GETTING SMART ABOUT SOURCING FOR CLOUD

How Cloud Computing is Impacting Business and how Enterprises should Plan and Source for it

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Executive Summary

Cloud Computing is refashioning the cost, quality, speed and flexibility by which businesses can access—and suppliers can deliver—services to support business needs. As Cloud-based services mature, many business functions can reduce their reliance on on-premises software, hardware and internal administration to access many Cloud services.

Cloud Computing has developed from a modular point solution in the form of SaaS deployments (e.g., talent management and expense management) to become an increasingly integral method for leveraging computing resources for IT and business. The rapid adoption of Cloud alternatives by the business has meant that management disciplines, standards and best practices are well behind where most organizations need them to be, in order to manage appropriately both IT and business risks.

This disruptive change that is challenging today's organizations to take advantage of Cloud-based services, is proving a difficult pill to swallow for many organizations. They need support and advice to help them with both internal IT and business process transformation, in addition to the contractual advice to ensure they are approaching their Cloud opportunities in the right way to mitigate risk and maximize productivity advantages.

This report provides both IT and Business executives with a detailed assessment of Cloud adoption strategies, an analysis of business benefits, concerns, challenges and contractual issues that need to be addressed and discusses the key services providers in the market.

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1. Defining the Cloud

The Cloud is proving to be the most misunderstood technological advance to impact business in the last decade but for those that can harness and manage its potential it may prove an enabling technology that could radically alter the face of business.

During a recent survey conducted by HfS Research and the Outsourcing Unit of the London School of Economics, over 60% of Business Executives and almost 70% of IT Executives offered a definition of the Cloud as an "enabling business services/IT delivery model that drives innovation in organizations"—while succinct, this does not clearly define it for what it is, rather what its potential is.

Wikipedia's definition of the Cloud focuses on the technical architecture and its ability for anyone, anywhere, to access any resources available with limited or no software required (see sidebar). It concludes by saying

"The principle behind the Cloud is that any computer connected to the internet is connected to the same pool of computing power, applications, and files."

This is the most telling aspect of what Cloud Computing can do for organizations—it opens up the world, to the world, creating new businesses, revenue streams and models that we believe will launch a new, more rapid phase of global innovation.

> **Cloud Computing** refers to the provision of computational resources on demand via a computer network. In the traditional model of computing, both data and software are fully contained on the user's computer; in Cloud Computing, the user's computer may contain almost no software or data (perhaps a minimal operating system and Web browser only), serving as little more than a display terminal for processes occurring on a network of computers far away. The principle behind the Cloud is that any computer connected to the internet is connected to the same pool of computing power, applications, and files.
>
> Wikipedia

Differentiating between Cloud, Hosting, and Outsourcing

At a practical level Cloud, hosting and outsourcing can all be categorized within the context of a third-party providing some level of function/expertise as a service.

Outsourcing may carry a more complete value proposition involving taking entire servers, middleware, and other systems and managing them for your organization in a different location. Leveraging the services provider's economies of scale, the outsourcing provider can provide you with cheaper operations than it would take for your organization to achieve the same level of service.

From a delivery perspective we see a continuum of Cloud models from unique private Cloud offerings for a business served up in a one-to-one model, to public solutions where a client subscribes to services from a services provider in a one-to- few or many model, to emerging community solutions that bring together both buyers and sellers in the form of a many-to-many model such as the Ariba Network.

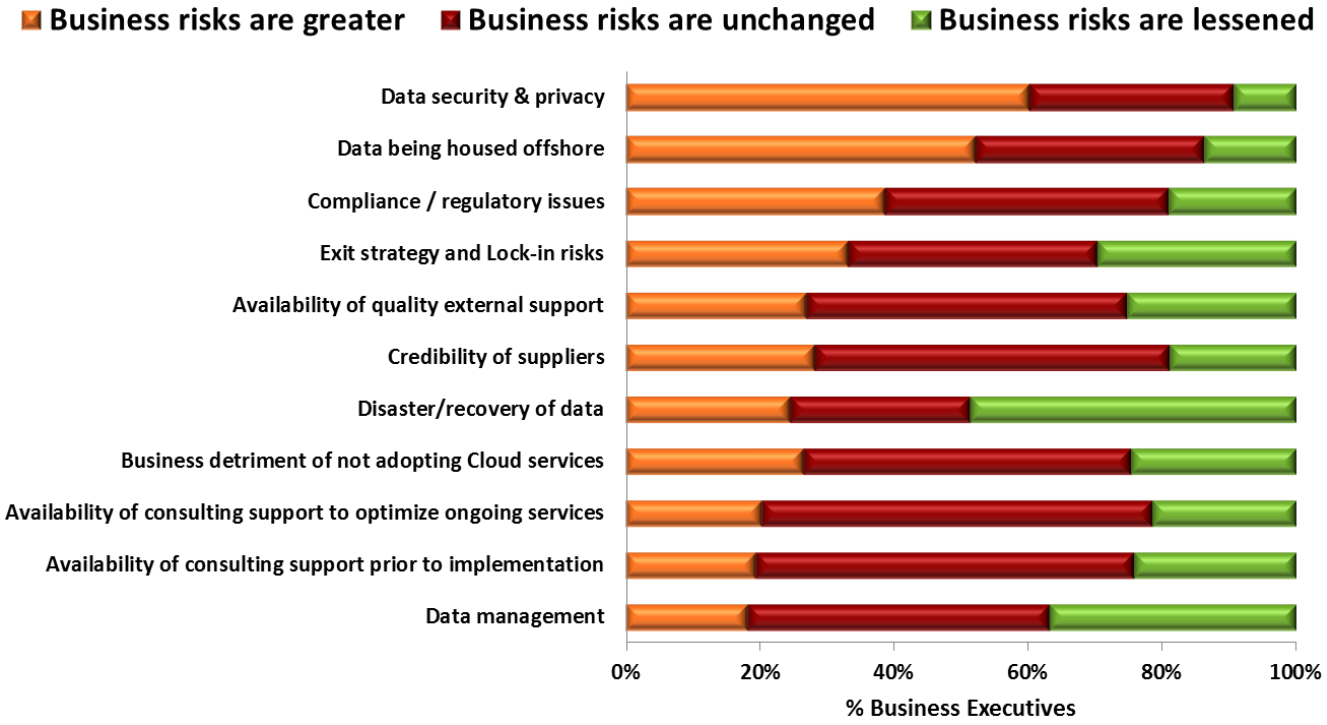
Essentially Cloud and hosting can be considered different flavors of outsourcing. Hosted solutions are typically crafted in a one-to-one model rather than a Cloud-based one-to-many model. Deep level integration with other applications or systems may require extensive coding. Not only must the integration be built, but also security layers must also be built for that specific implementation. Further, any changes to the security or integration layers may require a lengthy testing process to ensure that they still work. This complexity is what leads hosted solutions to be considered as relatively standalone. The Cloud through leveraging multi-tenancy, or the ability to provide multiple users' customized access to a single scalable solution not only reduces the number of hardware resources but also allows for far more powerful, distributed access to them.

The Reality versus the Hype

The reality of the Cloud today is that it is a nascent set of technologies and services that is seeing fast adoption in the market but the market itself is in danger of boiling over in terms of inflated expectations. HfS wants to calm some fears as our recent survey conducted with The Outsourcing Unit of the London School of Economics highlighted that both IT and business executives do maintain concerns about adopting the Cloud (see Exhibit 1 and 2) and are planning accordingly. Business executives are concerned about the location of their data, their secure access to it, but are less concerned about the underlying technology.

Exhibit 1
Business executives need reassurance

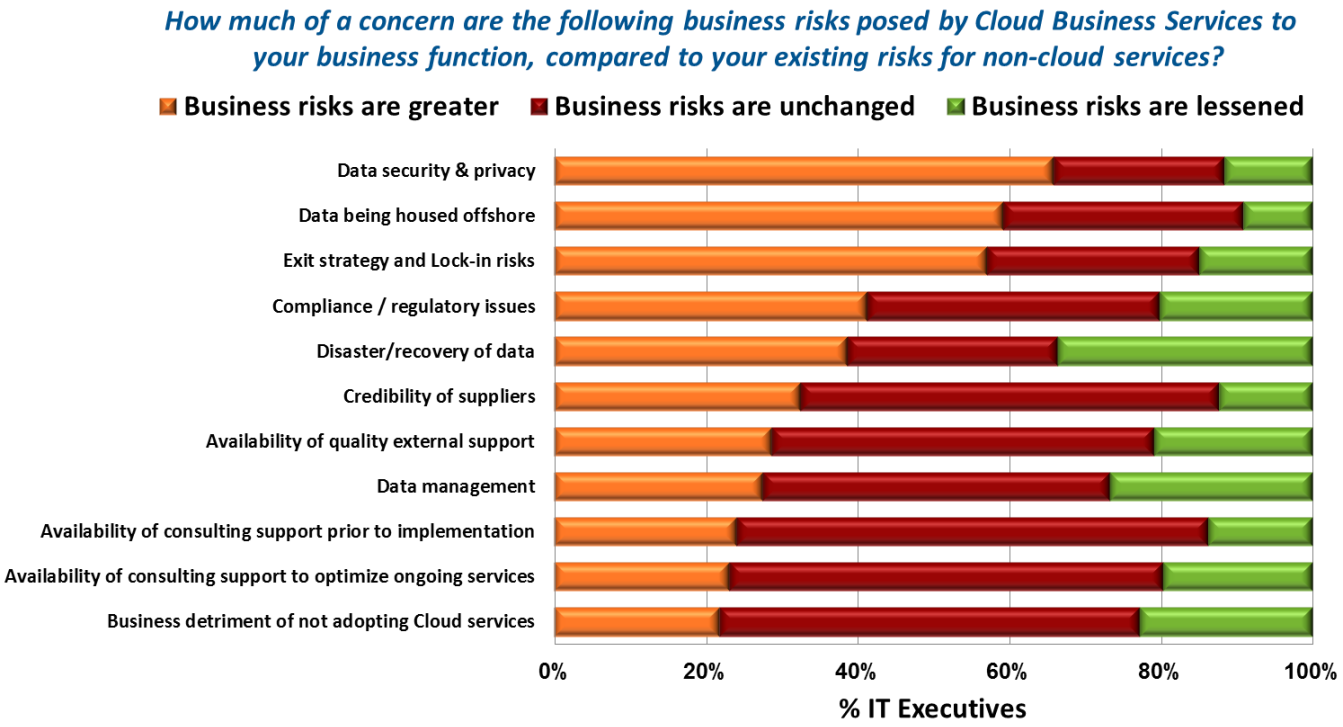
How much of a concern are the following business risks posed by Cloud Business Services to your business function, compared to your existing risks for non-cloud services?



Source: HfS Research and The Outsourcing Unit at the London School of Economics, 2011
Sample: 414 Enterprises

One item that deserves to be highlighted from the survey relates to compliance and legal implications. These grow considerably when dealing with implementations across different countries and industry verticals. We expect regulatory compliance, security and privacy issues to become even more important buying criteria as Cloud adoption continues and the fact that both IT and Business executives share the same Cloud concerns (see Exhibit 2). Don't give in to the temptations of "going Cloud" without a program in place that clearly defines what value it provides, how it will de-risk your business and how you will manage new risks over time. Ensure that you have a handle of the realities of Cloud architectures, providers' capabilities and the business solutions they target to prevent you or your business from being swept up by hype.

Exhibit 2
IT executives have same concern as business executives over security and offshore



Source: HfS Research and The Outsourcing Unit at the London School of Economics, 2011
Sample: 214 Enterprises

Benefits and Drawbacks of Cloud Adoption

The benefits of Cloud Computing are being more clearly understood as we see adoption in the marketplace and they are being realized within the majority of organizations. According to our research, there are three clear benefits to Cloud Computing:

- **Scalability.** Being able to improve performance at any time by simply adding resources is something that most CIOs and IT workers dream about. Providers like Rackspace and Amazon are moving to make this a service reality with the development of relatively elastic compute grids. For many organizations the services availability and assurance available from Cloud providers are far better than can be provisioned internally. Organizations have to test how to better scale up and down services over time, and this will require investment in people with requisite skills and new technologies to help with planning and migrating applications to the Cloud.

- **Availability.** IT Organizations traditionally have spent lots of money, time, and resources in preparing backup and disaster-recovery locations and sites. Testing, drills, and dry runs all increase the management cost. Cloud Computing simplifies the process by providing these functions as part of the bundled service.
- **Integration.** As world economies continue to merge, organizations are becoming increasingly entwined with partners, suppliers, and customers. As such computing standards need to be developed to effectively improve communication. A universal layer to which all adhere (using SOA and service calls to platforms and leveraging integration points via infrastructure) reduces some of the complexity of integration. Cloud vendors and providers that emphasize their own Cloud model over an open Cloud should be asked to support open standards and interconnectivity, or new alliances should be sought.

