If organizations are to turn technology into a *business enabler*,[1] this culture must change; the business-to-technology relationship must flow both ways, and this relies on transformation across the organization.

The strategic vision you will put in place for this transformation needs to navigate these challenges, and the following must be addressed in order to get traction:

- Funding of transformation and commercial and finance engagement.
- Scope and benefits aligned to a business case to initiate change.
- Set and measure benefits targets to maintain momentum.
- Analysis of the true cost of ownership and transformation.
- Strategies to handle legacy technology and suppliers.
- Strategies to handle workforce transformation, including automation and agility enablement.
- Performance models, baselines, and targets.
- Business, architectural, and operational polices, standards, and controls.

It's not easy achieving clarity on these challenges and taking shortcuts to get quick wins is common. However, doing so without understanding the impacts and risks can be the source of trouble later in your transformation.

Common examples include funding shortfalls driven by unclear cost of ownership and cost of change; unbalanced scope and benefits leading to false promises or delays; locked-in suppliers who resist change; and restrictive standards and policies that make transformation more complex and expensive.

Once your strategic vision becomes clearer the next step is to create cloud technology objectives that can be prioritized toward achieving your goals.

1 Business enabler refers to the technology organization directly contributing to business revenue rather than being treated as just a cost center.

Establish Your Cloud Technology Objectives

When cloud was an emerging industry trend, many IT leaders were frustrated by the lack of clarity about what cloud really meant. Its poor definition led to confusion about scope and disagreement about its key characteristics. It was in 2011, when the National Institute of Standards and Technology (NIST) published its *cloud paper* defining the cloud, that standard characteristics as well as service and deployment models became clear. The NIST standards identified the common cloud service layers for infrastructure, platforms, and software, including the expected characteristics for cloud.

The definitions have certainly helped, but there is a real danger of following an isolated path toward investing in new technology capabilities and losing focus on the operational transformation that's needed to deliver the technology as a service. This isolated path often increases costs without enabling standards, reusability, and performance. In Figure 2-1 you can see how some organizations may have declared victory from a cloud architecture perspective, but missed some of the more challenging cloud operating model transformation aspects.

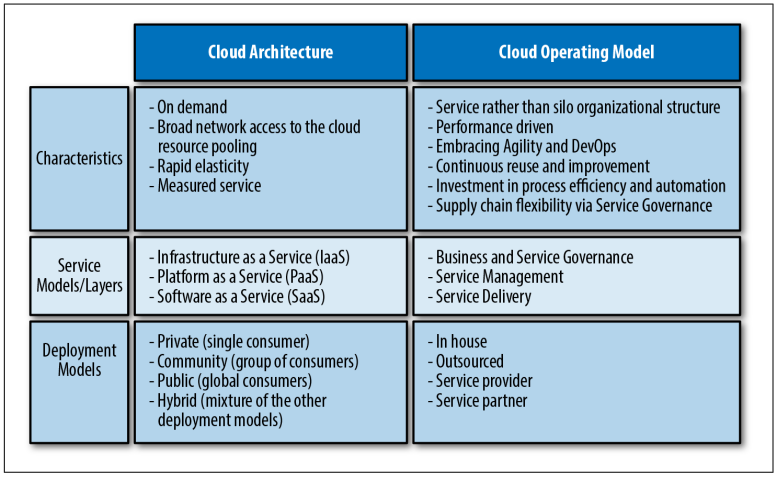


Figure 2-1. Cloud architecture versus cloud operating model

Cloud transformation requires strong service provider and service selection governance. You need an effective service portfolio manager who understands, and in some cases brokers, the business requirements against the catalogs of multiple service providers (both

public and private). The portfolio selection must factor in service capabilities, performance, cost, and in many cases, legal and regulatory factors.

Public cloud and *private cloud* have different value propositions.

Public cloud represents a shared service model where underlying infrastructure is shared with other organizations; this enables the cloud provider to invest in capabilities and capacity with scale. Private cloud, by contrast, is unique to your organization and you must bear the risk of investment in capability and capacity to meet often unknown business demand.

Most organizations will see great benefit from adopting public cloud services as a first step. There are some who argue that private cloud is a misnomer in that it can't truly meet all of the cloud characteristics. This argument is a diversion from the real issue, which is to ensure that business need is delivered in the most effective way within acceptable tolerance of risk. The massive and growing revenues of cloud providers such as Amazon Web Services, Microsoft Azure, and Google Cloud Platform suggests that most organizations are finding it compelling to move at least part of their technology to public cloud. To align business demands, you should assess the following characteristics across the internal and external cloud service providers:

- Scalability
- Flexibility
- Performance
- Cost effectiveness (i.e., total cost of operation, or TCO)
- Cost flexibility (i.e., a consumption-based model)
- Security
- Usability
- Reliability
- Service-driven capability
- Geographical distribution
- Service capabilities
- Service dependencies

- Service integration
- Workforce skills alignment

This list is not exhaustive, but gives some indication of the many layers of decision making, allowing you to align your requirements to the best provider and the most effective operational design.

Establish Your Cloud Operating Model Objectives

Cloud plays its part optimizing the target operating model surrounding the technology organization. This should close any gaps in expectations with business partners toward achieving your broader company goals. Aligned to cloud services, the digital agenda needs to drive forward an inclusive relationship where technology is at the heart of all department strategies. You need to shift focus from optimization of technology (often cost driven) to optimization of business (revenue driven).

The flexibility and agility of a cloud operating model will support this, especially if services can adapt and embrace business change. Beyond the services, your ability to harness data, and then align that knowledge with future services, is key to gaining competitive market advantage. From a digital perspective, this is broader than the service itself.

Commercially, the bottom line is profit. If revenue in existing markets is being eroded, and new markets are not being exploited, focus on costs is usually the last chance to save a service line (or the business itself). Companies with a *restrictive operating model*[2] will find it difficult to realize revenue gain from investments at a pace that can match a more effective competitor. Large and established organizations have the financial strength to invest, while accepting delays on a return, but this is a myopic approach. The challenge is not just one of time and revenue, but the pressure it places on all business units to make the right strategic decisions. Losing the ability to try, test,

2 A restrictive operating model is typically based on organizational silos and support-driven monolithic commercial agreements with suppliers that are hard to change. These factors combine to restrict investment reusability, performance, and agility.

and succeed or fail is a fundamental inhibitor of innovation for organizations with a restrictive operating model.

You must also design and operate services that align with consumer expectations. The additional expectations are significant, and the amount of dependencies on operating model flexibility can be difficult to achieve. The time to market and agility aspects of cloud impact your ability to improve experience rapidly. Your primary digital focus requires all business units to be able to analyze the experience data, and be in a position to drive improvement with pace and without undue cost.

The balance of service cost versus service quality depends on the market dynamics and your competition. You need the flexibility to configure services to suit different markets and allow for variable service offers that match the cost and experience to the market. Service expectations are high in a digital context, regardless of the price customers are paying; providing good service helps nurture a positive customer experience with your brand. For example, a consumer may be happy to buy a seat on a budget airline, forgoing the in-flight amenities that would otherwise be offered by a major airline, but they still expect the ordering, ticketing, and billing to be of a high service standard.

Case Study: Cloud Operating Model Objectives

I worked with a European-headquartered global utility organization that needed to standardize the cloud technology environments for all their operating companies around the world. In their case, the technology challenge was massive, but the main goal was commercial and related to the operating model (the technology was the dependency and cloud standardization was their secondary, rather than direct benefit). It's important to keep this in mind when setting objectives, as when times get tough, you need strong and very direct reasons to keep going.

