The Journey to Hybrid Cloud
A DESIGN AND TRANSFORMATION GUIDE

First Edition

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1.1 Introduction

Enterprises today are experiencing immense pressure from outside forces, disrupting businesses and inside forces, thus, pushing IT to evolve. The need arises to accelerate IT to the speed of Business and transform IT systems to "as-a-service" models. Traditional IT systems need to be modernized with automated solutions that are highly scalable, agile, and adaptive. Organizations want to accelerate innovation, transformation, and value allowing them to take advantage of new ideas, new business opportunities, and shifting consumer needs while anticipating competitive threats. They are looking to scale and adapt their IT infrastructure and services based upon the unique demand of their business and consumers.

This transformation requires infrastructure architectures that are flexible, agile, and scalable. Modern applications are required to be developed very quickly and they use a stateless, scale-out model. This is in contrast to traditionally large, heavy-weight applications[1], which, however, are still needed. To address both needs, IT infrastructure will have a "bi-modal" characteristic, where traditional (slow) and cloud (fast) models exist side-by-side. The cloud part of the IT infrastructure may include both private (on premises) and public (off premises) components.

[1] A number of industry analysts use the term "mode-1" and "mode-2" applications to characterize bi-modal IT. Traditional applications are considered as "mode-1" (stable, reliable, transaction oriented, development with traditional project structures, like "waterfall" or "V"). "Mode-2" designates modern applications (stateless, scale-out, short version cycles, and development with agile methods).

This book will present a number of approaches designed to assist in deciding which mix is best suited for a given situation. We will discuss the creation of a cloud model and the journey to private and hybrid clouds. While private clouds are ideal for services that have specific security, compliance or performance requirements, public clouds offer a larger range of elasticity. Public clouds are ideal for workloads that have large variations in demand, and have no particularly severe security or privacy policies. A hybrid cloud adds the benefit of spanning private and public clouds. This provides a choice of data and workload placement. **The path to hybrid cloud starts with the private cloud.**

Cloud concepts allow organizations to add new capabilities to their existing IT at the speed of business. Services are ordered and delivered through a self-service catalog. A cloud includes automation and virtualization. **Automation technologies allow organizations to shift administrators away from day-to-day common tasks to value-creation tasks.** This results in improved operating efficiency and reduced cost.

Private and hybrid clouds may support distributed architectures that span multiple clouds. The hybrid model combines the advantages of private and public clouds. **The hybrid model is therefore the key approach to enable IT to become a value creator in bridging traditional IT and cloud.** Furthermore, it allows the business to continuously create and deliver new services. Finally, the hybrid approach provides real-time insight and understanding while proactively managing and mitigating risks.

Data on current cloud adoption in the market is presented in Section 1.7.

1.2 Why we wrote this book

As outlined above, the topic of cloud has become very popular in the IT industry over the past few years. Many reports, studies, and research papers emphasize the benefits of using cloud-based approaches over traditional IT concepts in the context of the dynamic economic landscape.

With this book, we wanted to go beyond simple marketing messages. The intention was to link theories with their application in real scenarios. Based on the author's body of experience gained in multiple projects and over many years, this book focuses on the process of determining an appropriate cloud design. We describe how models are chosen, methods are applied, and tools are used to achieve requested results. Whenever possible, illustrations with real-life situations are added.

In addition, drawing from our experience, we share lessons learned from the use of HPE's cloud portfolio. These practical insights are designed to assist the reader and their organization by illustrating the best way to move to a private cloud and identify opportunities for extending that into a public cloud.

Figure 1-1 below shows the sequence of chapters.

1.3 Target audience

This book has been written for technically oriented personnel who are using, or who are considering to use cloud technologies and want to further that understanding from different perspectives. The typical reader will already possess a fundamental understanding of IT and cloud technologies and solutions. Basic knowledge in project management, IT architectures, and change management approaches are helpful, and sometimes required, to fully understand the context of a particular topic. The intended audience spans the roles of CTO, director of operations, IT manager, project manager, or solution architect, but the content will be suitable for anyone interested in building cloud solutions for their business.

1.4 Objective

The core sections of this book will discuss cloud solutions based on our experience in successfully implementing strategies in private and hybrid clouds. Our goal is to help build sufficient understanding to allow readers to define their own path to the cloud and delineate the required steps toward creating service-oriented solutions. A key topic will be the requirement for detailed strategic planning, thereby providing the structure to support the development of a unique approach to the hybrid journey with the appropriate services and use cases.

