

*Charting the Path That Links Technology and Business Goals*

# OPTIMIZING A CLOUD MIGRATION

There are many touted benefits of moving business functions to the cloud ranging from cutting costs to providing operational flexibility as business needs evolve. It's reported that by 2020, more than 78% of U.S. small and medium businesses (SMB) will have fully adopted cloud-based systems. The end goal of moving operations above property is for businesses to run more efficiently. However, if the migration is not done thoughtfully and with cogent planning, it might fail to yield the desired results. In this roadmap, *Hospitality Technology* (HT) discusses with industry experts the steps operators must take to plan and execute a successful migration to a cloud-based operating system.

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**70%**

**OF HOTELS ARE LOOKING TO DEPLOY SOME TYPE OF CLOUD-BASED SOLUTIONS IN 2016.**

**40%**

**OF RESTAURANTS NAME IMPLEMENTING CLOUD-BASED SOFTWARE AS A TOP R&D PROJECT IN 2016.**

Increasingly, players in all industries are migrating to cloud platforms and cloud-based solutions and services. The hospitality industry is following suit and, according to *Hospitality Technology* research, hotel and restaurant companies are prepared to invest heavily in above property solutions. The 2016 Restaurant Technology Study reveals that implementing cloud-based software was the top R&D project for operators in 2016, with 40% of restaurants investing here and 72% of restaurants saying enterprise cloud was either “important” or “extremely important.” Moreover, 66% said the same of cloud software at the restaurant-unit level.

On the hotel side, nearly 70% of hotels queried for the 2016 Lodging Technology Study admitted to embracing some kind of cloud-based solutions. Top systems being operated above property include email (54%), central reservations (46%) and accounting/finance (43%). The study projects that other systems will increasingly be moved to the cloud such as: revenue, customer relationship and property management. Seth Robinson, senior director, technology analysis, CompTIA, said in a statement, “While cloud will not quite become a pure commodity like electricity, it will be so prevalent in IT architecture that cloud-specific focus will give way to overall solution planning.”

According to Gartner ([www.gartner.com](http://www.gartner.com)), cloud migration was one of the top three strategic technology trends in 2015 and will have a significant impact on organizations during the next three years.

“Cloud is the new style of elastically scalable, self-service computing, and both internal applications and external applications will be built on its new style,” a Gartner report states.

Cloud is assuming “an ever-larger role in the hospitality market based on its potential to reduce expenditures for servers and other hardware, turn capital expenses into operating expenses, and provide operators with better access to data and applications, in turn enhancing the caliber of guest services,” says Victor Wolters, cloud strategist and member of the strategic advisory team at Perficient, Inc. ([www.perficient.com](http://www.perficient.com)), a technology consultancy.

However, successful implementation of cloud-based platforms, services, and solutions necessitates a strategic approach taken in logically ordered steps. Otherwise, the potential of cloud to transform business may not be reached, Wolters and other sources say.

To help operators make a transition to cloud-based operations, HT queried technology experts and consultants to build this *HT Roadmap: Optimizing a Cloud Migration*. Through step-by-step guidance, we outline best practices for transferring operations above property and call out key considerations to ensure optimal performance and results.

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## **STEP 1: DETERMINE YOUR PLATFORM NEEDS**

There are three different types of cloud platforms, each with their own pros and cons.

- **Public:** In a public cloud scenario, a service provider makes such resources as applications and storage available to multiple organizations on a pay-per-use basis. All users share storage space and other resources. Public clouds offer cost savings and flexibility, and deployment may be faster than with other models.

On the flip side, restaurants and hotels must maintain the security of sensitive payment data in keeping with the Payment Card Industry Data Security Standard (PCI DSS). Hospitality players are well-advised to do the same when it comes to guests’ personally identifiable information (PII), which can be used on its own or with other information to identify a particular individual. The security and privacy of this data may not be the tightest if it is stored on a public cloud that is shared with other organizations.

- **Private:** Under the private cloud umbrella, resources are delivered to a single entity, such as a restaurant or hotel, using a proprietary architecture. No sharing of resources is involved. A private cloud may be managed by an operator itself or by a third party, and may be maintained either on- or off-premise.

