Despite cloud maturity, many organizations are still starting their cloud journeys, struggling to get on track and avoid pitfalls. I&O leaders responsible for cloud infrastructure can mitigate risks, speed adoption and maximize cost savings by applying lessons learned by previous cloud adopters.

Overview

Key Challenges

- In some organizations, cloud adoption decisions often were made by line-of-business leaders without central IT governance, creating inefficiencies and a large number of cloud vendors for I&O leaders to manage.

- Failing in the communication of the cloud adoption benefits limits stakeholder buy-in and undermines I&O leaders’ efforts to implement the cloud strategy.

- Efforts to implement cloud strategies often overlooked relevant technical and business factors, requiring I&O leaders to address these challenges later in the implementation process and increasing the time and cost of cloud adoption.

- Many organizations wrongly believed that their existing on-premises management and governance procedures were valid for cloud infrastructure resources, challenging the ability of I&O leaders to scale governance and management efficiently with the growing complexity of their cloud infrastructure environments.

Recommendations

I&O leaders focused on cloud infrastructure must:

- Consolidate cloud adoption efforts by securing executive sponsorship for a cloud strategy that defines a cloud adoption roadmap adapted for the entire organization.

- Communicate the cloud adoption roadmap by establishing a cloud center of excellence (CCOE) and a cloud architect role to evangelize the cloud strategy to stakeholders.
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Strategic Planning Assumption

Through 2024, 80% of companies unaware of mistakes made by organizations in their cloud adoption will overspend in cloud by 20% to 50%.

Introduction

The 2020 Gartner CIO Survey identified cloud computing as one of the three top game-changing technologies. Many organizations will embrace cloud for the first time, and current cloud adopters will increase their usage. However, and despite the maturity of cloud, many I&O leaders still have questions about how to embrace cloud, adoption roadmaps or what other organizations are doing with cloud.

Uncertain of their path forward, these organizations are eager to identify best practices and limit surprises as they begin their cloud journeys. How can I&O leaders apply the lessons learned by organizations in their cloud adoption to smooth their own transition to cloud? This research reveals the common mistakes of these organizations and how to avoid them.

Based on the experience of cloud adopters, areas in which cloud implementations can improve are shown in Figure 1.

![Figure 1. Areas of Improvement From Cloud Adopters](image)

**Areas of Improvement From Cloud Adopters**

- How to start dealing with cloud and what are its benefits and risks?
- How to manage and govern cloud resources?
- How to adopt and implement cloud services?
- How to organize IT teams to embrace cloud?
Analysis

Implement a Cloud Strategy Across the Organization

A cloud strategy document defines a common guideline for the entire organization, aligning objectives, benefits, risks and key adoption criteria, which often differ among various departments within the organization (see "The Cloud Strategy Cookbook, 2019" and "Formulate a Cloud Strategy in the Context of Your Overall Strategy"). By defining consensus, the cloud strategy document prevents delays in cloud adoption caused by misaligned priorities.

Cloud adoption affects many internal departments and might produce changes in the way of working. Each department can have different interests, benefits, risks and challenges. Areas of innovation and DevOps will look for access to new technologies to enhance application and business services. Other areas like finance will look for high ROI initiatives related to cost savings.

In many organizations, multiple cloud initiatives live together, led by different internal departments. When the benefits from these cloud initiatives are not aligned with the business goals, the cloud approach does not scale and prevents cloud computing from positively impacting the overall business strategy.

Such misalignment of business goals with internal department interests and the lack of a coordinated governance can put cloud adoption at risk, questioning or delaying committed decisions. I&O leaders should support and collaborate in the creation of a cloud strategy document to provide a clear, concise point of view on cloud and its role in the organization.

Elements Often Overlooked

Authors of cloud strategy documents frequently overlook a critical element: organizational change. Including this element prepares the organization for cloud’s disruptive impact and identifies any gaps that exist in cloud skills and maturity.

Organizations frequently forget to empower an executive sponsor that evangelizes cloud computing to the entire organization. This C-level support is key to helping improve the success of cloud initiatives by maximizing buy-in throughout the organization. I&O leaders should support this role in the development of cloud initiatives to accomplish the cloud adoption by the organization.

Many organizations complete cloud strategy documents but fail to review their strategy on a periodic basis. Business factors, vendor markets and organizational goals evolve, requiring periodic reviews of and changes to the cloud strategy. I&O leaders should treat cloud strategy documents as living documents that require continuous care.

