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Evolve Your Infrastructure and Operations Organization to Remain Relevant in the Cloud Era

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Initiatives: Cloud Computing

An effective move to public cloud requires profound changes in the structure, missions and roles of and within IT organizations. Infrastructure and operations leaders must implement these changes to ensure the ongoing success of their cloud strategies and the relevance of their organizations.

Overview

Key Challenges

- Cloud adoption will succeed in the long term, but only if IT organizations make fundamental changes in their organizational mission and team member roles. Cloud initiatives falter without clearly defined leadership or identified expertise to guide the organization's efforts.
- Although existing I&O activities must continue for some time, most enterprises will adopt an internal cloud service brokerage model. I&O teams could eventually be displaced if they do not focus on maintaining their relevance.
- I&O leaders may find their teams' relevance diminished, if not replaced, by cloud-friendly IT organizational patterns, such as distributed DevOps.

Recommendations

To ensure long-term viability of I&O teams as the implementers of cloud strategy, I&O leaders must do the following:

- Stop calling yourself "infrastructure and operations" and reposition yourself as "infrastructure and cloud services" by sourcing experienced cloud leaders to drive the initiative. Heavily vet external candidates for a balance of organizational and technical skills, or pair an internal, organizationally adept champion with counterparts in an external consultancy or managed service provider.
- Understand the balance of required current and new cloud skills, retiring old roles and functions, and replacing them with new ones. Where possible, update roles with adjacent skills that are applicable to traditional public cloud infrastructure and platform services (CIPS) and SaaS operations.

- Continue the relevance of your I&O organization in a DevOps culture by building and operating a cloud center of excellence (CCOE) and the attendant cloud service brokerage, through which the CCOE delivers customized, integrated and aggregated cloud services.

Strategic Planning Assumption

By 2024, more than 80% of enterprises deploying cloud will have shifted focus from infrastructure as a service (IaaS) migration to replacing cloud infrastructure with CIPS and software as a service (SaaS).

Introduction

Cloud computing is both an operating model and technology sourcing model that invalidates many traditional assumptions about how to build and run an IT operation. Adopting cloud using best practices forces organizations to change. This change, while likely resulting in greatly improved business outcomes, is both stressful and unavoidable. Although the impact is felt across all departments and teams of the enterprise, IT infrastructure and operations (I&O) leaders find themselves in a particularly challenging position. Not only are their departments affected (as are others), but they are usually initially held responsible for the success of the cloud computing implementation.

Because IT nearly always leads the cloud transformation, IT organizations should be among the first to realign their component roles, missions and organizational structure to complement cloud's critical success factors. This demonstrates leadership to the rest of the enterprise and improves the chances of a successful outcome by being prepared to cope with stressful changes before they appear.

This research makes three key recommendations to I&O leaders seeking to improve the success of a long-term cloud strategy, as shown in Figure 1.

Figure 1. Three Organizational Things I&O Leaders Must Do to Ensure Cloud Success

Analysis

Call Yourself "Infrastructure and Cloud Services"

Many enterprises take a first run at cloud computing assuming it can be rolled up under existing organizations as-is, perhaps requiring some simple skills updates. They soon find that the biggest problems are not of a technical nature, but usually involve human behavior and organizational friction. If the cloud is not treated too differently from previous outsourcing exercises, such problems may not manifest. Eventually, though, the transformative potential of the cloud, and the disruptive influence it will have on every aspect of the IT organization, will surface. Put simply, existing IT organizations — specifically traditional infrastructure and operations — must change to remain relevant to the cloud model, or they will be replaced.

A cloud strategy can quickly founder in these situations for any number of reasons, from running afoul of hidden agendas to a simple lack of focus. Cloud implementations driven by a committee, though often necessary, are especially vulnerable to hitting such an impasse. The deadlock can persist indefinitely until it is broken by violent upheavals that are best avoided. There are two things you can do to avoid such a breakdown:

- Rebrand your organization internally as the infrastructure and cloud services team, moving “up the stack” yet remaining inclusive of I&O. This forms a center of gravity for cloud deliberations and fills the void where a lack of ownership may be perceived.
- Designate and empower a cloud champion who can identify problems early on and break through roadblocks when they do occur.

Although we refer to this organization as the “infrastructure and operations” team, today’s I&O teams are not guaranteed to be the ones the business ultimately depends on to bring about organizational changes. These changes would include a cloud center of excellence or new services such as a cloud service brokerage. What is clear is that the value delivered by the I&O team today will shift to be subordinate to a cloud brokerage team over time, and I&O leaders should be the ones to proactively build that brokerage.