During this program times did get incredibly tough due to massive complexities in the technology and broad differences in each operating company. The strength of vision and objectives was very important to overcome huge technical and political challenges but the ability to globally standardize facilitated incredibly strong central buying power. This then led to centralization of activities that

were formerly retentive in every country such as design, integration, testing, and automation.

The outcome was a significant cost reduction and increase in service agility and quality (by being able to invest in high-volume global services rather than custom services within each country).

Your strategic objectives should include agility, in particular, bringing together development and operations (DevOps),[3] and is intended to create services rapidly and get to market. To be truly efficient, you need a target operating model that can both reuse services and rapidly create new ones. If the service catalogs (both internal and across the partner chain) have high levels of reusability, then you have increased agility. The key performance indicators (KPIs) that need to challenge these models should identify:

- How much of the new service is actually a new investment versus reuse of existing services?
- For the new investment how long did it take to get to market?
- Did the new service investment improve the portfolio for future reuse?
- Did we use the investment to build something or could we have bought it?

Answering these questions may be a first step to drive initial transformation, but you should strive to make this a part of ongoing governance within your operating model, rather than a one-off exercise. You need to consider how the cloud technology and cloud operating model objectives align with your broader organizational objectives for service and agility.

Define Your Organizational Objectives

Despite all your objectives in cloud technology and your cloud operating model, you need to clarify the big picture with the overall organizational objectives. This is much broader than the technology organization, and starts to challenge the way the whole organization

3 DevOps is increasingly recognized as an approach to shorten software development timelines and when tied to automation can improve operational assurance.

deals with changes in the market and becomes more service focused in how it meets customer needs. Well-established organizations are often held back by yesterday's silo-based operating model and struggle to transform to become service focused and more agile. You need to evaluate different modes of organizational design and if transformation should be attempted from one mode to another.

Bimodal is a term that reflects the need for some organizations to operate in parallel with two types of organizational design. One mode is considered more traditional and rigid, prioritizing control over agility; the other mode is aligned to DevOps, focusing on agility with managed risk rather than restrictive control.

Bimodal, as explained by Gartner,[4] outlines different modes to reflect the need to categorize different organizational models, along with the case for when and why each approach should be adopted. A bimodal organization will function with some parts in a formal and controlled mode of operation, and others in an agile mode. What makes this challenging is that transforming from one mode of operation to another is complex; success often relies on the agile enablement of the operating model being created with a new team, competence, and culture. A bimodal approach needs you to transform the service governance and service integration and management (SIAM) layer of operations so you can be an effective parent to both modes of operation.

Closely related to modes of operation, you need to consider how silos of capability can evolve toward layers of service (a service layered organizational model). Well-established organizations often have core critical services that need to be handled with care, but they also need to be able to build new services quickly.

To architect a service layered organizational model that also successfully handles bimodal, you need both the service layers and the associated departments or teams that have different processes and governance for each mode of operation. You need to understand what the drivers are for different modes of operation, so you can make informed decisions about which parts of the operating model need to behave in different ways at different times. Figure 2-2 pro-

4 Gartner introduced the concept of different organizational modes in "Best Practices for Planning a Cloud Infrastructure-as-a-Service Strategy — Bimodal IT, Not Hybrid Infrastructure".

vides examples of drivers that may help you to consider the most aligned mode of operation.

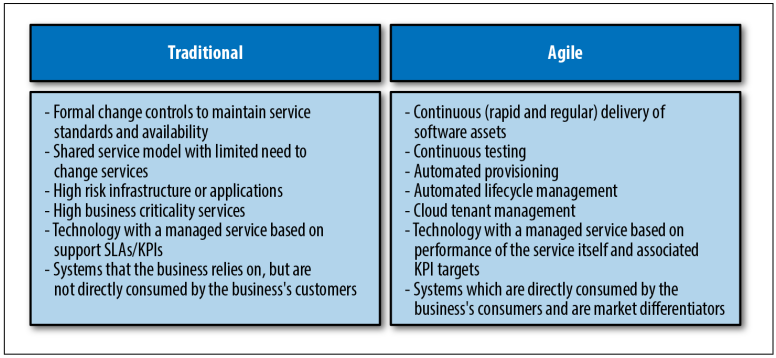


Figure 2-2. Assessment of traditional versus agile candidates

To define a service layered and bimodal organizational model strategy you need clear objectives to deliver what is a very complex change. Your strategy needs to address key questions:

- What are the services that need stability and efficiency, but don't need to change quickly?
- How can innovation and agility be supported that can leverage existing services, without being held back with complexity and control?
- How can provider and consumer layers be defined in the organization with clear lines of service performance ownership?
- How can services be reused and resold through different channels (partners, wholesale, and white labeling of service)?
- How can partners be integrated to provide services to help us buy more and build less?

Like other aspects of transformation, the answers to these questions drive the objectives and resulting change, but need to become part of the operating model governance to ensure that the benefits are realized on an ongoing basis.

On your journey to achieving a service model, internal silos and external supply chains should become aligned with your strategic service view. Layer your services in a way that allows you to drive hierarchical SLA/KPI reporting and to perform root cause analysis

on under-performing services so you can improve them. Standardization and automation of these services is your next consideration.

Define Your Automation Objectives

The creation of services can be compared to a manufacturing process. Each stage of manufacture is subject to automation if the capability/economic balance supports it and if the service customization is within reach.

Let us consider an analogy, and relate technology delivery to a car production line. This is a useful comparison, as modern production lines benefit from a large investment in robotics to aid automation, but this is blended with a human workforce. Production line design may be based on the capabilities of the machines, but the prime driver for automation is economics. Does the investment in automation cost less over its expected lifetime than an equivalent workforce would cost? The economic formula needs to assess the lifetime and the amount of work that the automation may save (person hours), and this in turn will depend on the volume of cars. It is possible that the broader end-to-end performance comes into play, and a human cannot achieve the process as quickly as a machine, or as reliably.

The modern car consumer, however, is a little more selective than in the days of Henry Ford, so car manufacturing also needs to handle an increasing demand for customization. Unless this is designed into the automation, retrospective changes to the robotics may be needed (and may exceed the economic viability). Humans, by contrast, need some training, and can adapt to changes in design relatively quickly.

Your goal must be to consider automation throughout the lifetime of the service, not just the manufacture. Extending our analogy, the (typical) car manufacturer will hand off to a dealer and service center to manage the final delivery and maintenance of the car for its warranted lifetime. After this hand-off, the manufacture processes and automation are disconnected from cars that have been built in the past (product recalls and maintenance being managed by the dealer or service center). This disconnected build versus maintain part of the analogy is typical of legacy technology, but not something we seek in the target cloud and digital operating model.

Interestingly, this disconnect is also becoming an issue for the car industry, as modern cars become more and more software defined. The software design is evolved by the manufacturer and tested not only on new cars but deployed to existing cars. In the case of Tesla, this is done centrally and wirelessly to all cars globally and updates a wide range of software related to car driving, performance, and user experience (the dealer or service center is not needed, and instead the manufacturing scope for build blends into maintenance). Similarly, it's important that cloud and digital design teams consider automation of the end-to-end service lifecycle to improve all aspects of service performance.