A key takeaway for readers of this book is the ability to understand how to evaluate and plan a cloud journey. This includes learning about practical cloud design. HPE technologies are introduced as examples and architectural building blocks. Beside the technical aspects, the associated transformations of the organization and processes are discussed to nurture a successful and broadly holistic approach.

We would like to emphasize that the best practices, designs, and architectures discussed in this book are based on HPE solutions and the authors' understanding. So although it is not an exhaustive approach to this topic, the processes and recommendations discussed are based on the experience of many IT and cloud projects over several years. Since each project and its implementation are unique, we understand that circumstances will vary based on the reader's specific context, industry vertical, as-is IT architecture, applications, IT capabilities, and so forth. At the same time, our experience tells us that there are typically enough commonalities to adapt these best practices to meet the particular needs of most organizations.

1.5 How this book is structured

This book is structured with the following chapters and topics, shown below in phases to provide overall guidance.

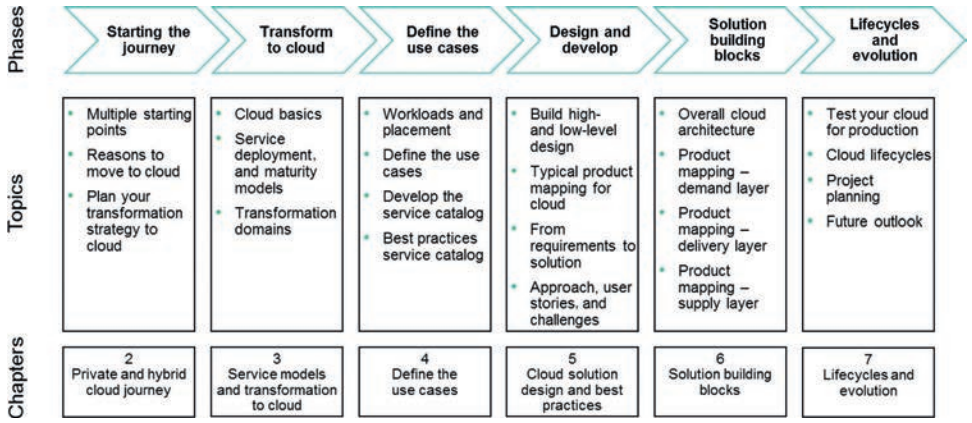


Figure 1-1 Book structure and implementation of best practices

This approach corresponds to industry-typical project phases and is a best practice that can be followed for private and hybrid cloud implementations. This structure is used throughout the book to help introduce, understand, and provide guidance on a typical journey to private and hybrid clouds.

1.6 Chapter overview

The following summary describes each chapter and what the reader will find within:

Chapter 1 – Introduction to this book

This summarizes the overall flow and content of the book. The structure of the book is explained to provide overall guidance. References to several recent articles and research reports provide insights regarding cloud adoption, usage, and future steps.

Chapter 2 – Starting the private and hybrid cloud journey

This chapter presents the reasons why customers with traditional IT infrastructure silos should move toward a converged infrastructure, and finally, to the cloud. It explains the stages required to move from a traditional data center to a private or hybrid cloud infrastructure. It highlights critical success factors as well as required decisions. Furthermore, the implications to IT and the business are discussed. These are important views to aid in understanding which domains besides technology are affected, when planning to move to cloud.

Chapter 3 – Service models and transformation to cloud

This chapter begins with "cloud basics" explaining some key terms and roles in the context of cloud. It continues with service and deployment models and introduces the concept of maturity. From

there, it explores the transformation process and associated modernization approaches to extend the technology discussion. We also share a customer example with the pain points, approach, and gained business outcomes related to this context. Lastly, we describe transformation domains that serve as a framework to evolve the journey to cloud.

Chapter 4 – Define the use cases

This chapter starts with a discussion of workload and placements that determine the best suited place to run a particular workload. It moves on to the discussion of use cases by addressing a high-level depiction of a business pain point. Use cases are helpful in deriving requirements top-down, starting from business to technical functionalities, and finally, to a service catalog. The service catalog topic is enriched with design best practices from the field. The chapter closes with a customer case, referencing the importance of a service catalog.