Of the new roles required to drive cloud adoption, the cloud champion is most critical to success and extremely difficult to source as a new hire. This person’s skills must be a balance of technical understanding, business acumen, decision making and interpersonal communication. He or she must be able to accommodate a diverse set of requirements yet make authoritative and informed decisions when progress stalls or is threatened.

An ideal hire would fulfill the role of chief cloud architect and be commissioned to lead a cloud center of excellence. If needed, he/she would build the cloud service brokerage capability discussed later in this document. Credentials would evidence real cloud solution deployments for at least one of Amazon Web Services, Microsoft Azure or Google Cloud. Also, the candidate should demonstrate a working understanding of how cloud technologies bring new and transformative alternatives to implementing IT solutions. The candidate should also possess skills to build and lead a new team in a potentially hostile environment, and the ability to balance consensus building with authorized action while maintaining momentum.

Keep in mind that this description is the ideal. Unfortunately, candidates that meet these criteria are exceptionally rare, and when available usually command a high price. In recent Gartner summits, IT leaders have revealed that hiring an expert can lead to failure as often as it does to success. The hire may be underqualified, especially when it comes to working with the existing organization to make progress while minimizing friction. Sometimes they are job hoppers, or otherwise difficult to retain. As an alternative to hiring a cloud expert, consider pairing a strong and dedicated internal leader who is familiar with the organization and its culture with external consultative services or a managed service provider. This alternative can bring a complete solution to bear more quickly and avoid some of these pitfalls.

Own the Cloud Center of Excellence

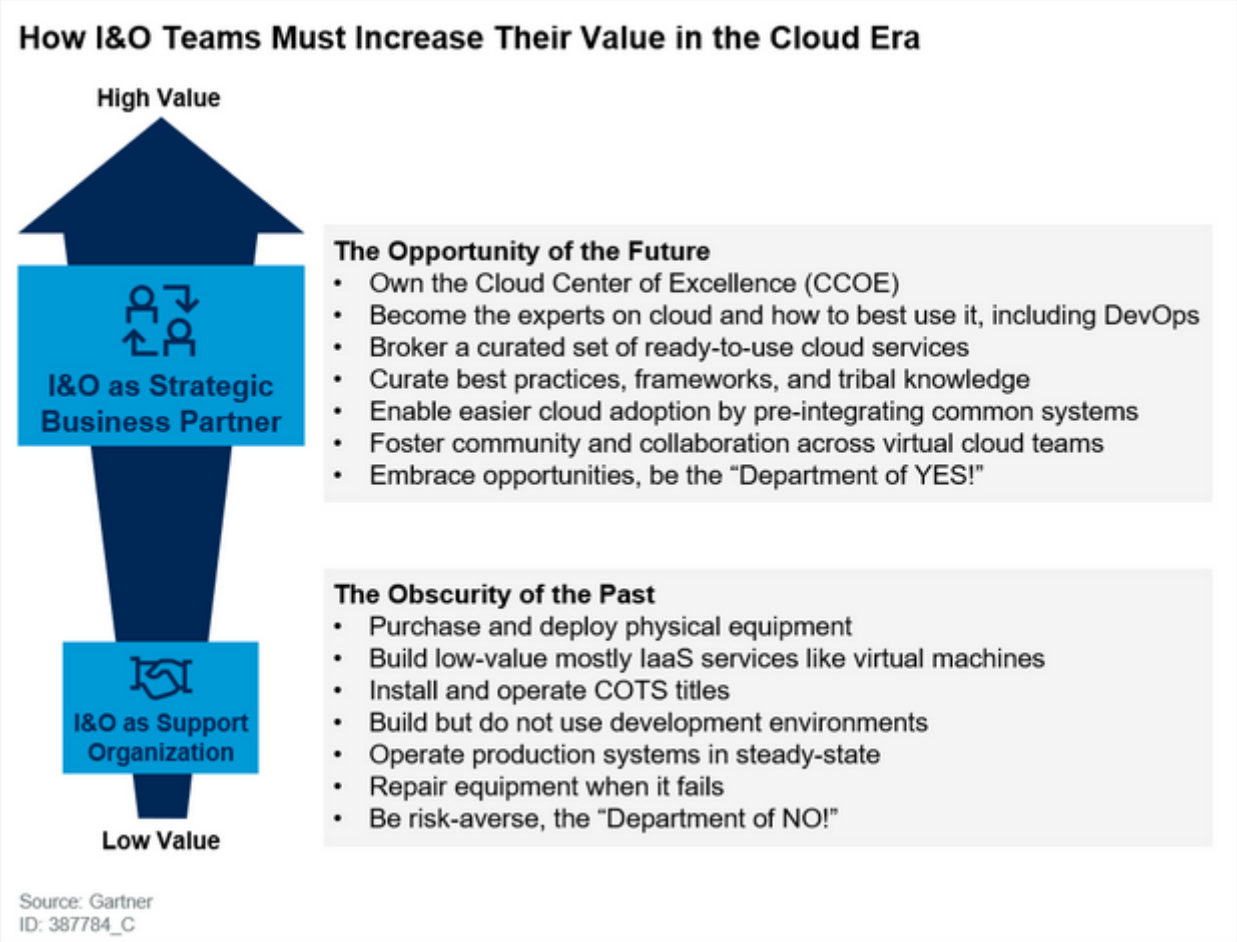
As cloud services continue to gain momentum and on-premises infrastructure loses focus, the traditional mission of an I&O team becomes less important to the organization it serves. I&O must