The private cloud model lets operators enjoy many of the cost-saving and flexibility benefits of private cloud computing, without the accompanying security concerns inherent in stor-

# 3 Smart Practices for Migrating to a Cloud Platform

BY ROB JACKS, VICE PRESIDENT, PROFESSIONAL SERVICES, AGILYSYS



It goes without saying that enterprises, including hotels and restaurants, can reduce the complexity of their IT management by centralizing technology in the cloud. However, this is the case only when the migration process is well executed. Every application has its own unique cloud migration path. There isn't a "one size fits all" approach and every business will have its own access needs and workflow requirements. With this in mind, here are a few guidelines for successful migration to a cloud-based platform.

## 1. Consider the four S's – in other words, the benefits of migration.

**Satisfaction.** Guest satisfaction is central to every operator's success, and with a cloud-based platform, satisfaction is easier to ensure. For example, with a property management system (PMS) in the cloud, staff can be more responsive to guests' needs, with less downtime than would be the case using an on-premise data server that consumes local resources and valuable time.

**Savings.** Most operators will find they can reduce hardware and energy costs after moving to the cloud due to a substantial reduction in the need for redundant hardware and lower energy expenditures when an on-premise data server or servers are removed from the equation.

**Security.** Moving technology to the cloud allows data to be stored securely and remotely instead of on site. Typically, cloud infrastructures operate at a higher tier level than an operator might afford. The delivery of this higher level data center operation is achieved due to scalability and leverage, because the cost is shared across multiple customers. In addition, operators can rest assured that their data is protected from a breach or other disaster that could occur if it were stored at

their physical location.

**Simplicity.** Cloud-based solutions are ubiquitous, providing operators with consistent and global access to their data.

## 2. Do your homework.

Thoroughly research a cloud technology before embracing it. It's important to carefully study your existing IT infrastructure, needs, and usage to best determine if cloud migration is right for your operation. Assess which solutions are best suited to a cloud environment, as not all of them should move to the cloud. There are some, including PMS, that will perform better in the cloud, and it's important to fine-tune the list of apps to be migrated in order to achieve optimal cloud performance.

Remember that security is paramount. Accordingly, ask any cloud service provider under consideration to clearly define the security services it will deliver. These details should be outlined in the Service Level Agreement (SLA). Make your expectations known to your service provider to ensure that they will meet all requirements that have already been set.

## 3. Know and avoid common mistakes.

One common mistake is getting rid of old hardware too hastily. After a hospitality operator has migrated to the cloud, its used IT hardware still has value. Consider a hardware exchange to recoup some IT budget.

Another frequent error is not leveraging in-house IT staff. In-house staff can complement the cloud providers' teams of experts. They can go a long way to ensure operators have sufficient data management and control, allowing them to maximize the return on cloud investment. In-house staff has a broad knowledge base of how the business operates and cloud migration can free up IT staff to better focus on technologies that are driving more revenue.

“**HYBRID CLOUDS CAN YIELD THE FLEXIBILITY AND COST SAVINGS OF THE PUBLIC CLOUD, ALONG WITH THE SECURITY AND DATA PROTECTION OF THE PRIVATE CLOUD.**”

ing data in a public environment. Long-term cost savings may exceed those achievable with a public cloud platform. However, private cloud platforms may require in-house expertise that is unavailable if the cloud-based solutions are maintained in-house rather than hosted by a third party.

- **Hybrid:** In a hybrid cloud computing environment, some resources are provided externally and others in-house. Hybrid clouds can yield the flexibility and cost savings of the private cloud, along with the security and data protection of the public cloud. A hybrid cloud infrastructure is more difficult to manage than its public or private counterparts, and integrating public and private clouds requires special expertise, Wolters explains.

Most public cloud platforms deliver unhindered performance and are infinitely scalable, but there is always the risk that another “tenant” may consume more resources of the shared infrastructure, sparking that performance to decline somewhat. This is not so with private cloud platforms, and less so in hybrid cloud scenarios, Wolters adds.