There are certain drawbacks to leveraging Cloud Computing in relation to on-premises alternatives or maintaining the status quo, especially at this stage of evolution. Early adopters of Cloud Computing have experienced issues related to:

- **Architecture.** Organizations may need to change their architecture to adopt the Cloud and this is no small matter for some. At the very least, making other systems and applications aware of the remote infrastructure and platform, and at the extreme end—moving the entire internal architecture to a Cloud model. In either case, it takes time, planning, careful execution, and plenty of testing. Issues from latency to security can cause deployment problems that can be spotted and dealt with through thorough analysis and testing.
- **Education.** Hype about the Cloud is everywhere. Separating technology hype from business reality is a big challenge. Organizations need to educate the business and IT workforce as to what is realistic and what's not. Invest in proper education and reap the rewards of not following the hype. The IT organization has the opportunity to cement its relationships as trusted advisors for business executives that struggle with Cloud and it implications to the business.
- **Offering Maturity.** The Cloud community's wake-up call came when Amazon's EC2 infrastructure crashed in April 2011. Part of IT and the industry's development is going to be learning how to make solutions more available, stable and mature and how organizations should plan for and respond to this type of risk.

2. Technology Considerations for Cloud Computing Services

There are unique technology models, implications, and considerations that organizations must understand in adopting Cloud Computing. This section lays out the technology issues and implications of moving to the Cloud.

Technical Architecture for Cloud Computing

The technical architecture for Cloud Computing has three layers: infrastructure (IaaS), platform (PaaS), and application (SaaS). While we can analyze them in detail down to their correlation to the seven layers of the OSI model (and it has been done, in addition to more thorough analysis), the reality is that each of them has a specific role in bringing the Cloud to reality. Exhibit 3 shows the three layers of Cloud Computing, and how they work together.

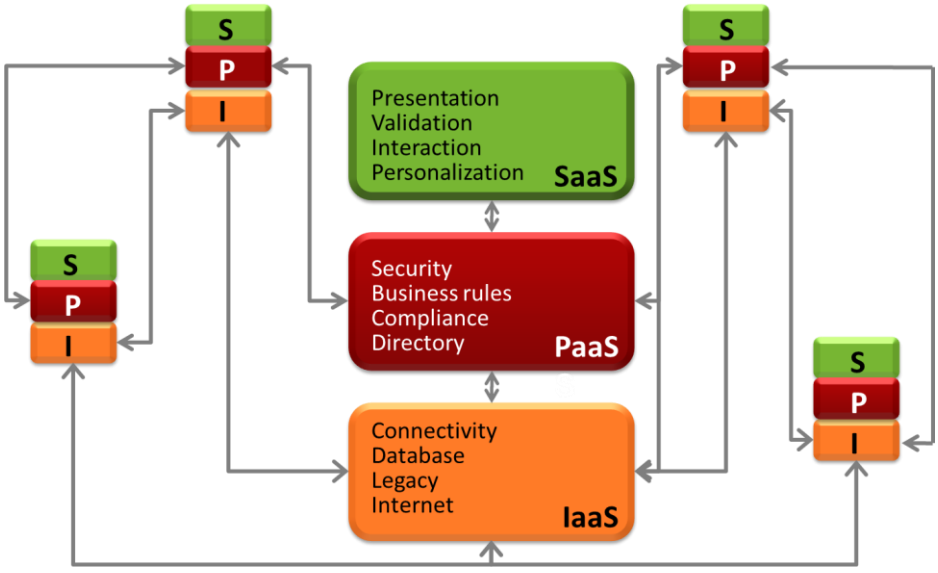
Infrastructure as a Service

The foundation layer is the Infrastructure layer called IaaS or Infrastructure as a Service.

This layer handles integration and connectivity issues—how computers and systems talk to other computers and systems.

Letting all computers and systems be accessible in an open network builds a network of computing power that can be used on an as needed basis. It leverages the power of available systems in a secure and simple manner, giving organizations more agile scalability. As more power is required, more machines are added to the IaaS layer. All these machines behave as a single entity—regardless of the number of them—delivering a single, inter-connected solution that businesses can leverage.

Exhibit 3
Three Layers of the Cloud



Source: HfS Research, 2011

Platform as a Service

The second layer is the Platform layer called PaaS or Platform as a Service. This layer is the group of common services (such as identity verification, security tokenization, among many others) that allow organizations to leverage computer actions that may be reused many times.

It creates a secure infrastructure where each action or activity can be easily authorized, and then continue to be reused. Any computer that is properly authorized and integrated to access the scalable Infrastructure layer can carry out any authorized activity as many times as it needs, in any of the connected systems. Instead of having to handle security, access, and privileges with each call (and for each system in the infrastructure layer), the Platform allows any computer to be authorized once and do whatever it needs—reducing both the complexity as well as the number of steps to accomplish any actions thereby accelerating and simplifying access to systems. The Platform layer handles the communications

between the Infrastructure and Application layers—allowing applications to securely access information and resources from all systems.

Software as a Service

The top layer is the Software layer called SaaS or Software as a Service and can be viewed as the presentation layer. Today, for the most part, software relies on the browser as the interface of choice, since it is the most widely distributed client to access the Internet. We are seeing more vendors adopting REST interfaces to create browser-free, independently run applications. This is even more important as tablets, smart devices, and mobile connectivity becomes the preferred method for accessing the Internet.

Software as a Service provides a very simple interface to access the power created by the Infrastructure and the Platform layers by tapping into the data, processing power, and openness that is created by the Cloud. SaaS applications don't have to be large or complex: by leveraging the services and integration provided by enabling technologies they may be small, simple, and single-function. Witness as a result the birth of applications that are distributed via marketplaces that can deliver incredibly fast and reliable power to very specific needs.

Public and Private Clouds: a War of the Overly Cautious

Lately, a lot of discussion has emerged about the use of private versus public Clouds. The assumption is that public Clouds are open and cheaper and that private Clouds are IT's response for greater agility and flexibility but in a far more secure manner.

Private Clouds are implementations of the three layers model described above, but behind an organization's firewall. In reality, private Clouds are no more than IT infrastructure that is being deployed to resemble Cloud Computing, but that fails the most basic test for using Cloud Computing: riding on an open network.

Still, semantics aside, most large organizations are interested in private Clouds (including, in extreme cases, virtualizing servers and user terminal servers to allow secure, external access to the resources running inside the firewall) than in truly making use of the three layers in a public Cloud.

Private Clouds seldom, if ever, can meet the scalability of the public Cloud. In short, it is a catch phrase used by CIOs and IT Leaders to demonstrate a Cloud strategy. We expect that further education on what the Cloud truly is, how it works, and how it benefits an organization will make the term "private Cloud" disappear. Essentially, we will see the development of hybrid architectures that leverage both public and private compute resources. Organizations need to know when to leverage public or private Cloud architectures. Cloud is becoming mainstream to IT and we expect the term Cloud to fade as businesses focus on its application, rather than its design.

3. Market Outlook for Cloud Computing Services

Give the market another 12 months and it will become clear what it takes for successful providers to build and sell Cloud services. At HfS Research we are already seeing the foundation of the core building blocks that are necessary to compete effectively. At the infrastructure/IT layer it's a straightforward sell. Server virtualization, storage-on-demand and virtual desktop offerings, for example, are well understood and are procured in scale today—in fact providers selling these services find the Cloud narrative effective. Cloud gets complicated for traditional service providers with a business model predicated on armies of business analysts, coders, and testers. Here Cloud has the potential for massive disruption as firms rethink how to build, deploy and manage applications. The real winners from Cloud will be the providers that have the architectural skills, technology depth, and service management capabilities to help clients develop the sourcing model and governance necessary to provision services from an extended ecosystem of third party providers. Quality of service and performance monitoring will determine how well the delivery chain works and just how deep firms can go with slicing up processes for a move into the Cloud. SLAs must be well orchestrated and disaster recovery must be built into the model so service delivery is watertight. Some will look to external providers to provide this orchestration layer as part of services delivery rather than choosing to develop internally.

Research shows strong intentions to adopt Cloud Business Services

The Cloud is becoming increasingly mainstream across geographies, business functions and size of organization. No longer a point solution or departmental tool, the Cloud, in all it incarnations including Infrastructure as a Service (e.g., Amazon EC2) and Software as a Service (e.g., salesforce.com) is being used as a tool for making IT delivery not just better, faster and cheaper, but as an enabler of business innovation and organizational change. A research study of more than 1,050 global enterprises, conducted by HfS Research in conjunction with The Outsourcing Unit at the London School of Economics, identified the following Cloud Computing adoption intentions and drivers:

- **Cloud Business Services are no longer hype.** Two-thirds of business and IT executives view Cloud Business Services as driving innovation in their organizations. Five-year expectations from both senior business and IT executives expect 30% of IT investments to be devoted to the Cloud. This implies that new IT spend will be even more heavily weighted to Cloud alternatives.
- **Cloud Adoption Moves from "Early Adopter" to "Fast Follower" Phase.** Over 60% of organizations already have strong momentum towards Cloud Business Services adoption. Mainstream corporate apps like email, websites, corporate social networking and CRM lead the way but executives indicate use of Cloud services will more than double in the next eighteen months.
- **The Majority of Executives See Value in the Cloud.** Business executives show greater enthusiasm for the Cloud value proposition, but over half of IT executives see powerful value in the Cloud's ability to drive out cost, increase speed to deployment, and facilitate a virtual work environment.

Concerns and Challenges impeding Cloud adoption

Within the context of introducing new types of computing models both concerns and challenges need to be addressed, but they should not be used as obstacles to improving the business.

- **Business executives need more Cloud education.** Organizations have not had enough time to develop best practices within their organization on how to assess, select, implement and manage new Cloud services. Executives need a better understanding of overall Cloud challenges and issues. Specifically, IT and business executives are concerned about security and privacy and the implication of data being housed offshore. Business and IT executives need reassurance over the Cloud's potential negative impact on data privacy and the risk of data being hosted beyond country or state jurisdictions. IT executives voice concerns over provider lock-in, loss of competitive advantage, and developing an effective exit strategy from a Cloud service.

- **Cloud challenges reflect immaturity of the Cloud business model and its implication to the business.** Both IT and Business executives ranked the top four risk challenges as data-compliance regulatory compliance concerns, contingency in the event of business supplier failure, intellectual property compliance, and service levels not being detailed enough. Organizations need to establish appropriate assessments (e.g., workload, risk and business case) for taking applications to the Cloud.

Services providers including consulting firms, outsourcing advisory companies and law firms can help address business, operational, IT and security/legal issues through detailed methodologies. With Cloud adoption now moving from an early adopter phase to a fast-follower phase, executives will find growing support including availability of improving reference architectures, standards and best practices.

Business Users Benefiting from the Cloud

Plenty has been written about the benefits that an organization can enjoy by migrating to the Cloud. Most of those focus on the technical merits of the Cloud: distributed network, power on demand, leveraged integration, open connectivity and improved failover and replication.

While technical benefits may be derived from the Cloud there are also many business benefits that are not being emphasized sufficiently. Indeed, from our survey the top three benefits of moving to the Cloud from a business executive's perspective include:

- Driving down the overall cost of running applications
- Driving down the cost and time to configure applications
- Facilitating a global and virtual organization

Cloud alternatives are not ready-made solutions across all applications or suitable for every business function, but there are a large number of low hanging candidates that can be successfully migrated to Cloud alternatives. The key to knowing which applications and business functions are appropriate requires an understanding of what the Cloud can, and cannot, enable as well as an understanding of an organization's ability to manage Cloud services.