evolve to remain relevant by curating and administering the new sources of IT's underlying engine: cloud services.

Although many organizations may aspire to go "all in" on the public cloud, this goal is nearly impossible to achieve quickly. There will be an indefinite period when precloud I&O activities must persist in on-premises and colocation data centers. These footprints will dwindle with time, as workloads are removed to the cloud, but they may never completely disappear. I&O leaders must maintain an organizational balance to support activities across all aspects influenced by the cloud. The mission statement should emphasize hybrid and multicloud strategic goals.

Clearly "operations" remain important, but the new model must comprehend managing and maintaining a collection of services, not just building and operating servers and disks, or engaging in other low-value activities. The opportunity to elevate the I&O team to become more of a cloud service broker is shown in Figure 2.

Figure 2. How I&O Teams Must Increase Their Value in the Cloud Era



The internal cloud service broker concept is not new. However, it is gaining traction as the migration to public cloud services across service models (IaaS, platform as a service [PaaS] and SaaS) continues unabated and on-premises infrastructure is de-emphasized. A review of inquiry data shows Gartner continues to see steady interest in cloud brokerage and multicloud topics.

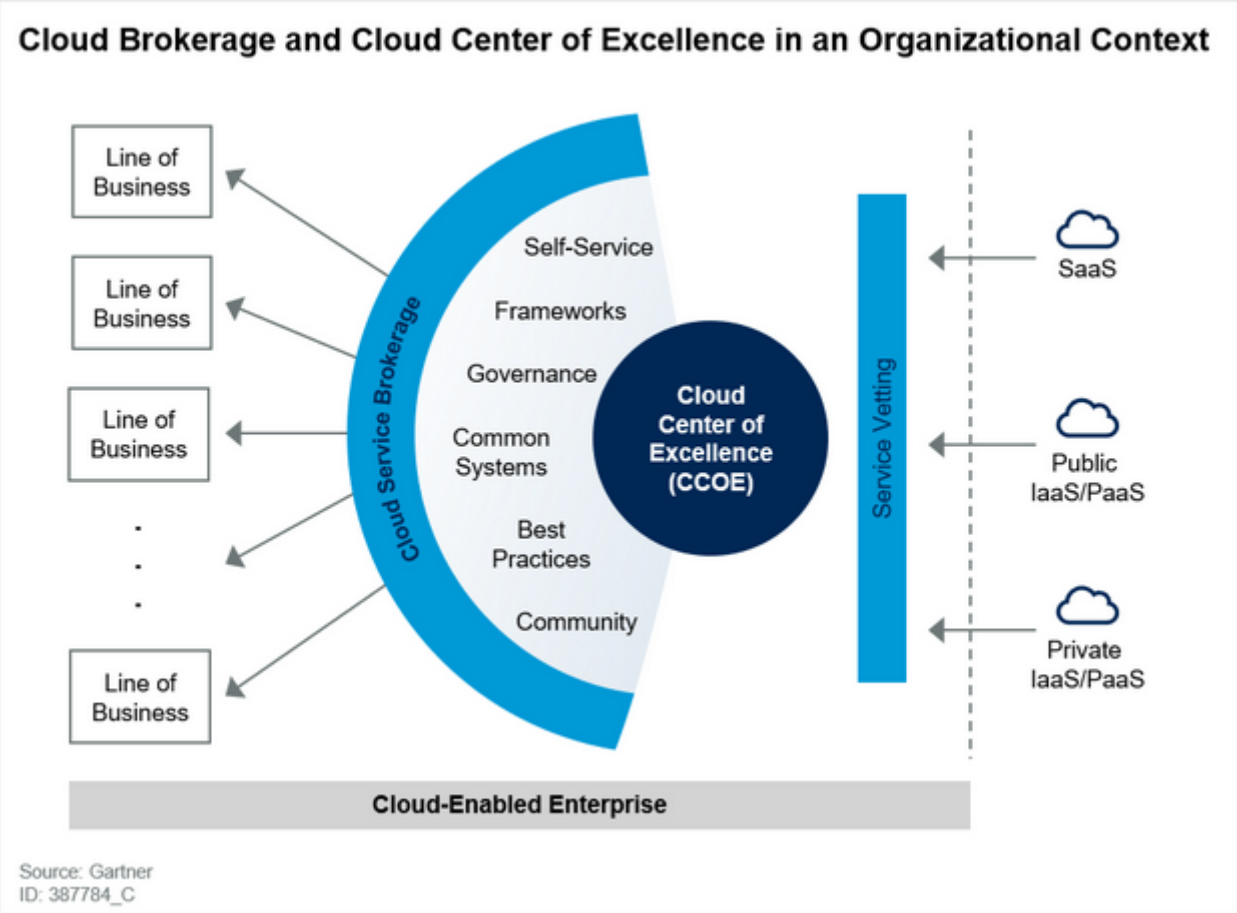
Although the rate and extent to which on-premises infrastructure will be replaced by cloud varies by enterprise, the trend is moving toward the cloud, not away from it.

