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YOUR TICKET TO A SUCCESSFUL CLOUD JOURNEY

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IT may be the front door, but how do you roll out the welcome mat when unifying technology? Learn how to become a trusted advisor to the business and ensure ROI.

The cloud journey, for many organizations, has multiple stages of maturity. In the early stages, organizations standardize their underlying infrastructure of servers, storage, and network to create a base standard of consolidated, pooled resources. Next, organizations build on that base by virtualizing their infrastructure, applications, middleware, and databases. This stage enables IT to obtain the most value from the environment with a standardized infrastructure and a virtualized application stack. Finally, IT can automate the operations (IT and business processes) of the environment, which includes the initial resource request process and the ongoing operations of this infrastructure.

Standardization/consolidation, virtualization, and automation can greatly increase the efficiency, flexibility, and effectiveness of a cloud while decreasing cost and physical infrastructure requirements. As you embark on your cloud journey, there are several tips to follow and mistakes to avoid that will ensure you get the most return on investment (ROI) and, more notably, take IT down the path of aligning to the business. These tips and guidelines will help your IT organization meet new and emerging business requirements.

Phase One: Standardize and Consolidate

The cloud cuts across layers of both infrastructure and applications. Adopting cloud solutions means moving from a stove-piped architecture of dedicated hardware, in which each application has its own resource, to a collective services model, where the underlying infrastructure is collective and shared among applications. Standardization will help you to consolidate those underlying resources. In many cases, we also see app transformation being accelerated as a result of cloud adoption. Until recently, app transformation was mostly linked under a larger, three-to-five year transformation.

In this effort to standardize and consolidate, many traditional platforms are evolving. Most recently, the proliferating x86 environments have been combined and consolidated in order to achieve higher utilizations. However, even platforms such as mainframes and mid-range machines are increasingly running Linux. Many organizations are expanding consolidation to include globally

dispersed data centers, and we see a new data center strategy evolving that takes advantage of cloud computing.

In the rush to standardize and consolidate, don't forget about how this will impact other infrastructure elements. Storage and networks are also experiencing a great deal of standardization and consolidation. Network standardization, for example, aids in achieving data segregation and privacy as well as speed.

People writing applications today with cloud platforms in mind will often build on a standard base and harness all of the possible features of elasticity and flexibility available through standardization. Therefore, in many organizations the newest applications, which have already standardized on the base technologies, are the first candidates for movement to the shared infrastructure.

Existing applications may need architectural changes in order to take full advantage of the cloud environment. These modifications require some degree of refactoring, or re-coding, of applications to run on a different type of underlying infrastructure, particularly those that have been running on older platforms. Pooling resources requires a relatively standard set of underlying specifications from servers to storage and network. Cloud environments are primarily Linux and Windows-based and, as a result, applications on non-x86 platforms may need to be ported, or refactored and moved, to the x86 platform, which are not trivial efforts.

Fortunately, many organizations are already undertaking application refactoring efforts, and the decision to move to the cloud can dovetail with these projects. While many older applications are now more expensive to run on existing platforms than cloud solutions, IT organizations still seek the capabilities and unique algorithms of these legacy applications and, therefore, will go through the refactoring process. Investing the effort to port legacy applications allows customers to take advantage of standardized, low-cost cloud environments without losing their familiar tools.

Other organizations are using the move to cloud as a catalyst to reduce their application portfolios. They desire the simplicity and lower cost of running fewer applications on a standard platform. Platform standardization and the reduction in the number of applications often occur over a three-to-five year timeframe, and the two efforts start dovetailing, leading to further consolidation.

In summary, standardization and consolidation are the first steps in the quest to capture the most value from a cloud. These actions set the groundwork to further increase ROI by providing a solid underpinning on which to build.

Phase Two: Virtualization in the Cloud

Virtualization provides the next layer of value that can be extracted from a consolidated infrastructure. Virtualizing standardized servers, storage, and networks helps further maximize the use of resources in an environment. In addition to infrastructure virtualization, you can gain other benefits by abstracting middleware and applications, further ensuring that resources can be shared across multiple workloads.

A hardware refresh cycle can often trigger a consolidation and further virtualization of servers, networks, and storage, especially once cost is considered. For example, a large telecom player decided to embark on a modernization program of its existing virtual environment. IT realized that a hardware refresh would cost $750 million and decided to identify consolidation opportunities. Their existing virtual environment was producing consolidation levels of 1:4, or four virtual servers on a single physical server, but analysts were citing others' success with much higher numbers: 1:8 or more. This company needed to look not just at further virtualization of their servers but also at virtualization from the standpoint of the applications, the computing environment, storage, and the network to improve on consolidation ratios. With this far-reaching perspective, they reduced 3,000 physical servers to 144 physical servers, a 1:22 consolidation ratio. This was far higher than industry standard and was achieved through a holistic approach to virtualization.

But we have seen a limit. Virtualized environments tend to expand to as much as 80 percent of the IT footprint. Beyond 80 percent, however, companies find increasingly diminishing returns, because the remaining 20 percent of the architecture is too complicated to port. The residual applications typically are nonstandard and cannot be refactored or migrated to the cloud, and therefore cannot be consolidated into a cloud environment.

Adopting cloud solutions means moving from a stove-piped architecture of dedicated hardware, in which each application has its own resource, to a collective services model, where the underlying infrastructure is collective and shared among applications.

Switching from an unvirtualized environment to a cloud can provide huge cost savings. With greater automation and consolidation, IT organizations can extract greater savings from their entire system. They may be able to increase efficiency from 24 to 30 percent. Software license costs are also reduced because fewer licenses are required. In fact, companies moving from a traditional to a cloud environment can expect a 60 percent savings over a period of three to five years.