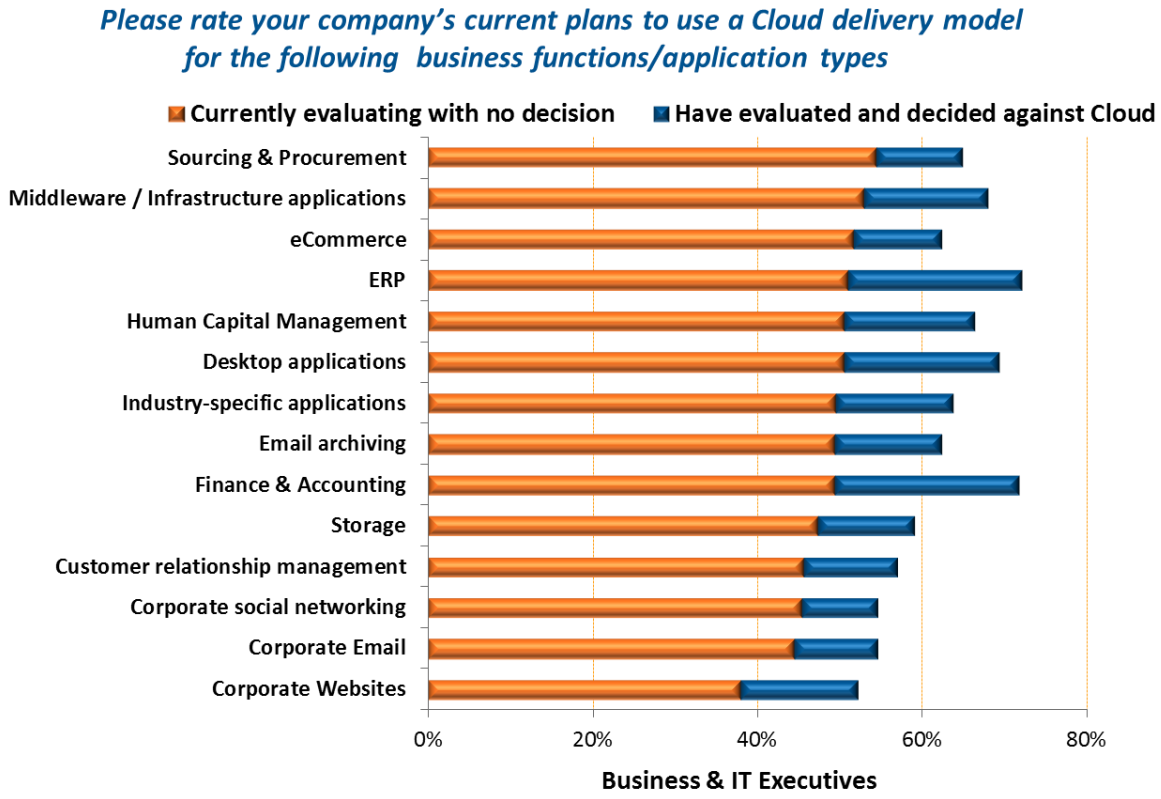
Best Business Functions for Migration

In the research study we conducted together with The Outsourcing Unit of the London School of Economics, we asked respondents to rate their company's current plans to use a Cloud delivery model across 14 business services. The results (see Exhibit 4) show that respondents are evaluating Cloud Computing alternatives across most functions—but also indicated that a handful, namely financial and ERP services (core systems of record that rely heavily on access to several sources of data) were the least likely to be migrated to the Cloud.

At the same time, the study showed that the most popular functions being assessed for Cloud-based delivery are those where the organization works in conjunction with other people from differing organizations such as Sourcing and Procurement.

There are businesses that will not hesitate to step outside of these norms and place business functions such as accounting, or inventory management in the Cloud; their sense of convenience for being in the Cloud surpasses the potential problems of security, and availability. Certainly, there appears a correlation between the sizes of those businesses: they are small to mid-sized, and the complexity of the functions they perform may also explain a willingness to standardize on more productized external offerings.

Exhibit 4
Half of applications still under evaluation. F&A and ERP apps proving least "Cloud-friendly"



Source: HfS Research and The Outsourcing Unit at the London School of Economics, 2011
Sample: 628 Enterprises

Indeed, there are business function characteristics that may make Cloud an appealing delivery candidate for organizations. Those include business functions with:

- Large number of transactions
- Large number of users
- Distributed nature of users
- Multiple data sources needed
- Flexible scalability requirements
- Dynamic workflows

CRM, HCM, and Supply Chain are good candidates for Cloud-based provisioning. Here we illustrate how a number of business functions work in the Cloud:

- **Sales Reporting.** Sales people are mobile and often distributed. Their data needs are relatively simple. Sales people read the latest information about a prospect or client prior to their next engagement to ensure they know what is happening in the account, and update in the same manner following their meetings. Beyond contact and account information—which must be synched to their mobile devices and be up-to-the-minute accurate—they don't really need more. Management can certainly take that data and use it for reporting on account and pipeline status. The mobile nature and potentially large number of transactions make it ideal to be deployed in the Cloud.
- **Customer Service Management (CRM).** Customer service organizations today are typically distributed around the world, and are in need of coordinated information and data. Between outsourcing to third parties and providing

customer service through partners, the complexity is coordinating distant locations that use fairly simple account data and knowledge to complete the job. Both items are easily distributed in a Cloud environment, and the compliance requirements tend to be small enough in most verticals to allow it. Those industries with increased privacy and security compliance requirements may be later adopters (e.g., some health sciences, financial services) but even conservative organizations are finding ways to leverage Cloud for CRM requirements.

- **Centralized Marketing Management (CMM).** Today's marketing organization is a federation of separate initiatives and entities coming together to accomplish a job: inform the prospects and clients. Most marketing organizations outsource a heavy number of their functions to different agencies, yet still want them to be connected. In this case the Cloud-based applications can provide the integration between stakeholders to improve reporting and management.
- **Human Capital Management (HCM).** Today's larger organizations are distributed around the world, some in locations that are too small to warrant a private network to be in place to provide internally provisioned security standards. Organizations are increasingly reaching employees at home to perform talent management, training, recruitment and time and expense management. This, mixed with the fact that a large number of benefits and HR functions are already outsourced, makes HCM and Employee Management functions ideal candidates for Cloud-based delivery.
- **Supply Chain Management (SCM).** Practically all functions performed as part of a SCM implementation require heavy communication and integration features between partners and suppliers. Knowing the status of the manufacturing queue at key suppliers is essential for planning manufacturing and output jobs at factories; understanding their main clients' inventories levels helps suppliers manage their productivity better. This simple exchange of data around the world, in new global ecosystems, may be more effectively performed in the Cloud and many organizations are already doing that. Indeed, leading SCM providers like Ariba have already transitioned their business model from on-premises delivered technology to SaaS.
- **Retail Management Functions.** Distributed retail organizations are excellent candidates and users of Cloud-based alternatives, as they are able to consolidate reporting, improve business analytics and management functions. This process used to require overnight couriers, heavy use of data entry staff, and the daily filling out of complicated forms—all of which have been replaced with automated data distribution that happens up-to-the-minute and feeds directly into centralized computer and financial systems.
- **Community Management Functions.** Marketing and Service/ Support organizations dealing with a new Social Customer are continuing to find that the Cloud is an ideal tool to grow communities and make them partners in their new marketing efforts. The Cloud enables companies to build/leverage online social and professional communities, track brand and company sentiment and collect data/knowledge from customers in a far quicker manner.

A majority of these services have transitioned to the Cloud from more traditional on-premises delivery models while others such as social media and community management are native to the Cloud.

Developing an ROI for Cloud Deployment

When developing an ROI model, no single model is adaptable to all circumstances. Each model must be based on the function and business characteristics of the project at hand. Any vendor selling infrastructure, platform, or software for or from the Cloud will have a set of financial metrics and ROI model. Some assumptions will unsurprisingly be based on too few data inputs with the risk that it becomes too generic. Any ROI (or better said, payoff) calculation can drive positive results with the right information being fed into it. Therein lies the problem for calculating the ROI for the Cloud. The information being fed to the model is either highly leveraged with assumptions (traffic, adoption, maintenance costs, etc.) or is biased towards simplicity. Neither of those models would deliver an acceptable payoff or ROI. For that reason, it is best to focus on the components of the payoff calculations (costs and benefits) and understand which ones are likely to occur when embracing Cloud Computing.

At a high level the potential costs for adopting the Cloud include:

- Infrastructure
- Platform
- Software
- Services
- Process
- People

To counter, benefits include:

- Scalability
- Speed
- Distribution
- Technology
- Resources
- Cost reduction

As mentioned above, your organization needs to identify specific benefits, costs and risks of moving to the Cloud and where appropriate report on your ability to reach key milestones through the implementation journey.

4. The Finances of Cloud Computing Services

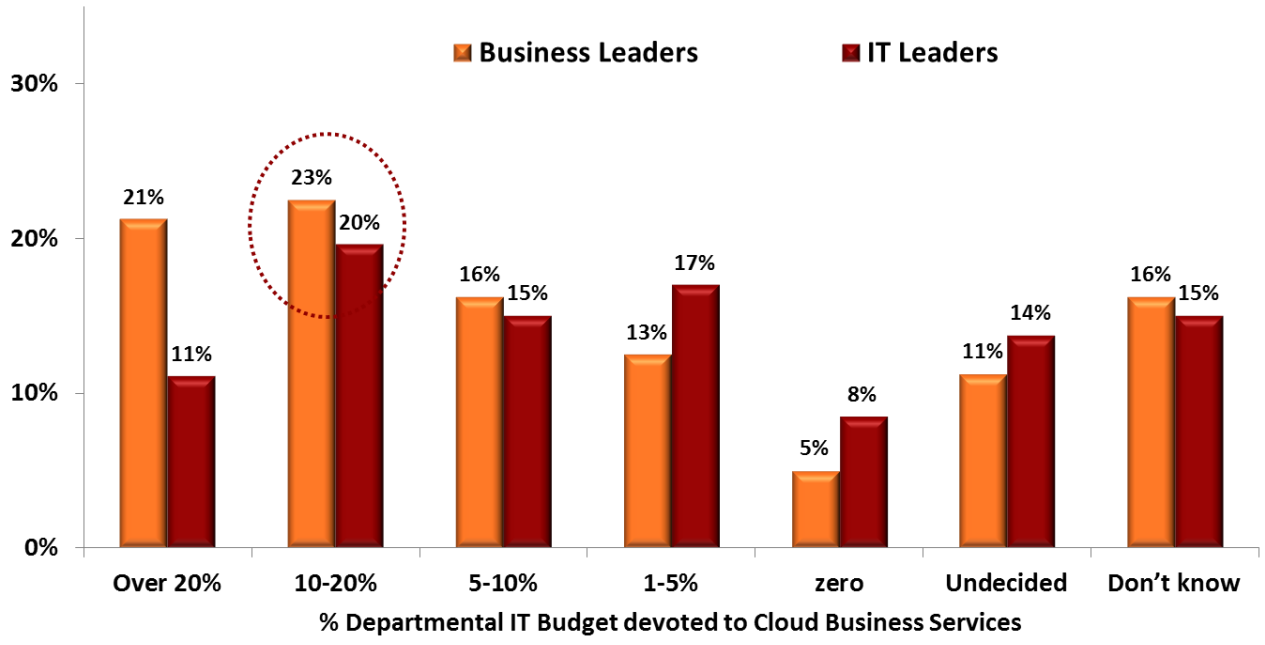
Three areas are critical when analyzing your migration to the Cloud: *budgeting*, *pricing and contracts*, and *risk mitigation*.

Budgeting

Budgeting for the Cloud is a very complex topic for most organizations. It certainly changes the way IT procures and pays for IT functionality. Cloud-based software vendors (those operating in the Software as a Service layer) have been extolling the virtues of how solutions may be bought with Operating Expenditure budget (which traditionally in most firms does not require so many layers of approval). Their reasoning is that since they are providing a service, not a license or a server, they can be paid out of the contractor or consultant budget—and which is largely discretionary. There are two outcomes to this procurement/selling strategy: contracts are going to be department-by-department which bypasses IT's ability to service, maintain, and integrate them, and there are no easy ways for finance or procurement—or even management to prevent it from happening—causing chaos in budget and governance efforts. Significantly, leveraging OPEX budgets, instead of CAPEX, may help drive financial metrics such as return on assets (ROA).

Exhibit 5
Cloud investment plans over next eighteen months

What percentage (as a rough estimate) of your present departmental IT budget do you expect to see allocated to the cloud?