In the past, I&O teams were tasked with building large data centers into which back-end systems were concentrated. The rigid workflows, long fulfillment cycles and need to implement a uniform environment to keep costs low and operational stability solid earned many IT departments the label of "The Department of NO!" However, the brokerage team of the future will curate a diverse set of services, potentially sourced from across the globe. In the cloud brokerage model, a central data center is replaced with a central catalog of curated services that is distributed to the rest of the enterprise. The enterprise then consumes the services directly. Core cloud tenets of self-service and automated policy enforcement, which are key in the brokerage model, make the long fulfillment cycles and manual approval processes of the precloud era seem overly risk averse. IT leaders building brokered services must set strategies to emphasize these new capabilities while retaining just enough central control to ensure compliance.

The key to building a truly successful internal brokerage rests in doing more than just allowing unfettered, yet controlled access to the cloud. It requires becoming an indispensable partner to the business, without whose expertise the use of cloud technologies would be much more difficult. By owning the cloud center of excellence and becoming the "Department of YES!," you bring your clients faster time to value by building out common systems, providing best practices and fostering community among cloud users, as shown in Figure 3. Not only will the role of broker be appreciated by the lines of business (LOBs) for its helpfulness, but leaders in the executive suite will value the order and control it brings to what would otherwise be chaotic.

Keep in mind that the cloud brokerage is not in and of itself a strategy, but a means to achieve a common strategic objective. Be sure you have a broader cloud strategy that supports the need for the brokerage before you set out to build one (for more, see "The Cloud Strategy Cookbook, 2019").

Figure 3. Cloud Brokerage and Cloud Center of Excellence in an Organizational Context



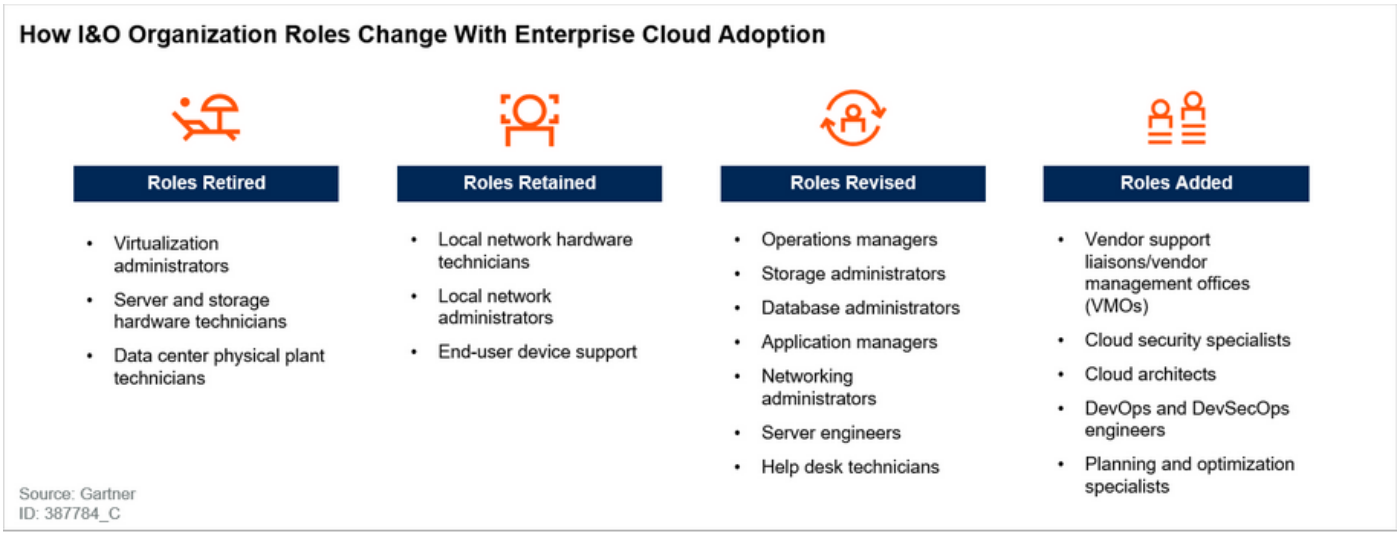
Reevaluate and Restructure Team Member Roles