Establish a CCOE and a Cloud Architect Role

A CCOE manages and governs the different stages of the cloud adoption roadmap. The CCOE must include a cloud champion or cloud architect, who will become the main actor when defining...
the cloud strategy and interact with all the cloud stakeholders within the organization (see “The IT Leaders Guide to How to Take the Cloud Center of Excellence to the Next Level”).

Delaying the formation of the CCOE is a common mistake among organizations embracing cloud. Consulting the CCOE improves cloud strategy decisions. Implementations deployed without the assessment of the CCOE could result in insecure or unreliable architectures that require redeployment. Because the CCOE defines, implements and communicates governance policies across the organization, delays in establishing a CCOE can result in inefficient governance models.

The way the whole organization (business users, developers, architects, engineers or operators, among others) interacts with cloud resources requires three areas of management:

- **Governance** — The CCOE creates policies related to cloud computing policies and selects governance tools. In collaboration with a cross-functional team, it creates policy enforced by the organization's mix of tools and approved organizational processes. This approach provides appropriate risk and financial management.

- **Brokerage** — The CCOE helps users select cloud providers, architects’ cloud solutions and collaborates with the sourcing team for contract negotiation and vendor management.

- **Community** — The CCOE raises the level of cloud knowledge in the organization by capturing and disseminating best practices. It does this through a knowledge base, source-code repository, cloud community of practice councils and training events, as well as outreach and collaboration throughout the organization.

Although establishing the CCOE is a good decision at any time, there are notable benefits of doing it as soon as the organization realizes it requires a cloud strategy. Having a cloud architect as part of the CCOE involved in the cloud strategy definition from the beginning will reduce the time and effort required to complete this initial step. The CCOE must increase team resources as the organization proceeds further with cloud adoption.

As stated above, the cloud architect is central to the success of the CCOE and to the organization's cloud strategy. I&O leaders must be able to identify candidates for this crucial role. The ideal candidate would come from within the organization and:

- Know the company, have authority and respect within it, have access to business leaders and the CIO, have initiative, and be a “cloud believer” to evangelize the organization

- Have technical cloud skills and experience in cloud adoption projects

Finding a candidate with all of these skills can be difficult, so I&O leaders should prioritize status within the organization over technical skills. Candidates who have the authority, respect and initiative can learn the technical skills more easily than a candidate with strong cloud skills and experience can develop the necessary influence.
The CCOE should grow in size as the organization progresses along its cloud adoption roadmap. As the organization's cloud implementation plan advances, some roles in the CCOE, such as cloud and automation engineers (see “Start Building Your Automation Team Now”), become more important. Automation engineers become relevant as automation guides process orchestration and helps limit future cloud management problems.

**Executing a Strategy Through a Cloud Implementation Plan**

Gartner receives many inquiries about how to implement cloud services. Most of these interactions focus on two areas: identifying which workloads are the best candidates to migrate to the cloud and how to select the right cloud service provider (CSP) based on these workloads. I&O leaders should start the cloud implementation stage after developing and communicating the organization's cloud strategy to the entire organization.

**Identify the Right Cloud Candidate Workloads**

Many organizations started to migrate applications and workloads to the cloud based exclusively on a short set of technical criteria following a lift and shift approach, avoiding both a business analysis and a more complete technical analysis.

I&O leaders must perform a complete application assessment beyond the technical aspects, including the business value of each application to identify which workloads are ready for the cloud. An impact matrix combines the business value and the technical viability of each workload, providing organizations with an overview of how a migration plan should be established. Focus on those applications that are worthy to be migrated. This saves deployment time and effort.

The impact matrix is divided into four quadrants (see Figure 2).

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**Figure 2. Cloud Impact Matrix**

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Identify the Right Cloud Provider

Many customers select public cloud providers based only on their critical technical capabilities. But I&O leaders also should consider location and business factors. For example, a high installed

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Cloud Impact Matrix

- **Quick Win Quadrant** — Applications in this area are the main focus during the implementation plan. They are valuable from a business and technical perspective as viable candidates to be migrated. Consider these in the first wave of migrations in your cloud adoption roadmap.