Your departmental design strategy should identify the benefits and trade-offs of driving service speciality and possible team service specialization versus shared roles across multiple services. In both cases, you need an effective mechanism to ensure that the performance of services and the alignment to teams is measurable, and influences potential evolution of departmental structure, technology capability, and responsibility.

You need to collapse silos and clearly define the goals. A service layer should not be just another silo—it must be directly associated with services and performance. In an ideal operating model, all of the capabilities, roles, and processes within a service layer are focused only on the task at hand (delivering and improving the service). A service-reuse approach makes it easier for you to justify investing in automation to improve human performance.

You may have a center of excellence (CoE), meaning one segment of your workforce is highly competent and contributes to multiple services. A well-designed service-oriented operating model should inspire service standards, reuse, and improvement. Centers of excellence can boost efficiency by allowing you to scale processes across a team of roles with similar competence. These people, if motivated properly, will help improve the collective training and competence of the team.

Project plans tend to be overly optimistic. You need to accurately quantify your organization's capacity for change. Technology organizations that rely on all of their capacity just to keep the lights on find themselves in a challenging position. If you are in this situation, you need to increase or augment your workforce capacity to enable transformation. Only after this change produces efficiencies can your staff resources be released.

From the past few sections you will feel that there are a huge amount of factors that need to be channeled into objectives. We need ways to make the journey easier with some priorities. We now need to forecast the demand for the services as part of the prioritization exercise.

Forecast Your Demand for Services

Transformation and investment decisions need to align with the forecast for demand. This relates to the need to increase capacity of infrastructure, develop or improve capabilities, or rebalance the workforce. From a business stakeholder perspective, it's often difficult to gain a common understanding of the dependencies, from the demand to the subsequent changes needed.

Evolving to a position where technology services are defined helps you gain clarity and supports a more effective business conversation where the technology service demand can be forecast. The target cloud operating model must include roles and processes that manage both the relationship with stakeholders and the forecasting of what they require. This demand should then be mapped against available technology services; in most cases, choices will exist on the best fit for that demand against available technology providers (e.g., private hosting, private cloud, or public cloud).

Your desired outcome is to establish clarity on business demand mapped to capacity across the available technology providers and services. This outcome helps you take all of your objectives into planning, but before you make that step you must look at how you can use some techniques to accelerate your transformation journey.

Define Your Accelerators

Using accelerators for transformation is an effective way for you to establish clarity amongst stakeholders and speed up your transformation. Successful transformation requires you to evaluate your organization through four *accelerators* to drive maturity of the underlying capabilities and performance:

- Technology
- Operating model
- Services
- Performance

> **NOTE**
>
> Accelerators are ways to look at the overall operating model from different viewpoints. Each accelerator should detail how each individual part of the operating model offers value to the business and this should form the baseline for improvement. In some organizations the accelerators are disconnected, but the goal is that they combine to deliver services at predictable performance that can be improved. Some organizations prefer to describe these as capability models but your emphasis should be to use them to move from your current to target position more quickly (to accelerate).

The purpose of the four accelerators is to align technology and operational aspects to deliver services at a given performance level. This is designed to avoid stranded investment in one of the areas that does not realize service performance benefit. In order to manage change maturity you should establish performance targets and tie them to capability dependencies.

The target operating model may need to be bimodal where Agile and DevOps methodologies promote rapid time to market. The traditional waterfall approach should be limited to large, predictable programs like infrastructure and legacy applications. You will also need to drive the workforce and process efficiency, by investing in technology automation in the right places and at the right time (in both cloud and digital transformation aspects).

If the accelerators do their job, they will align the objectives to the required capabilities. This is likely to be a very deep shopping list and we need a way to break the challenge down into smaller steps, each of which delivers some performance benefit. We will look at how to use the accelerators in the next chapter. Let's also consider using maturity models (that are aligned to real performance objectives) to help define your targets.

Define Your Maturity Model

You should consider the maturity model as a tool to assist with transformation. Maturity implies that something will improve with time. Working in a maturity model means you can measure improvement over time. The maturity model groups dependencies into defined maturity steps, where each step is associated with broader business objectives or performance targets. Your transformation focus and scope will determine how you define maturity and how to achieve it.

The goal of your maturity definition can vary. It may be benefit-driven, aiming at a clear performance target; or it may be tied to a timeline that aligns multiple programs in a single value position. Timeline-driven goals may require you to trade capability to achieve maturity.

Case Study: Maturity and Capability Alignment

I worked with a large Asia-Pacific cloud service provider that needed to transform its technology organization to cut their operating costs. When I arrived, they were already committed to building a new private cloud and based on application vendor promises, expected a return on their investment via a much improved operating model. I introduced a capability assessment for the applications to make sure that they would operate as expected (highly orchestrated and automated) in the new cloud, but this uncovered the truth to the real timeline of the vendor maturity and roadmaps. The delays in application capability meant the infrastructure investment wouldn't return an operating model benefit for an additional 12–18 months (significant delayed return on investment). The lesson here is that for cloud, the infrastructure, applications, and operating model capabilities need to be in step to realize the benefits. Being clear on your required capabilities and expected performance bene-

fits (and timings) is crucial to also push for contractual commitments, rather than just relying on vendor promises.

Here are some maturity definitions aligned with transformation targets to achieve operating model performance targets.

- Platform capabilities and balance of cost against service levels
- Service orientation and agility
- Process optimization and efficiency of human roles and process
- Technology automation and efficiency of fulfillment and assurance
- Customer satisfaction
- Industry benchmarking on service cost and value
- Service integration and management
- Private versus public optimization
- Role and process excellence versus pooling and departmental structure

Summary

- There are a significant number of considerations to factor into your strategy to reflect how broad the cloud and operating model transformation can be.
- Your strategic vision should be aligned to clear objectives that have a priority. Objectives need a plan and timeline.
- You must take care not to focus cloud on architecture goals alone and lose sight of the operating model dependencies.
- The operating model unlocks services, performance, and agility with cloud in a supporting role.
- Services should be the language of communication between the business stakeholders and the technology organization.
- Services need to be driven by performance and this must align to the efficiency and scale of the workforce in light of automation opportunities.

- Use accelerators to move quickly from strategy to planning. Stay on track by understanding service maturity and performance.

CHAPTER 3

Plan What You Need to Achieve Your Goals

Your strategy cannot be delivered without a plan. Having a plan to handle the broad scope and complexity which can also handle bumps in the road is essential. In this chapter, I'll explain some of the planning approaches you need to handle a program of change that has a vast number of objectives across all aspects of your operating model.

Transformation Planning

Available funding will directly influence the scope of your transformation planning. Some transformation changes may need explicit funding approval, whereas some may be absorbed within existing business as usual (BAU) budgets.

In terms of funding, there are costs associated with using internal resources, even if drawn from BAU budgets. In most large organizations, the cost of human capital is accounted for, and as a result, it is false to assume internal resources are free. That said, the allocated cost of an existing resource will be less than that of an external consultant. You need to determine how available a person with daily responsibilities is to take on transformational change before you involve them in the cause. Establish a resource model that details required competence, engagement, effort levels, and durations so you can productively discuss resource allocation with departmental managers.

Embarking on an assessment exercise is also fruitless without having a plan for closing the resulting gaps. Your planning needs to encompass the business processes for approvals of change, including stakeholder management and financial budget and approval. You must consider how the timing will relate to the funding, if it needs to be in a future budget cycle.