Chapter 5 – Solution design and best practices

Chapter 5 introduces the design approaches that are commonly used within private and hybrid cloud projects. It also discusses how to build both high- and low-level designs. The design principles covered will form the groundwork for the architecture and implementation of an effective cloud implementation. From there, we cover cloud design challenges and typical user stories to aid in building your solutions.

Chapter 6 – Cloud solution building blocks

The chapter introduces building blocks that provide certain functionalities for designing a private and hybrid cloud solution. It begins with a description of a functional architecture. The discussion of building blocks is then aligned to a functional architecture and associated with one or more products of the HPE portfolio. These product selections are described in detail in the subsequent sections. They serve as examples that have been successfully used within our own cloud engagements.

Chapter 7 – Lifecycles and evolution

Chapter 7 explains key aspects on testing a cloud implementation for production. With sample test cases, it combines user stories and insights to test descriptions. From this point, we present a number of cloud service lifecycles to be considered for engineering, consumption, and operation. The following section covers overall planning for all phases and complemented by management of change and education. Finally, we conclude this book by sharing personal viewpoints related to functionalities, services, and technologies that could be of relevance for the future of hybrid cloud.

1.7 Cloud research summary

This summary provides an overview of the following topics:

- Cloud-adoption state – Where do we stand today?
- Cloud models – What types of cloud environments are being planned and where are the majority of workloads?
- Cloud future – Where should enterprises invest?

Cloud-adoption state

The current state of cloud adoption is well known by IT professionals, and demonstrates that we are in the productive phase of the adoption curve. Enterprises are planning, implementing or evolving their own journey to cloud. Products and solutions have reached a useful level of maturity, which allows us to implement technologies with sufficient best practices and within reasonably short time-frames. When considering the leading solutions available in the market and the experience gained from cloud projects delivered over the past several years, this body of knowledge has allowed for the creation of a rich set of out-of-the-box capabilities. This has driven further adoption of cloud. Enterprise workloads have shifted to a mix of cloud environments where, as they mature, they will be considered as hybrid cloud. In some cases, private cloud has been used as a starting point to drive a new IT initiative or project allowing IT to justify a technology refresh of the legacy data center infra-structure. Consolidation is another topic that is frequently addressed along with the adoption of cloud technologies.

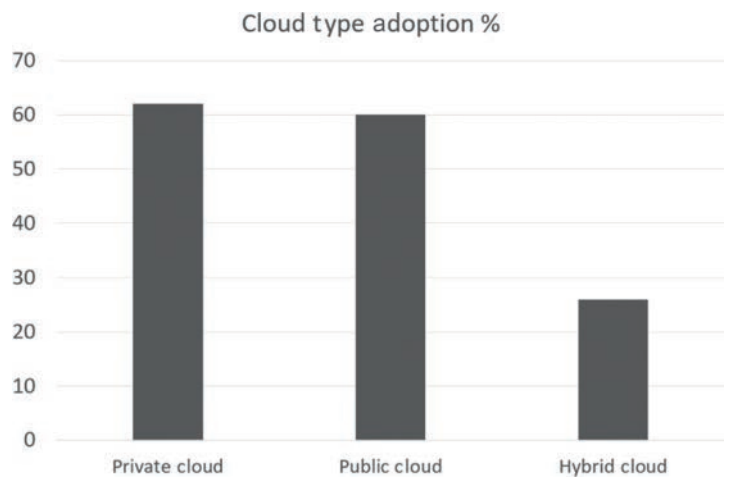


Figure 1-2 Cloud type adoption

Source: Forbes, Analytics, Data Storage Will Lead Cloud Adoption In 2017. 20 November 2016
Quoted Source: 2016 IDG Enterprise Cloud Computing Survey. November 2016

Forbes recently quoted an IDG study stating that "Organizations are using multiple cloud models to meet their business's needs, including private (62%), public (60%), and hybrid (26%)."

To conclude the adoption discussion, we can say that only a small portion of enterprises today have no current cloud plans. The majority are moving forward as reported widely by several different reports and statistics. This brings us to another key question. What types of clouds and workloads are being used in the cloud?

Cloud model

CIO magazine recently quoted a Forrester research regarding the current build plans of enterprise IT decision-makers.

