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Act Now to Improve Business Success by Moving Core Applications to the Cloud

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About this paper

A Pathfinder paper navigates decision-makers through the issues surrounding a specific technology or business case, explores the business value of adoption, and recommends the range of considerations and concrete next steps in the decision-making process.

About 451 Research

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I. Executive Summary

Our research indicates that 38% of organizations have a 'cloud first' policy in place, meaning cloud must be considered an option every time new workloads are deployed. There are two main motivations for moving to the cloud. Some enterprises do so in search of incremental business improvements, such as reduced cost and faster time to market through selective transition to cloud deployment models. Others are fully committed to a digital transformation strategy to enable agile application and infrastructure design that gives technology the ability to redefine markets.

Whatever the motivation, we believe the time is ripe for moving traditional applications to the cloud. Not doing so could well mean failing to provide the kinds of digital services the market and customers demand. Conversely, enterprises that seize the moment will gain the speed and agility that will propel the success of their digital business strategies.

The trend of moving traditional applications and workloads to the cloud is apparent. Our research shows that deployment of all types of workloads in the cloud continues on a steady upward climb across industries and enterprises of all sizes. Currently, 41% of workloads run in the cloud, and we expect that to rise to 60% within just two years – growth of nearly 50%.

Our research further shows that cloud can and often does offer a long list of business and economic benefits, including cost savings on hardware and lower staff expenses; reductions in IT complexity; dramatically increased scalability; faster time to market; expanded global reach; and improved reliability and uptime. There are also potential economic risks such as unforeseen migration and application rewrite costs. But it is our view that these pale in comparison to the benefits both types of enterprises (those in search of business improvements and those committed to a digital transformation strategy to enable agile application and infrastructure design) can reap from carefully hatched cloud strategies.

Additionally, the technologies, tools, processes and skills for moving all or parts of traditional applications to the cloud have been well developed by various service providers. In fact, to mitigate risk, the service providers can often provide a verifiable economic, cost-saving justification for doing so, notwithstanding the arguably more important digital benefits.

Our recommendations for enterprises thinking about moving traditional applications to the cloud include:

DEVELOP A DIGITAL BUSINESS STRATEGY. In doing so, your enterprise will be better able to exploit cloud capabilities and leverage them for competitive differentiation.

CLOSELY ASSESS YOUR INVENTORY OF APPLICATIONS. Evaluating the technical and business requirements of each is critical in determining a logical roadmap and deciding which applications to move first.

DETERMINE THE SKILL SETS NEEDED to move traditional applications to the cloud as seamlessly as possible. In many cases, service providers are best equipped to provide not only the skills but also the tools and procedures for doing so.

CAREFULLY ANALYZE THE SECURITY CONSIDERATIONS of the traditional workloads that you're considering moving to the cloud. Security will be a major factor in deciding the right cloud deployment model.

IF YOUR ENTERPRISE IS CONTEMPLATING BIG CHANGES such as capacity expansion, hardware/software refresh or datacenter overhaul, think first about reducing some of the expansion and placing it in the cloud.

IN SOME HIGHLY REGULATED AREAS, such as healthcare and finance, where regulations at times explicitly prohibit public cloud usage, you need to know to which data such rules apply.

II. Enterprises in full digital transformation mode

There is a small but important number of companies that can be considered cloud pioneers. Some are cloud-born enterprises such as Uber, Airbnb, Pinterest and Netflix; others have existing investments in traditional IT models but have decided to go 'all in' with cloud. In both cases, the primary motivation is business agility.

Cloud gives these companies the ability to deploy new applications rapidly, optimize their usage of resources, and experiment with innovative architectures and business models without tremendous risk. They also avoid the inertia of large capital investments associated with building and operating datacenters.

Data from 451 Voice of the Enterprise: Cloud indicates that 38% of enterprises have a 'cloud first' policy in place (see Figure 1). 'Cloud first' doesn't mean that all workloads are deployed in the cloud but, rather, that cloud will be considered as an option every time, and a compelling case for an alternative is necessary to deploy outside of cloud.

