Business Strategy for Cloud Providers

The Case for Potential Cloud Services Providers

IBM

This is one paper of a two paper series on cloud strategy from IBM Global Business Services

Abstract

Cloud computing has the potential to be the next major driver of business innovation, as it promises to enable new business models and services across almost all industries, especially telecommunications, healthcare and government. For some providers, cloud delivery models will open access to new customer segments such as small business and emerging markets. And it will fundamentally change the balance of power in many existing markets.

However, as with any technology-driven change, it is difficult to sort out the reality from the hype. And even when the technology is real, being able to capitalize on it with a winning strategy is difficult. Very few companies emerged as clear winners from the dot-com wave compared with the many more that failed. The same will be true of the cloud market. But for the companies that are successful, the rewards will be equally as large.

This paper is focused on helping those who want to emerge as winners in the new cloud provider marketplace.

We have assessed service provider business models for cloud computing by evaluating services/offerings, strategies, operations and target customers. We believe the recipe for success will require exploring all of these factors coupled with the right partnership strategy.

This paper explores the following areas for cloud providers:

- *What are the key attributes of a winning cloud provider business strategy and model?*
  Creating a viable business model through balancing up-front investment risk and cost with profit and revenue opportunities is the key to success for cloud providers.
- *How can partnering across the ecosystem accelerate my success?*
  Both cloud computing and new associated ecosystems are evolving. Providers are partnering in ways that are helping them to accelerate market entry and to expand their breadth of services, which is driving new alliances in some markets.
- *What are the implications if I do not act now?*
  Some service providers must move to cloud delivery models in the near term to survive; others can leverage clouds to differentiate and thrive.

Cloud has the potential to become the next major driver of business innovation by enabling entirely new business models across a wide range of industries. The cloud computing market will include offerings sold as a service such as business processes, software, platform, and infrastructure. And many of these cloud services will be consumed through a pay-per-usage pricing model.

The cloud market is appealing to new entrants not only because of its size and growth, but also due to the business potential it brings to a company. Cloud providers benefit by accessing new customers and markets, improving their deployment times, potentially lower their costs and achieving new revenue streams.

Already, companies are entering the field and the race is underway to determine who will become industry leaders through the use of new delivery models to provide enhanced or even brand new types of customer value. As with any rapidly emerging business segment, the key is to move beyond the business hype and to develop and scale a winning business model.

For potential provider of cloud services, seeing through the hype can be difficult. The current opportunity and growth projections are enticing, but one first needs to develop a robust strategy to succeed as a cloud service provider.

While much of the skepticism around cloud computing has subsided, some reports theorize that cloud computing will eventually fade, similar to previous evolutions in computing such as grid computing and utility computing. However, unlike previous generations of computing, cloud computing offers a distinctly new level of scalability and a new degree of business value made possible by the maturation of technologies and standards. Scalability results in a host of benefits that will make cloud computing a permanent shift in the how products and services are delivered.

Reality or Hype? The Real Potential of Cloud

Companies in many industries are considering entering the cloud market as providers, especially in the communications services provider, government and healthcare industries. Government organizations also see the impact on cost and quality that cloud can have. But what is the true market potential, and within industry, what type of business models will generate growth and profit?

Many analysts and IT industry experts are bullish about cloud computing, and are forecasting robust, double-digit annual growth. The market potential for cloud computing is forecasted to be $66B[1] by 2012 for software, platform and infrastructure as a service; adding business process as a service and cloud support services could push the total cloud market to well over $100B.[2]

While the market size can be debated, we believe that analysts are directionally right about the significant market potential for cloud computing due to four primary reasons:

- Cloud's strong value proposition for existing business users of IT.
- Cloud enables providers to access entirely new markets.
- Cloud is aligned with broader technology trends and demand.
- Cloud technology is real.

Aggregate cloud opportunity for consumption and enablement is estimated to be greater than $100B in five years.[2]

Strong Value Proposition for Existing Business Users of IT

Information technology, including infrastructure, applications, operations, maintenance or management, has become a major for large enterprises. And the demand for all types of IT is forecasted to grow as the digital and physical words become increasingly interconnected and provide the opportunity for new capabilities and services.