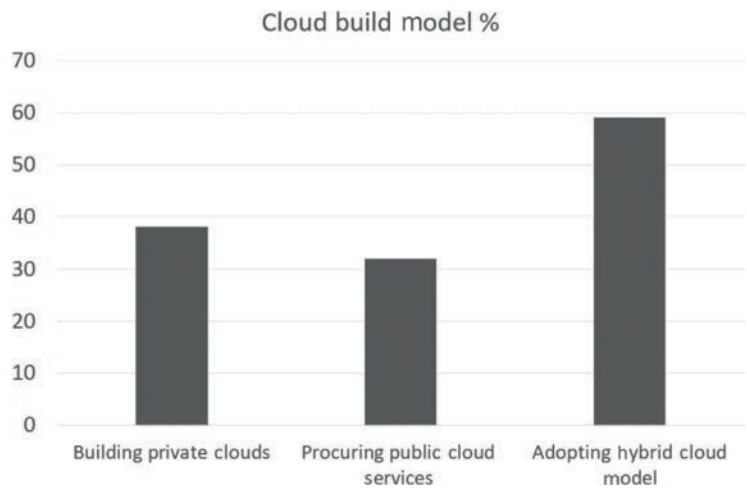


Figure 1-3 Cloud build plans

Source: CIO, 6 trends that will shape cloud computing in 2017. 2 November 2016
Quoted Source: Forrester, Predictions 2017: Customer-Obsessed Enterprises Launch Cloud's Second Decade. 2 November 2016

CIO quoted a Forrester research which stated that 38% of 1,000-plus North American and European enterprise infrastructure technology decision-makers said that they are building private clouds, with 32% procuring public cloud services, and the remainder planning to implement some form of cloud technology in the next 12 months. Also, 59% of respondents said they were adopting a hybrid cloud model. These data highlight a significant shift to public and hybrid cloud build plans over the last 2 years.

This research highlights that the enterprise cloud mix is moving quickly to public cloud and hybrid implementations while private cloud is maintaining a valuable position in the mix. Recent implementation experience has shown our team that the move to public cloud is not wholly due to regulatory and data privacy issues for some firms, but is accelerating at a significant rate. We have seen that most enterprise IT teams are quite serious about building a hybrid implementation model for

their applications and services where they balance in-house and external cloud services in a more dynamic fashion. A hybrid model will enable IT to help business teams move quickly in any direction, but also provide needed guidance and control for risk and delivery cost.

Cloud future

Recent predictions highlight the rate of increase in the move to the cloud and the need for a hybrid cloud view by most enterprises. Several statistics from the IDC FutureScape Cloud 2017 Predictions illustrate this shift:

- By 2020, at least 50% of net-new IT spending will be cloud-based, shrinking noncloud enterprise applications by 20%
- More than 85% of enterprise IT organizations will commit to multicloud architectures by 2018, driving up the rate of change pace in IT organizations
- By 2017, more than 60% of enterprise IT organizations building hybrid clouds will purchase new or updated workload-centric cloud management solutions

Source: IDC FutureScape: Worldwide Cloud 2017 Predictions (Doc #US41863916) 15 December 2016

These predictions highlight the movement of key enterprise applications to the cloud, the near term move to multicloud architectures, and the pressing need to better manage multicloud hybrid environments. IT operations is indeed moving to the cloud.

Finally, most industry research has demonstrated that a hybrid cloud environment has become a strategic initiative within enterprises worldwide. We can expect continued growth of public and multicloud implementations while private cloud forms the way to protect and operate key data and applications that are the best fit for on-premise use. However, the compelling conclusion to any study of the state of cloud operations is a continued acceleration of adoption of all cloud models and the corresponding need to manage across this rich ecosystem. This relates to tools that allow governance, management, and transparency of usage and cost. But first, let's discuss how the journey gets started in the next chapter.

2 Starting the private and hybrid cloud journey

SYNOPSIS

From a high-level view, the picture below may represent the journey.