Figure 1: Frequency of 'Cloud First' Approaches to Workload Deployment, n=941

Our De Facto IT Platform ('Cloud First') 38%

62% One of Many Options to be Considered
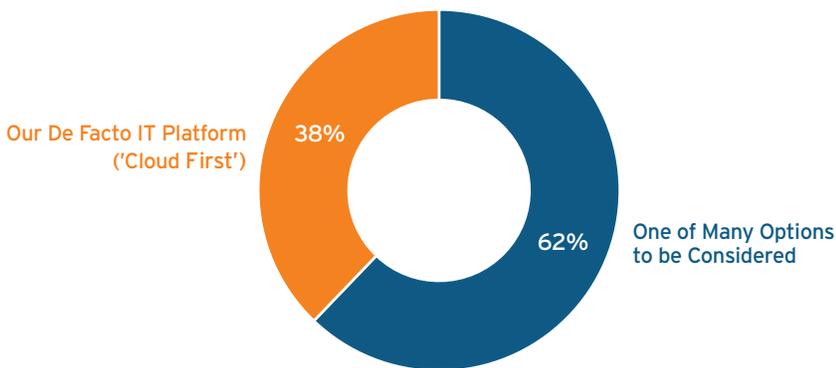
This number is significant because it indicates that many companies see public or private cloud as safe, beneficial and worth considering across the board for all types of applications.

INNOVATORS USE CLOUD TO POWER COMPETITIVE DIFFERENTIATION

Cloud-born companies generally focus on innovative and differentiating applications that have the power to create or transform markets. These enterprises used cloud-native infrastructure models to innovate in building new software, delivering powerful web experiences and connecting communities through mobile and social applications, all of which combine to drive bold transformation in their respective industries.

Uber is a poster child for cloud-born companies. It proved to be highly disruptive, utterly transforming the venerable, 500-year-old cab business in just a few years. Today, it leverages its cloud-based agility to fend off a raft of mainly digital competitors.

III. Enterprises focused on cost savings

Many conservative companies have become emboldened by the progress of early adopters, but they have different risk tolerances, as well as varying depths of investments in datacenters, IT infrastructure, applications and associated staff and expertise. Therefore, conservative companies need to chart a different course for moving applications to the cloud. Given the wide range of options in terms of venue and deployment options, as well as multiple examples of successful deployments, cloud is now seen as viable for more critical enterprise applications.

The more conservative cloud adopters are driven less by innovation and agility and are focused instead on cost reduction, increased efficiency, and spending less time and energy on mundane tasks. These companies are taking advantage of a wider range of cloud types, including public and private, off-premises in provider environments, and in their own datacenters.

Each cloud model offers different potential benefits, and enterprises considering their path to cloud should be aware of the variety of options. Figure 2 shows the varying models and their benefits: SaaS users focus most on the offloading effort; IaaS usage revolves around scalability; hosted private cloud sees the most interest in reduced cost of hardware; and on-premises private cloud is driven by security. All of the cloud models offer business agility – the ability to bring services to users faster by increasing automation and consistency of offerings.

The hosted and on-premises private cloud options may well emerge as the most common deployment models for traditional business applications that enterprises transition to the cloud. These options offer a measure of confidence for companies that remain concerned about public cloud security, and they may be more viable for traditional workloads that don't have the variability of demand or uncertainty of configurations that make public cloud so appealing for usage in more transformational workloads.

Figure 2: Different Clouds, Different Drivers

What are the key factors in building a business case for X cloud at your organization?

	SaaS	IaaS	Hosted Private Cloud	On-Premises Private Cloud
Hardware Cost Savings	28%	42%	42%	37%
Less to Manage Internally	55%	36%	37%	21%
Scalability/For Peak Demand	23%	44%	32%	29%
Speed/Time to Market	33%	41%	24%	30%
Improved Availability/Uptime	25%	31%	26%	36%
Staff Savings (time, FTE, skills)	35%	27%	29%	24%
Improved Security	11%	13%	27%	39%
New Functionality	33%	12%	14%	13%
Software Licensing Savings	21%	9%	11%	11%
Geographic Location	6%	12%	16%	15%
Create New/Additional Revenue for the Location	8%	10%	10%	9%
Sample N	739	420	378	491

For critical workloads with limited ability to drive differentiation, SaaS has emerged as the most likely cloud deployment option. Enterprises know that they must deliver reliable versions of commodified applications, but they don't want to spend their precious IT time and energy on managing them. For these important but commodified workloads, using a standard SaaS-delivered application with a focus on configuring rather than customizing has become the most common option. For example, email and CRM are widely delivered via SaaS, driven especially by vendors such as Microsoft and Salesforce.