One of cloud computing's core benefits is reduction of IT costs. In IBM Research, the Cloud Labs research team has shown that cloud architecture can increase the IT server or other component utilization up to 75% and reduce IT labor costs by 50% or more.[3]

In addition, cloud offers new ways to shield users from the ever-growing complexity of managing an IT infrastructure. These are key benefits that potential cloud providers can deliver to their customers.

Access to Entirely New Markets

Cloud delivery models open up entirely new markets for companies where existing delivery models don't facilitate access to these markets.

Today's enterprise IT model is designed for larger companies in mature markets with robust data centers and IT departments. Cloud computing provides access to enterprise-level IT for companies, including small and medium-sized businesses (SMBs) and larger companies in emerging markets who otherwise could not afford to invest in enterprise-level IT. Now, these businesses can reap the benefits of a sophisticated IT model without having to invest in it themselves.

Cloud computing's flexible delivery model also makes the minimum unit of purchase more granular. Now, organizations can purchase software by the hour, rather than on a per license, or acquire server space by the size and time period, rather than per server.

Cloud computing providers can capitalize on these factors contributing to growing demand for IT and start generating new revenue streams using these new delivery models.

Alignment with Broad Technology Adoption Patterns

Today, regulatory requirements around data security and archival are creating the need for significant data storage. Procuring, managing and securing archival systems is particularly critical in industries such as healthcare, financial services and pharmaceuticals.

Looking ahead, the amount of data generated worldwide in 2012 will be nearly five times the amount generated in 2008.[4] And the need to access, retrieve and use that data shows no sign of slowing.

Cloud will become the favored medium for file and archival storage, particularly for large files that must be stored but are not regularly accessed. In healthcare, medical records are receiving billions of US dollars in public investment[5] and will rapidly grow in adoption. Cloud storage will make it easier and more affordable for healthcare providers to maintain electronic records, an objective that could be otherwise unreachable for many industry providers.

Cloud delivery models open up entirely new markets for companies where existing delivery models don't facilitate access to these markets.

In the entertainment industry, movie distribution has begun to benefit from the cloud. Instead of sending tapes through the mail, movie distribution houses have started to stream movies to multiplexes for projection. This protects against piracy for film producers and reduces risk for multiplex owners who can now buy streaming service on a per-show basis from distributors.

Cloud Technology is Real

While large and small customers across a diverse set of industries and geographies are benefiting from the technology driving cloud, only recently are standards emerging to support this technology.

Cloud users value easy migration of data and applications from one cloud provider to another. Recently a new services management standards body, Open Cloud Standards Incubator (OCSI), was formed. OCSI is a group of cloud providers, and some users, who are collaborating to define interoperable standards for cloud delivery models. Cloud users, IT governance bodies and existing standards organizations must participate in the creation of these standards to ensure that vendors do not dominate the standards creation process. By embracing these standards, providers are more likely to gain credibility in the cloud ecosystem.

Providers who encourage open standards, non-legacy technologies, easy migration and collaboration are likely to gain the most credibility.

Winning Business Models for Cloud Providers

To win in the cloud market requires an innovative business strategy and business model. The strategies must reflect a rethinking of market fundamentals and truly envision new models to better serve customers.

We will see a wide range of cloud business models emerge over the next few years, and most of these will likely fail. Of the ones that survive, the profitability of the business models will vary greatly. A few winning business models will maintain healthy profit margins while others will find themselves relegated to much smaller, commodity-based profit margins.

Today, no one knows for certain what will be the winning model. But we do know how various models are taking shape. There are four key components that define cloud business models:

- Cloud Delivered Services – what you sell.
- Target Markets – to whom you sell it.
- Strategy – the overall game plan to create long-term value.
- Operations – how to create and deliver what you sell.

Cloud Delivered Services

The first component of a cloud provider strategy is to clearly outline the service that will be offered. Most cloud enabled solutions will have four layers in their "solution stack":

- Content
- Process and applications
- Integration and middleware
- Infrastructure and devices

A winning cloud strategy must clearly outline the competitive advantage for each layer. A single company does not have to be the owner or operator of all four solution layers.