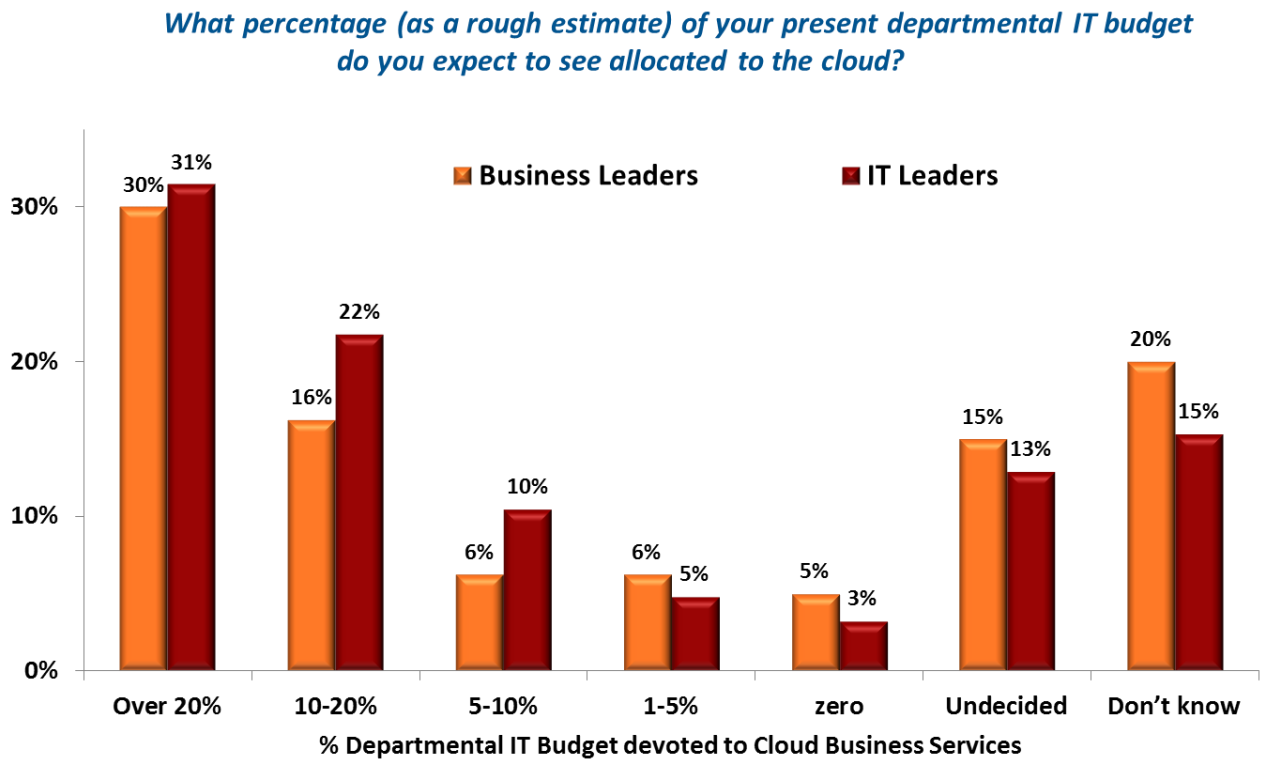
Source: HfS Research and The Outsourcing Unit at the London School of Economics, 2011
Sample: 628 Enterprises

Some organizations have initiatives under way to revert this process to gain control and go back to acquiring technology from Capital Expenditures budgets—where it can be more easily be budgeted, allocated and used. Not only that, but it also makes more sense for IT to integrate whatever elements are necessary and for Finance to plan appropriately and even take advantage of depreciation and other asset-related benefits from taxation departments.

We were curious during our recent research with The Outsourcing Unit of the London School of Economics about budgeting for Cloud projects, and how organizations are reacting to that. Our research (see Exhibit 5) indicates that both IT and Business Executives expect to invest around 20% of their budgets towards Cloud in the next 18 months.

However, when questioned about budget plans over five years both business and IT executives indicated that nearly 30% or more of IT budget would be attributed to the Cloud (see Exhibit 6). As we evolve we will see a strong move towards better plans, better budgets, and bigger implementations—all of that justified by a payoff model that leverages better planning and accounting.

Exhibit 6
Cloud investment plans over the next five years



Source: HfS Research and The Outsourcing Unit at the London School of Economics, 2011
Sample: 628 Enterprises

Pricing and Contracts

While the Cloud model brings potential innovation to the organization, including a better way to price software, platform services, and infrastructure, organizations are concerned with pricing changes and the contracts that follow it. Traditional on-premises perpetual licenses require an upfront capital expense to be paid to acquire/own the software and a yearly maintenance fee is paid to the vendor for services such as bug fixes, security patches and support. Payment for SaaS is typically on a consumption or subscription basis and is an Operational Expense. The low cost of entry is attractive for the business from a cash flow perspective and the "pay as you go" model reduces the risk of buying too much software upfront that may never be used.

Legal, finance and procurement groups need to understand the implications to what the business is signing up for, particularly, as many SaaS/Cloud vendors initial pricing is “under the radar”. Small implementations can quickly become enterprise-wide commitments that can triple or quadruple through “true ups” within a short time span. Certainly, organizations need to ensure that they have the ability to scale up use, as well as, scale down use of software and that any decline in use is reflected in payments. Finance must be able to change the way they depreciate any software or hardware assets impacted by a move to SaaS. Procurement has to track usage of SaaS ensuring that economies of scale are being achieved through a master services agreement. Legal departments and accounting must manage both country and state regulations that are changing rapidly related to SaaS and Cloud Computing, particularly, on how to deal with any local tax implications for use of software.

The contracts we are seeing today are far from innovative, not to mention they fail to truly leverage the Cloud Computing model. Contracts for Cloud Computing today are more focused on the financials than the delivery model of the Cloud. This is, in part, to ease transition of users that are accustomed to one licensing and payment model, and to divide the cost of the perpetual model over the term of the contract and call it a “service” or “rental service.”

Pricing is a complicated item to master for both users and vendors and we are still at an early phase of maturity in relation to Cloud/ SaaS pricing and contracts. Innovation will arrive in the next years that will both improve choice and value to clients but require that clients move to ever more custom agreements, thereby increasing both complexity and risk. A more business focused, output based Cloud Computing contract will emerge that would not focus on the number of users or number of servers; rather, it would focus on the value provided by the infrastructure, platform, or software being delivered to the business. This value will have an intrinsic value down to the specific transaction or sub-transaction being carried out by IaaS, PaaS, or SaaS layers. This, or a commission from it, would be the featured payment from the user to the provider in the form of micro-payments. These micro-payments can achieve values larger than traditional contracts for vendors and may be the future way to finance the Cloud going forward—both for providers and users. Owners and users of an IaaS or PaaS solution may create and resell their own applications that are built on top of Cloud technologies and charge for the value add as a service.

Risk Mitigation

The ramifications of public Cloud availability issues are potentially huge for the industry. When Google or Amazon goes down millions of people and thousands of businesses are impacted at the same time. The press and bloggers take minutes to write volumes on security and availability that question the business model. The fact is that IT, even provisioned from an in-house alternative, breaks. For many organizations the public Cloud provides economies of scale that are better than any in-house alternative. Cloud providers possess built in regulatory, security, and compliance best practices and are expert in enabling technologies. It sets into motion a whole debate about multi-vendor strategy, whether you need a service integrator (the "one throat-to-choke") and how much leverage you'd lose with that strategy. You could lose control over your competitive provider ecosystem if you fail to really understand the underlying technologies of IaaS and PaaS or you do not create the retained management function to effectively deal with business requirements, architecture and vendor management.
In the wake of very public Cloud failures, here are some thoughts on how a CIO needs to approach risk-scenarios:

- Develop detailed "Cloud Back-up/ DR/ risk management scenarios" and get your risk-mitigation strategy firmly in place before moving applications into a Cloud environment.
- Determine if your current in-house development team has the necessary experience and know-how to do this for you. If you are not 100% sure, engage a third-party consultant to help identify key success factors and identify skill gaps. Even a small investment in third-party risk oversight is worth the investment if it helps negate a potential disaster. While ensuring your in-house IT team has some knowledge of the underlying technologies associated with the Cloud goes against the concept of Cloud Computing, it will help you understand the risks associated and help cement a mitigation strategy.
- If you have critical apps in the Cloud, get your service provider to have a stake in your risk-strategy. Determine whether liability and indemnification in your contracts covers you for any outages that are tied to their service provisions and assurances. If a provider subcontracts to a third-party provider, ensure it is responsible for outages.
- Seriously re-examine your multi-provider strategy, because the "domino-effect" and ramifications of an outage may be very complex to manage and resolve. Ensure you understand who is responsible for what, as Cloud outages may only impact some components of applications, but they could manifest to related (automated) applications and could cause failures across entire applications environments. Having a multi-provider governance model could cause all sorts of liability issues—having "one throat-to-choke" could well be highly advantageous in these scenarios. Most large organizations have four or more IT services vendors currently provisioning their development and maintenance, and several have already voiced serious concerns as to how to develop their vendor management scenarios moving forward. Having one service integration provider taking overall responsibility for managing your risk-mitigation in the event of a Cloud outage is one solution, but that strategy could put your whole IT management strategy too far into the control of one provider who can really hold you to ransom in the future, as they are likely to develop an institutional knowledge of your IT processes that would be very tough to transfer. This is why we emphasize you need to have your own IT to staff get smart about how Cloud works, or you really do risk potentially losing control over your IT strategy.

Being Smart about Legal Issues in Cloud Agreements

In its typical architecture, Cloud-based services are not provided as a single “end to end” service. There may be multiple services underlying a provider’s service offering, linking one Cloud-based service to discrete third party services, or even to other Cloud-based services, data feeds, and other third party applications. Alternatively, the Cloud-based services may require a multi-vendor solution where the customer contracts with multiple suppliers as part of the single “Cloud” technology solution. Knowing the demarcation points—physical, electronic and services based—is critical to crafting contractual terms for Cloud services. This information will help a customer understand where a particular supplier’s obligations start and end, and related service limitations.

With this information, a customer can address key risk items in Cloud-based services agreements:

- **Structure:** Will there be one contract with one supplier that includes all services under the Cloud solution, or will the customer need to have separate contracts with each key supplier? Having one “throat to choke” provides greater accountability and will be easier for a customer to manage than multiple relationships. Having a responsible “prime contractor” may make sense in some situations as well.
- **Pricing Model:** Will the solution provide true “scalability” in terms of pricing, or will there be minimum commitments to “keep the lights on”, regardless of levels of use? How will “change” be addressed, particularly in terms of changes to technology and architecture, which are changing rapidly?
- **Service Levels:** Knowing the demarcation points can help create meaningful service levels. For instance, what does “Availability” measure? From which point to which point? Across Clouds? Across a multi-vendor solution?

- **Service Improvements:** Based on the Cloud service particulars, should service improvements be mandated? Should they address concepts such as improved service levels, technology refresh (whatever that may mean in a Cloud-based setting) and cost reductions?
- **Single Sign On:** Will the authentication of a user's identity carry across Clouds? Will a service provider take on the responsibility to ensure this takes place appropriately?
- **Encryption and Architecture Requirements:** Again, will a supplier of a Cloud-based service have the ability to ensure that data is encrypted uniformly across the entire technology solution? Will the technology solution follow a customer's specific technical architecture requirements or restrictions (i.e., technical architecture to ensure data security)?
- **Integration and Interoperability:** Will the entire solution properly integrate with the customer's own retained systems and data structures? Which party takes on this responsibility? Will updates to the Cloud-based service remain interoperable with the customer's systems? Will the customer have sufficient notice of such changes to address the issue, particularly if it requires the customer to modify its systems or interfaces?
- **Privacy:** Based on the types of data involved (e.g., personally identifiable information), how and where the data is processed and stored, and the geographies involved, will the Cloud services be in compliance with all of the implicated privacy laws and regulations? Which party takes on that responsibility?
- **Intellectual Property Infringement Risk:** Will the service provider protect the customer (i.e., indemnify the customer) for third party claims that the Cloud services or access and use by the customer infringes a third party patent or other IP right? Since Cloud-based services are provided in multiple jurisdictions, will the service provider take on this risk regardless of where the claim is made (i.e., worldwide)?
- **Ensuring Continuing Value:** Cloud technology and service offerings are changing on a rapid basis. Will the contract provide the customer with protections to ensure the continued viability of the value proposition for entering into the Cloud-based services agreement? How will the parties address new or replacement services that may become available, which may provide greater cost savings or other advantages? What if these are third party service offerings the current Cloud supplier does have available at that time?

5. Service Provider Overview

Outsourcing service providers sense another "paradigm shift" in the form of Cloud and "as-a-service" offerings and are revving up sales/marketing in response. In some cases they are repackaging/dusting off existing solutions as "Cloud Services." Service providers recognize that the utility of Cloud Services is its power; however, being able to scale up/scale down and billed by the hour/use will change IT delivery and the IT industry around it. The key question is when? When will customers start adopting Cloud beyond the pilots and the well-known infrastructure service offerings repackaged as Cloud? HfS identifies six triggers for Cloud that drive service provider development in the marketplace today (see Exhibit 7).Exhibit

Exhibit 7
Cloud Triggers and their impact on Service Providers

Cloud Trigger…	Services are…	What they do…	Sold to…	Business impact
Accelerate virtualization	Computing centric	Virtualizing servers helps to reduce server sprawl and drives efficiency from computing. The benefits include shifting dynamic workloads, pooling resources, simplifying updates and linking costs through to consumption.	IT	Low
Accelerate application development	Solution-centric	Abstracting developers from the infrastructure dominates current Cloud spending. Cloud provisioning works to minimize delays around testing schedules and application releases.	IT	Low
Re-platform applications for as-a-service delivery	Solution-centric	Migrating applications to Cloud platforms such as Microsoft's Azure platform or Force.com. Works well for services that are collaboration heavy and have relatively low security requirements.	Business & IT	Medium
Developing new applications that have a "Cloud spec"	Solution-centric	Architect new applications to be run as SaaS Cloud-based applications and may have to handle peak workloads.	Business & IT	High

Vertical apps that address "white spaces"	Business-centric	New solutions that identify white space opportunities either in current business processes or in niche verticals. Solutions may be standardized. Services providers may also develop template driven solutions for their clients.	Business	High
Develop new governance models and skills for Cloud delivery	Business-centric	The success of a Cloud sourcing model may depend on how effectively services providers can implement and manage improved governance mechanisms. New forms of KPIs, SLAs, and contracts will emerge to assuage the fears of interoperability, data handling, service assurance, and drive service integration.	Business and IT	High

Source: HfS Research, 2011

What's really going on is the landscape of Cloud providers is shifting into three main plays—compute centric service offerings that drive down cost, solution centric service offerings that drive faster deployment, and business centric service offerings that enable more agile processes and even new sources of business innovation/revenue streams.