## STEP 2: SET GOALS AND EXPECTATIONS

*Exploring the “why” and “what” of migration.* Operators need to determine whether the migration to a cloud platform and cloud-based services or solutions is intended to reduce costs, support growth in certain areas of the business (and which ones), achieve operating efficiencies, or a combination thereof. Without this analysis beforehand, there is a risk of wasting time and money on a solution or solutions that will prove inadequate on one or all fronts.

In taking this sub-step, it behooves operators to resist the temptation to migrate all of their existing applications to the cloud. Certain ones, such as those that are undergoing major upgrades or are a challenge to maintain because any small change may cause them to malfunction, are probably best left “as is.”

Vendors recommend thinking very carefully about migrating historical data to a new cloud-based system. Most operators will initially want to do so, they note, but such a “wholesale” migration, as one

source put it, costs time and money; moving last year’s data when there only exists a possibility that it will need to be accessed once or twice may not be a worthwhile endeavor. Many vendors will work with hospitality operators to help them decide what level of data should be moved into the cloud and how far back that data should go.

Sources also suggest that hospitality players think about how their systems integrations are set up and whether migrating to a cloud platform offers an opportunity to simplify them. For instance, if a restaurateur has an on-premise POS system in all of its locations, and each one has its own interface, moving to the cloud can mean replacing all of the resultant complexity with a simple, centralized integration architecture, significantly reducing system maintenance expenditures and making it easier to “on-board” new locations in the future.

***Double-check the scope of migration work and map the benefits of migration against existing problems.*** If the scope of work doesn’t encompass all of the identified objectives, the success of the project will be impeded.

***Establish, educate and review goals with a cross-functional team.*** This team should comprise representatives from upper management, as well as from individual departments (IT, operations, and marketing). It should also encompass end-users who will be depending on cloud-based applications to take care of guests — e.g., restaurant or hotel managers, front desk personnel, cashiers, and even kitchen staff. Efforts must be made to educate all team members about what migration to the cloud will and will not accomplish in their departments, why the move is being made, and what they should expect in terms of temporary workflow disruption (if any). Team members can then pass on the word to their colleagues and get them on board with the changes.

***Put it in writing.*** It’s far too easy for operators to assume that one party, such as an individual on the vendor’s team, will be responsible for a given aspect of migration, when that responsibility really falls on another party’s shoulders. Mistakes are also bound to occur if expectations of the vendor, project, and each

“**PUBLIC CLOUD SERVICES MARKET IS PROJECTED TO GROW 16.5 PERCENT IN 2016 TO TOTAL \$204 BILLION, UP FROM \$175 BILLION IN 2015.**”

— GARTNER

# Understanding Cloud: Challenges & Myths

JIM BIGGS, SENIOR DIRECTOR, MARKETING, CYBERA



**Q: What are some of the greatest challenges restaurant operators (enterprise and not-so-enterprise) face when migrating to cloud-based applications, and how can these be mitigated?**

**Biggs:** While cloud is no longer a new concept, concerns remain for enterprises that are either evaluating or expanding cloud adoption. In 2016, security concerns, long cited as the most critical challenge, were overtaken by a lack of resources and expertise. Mitigating these challenges involves making a choice between investing in in-house skills and expertise, outsourcing to an experienced managed services provider (MSP) for secure cloud WAN services, or opting for a hybrid between complementing in-house expertise with the benefits offered by an MSP.

**Q: What would you say to dispel some of the most common misconceptions surrounding the cloud?**

**Biggs:** A popular myth is the notion that enterprise IT departments need to retain control over the enterprise cloud and the distributed WAN serving remote locations in order to ensure security, data protection, performance and availability. At what cost do IT departments retain this control?

The two largest contributing factors to cost are labor and WAN expenses. The cloud can be a component of the WAN. One of the safest and most cost efficient ways to overcome cloud challenges and ensure the necessary protections for operators is to consider trusting cloud serving restaurants to a qualified and experienced MSP. Managing the cloud, network, and applications that service remote restaurant locations is not a core competency of most chains. It makes more sense for operators to replace this focus with their core that enhance diner experience and contribute directly to growing the business.