Hence, a key part of developing a cloud strategy is to define which component(s) you will provide and which components will be provided by a business partner. We expect partnership-based business models to be the norm within the cloud market, and as a result there will be a sub-market at each layer of the solution stack. These sub-markets are commonly classified as the following:

- Business-Process as a Service (BPaaS). Deliver an entire business process as a service via the Internet. Examples include payroll, printing and e-commerce from providers such as ADP.
- Software as a Service (SaaS). Deliver a standardized application running on a cloud infrastructure, with multi-tenancy, accessible from various client devices through a thin client interface such as a Web browser (e.g., web-based email).
- Platform as a Service (PaaS). Build and deploy new internally developed applications onto cloud infrastructure, exposing services needed to build an effective application including billing and sign-on services.
- Infrastructure as a Service (IaaS). Obtain processing, storage, networks, and other fundamental computing resources as a service where the consumer is able to deploy and run elements of the stack, such as operating systems, on the infrastructure service.

(These are abridged definitions; see the appendix for formal definitions).

In addition to direct cloud services, there is a wide range of support cloud services and components typically offered by outside providers, such as consulting firms, but also delivered by cloud service providers themselves. These services include training and consulting. For example, SalesForce.com offers training and consulting to complement its SaaS and PaaS offerings. This category can also include suppliers of hardware components.

In a few years, many large enterprises will be building or planning to build private and hybrid clouds. This will further spur demand for cloud consulting, implementation and management services.

Target Markets

There are many potential target markets for cloud adoption. Most current cloud providers narrow down their respective markets to some combination of the following segments:

Industry or Functional Verticals among Large Enterprises. While currently focused more on internal cloud enablement, some large enterprises will migrate toward adopting shared cloud verticals that reduce cost or risk in areas that are important to the business, but are not key sources of differentiation, such as back office functions or regulatory compliance. For example, pharmaceutical companies could join forces via an industry vertical cloud focused on regulatory compliance to drive cost savings and efficiency.

SMBs

Many workloads offer the least pain and most significant gain for the SMB segment. Cloud providers are targeting smaller customers who can benefit from cloud's compelling economies of scale, and who are less hindered by large, existing IT capabilities. Financial services companies have strong relationships with their customers, and could use this delivery model for business services.

Emerging Markets (see sidebar)
With limited resources, customers in developing markets will respond to the lower up-front investment costs and ability to scale service consumption in times of growth. For example, automotive manufacturers could use cloud to reach dealerships in distant markets.

Other Cloud Providers
Cloud services can serve as building blocks, where a provider sells one cloud service to another cloud provider to construct a larger service offering. IaaS providers often align with SaaS providers to jointly deliver a more comprehensive cloud service.

Consumers
Mobile devices, online email and other consumer services benefit from numerous new applications made available through cloud delivery models.

In segmenting their customer base, cloud service providers for payroll, collaboration, sales force automation, application development and test environments are seeing opportunities in organizations of all sizes.

During this early adoption period, large enterprises are embracing only a few types of public cloud-based services, instead favoring private or "in-enterprise" clouds. But demand is rising for public cloud services around HR benefits, procurement, e-commerce, data warehousing and archiving. Large enterprises are also interested in building or renting public services of 'overflow clouds' to be able to transition ad-hoc workloads and short term projects to a cloud environment. We are seeing that SMBs are more interested in website hosting, email, accounting, expense management and operations.

Cloud computing also is more suitable for organizations with mobile workforce across multiple locations, such as global companies with offices in emerging markets. With cloud, these organizations take less time to set up and manage operations than they otherwise would have taken.

Buying Decisions in Emerging Markets

Countries who lack traditional enterprise IT model now have the opportunity to get access to enterprise-quality infrastructure and applications through a more easily accessible and affordable cloud-based consumption model.

Of course, not all emerging markets are alike. Cultural differences will affect the likelihood and pace of business and IT cloud service adoption. Some cultures will quickly embrace the opportunities presented by cloud, while others, who can equally benefit from the leapfrog potential that cloud offers, will apply their risk-averse buying approach and wait for the business to drive the purchase decision. As one former Indian CIO explained to IBM, "in my culture, we don't just want to 'kick the tires,' we want to drive them for 10,000 kilometers before we buy." Despite documented benefits, a senior IT manager for another company in India said he was not in a position to push his company toward cloud until the business asked for it.

