



Cloud service lifecycle— service design

Create cloud services that deliver the value your users want





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Executive summary

“As-a-service” seems to echo today in almost every corporate corridor. Enterprise IT and lines of business are deploying and buying hybrid cloud services, and many executives are driving an “everything-as-a-service” mentality. Hybrid cloud services, or any service for that matter, have a lifecycle: plan, design, build, and operate. However, most of the action to date has been focused on deployments of technology and self-service portals, i.e., the “build” phase. While “build” is an essential phase, much more is required for IT to be able to succeed in delivering, scaling, and remaining relevant as the premier cloud services provider during this service-oriented transformation. This paper examines the critical role service design plays and offers a set of recommendations to help your IT organization make this transition and actually create services that deliver value.

Supermarket or restaurant?

Users are shifting their consumption models. They are no longer interested in consuming components, and they increasingly expect a true service-oriented experience. Simply put, they want a service but they are not interested in what is required to deliver it. This new attitude toward using IT ops services is akin to ordering a meal from a restaurant. When you go to a restaurant you expect:

- A menu
- Prices to be listed (so you know the total cost upfront)
- To be served at your table
- To know when your dish will be ready



You also expect to be able to return a dish if it is not cooked to your satisfaction. But you are probably not interested in the recipe or how the chef cooked the dish. People go to restaurants because they don't want the supermarket experience. They don't want to drive to the store, walk the aisles, stand in the checkout line, go home, put the recipe together, and cook the meal. Yet today, when it comes to IT services, most business users are still required to "cook their own meal."

Consider, for example, what happens when your company is hiring a new employee. Your human resources (HR) manager would like to access a portal, select the "Employee on-boarding" service, fill in a form, and submit the request. Instead, he or she, most likely, has to access multiple systems and make multiple requests—create a domain account, create an email account, assign a phone extension, order a laptop, allocate a desk, and so on. Most importantly, the HR manager needs to know exactly what it takes to on-board an employee, even though most of the required steps are IT, not HR, functions.

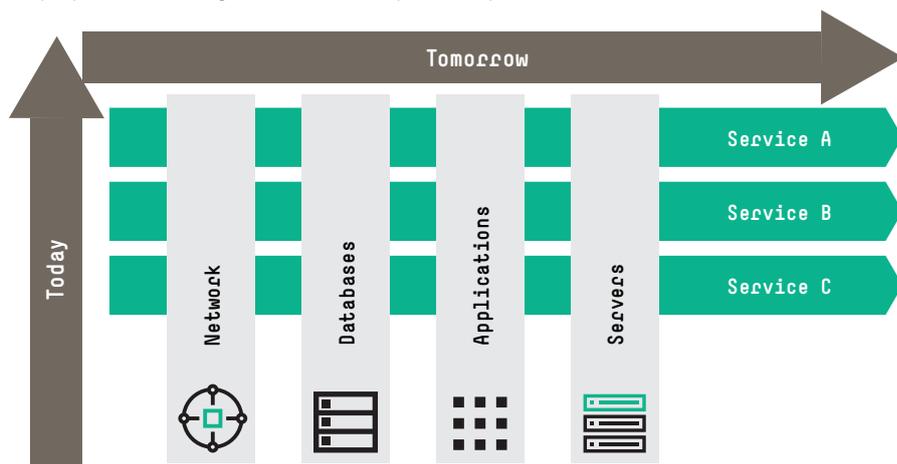


Figure 1. The shift from managing technology stacks to managing services

Service design drives agility

The primary reason cited for adoption of hybrid cloud services is agility. Service design is a key enabler of agility because it drives standardization. Going back to our restaurant example, think how long you would need to wait if any diner could order whatever they wanted. The reason restaurants bother to have a menu is precisely so they can plan the entire operation to allow them to deliver a standard set of dishes in acceptable time. It allows them to pre-cook many of the components so when you order they have to freshly cook only what is necessary. The rest is assembled and heated, and you are served on time. This also allows a restaurant to “hold the dressing” or cook it “extra spicy.”

Similarly, a standard set of services allows IT to be agile in provisioning, operating, updating, and changing these services. The only way you can create this standardization is via service design. Otherwise, every service becomes a custom project and agility becomes a remote possibility.

From silos to services

The main reason users are still required to assemble their own services is simple: IT thinks in terms of technology and IT services, and users think in terms of business applications and business service management services. IT has historically been organized along technology lines, with teams dedicated to and specializing in specific technology domains. While this approach served IT well in the past, technology is now so ubiquitous it is—paradoxically—almost irrelevant, at least to the users.