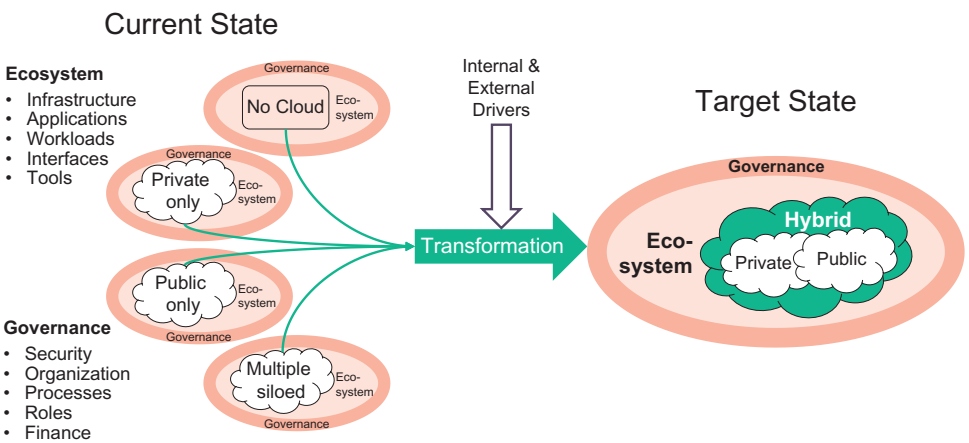


Figure 1 The journey to hybrid cloud

The journey starts from a **current state**, which includes a broad IT ecosystem, governed by a set of established principles. The ability of the current state to meet business demands determines the reasons and the urgency to start the transformation to a different (target) state. We will evaluate some of these reasons in Section 2.1.

The **target state** is associated with expectations justifying the time and effort for the transformation. We will have a first look at ways to verify expectations and identify an appropriate target state. More detail will follow in Chapter 4, which explores the role of use cases. The development of a suitable cloud design will be covered in Chapter 5.

The **transformation** is a project. In Section 2.3, we will cover some of the planning aspects of the project and will add implications to IT and the business in Section 2.4. Section 2.5 includes a customer case to draw a real-life example. Finally, Section 2.6 closes the Chapter with a presentation of tools and services which can be used for planning and starting the journey to hybrid cloud.

2.1 Reasons to move to cloud

Observations

At the start of the journey, enterprises tend to express a multitude of expectations about the "Cloud". These expectations are often unaligned across different organizations (for example, business, finance, IT). At the same time, the resulting implications on IT, people, processes, and responsibilities within the organization are rarely known or properly considered.

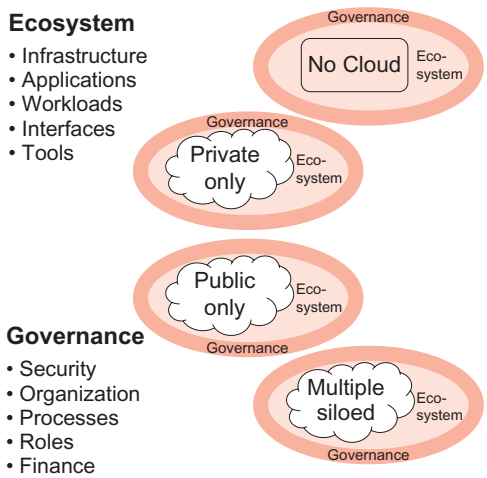
Referencing analysts (and cloud vendors) reveals a list of common **benefits** associated with the move from traditional IT to cloud technologies.

Some of the most frequently mentioned benefits are listed in the table below. However, interpretations may vary. Therefore, the table includes examples of qualifying questions for each of the expected benefits. The questions are meant to help determine an understanding of the current state ("What is currently …"), the target state ("which…", "how much…"), and the drivers ("business value") that push an enterprise from here to there.

Benefit	Examples of qualifying questions
Increase agility	• What aspects need to be more agile? • What is the business value of increased agility? • What is currently limiting agility? • By how much could agility be increased? • How will agility be measured?
Reduce cost	• What is currently driving cost? [Infrastructure, operations, licenses, facilities, processes, people, and more] • What are the estimated cost savings? • Which financial models are being used today and should be considered in the future? [Fixed allocated budget, flexible usage based budget, CapEx, OpEx, and more]
Reduce risk	• What risks are expected to be reduced? • What is currently imposing risk? [Compliance, operations, infrastructure shortage, software errors, disasters and more] • What risk mitigation strategy is in place? • Which risks are possibly being reduced? • What is the business value of reducing particular risks?