**Q: What questions do operators need to ask themselves before moving to the cloud?**

**Biggs:** It's quite natural for operators to trust connections to third-party processors for card payments. Forward-looking operators are examining the changing behaviors of diners, shaped by digital trends and led by millennials, to attract more diners and fend off competitive threats. The contemporary diner puts a much greater value on

the entire dining experience. In order to stay competitive in this context, operators are asking themselves some important questions. For example: how will the cloud reduce restaurant-operating expenses; contribute to affordably sustaining PCI- DSS security compliance; increase diner foot traffic and purchases; encourage repeat business and diner loyalty; and assure business continuity and agility?

**Q: How do operators ensure a cloud platform advances business needs?**

**Biggs:** Investment in core competencies that advance profitable expansion are key. Preserving that focus rather than diluting it with costly security and IT investments may mean evaluating a MSP that offers a secure cloud and software-defined WAN solution (secure SD-WAN).

MSPs share a vested interest in no downtime. The right MSP:

- Assures rapid deployment of new applications to personalize the dining experience and make the restaurant a destination
- Abstracts complexity from the edge of the network into the cloud to reduce or eliminate the burden of requiring IT
- Employs centralized and automated policy enforcement to eliminate error-prone manual configuration, enhance application agility, and update software across all restaurants
- Segments applications into isolated virtual networks to prevent lateral breach propagation across applications and narrows the scope of PCI DSS compliance, reducing that cost burden
- Offers a cloud that is software-defined in nature, allowing it to work on any existing network, preserving legacy network investments with virtually unlimited scalability and in an affordable and cost-predictable way
- Offers 24x7x365 monitoring and customer support



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team member aren't spelled out. Documenting this information in writing (and presenting it to the vendor, once one has been chosen in keeping with Step 4 of this roadmap) prevents a multitude of misunderstandings and disasters.

### STEP 3: SET A BUDGET

Many factors will impact hospitality operators' cloud migration expenditures. This calls for a comprehensive budget that takes into account the cost of initial and ongoing cloud service, license management, application re-design, solution deployment, solution testing, and application integration, along with future scaling of the platform.

The cost of training employees is also another critical component. Budget for online training, on the solution itself as well as for the hours employees will need to devote to learning the ropes. Cloud migration budgets should take into account the rapid turnover that is widespread in the hospitality industry. There should be ample flexibility in these financial plans to always cover the price of training new employees.

“**CLOUD APPLICATION SERVICES (SAAS) IS FORECAST TO GROW 20.3 PERCENT IN 2016, TO \$37.7 BILLION.**”

— GARTNER

### STEP 4: CHOOSE A PROVIDER

Maximizing an investment in migrating to the cloud necessitates limiting the choice of vendors to those whose solutions are purpose-built for a cloud platform rather than re-designed for use in a hosted environment. Failing to do so could result in the functionality and potential benefits to be compromised.

For the smoothest possible deployment and best post-implementation results, ask vendors detailed questions about:

- **Industry experience.** The vendor should be familiar with the hospitality industry and be able to discuss how it handled previous restaurant or hotel cloud migration projects.

- **Pricing and utilization policies.** Vendors say that starting off “too large” — and assuming an excessive financial burden — is one of the biggest mistakes made when adopting a cloud platform. Operators should ensure that the vendor supports a scenario in which



CLOUD SPENDING  
WILL TOP

**\$37**

**BILLION** IN 2016.

SOURCE: IDC

the cloud platform and solutions meet current business needs and can be scaled later, when changes and growth dictate. The flexibility to pay only for cloud resources that are presently being used, rather than for cloud resources to suit both existing and future requirements, is paramount.

One important pricing caveat to remember: Cheaper isn't always better — paying a higher price for better uptime, performance, and support makes more sense in the long run.