Still, as long as IT was the sole provider and remained a backend function, this structure worked. However, IT is now front and center, operating in an environment where users have other options. This requires IT to change from a technology-focused organization into a customer-focused one. IT needs to be able to pivot away from managing by technology stacks and into managing by services.

This does not spell the demise of technology expertise, nor does it signal the end of technical roles. A restaurant still needs cooks and kitchen hands and IT still needs database administrators, developers, and system administrators. But now IT also needs the equivalent of waiters, restaurant managers, cashiers, and menus.



What is a service?

Today's service definition disparity creates a situation in which the provider (IT) is not actually delivering what consumers want. In a customer-driven world, this is not, in the long run, a tenable situation. In a world where IT is not the sole option, users will go elsewhere if they are not getting what they want from IT. This circumvention of IT creates multiple challenges around security, compliance, cost, and architectural complexity. It is, therefore, incumbent upon IT to make a shift and adopt a business/user-centric mindset to its approach to services.

To make this shift, one must consider four elements:

1. **The “what”:** What is a service? What is an IT service vs. a business one?
2. **The “with what”:** What is required by IT to be able to deliver the service? What is the service architecture? What components are needed? What is the best way to design the service?
3. **The “how”:** How will users request this service? How will IT fulfill it? What is the cost? What are the service level agreements (SLAs)? How will the SLAs be guaranteed? How will the service be operated (e.g., change management, monitoring, break/fix)? How will the service be updated with new features?
4. **The “who”:** Who is the service owner? Who is the manager? Take a claims processing service, for example. Who should own it? The application owner (IT) delivering it to the line of business (LOB) or the customer service team delivering it to the customer? And who is responsible to make sure the service is working as designed?

To address these elements, IT needs to adopt a new discipline: service design. IT also needs to adopt new skills and roles that facilitate the design of services.

The “what”—service definition

One of the most critical aspects of this move toward service orientation is a renewed focus on service definition. This starts by differentiating between IT and business services. IT needs to begin by defining services from the consumer point of view. This “external” definition is what users care about. In the HR example we previously used, the HR manager does not want or need to know that creating accounts and ordering a laptop are part of the “Employee onboarding” service. The “external” representation includes elements such as:

- **Requirements:** Users express their needs in terms of business, not technical, requirements, and it is crucial to be able to capture them. This is what enables the service to meet the need and deliver the expected value.
- **SLAs:** Users expect services to always be there and always run perfectly. However, this is not a realistic expectation for 100% of services. SLAs need to match business criticality. SLAs also need to be specific about what is guaranteed. IT traditionally thinks of an SLA in terms of availability and sometimes performance. This is appropriate for IT services, but business service management services may require different kinds of SLAs. If you are an online retailer, it is far more important for customers to get what they ordered than to get their order a day faster.

Next, it is also important to define the “internal” representation. This definition describes the IT services and components that make up a business service. These are also very important because they enable IT to:

- Understand what SLAs can be provided based on IT’s operational capabilities
- Ensure internal capabilities exist to meet business demands
- Ensure that IT professionals understand the business context before they design the service

Service definition provides a vehicle to facilitate communication between “supply” and “demand.” It helps ensure that the critical needs of key stakeholders (both IT and the business) are met, that the business is solving the right problem, and that IT is solving the same problem. It allows IT to organize priorities and tradeoffs based on business needs, and it discourages engineering from getting lost in the “technology solves everything” complexity traps.

The “with what”—service composition

In today’s world both IT services and business service management services are complex. While the scope of this paper is service design, it is very important to note that the “new normal” of “everything-as-a-service” affects not just design. You now also need to manage and operate services, not just databases, networks, and servers. Each service has many components, points of failure, performance bottlenecks, and dependencies, all of which need to be clearly understood so that a service can actually be operated—while in production—and deliver on both its functional and non-functional requirements.

How do you manage, at a business service level, monitoring and remediation; compliance; configuration and change; and assets and costing? These are all critically dependent on the service composition, which is defined by the service design.