Benefit	Examples of qualifying questions
Increase speed of innovation	• What types of innovation may speed up? • What is the business value of improving the speed of innovation? • What is currently limiting speed of innovation? • By how much could speed of innovation be increased? • How will speed of innovation be measured?

Current state

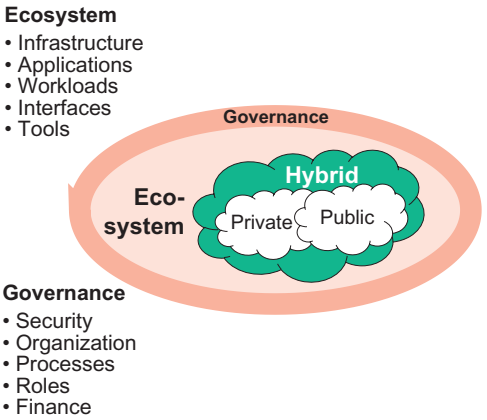


As depicted in the graphic, the journey to hybrid cloud can begin from **multiple starting points**. For some enterprises, the **current state** includes small-scale private clouds, and they are ready to extend to a larger scale. Some have deployed non-productive clouds to gain experience with moderately important workloads, and are now ready to leverage cloud for business critical workloads. In other cases, the intention is to evolve from a single delivery model, whether it is public cloud or private cloud, to a hybrid delivery model.

In any case, the current state includes a broad IT ecosystem, governed by a set of established principles. The transformation to cloud will have an impact on areas of the IT ecosystem. An understanding of the current state therefore includes knowledge of the importance of the existing IT ecosystem, and how much impact can be tolerated. Similarly, the impact on governance principles must be considered. Some governance constraints are impossible to change, while others may be modifiable according to the specifics of the transformation.

Example: An enterprise's current state may include an important central database system. Governance dictates the needed availability and recovery characteristics for this system. During the consideration of the current state, the enterprise will determine the business value of the database, and its role going forward. The analysis may find that the database system needs to stay as is. Thus, the transformation will then need to take that into account.

Target state



The target state is where expected business benefits will be achieved. This is the intended result of the transformation. It is aligned with the overall vision and IT strategy. One of the important factors of journey determination is the **right mix** between traditional IT, private cloud, and public cloud.

Any transformation may have side effects. While inevitable, they may not be evident at first glance, particularly in the area of governance. Therefore, the aspects of security, organizations, processes, roles, and the financial model should be considered when describing the target state.

The appendix describes operational and engineering roles, which may need to be established in the target state.

Example: An enterprise may see an increasing demand for deploying new applications for mobile consumption. This need may be driven by customer expectations. Failing to meet these expectations constitutes a business risk, because competitors may offer such services, and existing customers may switch to the competition, resulting in lost business opportunities. Their current environment is not ideally suited for this purpose. Limiting factors may be the time it takes to set up development and test environments, and the process of moving new application versions into production. The target state will be designed to help overcome these limitations. Therefore, a self-service model is intended to be introduced. Developers can order environments, where the setup is automated and the environments are ready to be used within minutes. In such cases, DevOps tools are implemented to allow a quick transition of applications into production. Governance policies are then extended to include

placement rules for these development environments. Some may run in a public cloud, others in the on-premises infrastructure of a private cloud.

Transformation

The transformation is a project or multiple projects, which moves an organization from the current to the target state. Once the target is defined, and the current state is described and its limitations are known, the gaps between the two states become visible. Gaps may be identified in multiple areas of the IT ecosystem as well as the governance principles. The gaps can be closed by appropriate initiatives. Each initiative will have its own goals and success criteria. Once an agreement on the various initiatives is reached, it is clear **what areas** need to be addressed in the transformation.

The next Section discusses how the transformation may be carried out.

In most practical cases, it will not be possible for the approach described above to be fully exploited. There are always constraints and limitations. Employing external transformation services can be useful in achieving maximum adherence to the ideal structured approach. Section 2.6 presents **tools and services** available from Hewlett-Packard Enterprise Consulting Services for reference.

2.2 How to move

Just as there are many different starting points, there are also many different steps and priorities to consider in the transformation.

For the target state, the **right mix** of intended private and public cloud usage, as well as traditional IT, is one of the major factors in the planning process. Workload dynamics are the major driving factor for determining the final mix. With a growing number of "cloud native" workloads with high fluctuations of resource demands, the mix may include more public cloud resources. However, regulations such as data sovereignty may limit the use of public cloud resources. In any case, the mix affects the architecture which must span traditional IT and private and public clouds; it affects operations, as the way to build and consume cloud services; and it affects administration, which has to adapt to a multi-cloud environment.