Exhibit 8
Providers jostle for position

Prototype	Value proposition	What's the play?	What it means	Examples
Compute centric providers	Radically reduce the time needed to provision, run, and configure infrastructure in support of business operations	Technology based. New economies of scale supported by standardized and pooled IT resources	Virtualization, virtual desktop, storage, bursting on data-center and network enabled delivery models Map to the CIO office with buyers focused on eliminating risk and moving the needle on low cost services	Amazon, Dell, Google, Rackspace
Solution centric providers	Accelerate service delivery cycles set around Cloud technologies to speed up application implementation	SaaS propositions for ISVs; SMB plays; Application reworks for app/dev providers	SaaS based service offerings give business application functionality quickly and reliably New service propositions focused on Cloud dev platforms allows app/dev providers (and internal developers) to revisit propositions — re-platform existing solution stacks to reduce cost	salesforce.com, Microsoft (Azure), Force.com Cognizant, Infosys, TCS, Wipro
Business centric providers	Build and run the governance, interfaces and ecosystems necessary for firms to provision agile business processes	Governance based, ecosystem marshalling, outcome based results, process innovation	Rethink governance to allow firms to procure and charge on a business outcome basis	Accenture, CSC, Cap Gemini, HP, IBM Global Services

Source: HfS Research, 2011

Service Provider Profiles

The following profiles analyze some of the established giants of the IT/services landscape that are battling for leadership in the upcoming years including Amazon, Accenture, Capgemini, CSC, Cognizant, Dell, IBM, Fujitsu, HCL, HP, IBMGS, Infosys, iGate-Patni and TCS. Leadership and success will not be solely based on vendor owned offerings but increasingly the partners that firms can recruit to their Cloud ecosystem.

Amazon	Detail
Cloud offerings	Compute centric and solution centric—its focus is on IaaS (infrastructure as a service)
Strategy	Amazon Web Services (AWS) is a leading model for a public Cloud IaaS offering. Amazon offers a compute and platform model that enables developers to use its services on-demand with unlimited flexibility. Going forward, Amazon will continue to develop its compute and platform services to further penetrate companies IT budgets.
Core offerings	With AWS, clients can requisition compute power, storage, and other services–gaining access to a suite of elastic IT infrastructure services. AWS's services model represents the core principles of Cloud Computing, which continue today: resource flexibility and pay-for-use. Additionally, AWS continues to expand its services. For example, AWS offers a virtual private Cloud that enables users to secure a specific set of isolated compute resources via VPN and extend their existing IT management capabilities (i.e., security and administration) to AWS resources.
HfS Opinion	AWS's agnostic, scalable, and transparent compute and platform is shaking up the traditional IT services business, and the company is well-positioned to continue its growth as a leader in public Cloud services. Take as evidence the number of industry stakeholders (both large and small) in the Cloud ecosystem that currently partner with AWS. Rest assured Microsoft and other key industry players (think HP and IBM) will keep close watch as the AWS business model develops. Many enterprise customers use AWS for development and testing to bypass corporate IT. Compute pricing is low; however, data transfer for data intensive workloads becomes a major concern that organizations sometimes fail to predict. AWS has few enterprise production SLAs and is typically not used for production workloads—it is not viewed in the same light as dependable IaaS hosting providers (Rackspace, Opsource, Savvis, and Navisite). That is the reason a lot of SaaS providers host with these providers. Amazon does have attractive pricing alternatives for customers such as On-Demand Instances, Reserved Instances and Spot Instances based on use cases.

Accenture	Detail
Cloud offerings	Solution centric, and business centric services
Strategy	Accenture aligns itself firmly on the business side of the Cloud though it does have a robust service portfolio for CIOs. Accenture views Cloud as a strategic lever to radically reduce cost and drive process efficiencies. Services help customers navigate, build, and integrate service delivery through the Cloud and blend it effectively with existing delivery models.

Core offerings	Accenture offers a full suite of Cloud services spanning planning, implementation, and service assurance/governance to make the Cloud model work. Services capabilities flow through functional areas: Defining Cloud strategy for customers with diagnostic tools and workshops; services for building and enabling public/private Cloud infrastructures; undertaking a SaaS based implementations; support for next generation application development and re-platforming existing application stacks; and, finally, business-as-a-process utilities. These process Clouds are the most intriguing and differentiate Accenture as it brings to bear a one-to-many platform to automate highly standardized processes for customers. These end-to-end processes cover not just software but also people and processes such as those found in the marketing or sales office.
HfS Opinion	The services opportunities for Accenture with the Cloud are significant, with multiple routes to market growth as a Cloud services aggregator, Cloud services facilitator, Cloud integrator, and the ability to build IP on top of the Cloud. Moreover, it can leverage its significant BPO presence to develop its capabilities as a Business Process as a Service (BPaaS) provider. Accenture Software can leverage new Cloud architectures. It clearly has opportunity in BPaaS and Cloud Business Services both to take existing services and run them better, faster, and cheaper, but also to productize their own IP to create repeatable subscription based services offerings (for example, its Navitaire offering for the airline industry). Certainly, Accenture will find a role as consultant around Cloud IT/ Cloud Business for large organizations, with the firm straddling both IT and business transformation competencies.

Capgemini	Detail
Cloud offerings	Solution centric and business centric
Strategy	Capgemini offers several private Cloud options. Capgemini can provide the consulting, implementation and management of Cloud environments and it has made great efforts in building a robust Cloud ecosystem.
Core offerings	Capgemini's Cloud offering is split into two distinct offerings. The first is a clear focus on private Clouds. With three distinct private Clouds, Capgemini offers clients varying degrees of control and automation of the underlying infrastructure. Moreover, each follows the core Cloud principles (i.e., services on-demand and pay-for-use). The second offering—'Capgemini Immediate'—is a Cloud ecosystem best described as 1) a partner operating model representing a fully-vetted collection of 250 market-leading service providers, 2) a federated business platform that securely and seamlessly brings the partners together with their client's systems, and 3) a commercial management model with services provided and billed under a single contract. Together these three components enable clients to engage public Cloud capabilities and services in conjunction with their proprietary systems.
HfS Opinion	Capgemini has taken a pragmatic approach to the development of its Cloud offerings. The offerings enable Capgemini to promote Cloud as a viable addition to its robust solution offerings.

CSC	Detail
Cloud offerings	Solution centric and Business centric
Strategy	CSC's Cloud strategy is to secure its position in the medium term with existing clients offering a long-term vision as a services integrator. The firms Cloud strategy offers three entry points: private Cloud, community Cloud and public Cloud with professional service offerings designed to support clients through the plan, build and operate phases. The portfolio is set to grow around business processes, software, platform and infrastructure.
Core offerings	CSC provides a robust set of professional services offerings through its Cloud workshops. CSC works with customers to establish which elements of their existing contracts can be ported to the Cloud. Account teams offer Cloud enablement workshops that set up a blended solution to reduce total costs on existing operations. The workshop identifies elements of infrastructure, application and process work streams that can move into a private, community, or public Cloud, and those that must remain in the traditional hosted model. The result? A blended Cloud solution. CSC also offers a "Cloud watch" service that offers a scan of the marketplace to help customers figure out what is client ready on the SaaS side.
HfS Opinion	CSC strategy is an intelligent one for the company and is designed to ease the journey for existing accounts rather than winning new ones. Its positioning as a service integrator will bear fruit once customers recognize the difficulties in running a Cloud model, and it offers customers insight into how the services ecosystem will look in the future. CSC has had some success in building collaboration related SaaS implementation wins (Royal Mail and Lotus Live) and (Google and LA County). Potential assets for leveraging IP include private Cloud for government and CSC Software. The firm will need to change the culture of CSC from "listening" to customers to really investing in Cloud ahead of demand. Siki Giunta, the former CEO of software provider Managed Objects, now runs Cloud for CSC, and has the potential to advance CSC's positioning and capabilities in the Cloud market.

Cognizant	Detail
Cloud offerings	Solution centric and Business centric
Strategy	Cognizant can develop and enable clients to leverage and benefit from Cloud services. It provides the consulting services around key SaaS providers as well as provides integration services to on-premises IT. A major investment is already underway that is integrating new forms of collaborative work with heavy investment in BPaaS offerings.
Core offerings	Leveraging its long history of process excellence in combination with managing third parties, Cognizant is developing and defining new BPaaS solutions to drive new growth. These solutions leverage the many benefits associated with Cloud Computing (i.e., pay-as-you-go and elasticity). The company is productizing IP in emergent verticals and horizontals (e.g. clinical trials management, order management as a service).
HfS Opinion	Cognizant leverages a low cost and talented development staff to build Cloud-based applications for clients and for new BPaaS offerings. HfS believes Cognizant is using the Cloud as an underpinning enabler of business change, alongside advanced analytics, and collaboration and it will remain heavily geared towards the Global 2000.

Dell	Detail
Cloud offering	Compute centric and Solution centric
Strategy	Dell's suite of services is intended to radically reduce the time needed to provision, run, and configure infrastructure in support of business operations. Dell focuses on the IT buyer, and its Cloud offerings are sold as part of the next generation of IT operating models that Dell believes span the data center. Dell puts its data center and storage expertise firmly at the forefront of its Cloud strategy with moves to virtual environments and SaaS creating a channel for its security, integration, and IT management expertise.
Core offerings	Service offerings focus on building the next generation of data centers and reveal an impressive set of global data center investments to date. These services are designed to take advantage of modular, hyper-scale and high-density principles focused on Dell OEM expertise. Dell offers a suite of next generation services offerings that provide consulting, storage, and SaaS.
HfS Opinion	Dell will be heavily expanding its SaaS footprint through acquisitions targeted at managing Cloud infrastructures. HfS does not expect to see Dell move into the PaaS market in the enterprise space. HfS expects multiple Dell acquisitions in the next two years in the storage, software and services space, having already acquired Boomi as a SaaS/on-premises integration technology provider. Additionally, Dell has opportunity to develop more business-focused solutions in the healthcare market the result of its Perot acquisition.

Fujitsu	Detail
Cloud offering	Compute centric and Solution centric
Strategy	Fujitsu positions Cloud as the foundation to create new types of public and other large-scale IT infrastructure systems; however, at its root is a service portfolio that offers consulting, applications, infrastructure, and networking reworked for Cloud delivery
Core offerings	Fujitsu's services help organizations explore and determine the business value that Cloud can offer with a focus on security, legislation, and data compliance. Its Cloud infrastructure services provide managed hosting or self-service access to infrastructure from Fujitsu data centers with offerings for virtual desktops, voice, and collaboration. Fujitsu's management services provide holistic support for virtualized computing systems and help to visualize implementation details as well as power consumption.
HfS Opinion	Firmly positioned on the IT side of the house. Service offerings represent an evolution of Fujtisu's service portfolio.

HCL	Detail
Cloud offerings	Solution centric and Business centric
Strategy	HCL Cloud strategy leverages its existing service portfolio while positioning itself as a channel for new Cloud services. HCL delivers services around IaaS, PaaS and SaaS but sees opportunity with BPaaS. HCL views the ecosystem as an important element of any Cloud strategy for the future with service integration and aggregation playing an important role.
Core offerings	Cloud readiness/migration assessments offer technical feasibility pilots to settle the delivery model and architecture. In addition to the explore phase, HCL offers implementation services through a SaaS enablement practice as well as supporting the build out of public Clouds for customers. HCL offers operational support from a proprietary service delivery platform as well as application support and maintenance and remote infrastructure support. As a Cloud services provider, HCL offers a host of SaaS based services around specific vertical and horizontal gaps, PaaS based services that support clients as they manage application life-cycles for the Cloud, as well as IaaS offerings for disaster recovery and shared compute and storage.
HfS Opinion	Sees Cloud through an IT lens, albeit, a highly automated and Cloud aware one. HCL's Cloud lifecycle offers exploration, experimentation, adoption, integration, governance and retirement for Cloud and its investments reveal where it sees the opportunity—service aggregation.