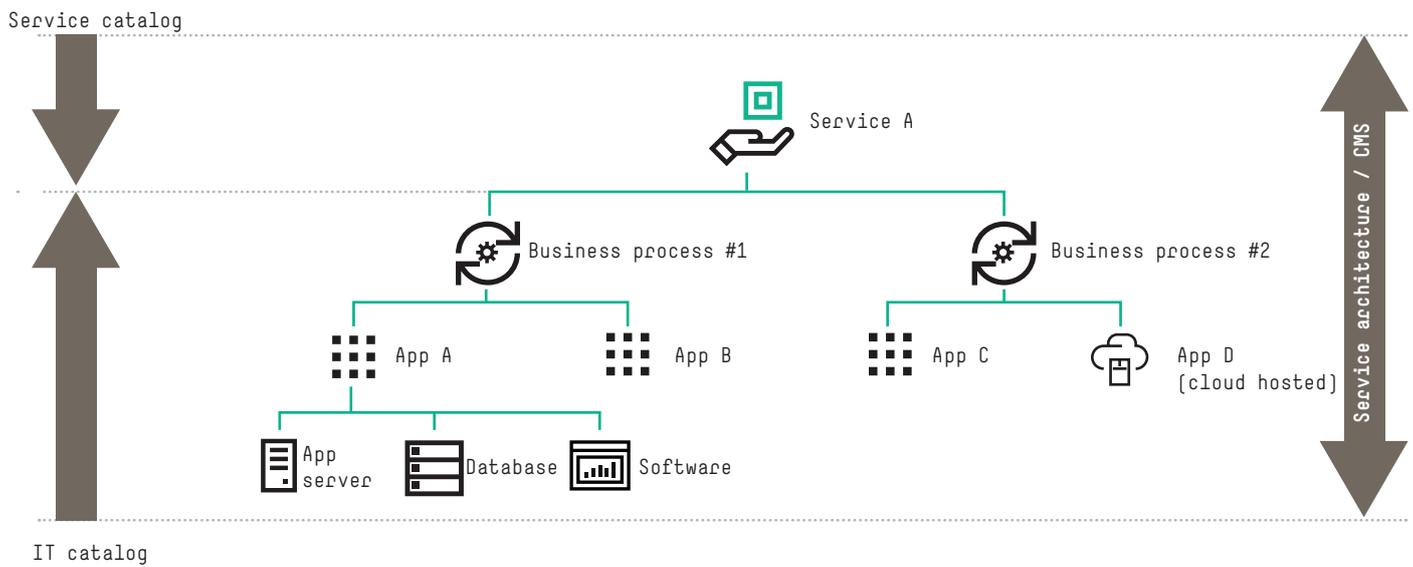


Figure 2. Modeling services and their components and dependencies

Service modeling

In order to manage services, you need to understand what a service is made up of. The same way a doctor needs to understand human anatomy, you need to understand service anatomy. This is achieved by modeling services and understanding how the service decomposes into its components as well as the dependencies between components, as well as other services.

Once you have defined the service model, you store it in a configuration management system (CMS). Based on the model, you can then drive all the management aspects of the service, including such tasks as:

- Service monitoring: understanding—during outages—which component is the root cause so you can remediate quickly and reduce business impact
- Service configuration and change management: understanding how a change in a given component will impact the service
- Service asset management: cataloging what assets make up the service so you can, for example, define the total cost of the service
- Service level management: knowing what makes up a service to help you determine the best SLA you can promise
- Service capacity management: knowing the level of resources available to support the end-to-end service delivery