This 'prove it to me first' mentality leads to an adoption waiting game characterized by IT understanding the economic and technical benefits of cloud, but not being in a position to drive the purchase decision. In fact, that challenge is not unique to emerging markets. Providers need to understand who the buyer (business or IT decision maker) is for their cloud services and tailor their pricing models to accommodate buyer preference to test proven models before taking perceived risks.

Strategy

Service provider strategies need to address pricing models, go-to-market approaches, business intent and value propositions, in addition to defining services and customers.

Current cloud providers are capitalizing on first-mover advantage. They are delivering services, learning from their mistakes, and capturing market share along the way. Some of their success has been at the expense of traditional players who have not ventured into the cloud marketplace.

For newer entrants, their value in the cloud provider ecosystem can be defined through some combination of access to customers, reliability, technology innovation, or integration efficiency. Successful providers will define their niche and stick with it.

One of the defining aspects of cloud computing is pay-per-use pricing models. However, variations are possible within this basic tenet of cloud. For example, some providers will find that their brand and reputation will allow them to price based on value delivered from their services, rather than purely based on hourly usage rates. The challenge is determining how to measure this value and how to capture that value through pricing. Another alternative is to offer tiered pricing based on volume of services consumed, with "unlimited" possible as the largest available unit. Strategic customers will command better pricing and higher levels of service.

Some cloud providers are offering cloud-based services directly to customers. Others are acting as enablers and integrators by providing their products and services as building blocks for other cloud service providers to then sell to their own customers.

Another consideration in the go-to-market strategy is targeting the right decision maker for the particular type of service delivered. Providers should tailor their offerings and value proposition based on the target buyer. Cloud providers can deploy new services to their customers in days rather than months which will help differentiate cloud providers and get them conversations with business executives in addition to IT buyers.

While most of the messaging around cloud computing today focuses on IT benefits and cost savings, the real business impact of cloud computing is what makes this delivery model transformational. Because the technology behind cloud lowers investment costs, provides ubiquitous access and minimizes the granularity of purchase units, cloud is enabling businesses to innovate and renovate in new ways. Companies can innovate by adopting new business models or renovate with lower cost service consumption models.

Operations

The operations component of a cloud business model includes the development of key elements needed to deliver business services via the cloud. This includes business operations and financial reporting designed to be more agile by more quickly engaging customers, tailoring services to fit customer needs, pricing for smaller units of a service, and establishing a viable financial model.

The operating model of the business strategy defines the sourcing model, partnership strategy, and deployment plan for the development of these capabilities.

Many providers are pursuing strategic partnerships to round out their capabilities and achieve the operational requirements associated with rapid service delivery. Alliances and partnerships are often keys to success in the cloud ecosystem.

Many cloud providers will likely come and go, so clear partnership agreements are necessary to protect the relationship, mitigate risks, share the investment requirements and ensure continuity of service to customers. As the cloud ecosystem evolves, we are seeing this fragmented market converge via partnerships and eventually through mergers and acquisitions. An example of these alliances is with British Telecom and their software partners.[6] In time, we expect to see the competitive landscape evolving with more new players emerging, as others converge into larger, more integrated players.

Winning Business Models

Given the numerous ways providers can combine these four business model elements into their unique cloud provider strategy, selecting the optimal business model can be challenging. Certainly, there is no "one size fits all" business model.

Potential cloud providers are emerging from a broad set of technology sectors, communications, media and other market segments, including device manufacturers, network providers, content distributors, IT and application outsourcing providers and more.

Providers can deliver services directly to cloud users, or sell technologies or services that enable clouds to other providers. Here are some examples of provider types:

- *Component Suppliers (providers of hardware, software or professional cloud-based services to other cloud providers)*
  As a supplier to other cloud providers, these companies will acquire or invent new technologies. They are likely to invest in research and pursue mergers to develop new capabilities that can help to deliver differentiated cloud-enabling offerings, improve integration skills, enhance security, and reduce commoditization risk through improvements in customer service. Suppliers working on technologies supporting hybrid clouds, cloud integration and specific industry solutions are likely to be better positioned in the cloud ecosystem.
- *Cloud-based IT Outsourcing Providers (providers of cloud-based IT infrastructure, application services and migration assistance for customers)*
  These providers are balancing the trade off between investing in up-front expense for traditional migration rather than paying over time for cloud-based service. They can improve profitability as result of high asset utilization and lower system and application management costs. These services will be delivered by partnerships between business process outsourcing and SaaS providers. As cloud service offerings in this space mature, these providers will likely be able to deliver a better ROI to their customers than pure SaaS providers will be able to do. Business processes supported by cloud that are fairly standard from one organization to another, such as customer relationship management, payroll processing, recruitment, accounting, and personnel are likely to be adopted first by enterprise customers.
- *SaaS Aggregators (aggregators of industry-specific or complementary SaaS offerings)*
  These providers will earn their revenue as percentage of SaaS sales. They will target companies who look for one-stop shopping for SaaS adoption. This model supports the early movers and extensive partner support. Smaller and newer players can prosper in specific industry verticals that have unique business process and application requirements. It is important for them to aggregate complimentary solutions that make up the full solution suite. In addition to industry verticals, SaaS aggregators can focus on cross-industry or capability-oriented aggregation, or through other affinity-oriented aggregation that will end up creating disruptive business models.

- *Managed IaaS Providers (providers of IaaS and value-added services to address latency, data security, and unique company needs)* These providers will have to make initial investments in infrastructure, thus revenues will build on a daily basis and profit will come over time. They can leverage differentiated pricing based on service level, customization requirements and security requirements. This business model will be somewhat price sensitive as offerings mature to industry standardization, and potentially approach commoditization. Also, local data security laws will support the larger players with multi-location data centers. Managed IaaS providers need to consider delivering value-added services to improve their profitability. They can charge premium pricing for services like local provisioning, premium data security measure, help desk, asset management, monitoring and other provisioning services.

Numerous other provider types exist today, such as cloud professional services and consulting, and new ones will emerge over time, such as managed IaaS and PaaS providers.

Partnering to Overcome Business Model Gaps

Both cloud and traditional service providers can create more robust service offerings and differentiate themselves in the market through the formation of innovative strategic partnerships with other service providers.

The critical success factors for these providers are lower total cost of ownership (TCO) to customers, simplicity of service, clear definition and delivery of service level agreements and availability of the necessary features to substitute traditional offerings. Identifying the right set of complementary services helps cloud providers be more effective at achieving these keys to success. For example, PaaS or IaaS providers could seek to partner with SaaS providers as a naturally complementary alliance.

Strategic alliances are particularly important for creating more robust cloud services, as alliances aggregate different providers' unique strengths.

Delivering cloud services with complementary cloud service providers is better than single-handedly trying to create a complete, competitive cloud solution. Even large scale cloud providers such as IBM are often more effective at delivering cloud services when partnering and aligning with other cloud providers.

Many of the new services and devices such as Net TV, Desktop as a Service or NetBook demonstrate how providers with complimentary capabilities can partner to bring out revolutionary ideas to market.

Partnership Model: Communication Service Provider (CSP) and Multiple Niche Players for Central Government

A large CSP delivering cloud services to the public sector has worked out an innovative partnership model of multiple niche Independent Software Vendors (ISVs) to provide best-of-breed solutions to a large European country's central government. This allows ISVs to get access to large public sector clients, while strengthening the CSP's offering. It benefits the ISVs, CSP and the customer. While this aggregation of service still faces integration and migration challenges, it delivers a powerful set of services otherwise unavailable to the central government.

Partnership Model: CSP partners with a hosting provider to offer a development and test cloud for its customers

Another CSP is partnering with a hosting provider to deliver a cloud-based development and testing environment. This offers scalability on a pay per use basis that helps the CSP's customers. Similarly, IBM has a developer cloud for business partners to leverage.

Partnership Model: Entertainment equipment and content providers partnering for hosted services

Gaming console manufacturers are considering partnerships with game content developers to provide online games hosted on cloud. Similarly, mobile handset manufacturers are already partnering with developers from universities, small software firms and freelance developer groups to create cloud-based applications for their devices.

This model provides a wider assortment of applications to consumers, while allowing developers to earn revenue through download charges without hefty investments in servers or software to develop applications. Handset manufacturers share the revenue from application download and internet usage, while also generating stronger customer loyalty.

Partnership Implications

We foresee other possible scenarios where unlikely cloud providers leverage their unique skills to complement the desired skill sets from other providers and missing capabilities from their own cloud portfolio, such as access to customers. One possibility could be software providers partnering with banks to leverage the trusted relationships banks already have with their small business customers.