HP	Detail
Cloud offerings	Compute centric, Solution centric and Business centric
Strategy	HP believes that "Cloud Computing is going mainstream and HP is leading the way." HP plans to 1) help customers transition to the Cloud and build Cloud infrastructures, 2) work on its own Cloud platform (PaaS), and 3) build an open Cloud marketplace and prepping a Cloud ecosystem.
Core offerings	Through its breadth and depth of actual and proposed offerings, HP wants to enable the "Instant-On" enterprise. From transforming applications and managing and monitoring Cloud services, HP is prepared to help businesses move into their own-built private Clouds as well as public Clouds. HP's offerings include its CloudSystem turnkey enterprise private Cloud, its hybrid Cloud Service Automation offering, and its Cloud Maps service that optimizes applications for the Cloud. HP also offers its Enterprise Cloud Services for Compute, which comprises server, storage, network and security, and bundles them as a service.
HfS Opinion	Based on the broad number of service offerings, both existing and proposed, HP certainly has the capability to operate at the front of the pack. Coupling its converged infrastructure capabilities with its Cloud platform and application optimization offerings, HP is out to own the entire Cloud stack. The firm has the datacenter hardware, software and services to make it work, however, HfS has observed a poor ability from HP to communicate effectively a Cloud strategy with key industry stakeholders.

IBM	Detail
Cloud offerings	Compute centric, Solution centric, and Business centric
Strategy	Positions service offering around the IT lifecycle of Cloud (plan, build, deliver) with an impressive network of Cloud solution centers linked into IBM's global delivery model. These provide proof of concept, playbooks, presales, and customer training for dynamic infrastructure, virtual desktop, and Cloud bursting among other Cloud themes.
Core offerings	IBM's suite of service offerings and technologies continues but in essence IBM focuses on the three major engagement areas with its clients: plan/build/operate. Service offerings upfront establish the Cloud workload and deployment model between public/private/hybrid and the service type—IBM consulting teams work with clients to establish the overall Cloud strategy and architecture model. As solutioning moves into the build phase, service offerings focus on virtualization, automation, and integration capability (through its acquisition of Cast Iron systems). Finally, the company works with customers to remove operational concerns by applying risk management and IT governance capabilities. Threaded through IBM's Cloud portfolio is its security framework that tests and deploys data controls, network endpoints and application, and processes.
HfS Opinion	As size and longevity befits a service provider, IBM Cloud service offerings are comprehensive and are industrialized. Setting service delivery around plan/build/operate is clever, and the link into IBM's global delivery model, expertise in middleware integration and software/hardware demonstrate its speed in the Cloud services marketplace. Of interest is the high priority the firm has put on security. It is unclear whether IBM will ever play in the enterprise applications stack unless it is through acquisition, with such obvious opportunities in Cloud Business Services and BPaaS. Its recent acquisition of Cast Iron that performs SaaS/on-premises application integration and marketing applications Unica and Coremetrics are steps forward in this potential direction for the firm.

iGate Patni	Detail
Cloud offerings	Solution centric and Business centric
Strategy	iGate Patni's Cloud Practice leverages its technology capabilities in virtualization, storage, infrastructure, migration, security and testing. The firm's Cloud initiatives aim to provide guidance to customers facing challenges migrating to public, private, or hybrid Cloud-based models.
Core offerings	IGate Patni offers four sets of services through its dedicated Cloud practice—Cloud acceleration program, Cloud outsourcing, Infrastructure, and Testing-as-a-service. iGate Patni's Cloud acceleration program (CAP) is the most significant and is designed to contain customers IT costs, protect critical assets, plan for disaster recovery, and integrate global business processes. CAP offers IT and business assessment workshops for customers and utilizes the ITIL 3.0 standard for IT Service Management (ITSM). CAP involves a strategy workshop: design of the architecture, transition, operations, and continuous improvement methodologies. iGate Patni focuses on the technology consideration, quality of service as well as the target operating model for infrastructure. iGate Patni's Cloud infrastructure enablement offering provides an integrated view of virtualized infrastructure with ongoing monitoring while ensuring service levels.
HfS Opinion	Firmly on the IT side of the house but with some BPO expertise, iGate Patni's Cloud capabilities map to client demand and the company's strengths. The CAP program is clearly articulated and easy to understand.

Infosys	Detail
Cloud offerings	Solution centric and Business centric
Strategy	Skews its Cloud strategy towards a strong set of professional services that offer a modular approach to supporting clients. Infosys is also productizing its IP for Cloud delivery through Business Platforms, as well as priming a SaaS based channel with strong relationships with several "as-a-service" providers for specific horizontal and vertical coverage.
Core offerings	Suite of professional services includes Cloud strategy and adoption workshops with tool-based analysis, business case builder, ROI calculator and roadmaps that build Cloud service catalogs. The firm's aggregation and migration services offer customers tried and tested Cloud enabled services to support customization of the business service catalog with data migration, application migration, application remediation, and user experience services built into the mix.
HfS Opinion	Infosys has an easy to understand suite of Cloud services that plays to the company's strengths as a Tier 1 offshore provider. The modular approach to Cloud service provision is clever and their vision cannot be doubted in terms of where they see the market going and what they want to be. They understand how the Indian model will need to change, and the service integrator role marshalling an ecosystem of providers for their clients could well be theirs.

TCS	Detail
Cloud offerings	Solution centric and Business centric
Strategy	TCS Cloud strategy demonstrates its commitment to emerging markets with a focus on productizing software solutions supported by Cloud technologies. Global customers see TCS focus Cloud services at the tactical and strategic level—tactical that continues the evolution of virtual technologies and strategic to offer experimentation with new business models and capabilities for clients.
Core offerings	Launched three strategic offerings to date—two for the emerging marketing and one for the global market—Banking Cloud, ION platform (emerging), and process Clouds (global offering). The Banking Cloud is aimed squarely at the small regional banks in India—TCS offers single instance, multitenant version of its banking solution; The ION platform offers microbusiness IT services through the Cloud; and Process Clouds focus on new areas such as HR analytics, which is achieved through partner platforms such as SAP. Offers a suite of professional services to support clients with their tactical move to Cloud with global consulting teams delivering the "art of the possible for clients" with a Cloud readiness assessment workshop and another set of services around the development and test environment.
HfS Opinion	TCS follows a strategic and tactical approach to the Cloud. Its service offerings reveal a refreshing reality in terms to what the Cloud can do for clients and where it can be used. The innovative capability of reaching the SMB market is to be admired if success is achieved.

6. Executing for Cloud

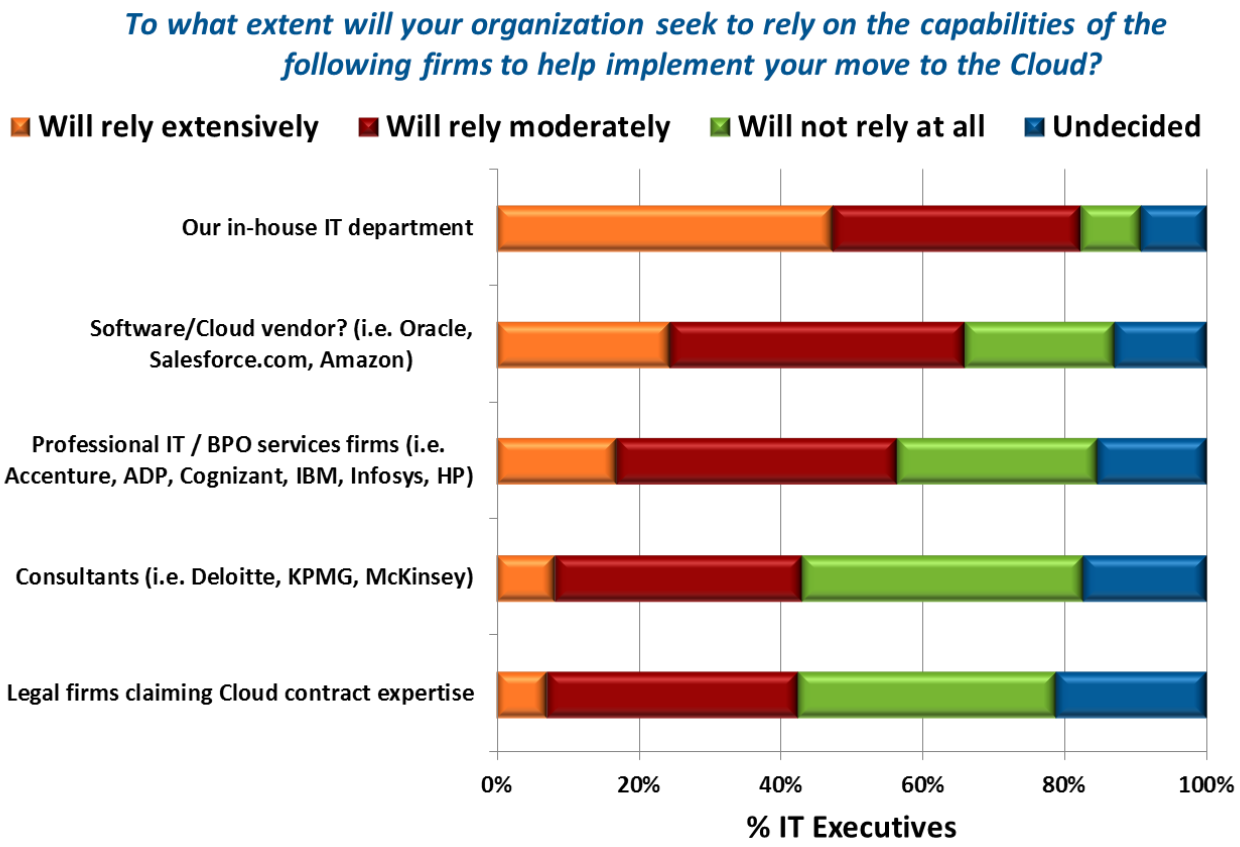
To IT executives and CIOs, the Cloud is a technology and business enabler. If they can master these new innovations effectively, then they can reduce the costs of provisioning technology and the time to deliver projects to business units while planning for newer and more innovative solutions for business units to deploy.

Leveraging the technologies and lessons from Cloud Computing is not going to be easy. Business stakeholders have realized two things about Cloud over the past few years: 1) by using Cloud applications, they can bypass IT and the associated constraints and requirements, and 2) the business can achieve their outcomes more quickly and easily. While this is not endorsed or accepted by central IT, which usually has to go back and make sure it all works as intended, the business interest remain focused on meeting the expectations of their stakeholders, namely end consumers or business partners.

In our recent survey (see Exhibit 9) when asked who they would rely on to help implement a move to the Cloud, IT executives expressed their desire to build expertise in-house, followed by a preference to rely on vendors, and just a minority selecting consultants (results are over 100% since they were allowed more than one answer).

This begs the question: How will businesses reach the level of maturity required to successfully manage Cloud Services?

Exhibit 9
IT Executives have the same perspective on where they need Cloud expertise



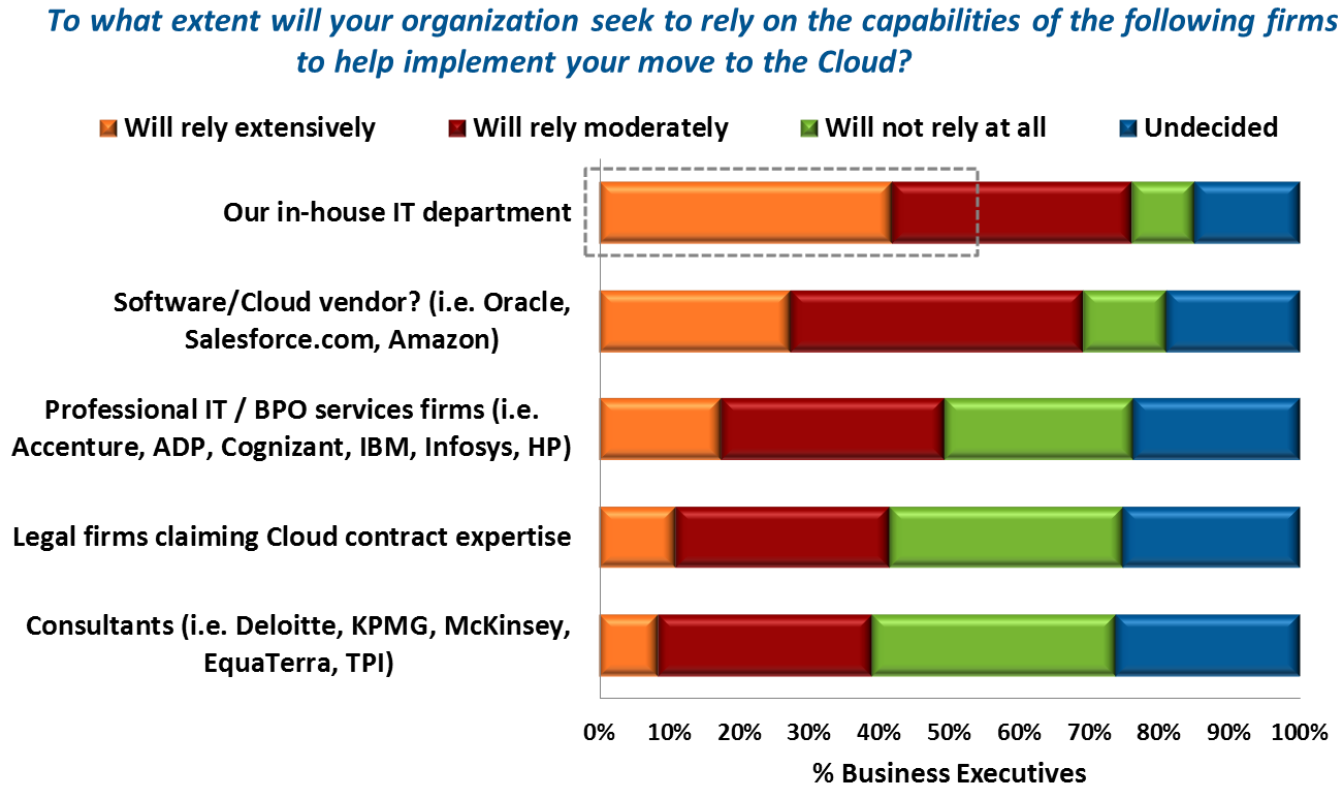
Source: HfS Research and The Outsourcing Unit at the London School of Economics, 2011
Sample: 214 Enterprises