There are some risks associated with assigning ownership that require mitigation. These include staff resistance to and capacity for change and the associated risk that business as usual responsibilities suffer under the pressure of transformation. When you need to assign ownership to a supplier, then the risks may relate to restrictions in contractual and operational agreements and commercial willingness to change.

Understand the relationships

It is crucial to maintain good business relationships. As you create your plan, take care to nurture your relationship with business partners and technology providers (both internal and external). Be sure you have a clear plan for handling contracts and service agreements.

Your strategies should first establish what your objectives are and when you need to realize them. The next step within planning is to establish how to achieve those objectives. The temptation is to jump directly to architecture and then design of the subsequent solution. Your planning approach needs to first establish if it makes sense to build, buy, or transform:

- Should you transform your existing services?
- Should you buy a new service?
- Should you change your supplier?
- Should you renegotiate an existing contract?

From a commercial and procurement perspective, being able to specify services and understand the industry benchmark expectations for service performance and price is key. Buying off-the-shelf services rather than building custom solutions should be your default strategy. This approach should also be applied to your existing supply chain to drive vendors to transform. If existing suppliers

cannot align with your objectives, then plan to transition to a new supplier who offers a better commercial and objective alignment.

Use the accelerators to help shape the transformation dependencies for technology, operating model, and services and bring it all together with a cohesive view on service performance.

Plan Your Target Technology Accelerator

At this point, I suggest that you set up and use the technology accelerator.

Some projects are doomed to fail before they even start, by attempting too much without returning stakeholder value. This is compounded by dependencies on large funding demands and challenges to clarify and communicate value, and then deliver on the promises. You need to break the problem down, and this is not as simple as breaking the scope apart; you must take a structured approach to transformation. Begin by asking yourself these capability questions:

- What technology capabilities do you have and what do you need?
- How can maturity targets help to evolve capabilities and set expectations on performance?
- How do capabilities align to processes to deliver value?
- Where are you today?
- Where are you heading?
- What is the timeline?
- What is the scope?
- What is the approach to change?
- Who is taking responsibility for each part?

You can achieve the goals of a technology accelerator by identifying, assessing, and planning the evolution of capability over time. If you define your capabilities in a non-product-centric way you can avoid any vendor or historical influences, and focus instead on answering "What capabilities do we already have?" and "What do we need?". Your planning goal is to establish the gaps that need to be closed for the capabilities that are in scope. Depending on your approach, closing gaps may result in improvement of existing capability, purchase

of new capability or outsource of the capability to a service provider. With an effective accelerator, you can more easily group the gaps and associate costs, ownership, benefits, and approvals for change.

The characteristics of the technology capability will align with the operating model accelerator (organizational service layers, departments, people, and process).

Plan Your Operating Model Accelerator

The operating model accelerator is important as it is very difficult to change organizational structure and processes. Changing a single process often impacts other related processes. Think of process modules as jigsaw pieces in a large puzzle, with adjacent pieces that have different types of interaction depending on their position. You must first understand the positions and interactions of each element before you can streamline the process flows and also establish modularity that is subject to improvement targets.

Each organizational process design considers process relationships in different ways, but will include Governance, Management, and Delivery. Consider these as layers to help optimize processes that rely heavily on interaction across layers.

Within each layer there are typically process stages including Strategy and Architecture, Design and Planning, Build and Develop, Test and Accept, Deploy, and Operate. The danger here is that each stage equates to an organizational silo with hand-offs between stages. It is very important that the organizational focus becomes the services that are delivered by the layer, rather than the individual processes within any given stage or silo. Figure 3-1 offers a representation of the organizational layers and stages.

From a transformation planning perspective, some of the goals will need broad change to the organizational structure (Agile and DevOps as an example). You also need to include departmental structure, roles, and competence in this planning, and depending on the service changes, to the outsourcing position to parts of the operational model.

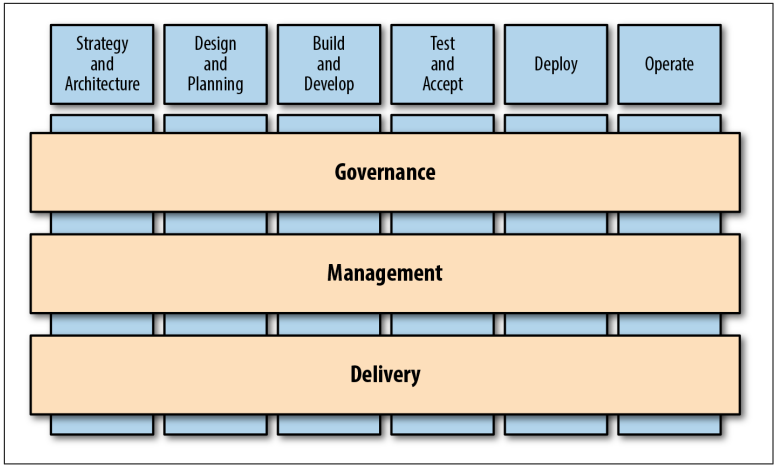


Figure 3-1. Organizational layers and stages

Case Study: Silos and Process Issues

A large government organization I worked with faced challenges due to a conflict between their existing organizational silos and their goals for agility and improved service performance. They wanted a new consumer service to be developed and improved with more agility using a DevOps approach, bringing development and operational teams closer together. Team hand-offs can be slow and inefficient, but organizational hand-offs are even worse (in this program, development was in-house and operations was outsourced)—a big problem for agility! The problem here is that the outsourcer's contract was based on reliability not speed; by taking a DevOps approach they needed to take on more frequent change and that added to their commercial risk.

The organization invested in both the cloud services and DevOps processes but were frustrated by operational suppliers who contractually had no incentive to adopt the DevOps methods. The operating model design should have tackled these issues. Attempting DevOps over organizational boundaries or even hard departmental boundaries must be avoided. In this case, the investments were made but some of the returns were lost by failing to address the organizational and departmental structure.

Use the accelerators to drive planning

Plan against the operating model accelerator at a high level first, so you can identify scope and timing for change, before you descend into deep process design. Describe the underlying operational process at different levels of detail as the transformation journey proceeds.

Once you start thinking about optimal process design, it's better if process relationships do not communicate with an adjacent process unless really needed. Think about an inefficient manager process that lacks guidelines for team members to follow, forcing them to constantly check in and seek approval. This is inefficient for all, especially if the team member is expected to bypass the team lead to communicate with other teams. The service layers should define the rules of the game. The processes within each layer should function independently, and you need only interact with management or governance for exceptions, or where a process has exceeded the allowed parameters, policies, or controls. An efficient operational model requires the parent to deliver the appropriate definitions to work within, and is the prime reason why you need a hierarchy of Governance, Management, and Delivery across the layers as seen in Figure 3-1.

There is a risk that process redesign lacks focus and you should look at the bigger picture on how technology and process are working together to deliver your services (and at what performance level). This can be a good indicator of whether your operating model and its processes are inefficient and need to transform. Let's look at how you can use the service accelerator to help.

Plan Your Service Accelerator

If you are planning to buy services from public providers or third parties, this accelerator is a better starting point—you are planning to buy a service after all, so the technology and operational dependencies are mainly the service provider's problem! For your own services, however, you need to begin with the technology and operating model accelerators, so you can start building your service hierarchy, before moving on to the service accelerator. This also brings the layering of your services into consideration.