IV. Keeping control of core applications

Critical enterprise applications that often drive competitive differentiation are more likely to be deployed in an environment where there is more control and customization of infrastructure, such as IaaS, hosted private cloud or on-premises private cloud. These venues offer cloud benefits but allow for more sophisticated security controls and enable the environments to be more closely tailored to the specific performance needs and considerations of the workloads. They also tend to allow users to build innovation into the workloads through customization rather than just use the same architecture and capabilities as those offered by a standard SaaS platform.

ERP is a classic example of a mission-critical enterprise application that also has the potential to provide significant competitive differentiation. The tools that run factories and plan inventory and logistics have the potential to transform markets and allow businesses to become disruptors within their industries. Although ERP applications have historically been considered too critical and sensitive to be moved to a cloud deployment model, our data shows that the tide is starting to turn. A combination of increased comfort and familiarity with cloud deployment models among end users and more offerings and expertise from trusted service providers and consultants appears to have led to a greater willingness (and even preference) to deliver critical differentiating applications via the cloud.

According to our research, more than 45% of ERP-related workloads run in some form of cloud today, and 62% are expected to run in the cloud within two years (See Figure 3), including IaaS and SaaS. On-premises private cloud has the most cloud deployments today at 17%. SaaS, IaaS and hosted private cloud should all see big increases over the next two years as en¬terprises work to cloud-enable and transform this key category of workload.

### Figure 3: Enterprise Resource Planning Workload Distribution

Q. Approximately what percentage of the Enterprise Resource Planning (ERP) workload is/will be deployed in the following environments today/in two years?
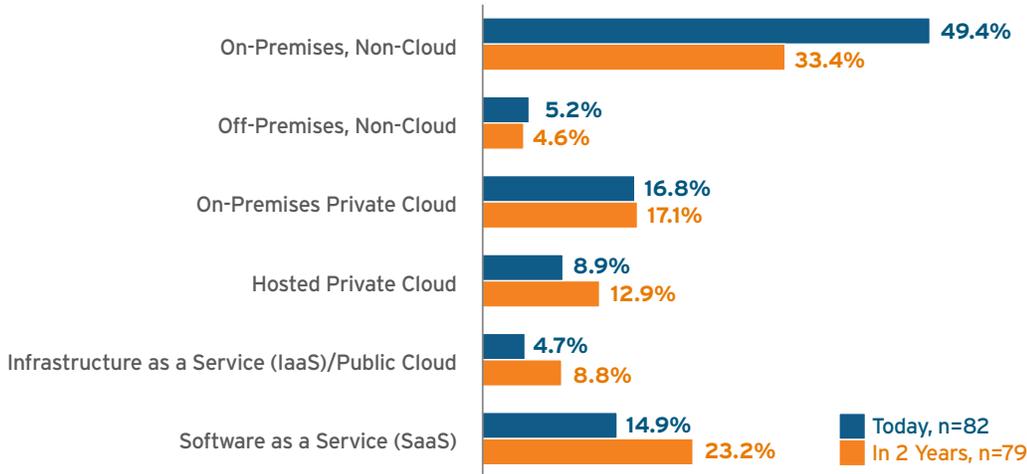
Industry-specific applications fall into a catch-all category that can mean many different things to users, but these applications often include key workloads that power the healthcare, banking and finance, utilities, and transportation industries. More than 30% of these critical and differentiating workloads are running in some form of cloud today, and it's likely that more than 53% will be running in the cloud within two years (see Figure 4). As with ERP, on-premises private cloud represents the most likely cloud option for industry-specific applications today, with high growth predicted for SaaS, IaaS and hosted private cloud over the next two years.