There are five steps that IT executives must take to embrace the Cloud and build their in-house expertise:

1. **Educate**. Education cannot be emphasized enough. Cloud Computing is a complicated topic. Understanding what services go in the software, platform and infrastructure layers will take time. CIOs and IT Executives should focus first and foremost on educating their people on what the Cloud can do and on what is hype that probably cannot be fulfilled.
2. **Partner**. A trusted council can help provide the right advice and input at the right time. Build a partner ecosystem between Consultants, Outsourcers, Analysts, Advisors, and System Integrators that are trusted and know your business, and rely on this council for guidance—not for decisions.
3. **Plan**. It should go without saying, but to build a plan for the Cloud that takes either 1) a vendor's word about the ability to execute, 2) a consultant's work as the best path forward, or 3) a blind leap forward is not the best solution. Worse, when those approaches fail, the rest of the organization ends up resenting the move to the Cloud and your decision. A proper plan should identify the appropriate applications that can leverage Cloud Computing benefits including determining the necessary change requirements and best transition plans.
4. **Architect**. Any move to the Cloud will require the re-architecting of the existing infrastructure layers but also systems and applications. Revising all these systems, integration points, and making necessary changes for them to continue to work the same (or better) under a normal deployment requires a dedicated and informed Architecture function.
5. **Test**. Testing thoroughly before deployment to ensure performance and acceptance by end users is going to be paramount to success. Change management should be at the forefront of a migration of this magnitude; nothing will derail adoption for end users faster than a slow system (by comparison) or one that requires them to do things in more steps or in a more convoluted manner than before. Recent Cloud outages demonstrate, if anything else, the importance of preparing for the most unlikely of situations—since they are the ones that bring plans and strategies to their knees.

HfS's most recent research indicates that business users do trust their IT solutions, but remain willing to bypass IT and go directly to vendors if the internal resources are not available and ready to go when needed (see Exhibit 10). In other words, CIOs and IT executives may not have made a strong-enough case for being included in SaaS procurement cycles. IT organizations should proactively assist the business to evaluate Cloud/SaaS opportunities, perhaps even ceding that some SaaS standalone solutions provided by vendors are better candidates that internally provisioned function.

Exhibit 10
Expectations to deliver on Cloud on in-house IT staff are high from business function



Source: HfS Research and The Outsourcing Unit at the London School of Economics, 2011
Sample: 414 Enterprises

We believe that IT and business must work together on Cloud opportunities and these next five steps can help move both forward in the best possible way.

- **Investigate:** An organization should be aware of what other organizations have experienced in terms of Cloud successes, failures and any developed best practices for managing cloud deployments. This may be achieved using traditional research tools: talking to advisors, consultants, and even getting references from vendors. Use the Internet to find documented cases similar to the ones being considered, and make use of detailed discussions and conversations inside Forums and other Communities. A good understanding of what has happened, the results, and the lessons learned can be accomplished with relative ease.
- **Educate:** IT must educate both internal IT and Business Executives with case studies on what others have done, the lessons they have learned, the benefits for the business and its clients/customers, and how it will change core functions. While technology education is not discouraged, it is not likely to add much to the business executives' needs, though it may help with any regulatory, privacy or lock in challenges that may impact business in the medium term.
- **Partner:** Contrary to what is currently happening (e.g., the line of business trying to avoid dealing with IT resources and implemented solutions), we have found the most complete and successful Cloud implementations are those that have partnered Business and IT staff. We strongly recommend that at the very minimum one resource from each group be assigned to meet and discuss needs and wants from the business side and the correlation to

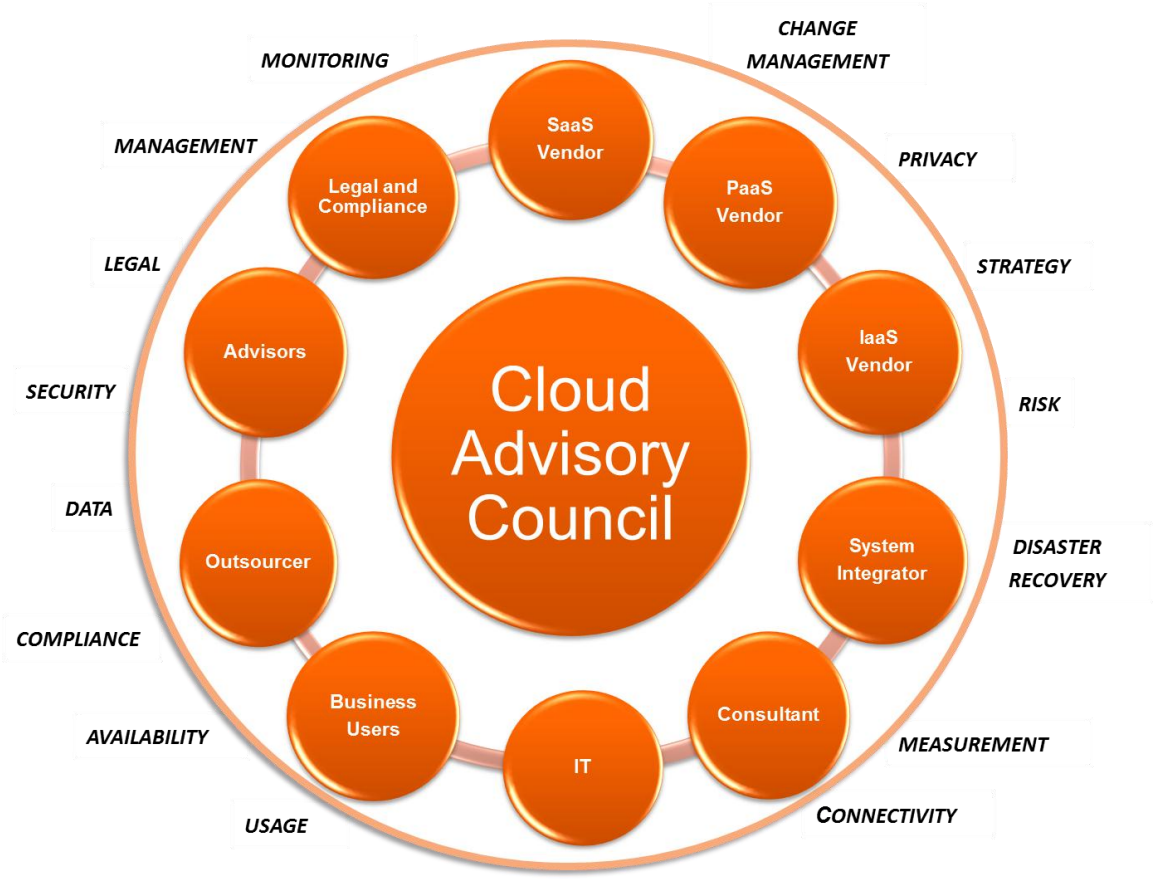
ongoing and upcoming projects from IT. This ensures that the projects and available resources are assigned in the right priority for the business to achieve their goals.

- **Negotiate:** A critical element of partnering is the negotiation with IT for resources and priorities. Business needs and wants change far more quickly than IT can traditionally respond. This is the basis for the perception that IT at times is "falling behind" business needs. The need for planning, testing, and change management make it so that IT cannot react as quickly as businesses users would expect them. Engaging in active negotiations for IT resources as changes in business needs occur is critical for the success of both. There has never been an occasion before when business users needed technology so widely, and quickly, and they can source it directly themselves. IT needs to build positive relationships and help as an advisor to the business. This new role will make IT a key player in the future of the organization.
- **Invest:** One of the reasons business users prefer Cloud-based applications is that they are, in their estimation, cheaper. Although research has shown that over the time the cost of most contracts (four to five years are very similar) the lack of an upfront CAPEX followed by smaller payments for maintenance and support and the lower monthly commitments make Cloud seem better value to the Business. In other words, they are making an investment, spread over time, for their applications. Most business users would be better off taking savings made from any move to the Cloud and invest them in a business initiative that will help them achieve their goals.

The Ecosystem

The leading implementations we have studied show that organizations create an ecosystem of resources and rely on each based on their unique values (see Exhibit 11). This ecosystem is a council body or committee that helps IT and Business Executives collaborate to make the right decisions and implement them in a timely manner.

Exhibit 11
Cloud Advisory Council



Source: HfS Research, 2011

Each member of the ecosystem brings value to the table. For example:

- **IT:** IT provides technology knowledge on how to tie systems, vendors, providers, and consultants together. They also hold the key to some, or most, of the technology budgets within the organization, as well as compliance, legal, and maintain technology standards for the organization. They also, typically, hold a seat on the Executive Management table in the form of the CIO. So they can get management approval, if needed, for projects and deployments.
- **Business users:** The business user end-goal is to make sure that what they do works for the organization and they bring business requirements, process knowledge, IP and metrics. Certainly business application owners will want to understand any infrastructure that is supporting key applications including understanding processes associated with change management, upgrades and maintenance windows.
- **Software vendors:** Software vendors bring the specific know-how of what their solution does, in detailed technical terms, and what others in the market do as well. They have extensive experience navigating procurement and purchasing departments, which should not be discounted, and they are an essential part of planning for implementation and integration to other systems. They have either the partnerships or the resources through Professional Services to help install, deploy, and optimize the implementations as well as troubleshoot problems.

- **Platform vendors:** Platform vendors hold knowledge of the details of each of the services they host and provide, as well as detailed knowledge of how the Cloud works.
- **Infrastructure vendors:** Leveraging dependable infrastructure provisioning and management services are key to deploying dependable applications. Knowing how to optimize and load-balance the chosen platform for fault-tolerance is a critical part of migrating to the Cloud. The value of such relationships is not purely technological but can be financial as they are related to business requirements/budget forecasting.
- **Outsourcers:** There are very few, if any, large organizations operating today that do not have an outsourcing strategy, and as such any migration of architecture or technology must proactively include every player involved in services delivery. Outsourcers that provide infrastructure, platform, or even application development and management services may have timely and valuable information to share.
- **Consultants:** Business consultants have been working around the Cloud for a long time, some of them making it part of their arsenal for over fifteen years. Along the way they picked up a lot of very valuable information on what works and what doesn't as far as using the Cloud for system, migrating the architecture, and getting buy-in and support from all layers of business users. In addition, their training as outside observers is critical to get a fresh set of eyes in any problem or planning session.
- **System integrators:** System integrators may be key partners for organizations migrating to Cloud Computing. They spend the time dealing with connectivity issues, troubleshooting access, and making sure that the flow of data to and from any existing and new systems are working. In addition, they have the experience, as do consultants and outsourcers, of working with other organizations Cloud that are moving to the Cloud. Their practical and tactical knowledge of how to make applications, platforms, and infrastructure work together better may save time and money.
- **Advisors:** Under the name of advisors, also called influencers in some circles, we have analysts, bloggers, and evangelists. Vendors may compensate some advisors while some may be independent, so ensure that the information received is based on real world inputs (data from other organizations).

The ideal council will include all entities and people that are involved in your Cloud strategy, migration, maintenance, and operations. Consider a complete council to have far more value by representing all views than one where you pick who can contribute based on a perception of value. Of course, no group this large can get together and actively work towards helping any organization without having a good governance model: a set of rules and steps to make sure it works and delivers as expected.