Your ability to evolve to service layers depends largely on the organizational dependency on a given service, and whether it is a commodity or something that differentiates from the competition. Commodity services are easier to define and buy, whereas you may need to retain specialist or evolving capabilities until they achieve a more steady state of operation. In most organizations, IT infrastructure is now viewed as a commodity, and as a result, this layer of the organization could be the primary candidate to align with an Infrastructure-as-a-Service (IaaS) model.

To realize a service-oriented operating model, your planning needs to define and evolve your optimal service architecture, from a business perspective first, rather than technology. Your service architecture should reflect the services that your business requires to drive revenue, and leverage both internal and external service providers, and increasingly, service partners. To achieve an appropriate balance of governance and management you must establish a number of policies that align the expectations of different departments. These policies must also define how your organization will handle external legal and regulatory matters.

Case Study: Service Layering

I learned a tough lesson on organizational design while working with an application service provider in North America: if the target service layers are so far removed from the current management structure, it will be almost impossible to change due to management and departmental resistance. My natural approach is to define the most efficient operating model, but unfortunately sometimes you need to plan a more pragmatic and achievable path. The company initially adopted a three layer target organizational structure (service governance layer, application layer, infrastructure layer), but this forced such a management reshuffle that they resisted the change (lack of sponsorship mandating the change did not help).

We adjusted the services in each layer, allowing a closer match to the existing ownership and responsibilities. Some services were moved from the application to the infrastructure layer, which resulted in very clear lines of ownership of the service layer, enabling performance responsibility to be squarely assigned to a single owner.

The lesson here is not to set an overly aggressive target that is so far removed from the current structure you never achieve it—

pragmatism over purity is often the best path. Be prepared to change if organizational resistance or lack of support threatens to derail your optimal plan.

Your organization will always need technology and process to manage the services it depends on. For services you are buying or partnering with, the technology and processes should focus on governance. The same governance should apply to your internal services. For internal services, you should anticipate additional layers of management and delivery, but drive toward a service-oriented organization design. Internal technology organizations that do not transform will see services and responsibilities eroded as service providers and partners offer the business what they demand.

Attempting a transformation that relies on large step change (or cliff edges) can add risk, and in many cases, does not reflect the reality of daily business and project failure. Early evolution of the service integration and management function should allow your organization to evolve and improve. By enabling better service and business governance, you can avoid binary decisions such as:

- Internal technology organization versus external supply chain responsibility
- Private versus public services
- Support contracts based on service desk response versus service contracts based on service characteristics
- Operate outsourcing (retained design) versus as a service outsourcing (end-to-end service)
- Internal application development versus partner development

These examples highlight that in many aspects of the supply chain, a number of options exist. You should always reuse and improve investments if possible. Governance is key to avoiding stakeholders investing in what may be the wrong commercial decision. It is the responsibility of the senior staff who manage the portfolio to govern the service architecture and the associated commercial handling of the supply chain.

The next accelerator is performance and while this appears last in planning it should be first in strategy—if the strategic objectives are not related to performance improvement, then why change? You

should use the performance accelerator early in strategy to establish the performance gaps and motivations for change, and then again in planning to identify the specific services and what elements of performance are priority (agility, cost, experience, flexibility, etc.). Once you know your service transformation targets, you can then drill down further into any root causes in the technology and operating model accelerators.

Plan Your Performance Accelerator

When you establish an effective organizational structure, you enable the performance hierarchy to be related to service layers, and where needed, departmental contribution to a service outcome. Your aim is to have clear lines of responsibility, matched by effective governance that can set and reset performance targets and initiate corrective action when needed. Defining services allows you to test if targets are realistic, by comparing with available industry benchmarks for performance and cost. With service-driven suppliers, you should then focus the contractual landscape on rewarding performance improvement, by measuring the baseline and benchmark performance metrics (or penalty if the trend is toward performance failure).

Use the combined accelerators to drive performance

Your technology capability and processes contribute to your ability to deliver a service. Assess maturity against target performance goals and relate your progress back to improvements needed in technology, operating model, or both.

It is not easy to build a hierarchy of services based on clear performance reporting. Successful transformation relies on a definition of services that can be measured; this measurement should then be baselined and targets set for improvement. Your governance here should ensure that investment correlates to service improvement, rather than becoming stranded. All parts of your organization are responsible for performance, so make sure you set appropriate strategies and targets for them to work toward. Figure 3-2 shows the top-down organizational layering and also the common grouping of financial, experience, and agility. The chart represents a basic layer-

ing of performance that can be assigned to parts of the organization and includes a broad range of performance characteristics.

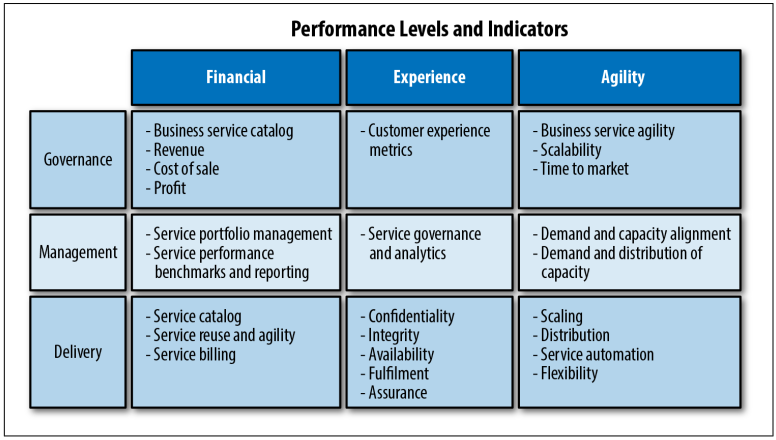


Figure 3-2. Hierarchy of performance levels and indicators

Summary

- Plan your objectives and be ready to feed back and challenge the strategic objectives or priorities if planning reveals issues.
- Don't default to building capabilities if you can buy services instead.
- The service layering and broader operating model are key objectives and should be priorities for transformation planning.
- Operating model transformation is complex, difficult, and disruptive. Manage the risk and plan process and workforce impact and dependencies with care.
- Keeping your plans on track needs performance alignment to the services you aim to transform. Performance targets should unlock investment in underlying capabilities. Be prepared to adjust the plan.

CHAPTER 4

Put the Plan into Action

You need experience of complex change programs for cloud and operating model transformation. In some ways, you could compare the transformation to transforming the engines of your aircraft while you are in flight. In this chapter, I'll highlight your ongoing need for alignment of sponsorship and strategy to the direction of travel and associated funding for the journey. In terms of governance of change, we will look at risk avoidance and transfer of risk to those who should take responsibility, to either make or accept the change. You should now be thinking about getting the program in place with a strong program director and clear engagement with the sponsor and all stakeholders.

Secure Organizational Sponsorship

Now that you have defined your outline transformation plan, you need acceptance from the stakeholders, sponsor, and executive board before you move to implementation. They should all form part of your executive transformation team. You could be asked for clarification or adjustment and an iteration of the plan by any member of that executive team. Depending on your financial approval processes, you will need to use your plan to sharpen the business case or benefits case and finalize the commitment on performance targets. You will also need executive team approval for your implementation approach, especially if you require commercial and procurement processes to select the appropriate implementation

suppliers. At this point, your strategic planning team should switch into a governance role over the implementation phase.