A common question from I&O leaders to Gartner during this time of heavy cloud migration is: "How should I evolve my staff to ensure success in the cloud?" No single answer meets every need. In general, and considering most enterprises' mix of traditional and cloud-native applications, roles must shift to support these four use cases:

1. Managing traditional monolithic application stacks in a virtual machine
2. Managing SaaS solutions that replace traditional on-premises commercial off-the-shelf (COTS) software
3. Managing cloud-native applications built on integrated CIPS offerings
4. Integrating cloud services regardless of service or delivery model into composite applications

Figure 4 shows how roles in an existing I&O team might change to accommodate these use cases. Across the spectrum, roles will most likely evolve, though some may disappear or be altogether new. Your organization may have multiple people assigned to these roles or multiple roles assigned to the same individual. The mapping isn't as important as the coverage, and it should be adjusted based on your organization's size.

Figure 4. How I&O Organization Roles Change With Enterprise Cloud Adoption



Use case 1 is the first most enterprise encounter. It is predicated on “lift and shift” — or getting to the cloud as quickly as possible with a minimal amount of change to the application — and is essentially the replication of traditional I&O in the cloud environment. This use case causes the least impact to existing roles and does not motivate the need to build a service brokerage. It is also becoming less common as large-scale migrations of this kind have not delivered on expectations, and cloud users are now much more aware of the cloud-native value proposition than they were three years ago. The other use cases quickly follow to service use cases 2 and 3, which motivate the need for a service brokerage, but for different reasons.

Pursuant to use case 2, independent software vendors (ISVs) will shift their offerings to favor SaaS-based delivery. The trend is already apparent in mass-market applications, such as collaboration, CRM and ERP, and is quickly permeating the broader software market. Enterprises are being pressured to trade in their self-managed instances of an ISV’s COTS title for the SaaS equivalent. Many make the switch of their own accord, without being pressured. Therefore, managing SaaS subscriptions within the context of a broker have become a central theme for IT. Cloud access security brokers have already established a presence in the market for building internal SaaS brokerage solutions (see “Magic Quadrant for Cloud Access Security Brokers”). The need for this capability across all service models, not just SaaS, will only increase.

For use case 3, an enterprise is developing cloud-native applications. The need for a brokerage isn’t so much to purvey the finished product for consumption by the rest of the organization (although that is often in scope). Rather, a brokerage brings the services developers need to build their applications. In this case, the internal brokerage brings DevOps services directly to the LOBs where DevOps is being applied. Because operations in DevOps environments are more likely to be embedded in or close to the consuming LOB, the need for centralized operations is greatly diminished. However, building and maintaining the right set of services for DevOps (DevOps as a service) is required (see “DevOps Primer for 2019”).

Keep in mind that changes in roles and responsibilities require new and updated skills (see "The Cloud Engineer: Skills Guidance for Modern Technical Professionals"). These skills can be obtained through formal or on-the-job training or through cloud-focused training events if they are adjacent to existing skills in current roles and the timeline allows for it. (For more, see "4 Strategies for I&O Leaders to Attract and Hire Cloud Experts.") However, many skills are best sourced through new hires or engaging a managed service provider. You must also consider cloud service providers (CSPs) and managed service providers (MSPs) as extensions of your organization in many respects, partnering for or with many of the roles listed in the Table 1. (For more, see "Transforming I&O Skills to Remain Viable Through 2022 and Beyond").

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