Differentiated user capabilities are critical to retaining customers who have very low switching costs between cloud providers. Providers are moving quickly to preempt the cannibalization that might otherwise be done by a competitor.

Industry Plays for Providers

Developing industry specific strategies are one option to help cloud providers differentiate themselves and become a leader in cloud service delivery.

Many companies and organizations are looking for providers to deliver industry-specific business benefits through cloud computing to help them innovate. Some industries are seeing the benefits of cloud computing through the emergence of new business opportunities.

The providers that tailor their offerings to industries at the forefront of cloud adoption, such as healthcare, government, and telecommunications, will have greater near term growth potential. The following represent industry examples of the types of value providers are delivering today.

Healthcare

Healthcare providers crave more consumable, easier ways to cost-effectively capture and store medical images and records. Some SaaS providers offer cloud-based solutions for thousands of physician groups to use on a pay-per-use basis. Doctors can focus on patient care while their cloud provider manages the technology behind the service delivery.

Telecommunications

Communications services providers are developing, or in some cases reselling, cloud capabilities for their customers, while also using cloud internally to deploy new business services in days rather than in months.

Government

In some emerging markets, central governments are using cloud computing to fuel economic growth for their country. For example, Wuxi software park in China is building cloud computing centers in their special economic zones to support emerging companies setting up their IT infrastructure at no initial cost. This arrangement offers Chinese software companies the ability to tap into a virtual computing environment to leapfrog their development activities.

Act Now, or Wait

For potential cloud providers who do not face immediate threats to their existence, the choice of waiting to enter the cloud market is viable.

But for potential cloud providers facing real challenges to their business models in the near term and needing to offer their services via a cloud, the time to act is now. Understanding key adoption inhibitors for their target customers will help providers position their cloud capabilities.

When evaluating whether and how to enter the cloud provider market, consider these questions:

- Which cloud opportunities can enable me to make new strategic choices involving new products, new services, new partnerships, etc.?
- What is the cost benefit analysis for each of these opportunities? For example, revenue growth from new and existing customers weighed against capital expenditures; potential profitability vs. risk assessment, etc.
- What are my current capabilities relative to the services I want to offer? Should I partner, buy or build the necessary competencies for offering the desired cloud services?
- What should my market entry strategy be in terms of segmentation, positioning and target segments?
- Which pricing strategy would be most profitable?
- What kind of operating model should I have?
- How should I construct my technology roadmap for cloud services, from design and planning through execution and support?

Answers to these and other key questions will help potential cloud providers see through the fog. This clarity can allow cloud providers to create a fact-based business strategy for cloud that uniquely fits their business needs.

As was the case in the dot-com era, many players will come and go as the cloud ecosystem evolves. The winners will be the organizations that create the right business strategy for cloud, and then execute against their business strategy most effectively.

Appendix

Business Process Services.[7] Any business process (for example, payroll, printing, ecommerce) delivered as a service via the Internet with access via Web-centric interfaces and exploiting Web-oriented architecture. Advertising services exploiting real-time Internet-based fulfillment are included here.

Cloud Software as a Service (SaaS).[8] The capability provided to the consumer is to use the provider's applications running on a cloud infrastructure. The applications are accessible from various client devices through a thin client interface such as a web browser (e.g., web-based email). The consumer does not manage or control the underlying cloud infrastructure including network, servers, operating systems, storage, or even individual application capabilities, with the possible exception of limited user-specific application configuration settings.

Cloud Platform as a Service (PaaS).[8] The capability provided to the consumer is to deploy onto the cloud infrastructure consumer-created or acquired applications created using programming languages and tools supported by the provider. The consumer does not manage or control the underlying cloud infrastructure including network, servers, operating systems, or storage, but has control over the deployed applications and possibly application hosting environment configurations.

Cloud Infrastructure as a Service (IaaS).[8] The capability provided to the consumer is to provision processing, storage, networks, and other fundamental computing resources where the consumer is able to deploy and run arbitrary software, which can include operating systems and applications. The consumer does not manage or control the underlying cloud infrastructure but has control over operating systems, storage, deployed applications, and possibly limited control of select networking components (e.g., host firewalls).

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For more information visit: **ibm.com**/services/cloud

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