When you finalize your strategy and plan, it is important not to lose focus on the daily challenges that can also offer an opportunity. When possible, act early to stop a problem from worsening. You could need some early operational enablement work, but avoid new services being designed on legacy technology whenever possible; service owners need to justify any exceptions. Let's now move from sponsorship to funding.

Establish Funding for Your Transformation

When planning a large transformation, you must keep your finances in control. Your transformation plan should address the following to ensure financial diligence:

- Early changes that can be initiated with the business as usual (BAU) organization, to help drive and support your strategy (e.g., enabling better reporting to support the performance and related TCO analysis).
- Modular transformation activities that hand back to BAU as quickly as possible (e.g., enabling more effective performance reporting).
- Transformation that moves in-house responsibilities to service providers or partners.
- Continuous improvement targets that can be assigned internally or to your supply chain.
- Opportunities to return benefit quickly (low-hanging fruit).
- *Transformation horizons*[1] that return tangible annual benefits to maintain momentum.

Most organizations will have an established process for business case generation. Your financial considerations to cover in the business case include:

1 Transformation horizons are program milestones that reflect where multiple transformation activities deliver business value.

- The current and target total cost of operation (TCO); this implies a complete view of the costs of a product or service and includes the associated operational costs around it. These costs may be very fragmented across internal departments and external suppliers. Your focus is to establish a complete representation and avoid scenarios where a product or service that may appear initially commercially attractive is outweighed by higher operational or maintenance costs. Establishing current and target TCO can be a significant exercise, but this is essential if a return on investment (ROI) model is required.
- The total cost of change (TCC); your organizational funding approvals for change could rely on the business case demonstrating a ROI. Some organizations who strategically are bought in (or compelled) to change, and perhaps focused more on the cost of change and benefits, can focus on a TCC model with associated benefits case.

The challenge with typical financial approval processes is that they can require a significant upfront effort to get started and often focus on a specific project scope and timing. This can lead to a protracted set of sequential stages (waterfall-style project) and it's important that we instead seek to make smaller, more iterative steps, with a view on enabling ongoing service improvement.

Some of your financial dependencies and resulting timeline targets may need to align with contractual deadlines.

Establish Contractual Deadlines

The contractual frameworks of your suppliers can be a significant barrier to change. Your worst scenario is having to renew a bad deal because you are unable to unlock a technology or operational dependency. There are significant financial and performance impacts at stake, and these demand adequate supplier strategy and planning. You must start by assessing your existing contracts and if necessary, transition out of one contract, then negotiate a new one that is more aligned with your commercial goals and avoids subsequent technology or operational dependency lock-in (repeating the mistakes of the past).

Case Study: Contractual Deadlines

In the case of one European financial services organization, the target operating model depended on transformation of the service layering and associated contractual boundaries with support and service providers. The selection, negotiation, and contracts for outsourced deals needed a huge amount of time to prepare and execute (12–18 months). The timeline to exit existing outsourcers needed careful planning, as if a new one (or the organization) is not ready for transition, then the existing, possibly unfavorable, contract will need to be extended.

The organization made significant investment in both cloud technology and the new cloud operating model which depended on a transition of multiple existing outsourcers. The timeline for the commercial, legal, and governance work to drive the selection process was not in step with the transformation, which forced a situation where existing contracts had to be extended at significant cost and loss of benefit. These contractual deadlines must be very high priorities for scheduling with very clear ownership in the executive transformation team, which in this case failed. The cost of missing the contractual deadline was significant and the side effect was that the existing support-driven suppliers weren't aligned to the service vision (and disrupted related objectives and performance benefits).

The contractual strategy of outsourcing based on support only must evolve toward buying a complete service. This is a significant step commercially and contractually. Both your organization and the outsourced suppliers must be ready; while the public cloud service providers are marching ahead at great pace by providing the whole package (as a service), traditional outsourcers are more reluctant to change from a support model; you may also find that your service governance teams are not set up to manage a true service provider.

Changing suppliers and contracts as part of your transformation can help you achieve your performance and financial objectives, but the change is also complex and carries significant cost and risk.

Establish Cost and Risk Priorities

Transformation business cases usually align with strategic objectives and performance benefits, then flows through to planning. Your transformation horizons should be designed with this in mind, but it's important to also prioritize your underlying transformation projects and related work packages to avoid costs that aren't aligned with your objectives. For example, prioritizing cloud application migration activity to avoid capacity investment in a non-strategic technology platform.

Your planning must also factor in the risk of delays with appropriate contingencies. Some fixed milestones demand a very definite timeline that cannot be delayed. Risk mitigation can only go so far and sometimes these milestones will need to override benefit and cost in favor of time.

Costs and risks relate closely to the transformation of your workforce (changing people and process is challenging). You need to position a competence model so you can train and scale your workforce to match the needs of the transformation.

Establish Workforce Competence and Scaling Models

Your people become part of your broader consideration on transformation (training and hiring) or transition (outsourcing and attrition).

There is a trade-off on the value of experience versus resistance to change. Technologists will generally embrace the opportunity to design and deploy a new product or service, especially if they see it as an industry in-demand skill set. Changing your operational processes and ways of working, however, will meet with greater resistance; this can be related to fear of job changes or losses. Operationally, there are cases where problems are an opportunity to test knowledge and experience, and as a result the individual may consider it more rewarding. You need to redirect this reactive mentality toward proactively designing problem resolution into the new processes and ensure that operational assurance becomes a design responsibility.

You need a profile of key stakeholders and departmental leads. Some of the following attributes may help you establish a competence model aligned to roles in the operating model, so you can decide how a team member may support your transformation goals:

- Is the role managed by another, or expected to self start?
- What responsibility does the role have?
- What reach does the role have across teams and departments?
- How complex and challenging is the role?
- Is the role emphasis aligned to business or technology?
- Does the role promote service awareness and reuse?
- Does the role specify what is needed, or how it is achieved?
- Does the role focus on proactive design, or reactive problem solving?
- Does the role drive automation versus manual process?
- Does the role have leadership and team management attributes?
- Does the role deliver service leadership or resource leadership?
- Does the role need technology competences related to support of products and services?
- Does the role need technology competences related to ability to develop or improve products and services?

The role and competence, balanced with the culture and political influences, will be indicators of the value of an existing role toward the target operating model. The scope of change is also a factor—if the service is *greenfield*[2] with new working processes, then you need to address a significant demand for training or hiring of new staff.

One of the most sensitive aspects of transformation is applying economics to people; if you have a large capability gap with a high cost of change, you need to hire people who are supportive of change or already experienced in the target operating model you want to transform to. Workforce attrition needs to be planned, either to avoid people leaving, or to encourage them to do so.

2 Greenfield implies a fresh start to build something new; by contrast, brownfield implies you need to address and change what already exists.

When thinking about your workforce and potentially people within the supplier organizations, it's important to establish accountabilities and responsibilities for change. It's important to avoid your transformation program taking on too much and to ensure that the existing organization is involved on your journey.

Assign Accountabilities and Responsibilities

The existing organizational structure often needs to change, but also needs to be included to bring about the desired change (organizational change is high risk). To engage with the existing organization you need to view the current structure, but with an eye on the goals for service layering and a simple hierarchy of governance, management, and delivery.