Small companies may transform exclusively to public cloud usage, with no private cloud or traditional IT infrastructure at all. (Startup companies are not transforming at all, they typically use public cloud resources to begin with.) Larger organizations may envision both private and public cloud components.

Once the gaps between the current and target states have been identified, and appropriate initiatives have been defined, a roadmap for the steps of the transformation will be developed. The roadmap reflects the priority of the initiatives, as well as the available time and resource budget.

Each initiative will have associated success factors and criteria. The overall governance for the transformation monitors the progress of all initiatives and verifies milestone targets along the way. In some cases, targets will need to be adjusted due to changing conditions.

Dividing the transformation into small steps is a wiser move and is better suited to a successful conclusion, than a big bang approach. Small steps allow for frequent **reality checks**, which may detect issues and allow corrective actions to be taken along the way.

Example: In many cases, the first step of the journey will relate to automation because it can demonstrate an immediate business value and will free up resources for subsequent steps. In other cases, enterprises focus more on their application portfolio and start to develop new applications or modernize existing ones (namely, re-architecture, re-host) to run optimally in the cloud for scalability and flexibility.

HPE offers many services that deal with planning and setting up roadmaps for the transformation to a cloud environment. The **HPE Transform to Cloud Workshop** in particular, helps enterprises to define, power, and optimize the "right mix". Section 2.6—Tools and services, presents the HPE Transform to Cloud Workshop in greater detail.

The next Section discusses how to define a strategy for the transformation. Similar to the HPE Transform to Cloud Workshop, it follows a sequence of topics to be addressed, and questions to answer during the planning of the transformation.

2.3 Plan your transformation strategy to cloud

Each enterprise has its own sequence of steps that make up their journey. Industry segment, organization size, and technical maturity are some of the determining factors for a particular journey. However, the methodologies to define a desired future state, and the process of finding suitable actions and finally determine a roadmap are quite common. The «right mix» approach described above is helpful as an orientation in an initial phase of the journey. A major factor to consider is the tendency for technically competent individuals to **jump to conclusions or select solutions too early in the process**. The discussion about the right mix starts best from a business context, such as forming an understanding of the business outcomes that need to be achieved. Examples are "faster speed-to-market" or "higher customer satisfaction". These high-level business goals may be difficult to achieve solely by IT operations teams, architecture or engineering groups. Likewise, the results of cloud transformation planning may not be optimal when discussed among c-level persons only. A successful transformation will require all stakeholders to agree on the goals and the success criteria. A thorough business case is often mandatory for the sponsorship and budget provision for the project.

The drivers that get an enterprise to consider the move to cloud solutions are another important factor. These drivers may be external such as new customer behavior, faster time to market, new services; or may be internal such as cost-efficient IT, instant service deployment or faster development. In addition, the expectations around the benefits and outcomes that the organization would like to achieve need to be carefully assessed across the entire organization. The following Sections show how to plan and accommodate these factors with the right questions. This methodology allows you to turn your transformation into a structured approach.

In the initial stage of the discussion, you need to **address the role of the provider and the consumers**. In other words, who are going to be the users or consumers? What type of services will meet the demands of these consumers? How should they be presented? For example, an end user might want specific predefined 'T-shirt' sizes for IaaS or SaaS services (small, medium, and large) in their catalog. Whereas a developer may feel that they are better served with customizable IaaS or defined PaaS resources.

To summarize and provide additional guidelines, the key questions are:

- What are the drivers?
- What is your provider role?
- Who are your consumers?
- What are the outcomes?
- What are the benefits?
- Who are the sponsors?

Reference in the book: These questions are discussed throughout the current Chapter and are concluded within Chapter 3 where the roles and the approach to hybrid cloud are highlighted.