Figure 4: Industry-Specific Applications Workload Distribution

Q. Approximately what percentage of the industry-specific applications workload is/will be deployed in the following environments today/ in two years?
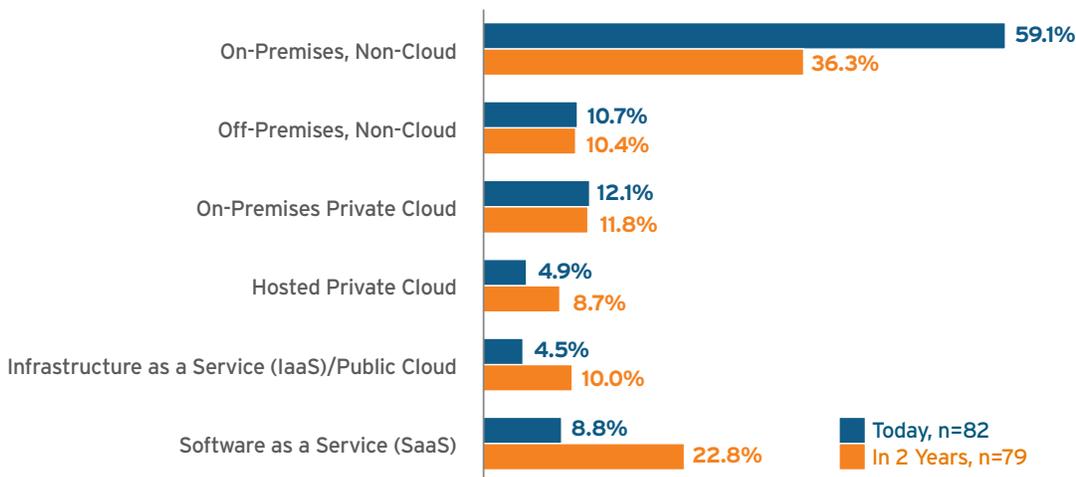
V. Economic benefits of cloud

TAILORING CLOUD USAGE TO THE NEEDS OF INDIVIDUAL ENTERPRISES

The potential savings and economic benefits of cloud are many and varied. However, they are by no means guaranteed, and certainly not all workloads should necessarily be considered as candidates for cloud migration. That said, here are the most salient financial benefits the cost-minded enterprise can expect.

1. **HARDWARE SAVINGS.** Users of cloud can expect to see a reduction in hardware spending due to offloading of effort or increased efficiency in several categories: servers, controllers, networking gear, storage devices, heating and cooling devices and other climate-related items, UPS systems, switches, and the facilities and real estate needed to house it all. Off-premises cloud allows users to scale their hardware usage up and down to more precisely match their needs, providing significant savings because they're not paying for resources when they are not in use. Private cloud allows for greater automation and efficiency by deploying highly virtualized systems that better share resources among many workloads.

2. **REDUCED COMPLEXITY.** At the root of a lot of IT complexity is ensuring that all of the hardware mentioned above works well with everything else and remains optimal as new workloads are introduced. Maintaining the software running on these various platforms adds a layer of complexity because it involves version control, compatibility testing and a raft of other time-consuming chores. It is no surprise that in many datacenters, up to 70% of the IT personnel budget goes to IT operations – keeping the trains running on time. Much of that goes away when leveraging cloud service providers.

3. **SCALABILITY.** With cloud, scaling up when demand is high and back down when it is reduced is far easier and more affordable than in traditional infrastructure models that require long-term purchasing. There are almost no practical limits to how quickly scale can be achieved in on-demand cloud models, and automation tools can make it seamless and easy. For applications with peak-load characteristics, cloud is almost a no-brainer because it provides applications with access to the capacity they need when they need it, and the ability to give it back when the spike passes.

4. **SPEED/TIME TO MARKET.** Automated cloud models allow new services and applications to get to market faster. Skipping the purchase and installation of augmented hardware and software further speeds these processes. Ditto with maintaining around-the-clock development and testing environments, which are commonly moved to the cloud today. Installing a new or upgraded application in the cloud can involve nothing more complicated than logging in to a provider's website, customizing the application and then commencing usage.

5. **IMPROVED UPTIME.** Most downtime-causing events are attributed to people and processes, not to core technologies. Cloud providers generally have more consistent operational models, as well as greater experience due to higher scale and more expert staff dedicated to keeping all systems running. And depending upon the applications in question, businesses can sign contracts with providers that clearly define uptime guarantees, up to 100%, depending on the price tag.

6. **REDUCED STAFF EXPENSE.** Mentioned earlier, the savings come from offloading what amounts to a lot of drudgery to cloud providers, leaving your prized IT staff to focus on business and strategic projects.

VI. Recommendations

Whether yours is an enterprise leveraging cloud as a key element of digital transformation or an enterprise primarily seeking to reduce costs via cloud deployments, there are several things to consider to optimize the cloud experience.