Keep the following in mind as you build an effective project team, comprising internal stakeholders and external service providers:

- In some eyes, all third parties will be viewed as suppliers, but you need to differentiate when establishing a trusted client-side transformation advisor.
- You need to invest in competence to strengthen your existing teams and may need to augment existing resource with externals to release their availability and benefit from their experience.
- Find the key roles and people from within where possible—drive them to focus on what the business needs first, rather than being bogged down with how they deliver it.
- Focus on enabling and utilizing business as usual (BAU) to avoid the transformation scope becoming unmanageable.

Summary

- If the strategy and planning foundations are solid, then implementing your plan needs a strong transformation executive governance team.
- Organizational challenges include sponsorship, ownership, funding, and contractual dependencies.

- Your transformation program must balance time and risk against target benefits and performance that your organization can both absorb and deliver.
- Workforce change needs special consideration and a competence model supported by human resources to help you direct investment toward hiring, training, and attrition.

CHAPTER 5

Take Small and Measured Iterative Steps

You have now done the outline planning and it's time to start delivering the first transformation horizon. Your strategy should take a long-term view but the detailed planning and execution should focus one transformation horizon at a time. In this chapter, I'll explain how you align projects and work packages within a horizon, to achieve the expected benefits and avoid investing in changes that yield no results. You will identify the key relationships with daily business and suppliers. Finally, look at how you can measure the journey and if needed adjust the direction.

Deliver Work Packages

To accelerate your timeline you need to consider packaging work, and where possible, hand it directly to BAU or to your suppliers, rather than overscope the project team. Each transformation horizon should group a number of tasks into a package of work; this technique helps manage scheduling and dependencies.

Figure 5-1 provides a visual reference of the approaches to change types and an example set of stages.

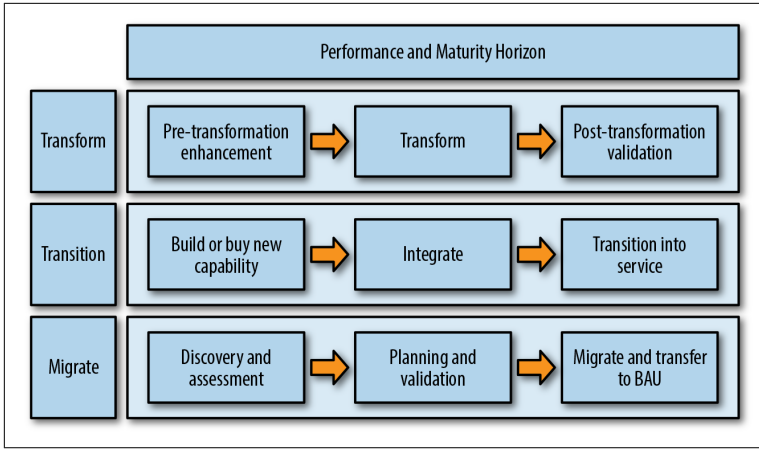


Figure 5-1. Transition, transformation, and migration approaches

Where possible, you should identify work packages that can execute immediately, without waiting for broader transformational dependencies. A pre-transformation work package can be completed by the existing organization and "as-is" operating model. These work packages could, for example, use existing processes to create/publish artifacts or data, that you will subsequently need as a baseline for transformation.

You may anticipate a lead time, but often transitionary work packages will lag behind transformation, at least in the early stages of the plan. You may need work packages to accept a change under an operational context, rather than a project one.

When you migrate to the new service or capability, this is usually handled by BAU, but often exceeds existing team capacity, as it can require significant overtime. If you need a supplier to help, then the timing should be aligned with when the work package is ready to accept.

We have often discussed performance of services as the overall outcome, but please apply diligence to individual work packages to make sure they are delivering what you expect to the transformation project. You need ongoing validation of project and work package performance (ideally assigned to the project manager).

Measure and Validate Performance Benefits

Even the best transformation plans deviate from targets and need to be adjusted in flight. The approach to take small and more iterative steps lends itself well to assessing the alignment of goals and make smaller corrections (rather than waiting longer and being further off course). There are synergies here in becoming more agile and iterative in both software development and transformation.

Some of the transformation benefits may not be tangible, which makes measurement difficult. Therefore, it is important you establish baseline and target performance metrics that can provide your stakeholders with evidence of success or plan deviation. Establishing dashboards for business-as-usual reporting and associated performance not only helps develop an inclusive culture, but also avoids divorcing the transformation program from the existing technology organization.

You need to engage the business as usual teams early so you can delegate ownership of performance targets.

Enable Your Business-As-Usual Teams Early

The balance of project resources to business-as-usual (BAU) teams will depend on a significant number of factors, which you should consider as part of the funding of the transformation program and the ongoing risk management. The following are example factors:

- The cost delta from allocated BAU resources to external consultants or costs
- The efficiency of external consultants to bring along models, tools, and accelerators for change
- The availability of BAU resources to participate, and at what stage of the program
- The competence of BAU resources and the cultural attitude and willingness to change
- Scope factors and services needed to transition from BAU to an outsourced provider
- The relevance of skills and the need for a temporary skillset for the transformation, that is not needed for the target operating model

- Commercial, security, and regulatory factors that could restrict access to systems or information
- Client-side versus supplier-side trust (excluding vendors who need to be subject to commercial selection)

Case Study: Losing Your Way Early

A UK-based IT service provider found that old habits die hard! They decided that their transformation should use almost exclusively their existing team with very little external consulting support. As with most organizations, the BAU team already had a job to do and were overloaded, but crucially they were also very accustomed to the existing ways of working—many of the team had worked together, and in that way, for many years. When a transformation team is resourced mainly from the BAU teams, it is difficult to drive the transformation with limited resource availability, experience, and reluctance to change.

In this case, when trying to transform, team members threw too many negative issues and opinions on the table that slowed progress. In workshops, there was often no-one in the room that had experienced the target environment they were trying to transform to. They were using strategy and planning documents, but without leadership or experience, they quickly lost their way. Now you might expect me to say more consultants are the answer, but for me, it's crucial to invest early in new people who have experience and can lead from within the BAU teams. Strong, experienced people with the right attitude not only help the transformation and relieve daily resource pressure, but they also help train the existing team members, and encourage a positive culture.

Handling the costs for BAU very much depends on your organization, but in most cases, enterprise resource planning (ERP) will identify what people are working on and assign the internal costs to projects or cost centers. You also need to look for opportunities to transfer risk to suppliers.

Transfer Risk to Your Suppliers

You must differentiate between your supplier's services and motives to discern whether the supplier can be trusted to act in your best

interests. Let the stage of your transformation journey determine the role that the transformation team (or supplier) is playing. Your journey will have stages that can be mapped to client side or supplier side with associated commercial arrangements. The ideal client scenario is to clarify what is required within the client-side stages and then go to market for the supplier-side stages to drive competitive tension to the suppliers. Figure 5-2 shows an example alignment of project activities that are assigned ownership either to the client or supplier.

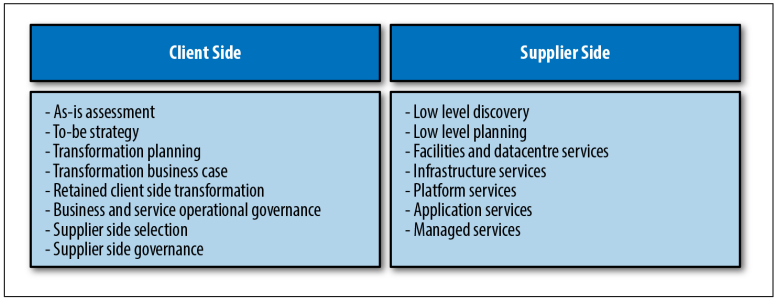


Figure 5-2. Client versus supplier-side considerations

To engage suppliers early, you first need internal effort and cost to build a business case, which is often the milestone that releases finance. It takes time and money to build a business case, so you need to secure a sponsor to fund the initial stages. Once funding is available, engage with client-side suppliers who not only have experience with these stages, but also have models and content to help accelerate toward your business case.