In the next step of the transformation, it is good practice to **establish your cloud concept**, define the use cases, and understand existing and future workloads. The term "use cases" is usually not sufficiently defined. There are different levels and types of use cases. Business use cases, functional use cases, technical use cases and finally, user stories for agile development are common examples of use cases. In this early stage of the transformation, it is important to have clarity across all teams by defining common factors such as:

- Service Model
  (IaaS, PaaS, SaaS)
- Deployment Model
  (Private, Hybrid or Public)
- Sourcing Type
  (Internal, Co-located, Outsourced)
- Cloud services/lifecycle
- Service catalog and options
- Roles and dependencies

Reference in the book: The first two topics within the list above (service and deployment models) are discussed in detail in Chapter 3, while the service catalog is the main discussion topic within Chapter 4.

An important aspect of transformation planning is to **factor-in changes to business, processes, organizations and roles, financial models, and IT governance**. These factors need to be considered as early as possible; in particular, the involvement of business and application stakeholders is key.

Regarding changes in business and IT, the key questions are:

- What is driving change
- Changes to Processes and Services management
- Changes to Finance
- Changes IT Governance
- Changes to Organization and Roles

Reference in the book: Changes and their implications to processes, organizations and roles, financial models and governance aspects are described in the next Section of the current Chapter.

When considering transformation design and implementation, it has proven useful to **divide activities into streams**. Streams are used to define and delineate logical units within the overall planning process and to separate discussions. This aids in streamlining the approach and helps to dedicate tasks and resources for this extremely interdisciplinary IT topic.

For the design and implementation portion of the transformation, the key questions for the planning phase are:

- Which Use case(s) to be planned
- What streams are in scope
- Implementation Stages e.g. Test, Dev, Prod
- High level and detailed design
- Infrastructure implementation streams
- Software implementation streams
- Build, Test and Hardening
- Implement to run

Reference in the book: The design definition is a key topic of this book covered in Chapter 5

In parallel to the design, it is also good practice to **start the education and training for new technologies**. The people who will operate and manage the new environment need to be comfortable in running the cloud. Staff members should receive training on any new tools according to their roles. Training plans for each role, for example, architect, operator, service designer, among others, will be required. An additional success factor will be the creation of the operations handbook. The operations handbook will provide clear guidance and will define common management and operational activities.

Key questions for the operate and manage phase of the transformation are:

- Staff Training requirements
- Engineering and Operation Roles to manage the solutions
- Operational handbook
- Acceptance for Production
- Test Customers

Reference in the book: Roles for engineering and operations staff are discussed within this Chapter, while best practices regarding user acceptance and next steps are described in the last Chapter and will conclude the journey.

The "checklists" above will assist in defining an appropriate and structured overall transformation plan. A common understanding of the streams and activities contained within the plan will form an important success factor for the implementation phase for your enterprise.

To summarize, the above best practice suggestions revolve around the topics depicted in the following picture:

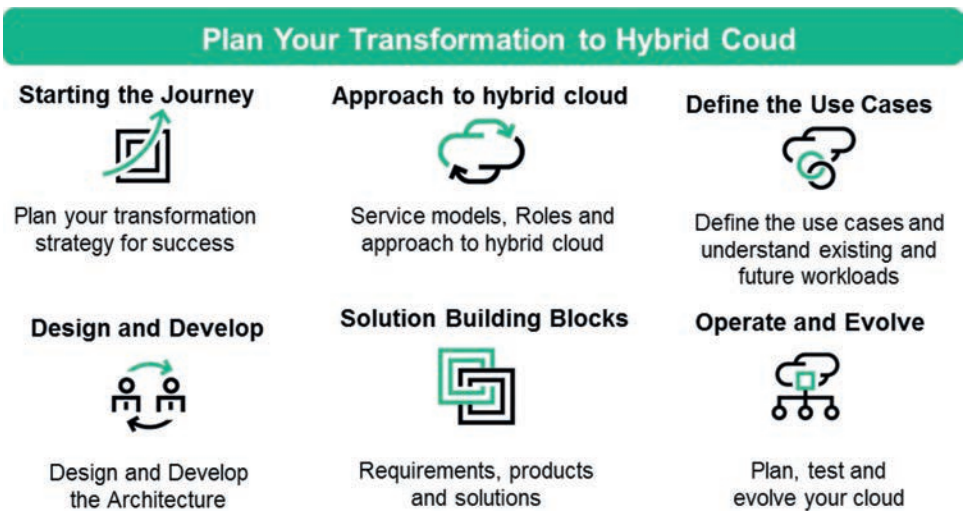


Figure 2 Transformation journey to hybrid cloud