- **Develop a digital business strategy.** By doing so, your enterprise will be in a good position to exploit cloud capabilities and leverage them for competitive differentiation. The first step is a careful evaluation of business needs – the core driver of the move to the cloud. Then closely assess your inventory of applications. Evaluating the performance, security, regulatory and scale requirements of each is a good start in creating a roadmap of which applications to move first. Next, consider the benefits each workload could see from cloud in terms of variability of demand and long-term scalability requirements, as well as the business opportunities that can be created through technology innovation in a given workload category. Look for cloud investments and projects that will maximize returns by best supporting digital business strategies. A solid understanding of these factors will be the most important step in charting an effective path to cloud, prioritized and driven by business needs.

- **Security: Just how sensitive is the data?** As you prioritize the applications you want to move to the cloud, include a security profile of those applications. Just how proprietary and important to the business is the data touched by each application? It is widely held that the familiarity with internal legacy systems, and the security thereof, make them seem more secure than public cloud deployments. The fact is that public cloud providers employ far more security experts because their continued existence depends explicitly upon security. They gain significantly more experience from the global threat environment than can any individual enterprise. Thus, a careful and thoughtful assessment of vulnerabilities, both internally and at the service provider, is essential to guiding enterprises to the right cloud deployment model.

- **Skill sets: It takes a village.** It will take staff with specific cloud skill sets to realize the benefits of transitioning to cloud. Traditional business applications are generally not forklifted to the cloud without modification. Legacy applications must be modified to support mobility and other digital projects using cloud design principles. IT staffers are no more immune than other employees to being change-averse. Knowing which staffers are more likely to agreeably come along for the cloud journey is a major plus. Be honest about what you're likely to execute effectively internally and where you might need help from outside experts. You may well find that the skills, as well as tools and processes, for cloud-enabling traditional applications are more readily available from a service provider partner, especially considering that many of these skills are needed only temporarily during the transition to cloud.

- **Big changes planned? Think cloud.** If your enterprise is contemplating big changes such as a capacity expansion, hardware/software refresh or datacenter overhaul, think first about peeling some of the expansion away and placing it in the cloud. In essence, cloud can function as an effective 'capital investment avoidance' strategy in such circumstances. Do these assessments before making any big internal investments because the business case for moving traditional applications to the cloud is less attractive after the fact. Here's what one senior IT manager had to say when his enterprise chose cloud over an on-premises upgrade: "The whole infrastructure was up for renewal, so we were going to have to invest in new switches, new servers, new storage arrays, expanded more capacity than we currently have … We decided not to do it … Even if we spend the same dollars (on cloud), I think we're going to get more flexibility."

- **Know your enterprise's compliance and regulatory profile.** In some highly regulated areas, such as healthcare and financial services, regulations at times explicitly prohibit public cloud usage. You need to know to which data such rules apply. Other times, an enterprise's own legal department makes such rules. In cases like this, a hybrid cloud infrastructure might make sense. As time passes, regulators and attorneys alike will gain greater comfort with public cloud. That is not the case today.

- **Embrace experimentation.** Unlike with infrastructure tied to an enterprise's datacenter, cloud offers an off switch. That means your developers and architects can experiment in a sort of cloud sandbox on changes to the application architecture. Testing new mobile services, for example, is often done in the cloud. Developers can put their experimental services through the heaviest set of scale requirements without any disruption to ongoing work back in the datacenter. In fact, experimentation and cloud are a perfect fit.

Conclusions

Although historically known for its cost-saving potential, moving traditional applications to the cloud has become an imperative to support fast-evolving digital strategies. The economic benefits are still very much in play, and leveraging the experience of a trusted service provider can help mitigate the risks of moving traditional applications to the cloud.

The fact is that the future belongs to enterprises that can quickly develop new digital services, test them thoroughly under any possible conditions, then deploy them to an ever-increasing variety of mobile devices – the end users' tool of choice. This simply cannot be accomplished unless significant portions (if not the entire inventory) of traditional applications and workloads are moved into the cloud. Seen this way, the key drivers of cloud-enabling these applications are both digital business strategies and pure economics. The choice of whether to move traditional applications to the cloud is no longer a choice at all. It is a requirement here and now for business in the digital era.