Advisory Council Governance

Governing a distinct set of individuals all with varied backgrounds and drivers is complex, to say the least. There is a set of rules that apply to any large group that needs to be focused on a single objective, and we have adapted those to the particular issues of Cloud Computing adoption. These rules include:

- **Focus on the Goal:** With so many people with different agendas it could be cumbersome for all of them to remain focused on the reason for the meetings and the work to be done. To help the organization deliver and maintain a sound business/Cloud strategy and implementation all actions should execute against that goal.
- **Periodicity:** Meetings of the council should happen regularly, with the ability to organize ad hoc meetings depending on need.
- **Membership Reviews:** To ensure that the best people are advising the organization at all moments, it is imperative to conduct a review of outstanding issues, identify the necessary advice and help required.
- **Sharing:** One of the advantages of an Advisory Council is to learn from others. All information that is created and learned by the council can be shared with others (by virtue of having advisors from outside of the organization).

The following topics are the basis for creating guidelines and operational standards for migrating to the Cloud. These topics consolidate matters of business and technology, and provide the basis for Cloud Governance—regulating who accesses what, how, and for what purposes as well as monitoring that the implementation reached intended results.

- Security
- Risk Management
- Legal and Compliance
- Open Connectivity
- Data Availability
- Disaster Recovery
- Management and Monitoring
- Metrics and Intelligence
- Strategy Review
- Privacy and Confidentiality
- Term of Service and Usage
- Availability and Inter-Cloud Connectivity

This is a mostly exhaustive list, but issues may be added or subtracted if they don't match your organization's needs and policies. The core concept of Governance is to develop a set of guidelines and policies on how IT and Technology as well as Business Executives can work together to a common goal. The meetings with the council are about how to implement, evaluate results, and improve these policies on a regular basis.

7. Conclusions

Much like any new successful technology that has so much potential for both IT and business change, the Cloud phenomenon is in a period of incredible hype. The press expound the benefits of Cloud, profiling unproven venture-driven start-ups, while the majority of services providers marketing efforts make organizations feel left behind as they "Cloud Wash" service portfolios. The frenzy of publicity is in danger of generating over-enthusiasm and unrealistic expectations. Throughout this paper we have defined the cloud, assessed its impact to both organizations and services providers, and profiled some of the leading providers in the market, as well as, given recommendations on how to introduce and manage Cloud technologies and services through governance mechanisms.

Recommendations for Buyer Organizations:

The Cloud provides real business benefits to organizations including cost and agility as well as a platform to drive innovation. However, organizations should reframe from rushing into the Cloud without giving considerable thought to the financial implications, risk factors and organizational change that it poses. Even what appear low risk modular SaaS implementations can grow quickly within an organization as users adopt SaaS with relative ease. This drives subscription costs, increases configuration and customization requests and risk as data sources move between on premises and Cloud providers.

Cloud computing is becoming an increasingly mainstream part of IT and business services delivery. Much like outsourcing there are some aspects of Cloud management that cannot and should not be outsourced to a Cloud provider, including architecture, vendor management and business relationship management. A strong sourcing group must be able translate business requirements into medium and long-term architectural roadmaps.

Organizations that want to move quickly to Cloud alternatives in any strategic manner may need support and advice to help them with both internal IT and business process transformation. Organizations need not reinvent the wheel and may find value in working with partners through this next journey of IT and BPO delivery. Services providers including consultants, legal, tax, IT and BPO providers are investing heavily to build methodologies and best practices on how to evaluate, select, implement and build upon the Cloud as a new and enabling pillar of organizational value.

Recommendations for Providers:

Successful providers are those that know what their clients want and understand how the value of their offerings resonate. Successful Cloud offerings are those that align to client expectations. For example:

- Computing centric providers position Cloud around how they can reduce the time needed to provision, run, and configure infrastructure and applications in support of key business operations.
- Solution centric providers position Cloud as an accelerator of service delivery cycles based on speeding up implementation time frames.
- Business centric providers position Cloud value around how to effectively build/run new governance mechanisms and interfaces and how they can marshal service delivery ecosystems to provision more agile business processes.

What will fail to work are those that "Cloud Wash" legacy solutions and underestimate the technical and business model changes that are required to succeed. Marketing will not be enough and substantial redesign of offerings will be required to deliver function effectively from the Cloud. Services providers will truly have to invest in new business models, operations and technologies. New partnerships and ecosystems have to be created, managed and supported for organizations. Certainly, the majority of services providers have already set up Centers of Excellence to incubate ideas, fund new services and capture learnings from clients. Providers though will increasingly have to introduce Cloud not as a core value proposition in and of itself but as an alternate delivery model presented to a client's business problem. This will increasingly mean that providers will present more holistic services catalogs that are integrated into well-orchestrated service management tools and frameworks across the complete service delivery chain.

About the Authors

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Phil Fersht is Founder and Chief Executive Officer of HfS Research, the leading global research analyst organization covering global sourcing strategies. He was named "IIAR Analyst of the Year 2010" by the Institute of Industry Analyst Relations (IIAR). This is the most coveted global award for industry analysts in technology and services. His specialist coverage areas include finance, HR and supply chain BPO, and he also focuses on industry-specific issues and the convergence of BPO, SaaS and Cloud in a business utility context.

He is an acclaimed industry analyst, practitioner, advisor and strategist across Business Process Outsourcing and IT services worldwide, having worked extensively in Europe, North America and Asia. During this time, he has advised on more than 100 major outsourcing and offshoring engagements and consults regularly with senior operations and IT executives on their global sourcing strategies. At HfS Research, Phil directs and contributes to the firm's research and social media strategy, in addition to administering the global finance operations.

During his career, Phil has worked at AMR Research (Gartner Group), leading the firm's BPO and ITO practice. Previously, he served as market leader for Deloitte Consulting's BPO Advisory Services, where he led numerous outsourcing and offshoring advisory engagements with Fortune 500 enterprises. He also worked for outsourcing advisor Everest Group leading the company's BPO research practice. Phil began his career at IDC across its European and Asia/Pacific operations.

Phil is a frequent author and speaker on IT services, Finance, HR and Procurement Business Process Outsourcing trends and issues. He was named both an "FAO" and "HRO Superstar" by FAOToday and HROToday Magazines for 2005, 2006, 2007, 2008, 2009 and 2010 and was featured as the cover story for the December 2006 issue of FAOToday as one of the outsourcing industry's most prominent advisors. He was also nominated for "Advisor of the Year" at the FAOSummit 2008. He speaks regularly at industry conferences, which have included The Conference Board, NASSCOM, IDC Directions, the Sourcing Interests Group, the Shared Services & Outsourcing Network and the Council of Supply Chain Management Professionals. He is also a regular columnist for several industry publications, and regularly quoted in the business press.

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McNeill's main focus at HfS is delivering research, thought-leadership, practical advice, and imparting real-world Cloud services experience to buy-side clients and service providers on what really matters—how to execute Cloud business strategy in a manner that creates real business value. McNeill will examine the industry dynamics driving business utility solutions, as the boundaries between Cloud Computing, Business Process Outsourcing and IT infrastructure services continue to blur.

Prior to HfS, Robert was VP Research/Consulting for Saugatuck Technology, VP Strategy/ Marketing for SaaS vendor Service-now.com, a management consultant with Deloitte Consulting advising organizations across North America on IT and business process sourcing strategies and a Principal Analyst with Forrester Research. He is a contributing author of a book produced by the Institute of Directors in the UK on software asset management.

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Kenneth Adler specializes in complex global and domestic outsourcing and technology transactions. With 25 years of experience, his practice includes drafting and negotiating all types of outsourcing and technology agreements, including business process and information technology outsourcings. He has significant experience addressing the creation of and strategies relating to cloud-based and multi-sourced environments, as well as renegotiation and termination of existing outsourcing agreements.

Mr. Adler regularly assists clients with respect to outsourcing strategies, including to near-shore and off-shore destinations. He represents financial institutions, insurance companies, accounting firms, media and entertainment companies, healthcare companies and technology companies in large-scale, complex outsourcing and technology sourcing, licensing and system development and integration agreements. He has completed numerous BPO and ITO transactions, including outsourcings related to infrastructure (including data center, desktop, help-desk, telecommunications and networks), applications development and maintenance, cloud-based infrastructures, call center, hosting, co-location, securities and back-office functions, human resources, finance and accounting, logistics, real estate and facilities management. Mr. Adler is on the Editorial Board of the Advanced Media and Technology Law Blog.

Mr. Adler is recognized in the legal directories as a leading lawyer in the areas of outsourcing and information technology. The Best Lawyers in America, published by Woodward White, Inc. named him "Best Lawyer" in Technology Law; named in Chambers USA, America's Leading Lawyers for Business, in National Outsourcing and New York Technology & IT four consecutive years and in 2011 was recognized as "a remarkable lawyer at the helm of a great team.", and Chambers Global, The World's Leading Lawyers for Business in the United States of America in Outsourcing two consecutive years. Named "New York Super Lawyer" in Information Technology/Outsourcing and Intellectual Property by Law & Politics five consecutive years, and named in PLC Which Lawyer?, as recommended in Information Technology.

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Mr. Stern helps his clients with outsourcing transactions and strategic alliances, as well as with structuring, negotiating and implementing commercial strategies, alliance structures, pricing models, governance arrangements, change management protocols, contract administration and supplier compliance strategies.

Mr. Stern is recognized in the legal directories as a leading lawyer in the area of technology and outsourcing. For several years he has: received the highest ranking in Chambers USA; is “Recommended for Outsourcing” in PLC Which Lawyer? Yearbook; named as a “Leading Lawyer” in The Legal 500 US in Technology and Outsourcing; named in The Legal 500 in Outsourcing and name a New York Superlawyer in Information Technology/Outsourcing.

These publications say that Akiba Stern is: “An incredibly business-oriented expert" in outsourcing; “One of the best - he makes it happen on the pressure-packed deals”; “Very good with clients – he’s thorough, a problem solver, gets stuff done and knows how to make the client look good”; and “An impressive strategist who is well known for advising on multi-tower outsourcing deals.”

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About HfS Research

HfS Research (www.HfSResearch.com) is the foremost research analyst firm and social networking community, focused on helping enterprises make complex decisions with their business process operations, IT outsourcing and shared services strategies. It has the largest audience and regular following in today's global sourcing industry.

With 58,000 subscribers, HfS Research provides the most impactful and frequently-visited global collaborative community platform in the global services industry, providing rapid and insightful commentary, analysis and debate of enterprise outsourcing and shared services dynamics. The organization is distinctive in that it integrates personable social networking with market research and expert advisory services.

The HfS Research mission is to provide a unique environment for collective research, opinion, experience and knowledge across the global outsourcing industry to help enterprises explore new performance thresholds. Led by industry expert Phil Fersht, the HfS Research team is a multi-disciplinary group of analysts across North America, Europe and Asia/Pacific regions, with deep domain knowledge in business process outsourcing, information technology services and Cloud business services.

Launched in 2007, HfS Research's acclaimed blog Horses for Sources has more than 120,000 monthly visitors across the global outsourcing industry, and is widely recognized as the leading destination for collective insight, research and open debate of industry issues and developments. The HfS LinkedIn community, The BPO and Offshoring Best Practices Forum, is thriving with over 13,700 industry professionals sharing views and information daily. You can access information about HfS at HfSResearch.com and on Twitter at www.twitter.com/horses4sources.

To learn more about HfS Research, please email research@HfSResearch.com.

About Loeb & Loeb LLP

Loeb & Loeb's premier Outsourcing Group takes a results-driven approach to the strategic outsourcing of complex information technology and business process functions. Our integrated team of experienced and industry-respected practitioners draw on diverse outsourcing backgrounds and collectively have more than 70 years of outsourcing experience. We have substantial expertise with complex, multi-tower outsourcing transactions and a wide breadth of deal experience in all types of ITO & BPO transactions, including those related to cloud-based services, HRO, F&A, AD&M, facilities management, logistics and procurement. Our ITO and BPO practices have been recognized by all of the major peer-review publications, including *Chambers*, *Legal 500*, and *Practical Law Company Which Lawyer?* among others.
We offer a full range of resources to assist in the transaction life cycle, from strategic planning to contract negotiation to renegotiation/exit strategies. Our global practice serves a broad cross section of industries that procure and provide outsourcing products and services. Our primary business goal is to add value through our commitment to understanding our client's business objectives and through our ability to apply industry knowledge, market trends and best practices as key issues are weighed.

Loeb & Loeb's comprehensive legal services include matters relating to onshore, near-shore and offshore solutions; multi-sourced environments; cloud-based service offerings; renegotiation/exit strategies; dispute resolution; labor and employment; privacy and data security; compliance; intellectual property; and corporate events, including mergers, acquisitions and divestitures. The firm has six offices, including Los Angeles, New York, Chicago, Nashville, Washington, DC and Beijing. For more information about our Outsourcing Practice capabilities, visit www.loeb.com.