- **Worthy but Hard Quadrant** — Applications in this area are critical to business, but they require technical effort to be migrated to cloud. This effort normally means adapting the application to cloud services, which requires technical design and time. I&O leaders must consider these applications in the second or third wave of migrations in your cloud adoption roadmap.

- **Easy but Not Worthy Quadrant** — Applications in this area can be easily migrated or adapted to the cloud, but don't provide organizations with an impactful business benefit. Focusing on these applications in initial waves of migration could result in a misalignment between business goals defined in the cloud strategy and cloud benefits. Consider these applications in the third wave of migrations in your cloud adoption roadmap.

- **Out of Scope Quadrant** — Applications in this area provide poor business value and a big technical effort to be migrated to the cloud. Disregard these applications and don't consider them as part of their migrations in your cloud adoption roadmap.
software base can impact public cloud providers' licensing costs.

The location of cloud regions is another factor that organizations frequently undervalue. Early adopter countries had the advantage of being close to cloud regions and could avoid issues related to data residency, latencies, availability features and cost. I&O leaders must consider location factors and the possibility of relying on local CSPs when public cloud regions don't deliver the appropriate level of cloud service, performance or cost. Even from the same public CSP, the type, price and quality of cloud services (in terms of SLAs) differ among their regions.

The type of cloud regions and the existence of availability zones (AZ) may condition the cloud architecture. High-availability architectures within a region with three AZs are quite different from high-availability architectures between regions without AZs. The latency differences between AZs within a region and latencies between regions may put at risk the viability of services that require synchronization or a recovery point objective (RPO) near zero.

A common mistake among organizations is failing to account for architecture's impact on future billing. For example, replicated data within a region normally doesn't impact a customer's bill, but traffic between regions does (see “The Art of Taming Data Egress Charges in Hybrid and Public Cloud IaaS”). This not only increases costs, but also impacts the SLAs from the CSP and the SLAs that organizations provide to their customers.

Some organizations spend a lot of time during the cloud implementation due to the lack of skills, analysis or testing in the areas of networking and security. Implementation plans are often frozen until networking and security issues are solved. Avoid these pitfalls by involving specialized networking and security teams from your organization or from external professional services at this phase (see “Check 3 Critical Dimensions Before Selecting Public Cloud Infrastructure Managed and Professional Services Providers”).

Cloud adoption is a continuous process that requires multiple revisions. The cloud adoption roadmap moves organizations through different stages of cloud maturity. As organizations progress on their cloud-adoption roadmap, complexity increases. I&O leaders must be realistic about the organization's cloud maturity to avoid unnecessary efforts to implement complex cloud architectures properly from advanced multicloud maturity states.

**Adopt Management Practices Suited for Growing Cloud Maturity**

As the organization's cloud maturity improves, I&O leaders must evolve the governance and management of their cloud resources.

A common pitfall among organizations beginning their cloud journey is believing that their current on-premises governance and management procedures are valid for cloud resources. Changing governance and management practices after trying to integrate new resources into existing tools and policies requires more time, effort and spending than if these practices had been changed earlier. Even starting by enabling governance policies and building rules that apply to all scenarios can become too complex as the organization's cloud maturity advances.
Successful cloud management requires a balance between self-service enablement (see “IaaS Cloud Governance Guidelines and Guardrails for Midsize Enterprises”) and governance through implementing policies. Allowing these elements to fall out of balance invites problems.

**Excessive Self-Service**

Too much self-service can complicate cloud management by creating a chaotic environment that is difficult to wrangle. A Gartner survey on cloud adoption shows that more than 80% of organizations using the public cloud interact with two or more CSPs. Gartner clients have indicated that the use of multiple CSPs is based on independent applications running on top of cloud services from different CSPs. Only organizations with advanced cloud maturity are mixing workloads between CSPs for high-availability architectures or as a result of needing the best-of-breed cloud services from different providers.

Spending time and effort analyzing multicloud management tools or providers is a common mistake among organizations that are starting to adopt cloud. I&O leaders in organizations at early stages in their cloud journey should use the cloud-management tools provided by their CSPs rather than multicloud management tools from third parties. I&O leaders managing multiple CSPs in their environment could consider a third-party cloud management platform (CMP) or managed service provider (MSP) to integrate multiple CSPs when workloads are distributed among CSPs or require a homogeneous management vision across management functionalities from different CSPs (see “Check 3 Critical Dimensions Before Selecting Public Cloud Infrastructure Managed and Professional Services Providers” and “Technology Insight for Multicloud Computing”).