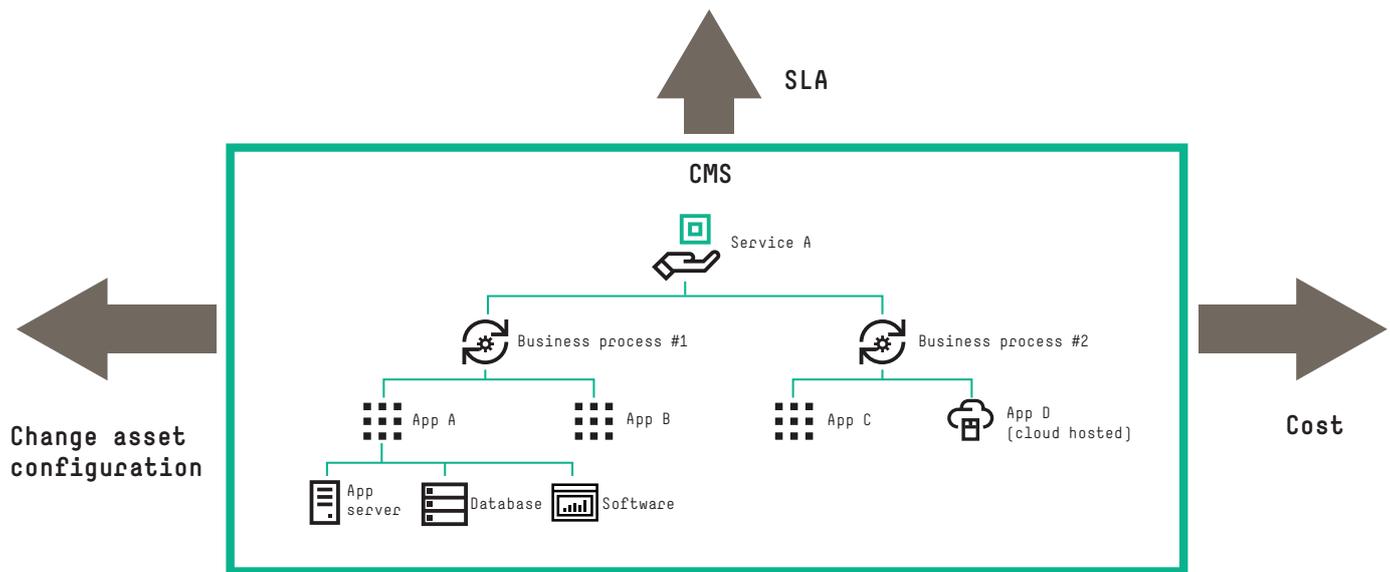


Figure 3. The CMS stores the service model, which drives all aspects of the management of the service.

The “how”—service catalog

Most IT executives would be right to think they already have a service catalog. However, there are two pertinent questions that must be asked:

1. How many catalogs really exist?
2. Do they provide business users the services they really want, how they want them?

The answers, in most cases, are “many” and “no” respectively.

Any method for requesting services is in fact a form of a service catalog, whether it is a central mailbox, the service desk, or a portal. With users now opting to circumvent IT and source IT services from external providers, this sprawl is only getting worse. To contain this sprawl, and to consolidate and streamline your catalogs, your IT organization must take a serious look at how to become a service broker.

This is not a trivial undertaking. It is transformational but it is also unavoidable. The growth in “shadow IT” is real and proof that users will take matters into their own hands unless someone gives them a better choice. The only corporate entity that can and should provide this choice is IT. Unless you know how to broker services, you cannot effectively offer them in a way that makes sense to your users and gives them an easy way to consume them. Going back to the restaurant example, unless you have a handle on how to buy ingredients and supplies and turn them into consumable dishes you cannot offer a menu to your diners.

While becoming a service broker is not the focus of this paper, it is worth noting that Hewlett Packard Enterprise has developed a framework called [SIAM—Service Integration and Management](#), which accelerates the ability to deliver, assure, and govern IT services in a multi-sourced, hybrid service-delivery environment.

Brokering services in itself will not guarantee that the services provided in the catalog are indeed those desired by users. Ultimately, like any provider or vendor, IT has to listen to its customers. This isn't so much about wanting to have a dialog as it is about speaking a common language and having a marketing-oriented discussion.

Beyond gathering requirements and specifications, your IT organization needs to develop a business relationship management competency to help it understand what its customers really want and convince them that IT should be its preferred provider. Countless projects have resulted in line-of-business (LOB) customers saying, "This is not what we asked for." Truly understanding your customers and speaking the same language will serve to reduce such occurrences. If IT is the business, it needs to behave like a business.

The "who"—new roles

As is the case with any transition into a "new normal," there is more to it than technology and process. The people aspect is just as critical to success and it involves the adoption of new teams skills and roles. Let's walk through these new roles for the IT organization.

Service architect

This role is responsible for translating the "external" definition of a service into the "internal" representation of its constituent components so that IT is able to build and deliver the service. The architect defines how business service management services should be built.

Service designer

This role is responsible for defining and designing the services and components that make up a business service—i.e., the IT services. The designer defines how an IT service should be built to ultimately play a part in delivering a business service.

Service owner

This role, typically a line-of-business manager, is responsible to the corporation and its external customers (if applicable) for the delivery of the business service. Service owners are the final authority for all decisions made regarding the services they own.

Service manager

This role, typically an IT manager, is responsible to the service owner. It is his or her role to ensure the service meets all business and SLA requirements.

The move to a service-oriented operating model also requires new functional teams:

Service portfolio management

This team is responsible for the catalog management and service on-boarding practices. It is the governing authority over what services will move to the engineering team and be exposed to the user community via the catalog.

Service engineering team

This team is responsible for developing the service architecture and designs, incorporating the appropriate service delivery options—traditional, private, public, or hybrid.

Service lifecycle management

This team is responsible for extending standard IT operations practices, such as incident, change, configuration, and asset management, to account for hybrid cloud services.

Key takeaways

We live in a customer-driven world. Our customers are no longer sympathetic to the realities of what it means to run an IT organization or what it takes to deliver services. They want to consume everything as a service, and if IT will not provide what they want, they will simply procure services externally.

IT must acknowledge this trend and pivot itself away from a world organized according to technology-based constructs and toward a “new normal,” where IT is a customer-focused, service-oriented provider. Service design plays a key role in this transformation.

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