Phase Three: Automation

Automation enables systems — whether through new servers coming online, resources being right-sized, or errors being repaired — to self-regulate, reduce administration costs, and increase the speed with which changes can be made. IT organizations understand that through automation processes they can achieve a much more powerful environment. Despite this, many organizations are hesitant to automate everything simultaneously.

Instead, one way to approach automation is to begin with a small deployment and a set of repeatable, straightforward tasks associated with configuring the server, storage, network, and database. Many of the repeatable tasks can be automated. By implementing a cloud, automation of the servers allows for the interaction between compute, storage, network, and database applications.

Automation can help meet the fluid demand for services. As resources for a particular workload need to be expanded or contracted, automation can mechanize that change, ensuring that no workload is left to struggle, or to burn excess. This can be particularly important both in periods of predictable utilization spikes, such as peak shopping seasons or tax season, and in periods of unpredictable change, such as when a product suddenly gains popularity in the market.

Automation can also enable the handoff between application development and application testing to be completed in a repeatable, automated manner, including the ability to recreate a situation in which a bug was experienced. The cost savings of automation are significant. Over a three-year period, customers who are attuned with their virtualization and have some degree of automation can expect to see savings between 24 and 30 percent if they migrate to the cloud.

Tips on Getting the Most Value from the Cloud

Understand the end business goal. Ask, "What goal is the business ultimately trying to achieve?" IT focuses not only on technology problems but also on business problems. For example, some companies move to the cloud to increase agility in meeting business requirements. Other companies move to the cloud to improve operating and/or capital expenditures.

One internal desktop virtualization implementation project stalled, and initially failed, because there was such high concern about security and reliability of the environment. The company had implemented a bare-bones solution, and no one was adopting it. But once they included security features to allay the concerns of the business, the demand for virtual desktops increased dramatically. While security was not measurable in the immediate ROI, it was clearly critical to the business.

Take a "there are no holy cows" approach to cloud. After you identify the initial target area, the focus of the cloud should be on efficiency and innovation. Look at both sides of the equation in terms of being more efficient and more effective while also being more innovative. Consider broadening the services offered through a cloud infrastructure.

When you move from focusing on efficiency and effectiveness to enabling that experience, assume, "There are no holy cows." Look at all the components of a business service and see if each piece could potentially be transformed by a cloud approach. All workloads should be reviewed. Go through a process of elimination and determine what could be moved to the cloud and what the effort would be, and then move everything that can be moved. It is not all about 100 percent movement to the cloud or all about ROI. It's about making the right efficiency decisions for the application portfolio and moving, over time, to a cloud-first approach for all workloads. When there is a dominant platform, the economies of scale will kick in, and the cloud implementation will pay for itself.

Work on the behavioral issues of server hugging. "Server hugging," or more generically "IT hugging," is the common tendency of people to refuse to give up their physical servers for a virtualized or cloud environment. Often people also do not want to share their infrastructure, even when utilization levels are low. IT needs to work around some of these behavioral issues. One way is to provide incentives such as, "You'll get two servers (higher capacity) back for each one you give us." People do not realize that it is not going to be two physical servers they get back, but it works.

Consider ways to extract efficiency with time multiplexing. Time multiplexing is what cloud is all about. It is what happens when the environment is commissioned to over-allocate or overbook time, using the exact algorithms that airlines employ to overbook flights. A customer can overbook the cloud resources, for example, by a factor of three to six depending upon the size of the workload that it has, since people rarely use all they claim to need.

The first time customers hear of multiplexing, they may not believe it could work. But by working through one step at a time, chipping away at some of their concerns, and then letting them see it in action, they discover that, "Yes, this works!" Continuous monitoring and reporting back is very important, as is showback (providing transparency on costs internally) or chargeback (where the business is actually billed on resources used). Once customers start monitoring, then usage can be measured, and that is when they can start to see that time multiplexing works and saves them money. That is the power of utilization, the power of time multiplexing, and the power of cloud.

Mistakes to Avoid Along the way

These are all critical factors in the journey to cloud maturity:

Singular concern about security — Concern about security is good, but it is only one of many considerations. It is a common mistake to consider only security when considering the cloud, and this blocks progress.

Assuming all the old tools will work in the new world — Customers look at the cloud and immediately look to the tools that they use in their current environments. When the model itself is new, the tools that are needed to operate in this environment also need to be in line with the new model.

Not building a strong program around the transformation — Transformational programs can work very well only when there is a transformation program office with cloud as its objective. The program has to transform the IT department and its embedded culture. If this does not happen, then the program could become untenable. The initiative needs to be taken seriously as a change in the whole way IT does business.

The Emerging Role of IT

In the journey to cloud, you are operating in a world where services are readily available from third parties and business leaders are increasingly seeking the flexibility to rapidly get their technology needs met. The cloud is enabling the unification of technology services through the single front door that is IT. To any user, IT should provide a customized set of options — services that fit each user's needs and profile — from which to choose. These services may be offered by IT directly or sourced from a third party. This change enables much more independence for the user in the line of business.

As you shift from being a sole source of technology to being a trusted advisor to the business, you will travel through the multiple stages of maturation, from standardization through automation. The ultimate outcome will be a tighter relationship between you and the business as you align strategies to reach your mutual goals.

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Atul Sood is General Manager and Global Head of Cloud Enablement, Wipro Technologies. He has 16 years of experience in working with IT service providers, IT product organizations, and IT consulting behemoths. Sood combines technological capabilities with sound business leadership skills. He is recognized for his ability to see "what's next" and create a methodical approach for an organization to traverse a path to future success, visionary foresight into new technologies to analyze business needs, define opportunities and develop optimized solutions.

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