**Excessive Governance**

Governance that results in excessive rigidity could impede productivity and innovation. I&O leaders should adopt a governance approach based on policies that:

- Define and implement guardrails as proactive and reactive controls
- Define and enforce the automation of policy checks and outcomes through monitoring to verify policies are being followed

A governance and management approach suited to increasing cloud maturity requires monitoring and automation. Monitoring the use of cloud resources and networking activities provides insights into how to optimize workload availability, performance and cost. By optimizing and automating cloud management, I&O leaders can increase business agility, limit human errors interacting with cloud resources and manage an ever-growing set of cloud resources.

Many organizations realize the need for automation only after their cloud resources become nearly impossible to manage. Embrace automation in early stages by integrating tools and specialized automation roles as part of the CCOE. Adopt and use infrastructure as code (IaC) tools or the use of APIs as technologies to optimize and automate management activities (see “Evolve Your Infrastructure and Operations Organization to Remain Relevant in the Cloud Era”).
Manage Expenses

Mistakes in the area of financial management lead to expenses growing out of control and cloud budgets being misaligned with real bills. Mistakes in this area also make it difficult for organizations to split expenses among different lines of business and determine how the organization consumes cloud. I&O leaders need to use the CSP’s tools and functionalities to split costs among different lines of business in a manner that matches the organization’s current or planned model.

Evidence

1. The 2020 Gartner CIO Survey was conducted online from 4 June 2019 through 5 August 2019 among Gartner Executive Programs members and other CIOs. Qualified respondents are each the most senior IT leader (CIO) for their overall organization or a part of their organization (for example, a business unit or region). The total sample is 1,070, with representation from all geographies and industry sectors (public and private). The survey was developed collaboratively by a team of Gartner analysts, and was reviewed, tested and administered by Gartner’s Research Data and Analytics team. Disclaimer: “Results do not represent ‘global’ findings or the market as a whole but reflect sentiment of the respondents and companies surveyed.”

2. Analysis and conclusions based on more than 9,000 interactions with customers during 2019 in areas of interest related to cloud strategy, cloud implementation plan, cloud team organization and cloud management.

3. Gartner 2018 Cloud Study: This survey was conducted online by an internal partner from October through November 2018. In total, 1,200 respondents were interviewed in their native language across the U.S. (18%), Canada (8%), the U.K. (13%), Germany (13%), France (8%), China (13%), India (8%), Australia (8%), Mexico (8%) and Brazil (8%). Percentages may not add to 100% due to rounding.

In order to enable the comparison and contrasting of key trends, quotas were established on key organizational and respondent characteristics:

- 1,000 qualifying participants from organizations that are currently using one of the following cloud types: public, internal private, hosted private, community or hybrid. Participants were required to be advisors to decision makers, or more, on topics related to cloud. Of this group, 628 reported that their organization was using the public cloud, and 507 (81%) of those respondents reported using more than one public cloud provider.

- 200 participants who work in an organization that is planning to use cloud in the next two years. These respondents were asked a small subset of questions for comparative purposes.

The results of this study do not represent global findings or the market as a whole but are a simple average of results for the targeted countries covered in this survey.
Recommended by the Author

The Cloud Strategy Cookbook, 2019
Move From Cloud First to Cloud Smart to Improve Cloud Journey Success
The IT Leaders Guide to How to Take the Cloud Center of Excellence to the Next Level
Cloud Architects: What They Do and Why You Need One
Check 3 Critical Dimensions Before Selecting Public Cloud Infrastructure Managed and Professional Services Providers
How to Identify Solutions for Managing Costs in Public Cloud IaaS
Your 90-Day Action Plan to Control Public Cloud Spend
IaaS Cloud Governance Guidelines and Guardrails for Midsize Enterprises
Technology Insight for Multicloud Computing

Recommended For You

Haier Group Transforms the I&T Operating Model to Accelerate the Growth of Digital Platform Business
Market Guide for Infrastructure Automation Tools
ERM Adapts to the New Normal: Discussions With Heads of Risk
Forecast: Enterprise IT Spending for the Banking and Securities Market, Worldwide, 2018-2024, 1Q20 Update
Can Your Core Banking Support Negative Interest Rates?

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