It is essential that you trust your client-side suppliers because they need access to sensitive information which would cause a conflict of interest should they bid for services or implementation work.

If you have a good balance of transformation success across the project team, the BAU organization and the suppliers, you should prepare to transition to the next transformation horizon.

Transition to the Next Horizon

As you near the end of a horizon you must evaluate your progress and consider if your transformation objectives and plans are still valid. It is an unfortunate reality that plans often need to change, so your projects need to be able to handle change mid-flight.

Validating all aspects of your plan requires a lot of overhead (and is not always practical). Secure executive support for your plan to shield you from rework and repeat diligence. Changes to scope, for instance, may escape rework of the business case if financial budgets are not exceeded. Your transformation plan should be based on the accelerators (and associated capabilities) so you can understand the change and impact in a more robust way (this can include dependencies, costs, and benefits of capability change or enablement).

Your transformation approach must seek to achieve:

- Iterative transformation horizons with clear business value
- Hierarchical performance model and responsibilities/ownership
- Continuous improvement of services and agility
- Governance to enable supply chain flexibility
- Resilience to deal with mid-flight executive leadership change

The risk of leadership change is an unfortunate reality; a long-term strategy is needed but transformation needs to deliver shorter-term benefits. In the event of leadership turbulence, a shorter-term transformation horizon can have a chance to finish delivery.

The definition of a transformation horizon can also be subject to change mid-flight if the performance goalposts move, or the underlying capabilities and benefits change. Again, depending on sponsor and executive governance, this does not need to materially impact your plan (it can be as simple as communicating the adjusted horizon definition). If, however, the composition of the capability has changed significantly and the business benefits are no longer realized, you will need to rework the business or benefits cases.

The business case should drive dependency on actual performance benefits and associated KPIs that you expect to improve, in step with new capabilities being delivered. You must establish KPI baselines and targets aligned to the timeline, but be aware that you will need to make plan adjustments as timeline deviations arise.

The flexibility for change will also depend on your ability to assign ownership for implementation roles and responsibilities. In-house teams may accept change with appropriate governance and mitigate

the impact. External implementation partners, vendors, or service providers are likely to be under a contractual relationship. A good contract will enable change (typically at a cost) but depending on how broad the change is, there could be issues due to the time it takes to react. Of greater concern is if your supplier is unable to deliver a capability change, especially if this means that a supplier needs to be replaced. In either case, you need to align the change, scope, and ownership to revalidate the plan.

Summary

- Embrace the use of transformation horizons to align investment to value and then prioritize work packages within each horizon.
- Be diligent when defining and governing performance achievement for each horizon.
- Avoid your transformation program and daily business running along separate tracks for too long; aim to involve, improve, and delegate to BAU early.
- Aim to transfer risk to daily business or suppliers at all stages; if the transformation risks are mounting, be prepared to change.

CHAPTER 6

Don't Lose Sight of Your Long-Term Goals

You need to periodically assess your strategic objectives to maintain alignment to your vision and long-term goals. The following summary topics identify goals that either need ongoing governance of delivery or inform strategic objective and priority change.

Govern Transformation Horizons by Maturity

The scope of cloud and operating model transformation is broad, deep, and complex. The scope needs to be structured into transformation horizons to break the scale of change down into achievable goals. Use maturity models to align investments across the operating model and avoid gaps in capability, where benefits cannot be realized because one of the parts is missing.

Achieving maturity of all the required capabilities should directly align with performance improvement. Governance must be strong to both establish the correct plan and then police the delivery of each horizon with maturity gain and achieving associated performance targets.

Manage Expectations Against Your Service Portfolio

Your transformation should enable a more dynamic and flexible consumer/supplier relationship. The supplier could be the internal technology organization, a partner organization, or a service provider. The consumer could be internal business units, the external consumer, or partner organizations (partners may act as both consumers and suppliers).

To manage this dynamic and flexible relationship, you need significant transformation and alignment of strategies and demand to the service portfolio. Brokerage is the process that should channel consumer demand to the most effective supplier based on established policies and rules. The governance of the portfolio should evaluate the performance of all providers and seek either improvement or transition to better providers or services.

Establish Performance Dashboards Across All Services

To effectively govern, you need performance visibility of the services that are being consumed and alignment to the service providers within the service portfolio. Commercial frameworks with outsourcers, focused on the support wrapper rather than the underlying service, hinder the ability to roll up effective service reporting. Internal operational focus on the monitoring of individual capabilities can provide useful data, but only if it can be aggregated to the services (the sum of the parts).

Achieving performance visibility early in the transformation project enables validation of the strategy and planning and ongoing governance of change.

Adjust Transformation Objectives If Needed

With a horizon-driven plan and visibility of performance, the governance team must react to make adjustments as soon as deviation is recognized. Stakeholder management and associated confidence in the transformation will be retained with transparency. Root cause analysis will be needed to find the underlying problem and you

must make tough decisions to adjust objectives and plans. If the root cause is related to failure to deliver, then you must address this to avoid a recurrence.

Govern Digital Experience Across Your Services

While transformation priorities can target cloud capabilities early to act as an enabler, the reality is that some organizations cannot wait to start driving changes more aligned with the digital capabilities. This is especially true if competitors already have an effective cloud operating model and more compelling digital services. While cloud is the focus in the infrastructure domain, digital is primarily the focus in the application service domain.

Pressure to enable digital capabilities leads to parallel investment in both cloud and digital transformation. To achieve this, drive a common transformation strategy toward an operating model that both leverages cloud and enables digital. Align both sets of agendas and capabilities with the core elements of the service-driven target operating model.

Identify Your Competitive Service Differentiators

Align your service portfolio to the business objectives and what are strategically viewed as competitive differentiators. Your business needs to be agile and focus its investment on differentiating services, while driving the efficiency of commodity services. In an optimal position, your business can build new differentiating services by bundling up smaller building block services from the portfolio. The ability of the service portfolio to anticipate and meet new demand in a timely manner enables the ultimate business agility goal.

The governance of the service portfolio should be to ensure that commodity services are reusable for agility goals and are aligned to the best provider to achieve performance.

CHAPTER 7
Conclusion

Organizations that see cloud as just another technology trend are on track for disappointment. Cloud is a catalyst for enabling service-driven technology via operating model change. Thus, cloud is an enabler for digital business. Without transformation, the business pressure will accelerate, the gap in expectations between the business and technology will widen, and the ability to change will be subject to even more restrictive funding. Establishing your own strategy is only the start. You also need a clear transformation approach. Timing, phasing, and capacity issues can derail the best-laid plans, so take the time to make sure you have a strong team around you. You can't go it alone; the brave soldier on the battlefield with little more than a flag and no support does not last long.

About the Author

Mark Preston has over 25 years experience delivering enterprise solutions within complex change programs for large global organizations. He has led the transformation of cloud platforms and operating models for major global service providers. He also creates effective transformation service offers, including cloud capability models, maturity models, process models, and the broader target operating model specifications.