- **Support.** Any vendor chosen to provide cloud-based solutions and services to hospitality operators must stand ready to go beyond delivering these at the outset of the move to the cloud. This means providing a full complement of on- and off-site customer support services (e.g., training, technical support, troubleshooting, assistance in determining whether scaling a solution is warranted, and much more) not only during the initial migration process, but after the move itself is long over.

- **Downtime.** Hospitality operators should weed out potentially troublesome vendors by reviewing downtime histories and inquiring how data backup and redundancy will be handled. Vendors that allow downtime to drag on and/or lack detailed backup and redundancy plans cannot be considered reliable and should be crossed off operators' list of provider prospects.

- **Security.** Hospitality operators should ascertain that the provider has a secure data center. Standard measures and protection (e.g., firewalls, virus detection tools, anti-virus solutions, multi-factor user authentication, data encryption, and routine security audits) should be in place and consistently updated. Equally important is determining who has access to data stored in the cloud (this should be determined based on individuals' roles) and whether background checks have been conducted on the vendor's employees to rule out criminals.

## STEP 5: DEPLOY AND REFINE

Prior to deploying a cloud initiative, best results are achieved when a reasonable timetable has been established. The time needed to

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complete a cloud migration project will vary based on its scope and complexity, but extra time for deployment should be factored into the timetable regardless. Work should be planned to minimize disruption of guests' experience, even if it means budgeting extra time for a deployment completed in small steps rather than large ones. Project management will also be easier if deployment occurs in stages.

**Watch for and prepare to remedy glitches.** Members of hospitality operators' cross-functional teams should assist the IT side in looking for problems as implementation proceeds. Often, such problems center on employee reluctance to learn how to use cloud-based solutions and endure the learning curve. Network and hardware compatibility is another common glitch; one source described a hotel migration to a cloud platform that fell three months behind schedule due to network and hardware compatibility issues.

**Test.** Hospitality operators shouldn't expect smooth sailing from the first day following a deployment. Moving off a cloud platform after three months because the desired results of deployment have yet to be achieved is very unrealistic; a minimum of six to 12 months is typically needed to experience ROI and see a true shift.

## **STEP 6: MANAGE AND MAINTAIN**

Like other platforms and solutions, cloud-based environments and applications aren't static in nature; they require ongoing care if restaurant and hotel operators are to reap their full benefits from a financial and logical standpoint. This entails:

**Benchmarking results.** Watch the new technology to ascertain whether it's serving its intended purpose. For example, is a cloud-based property management system (PMS) streamlining day-to-day operations? Is a cloud-based inventory management system making it easier to track ingredient inventory, and have there been subsequent financial savings? What are the details?

Hospitality operators should not be expected to operate 100% smoothly or start to yield ROI from day one. They must understand that before any ROI is seen, the technology must become part of

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the business process — and this takes time. Hospitality players may be tempted to rip out cloud-based technology after three months because results have yet to be stellar, but this is a very disruptive, time- and money-consuming process. Vendors recommend that each initiative involving the cloud be allotted a minimum of six to 12 months before it is expected to produce a ROI.

**Implementing monitoring and disaster recovery tools.** Cloud platforms and cloud-based solutions have multiple built-in redundancies, but vigilance in monitoring to ensure that storage, backups, patching, and networks are correctly maintained is a must.

**Preparing for a rapid rate of change.** The beauty of cloud is that once the implementation phase has been completed, in-house technology experts are no longer needed. Operators can focus on responding to market opportunities faster than they ever could with on-premise systems, whether with new loyalty programs, payment systems, or anything else.

## CONCLUSION

There are many positives that can be achieved from moving to the cloud, but a logical path to migration must be followed to reap the benefits. In order for operators to find success with systems operating above property, businesses must identify goals and set clear parameters for what they hope to achieve. The potential is there, evidenced by the rapid growth in SMBs adopting cloud systems. As mobility and systems integration continue to increase in importance, cloud technology will further establish itself as a best practice to cut costs and streamline operations. Restaurants and hotels will need to identify the best path to the cloud for their specific business structures and in order to do so, should enlist the services of a trusted and experienced service provider. The success of a cloud migration, however, hinges on proper planning and a clear understanding of the anticipated outcomes.