

A new era for communications service providers

Cloud computing changes the game



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As both providers and consumers of cloud services, communications service providers (CSPs) are at the heart of cloud computing's disruptive impact. While this impact is creating challenges, it also introduces opportunities for diversification and growth.

Externally, CSPs are facing intensifying competition from cloud-powered over-the-top (OTT) internet players, and from global-scale cloud providers like Amazon. Internally, CSPs' need to drive down costs, increase competitiveness and boost agility and scalability makes cloud a natural fit for their enterprise IT.

As they weigh the impacts and opportunities associated with cloud computing, CSPs are also facing shrinking fixed-line revenues and ongoing erosion of margins in their traditional carrier business. These pressures reduce the financial flexibility that allows communications operators to invest in developing their cloud businesses—which makes it even more vital that they do so.

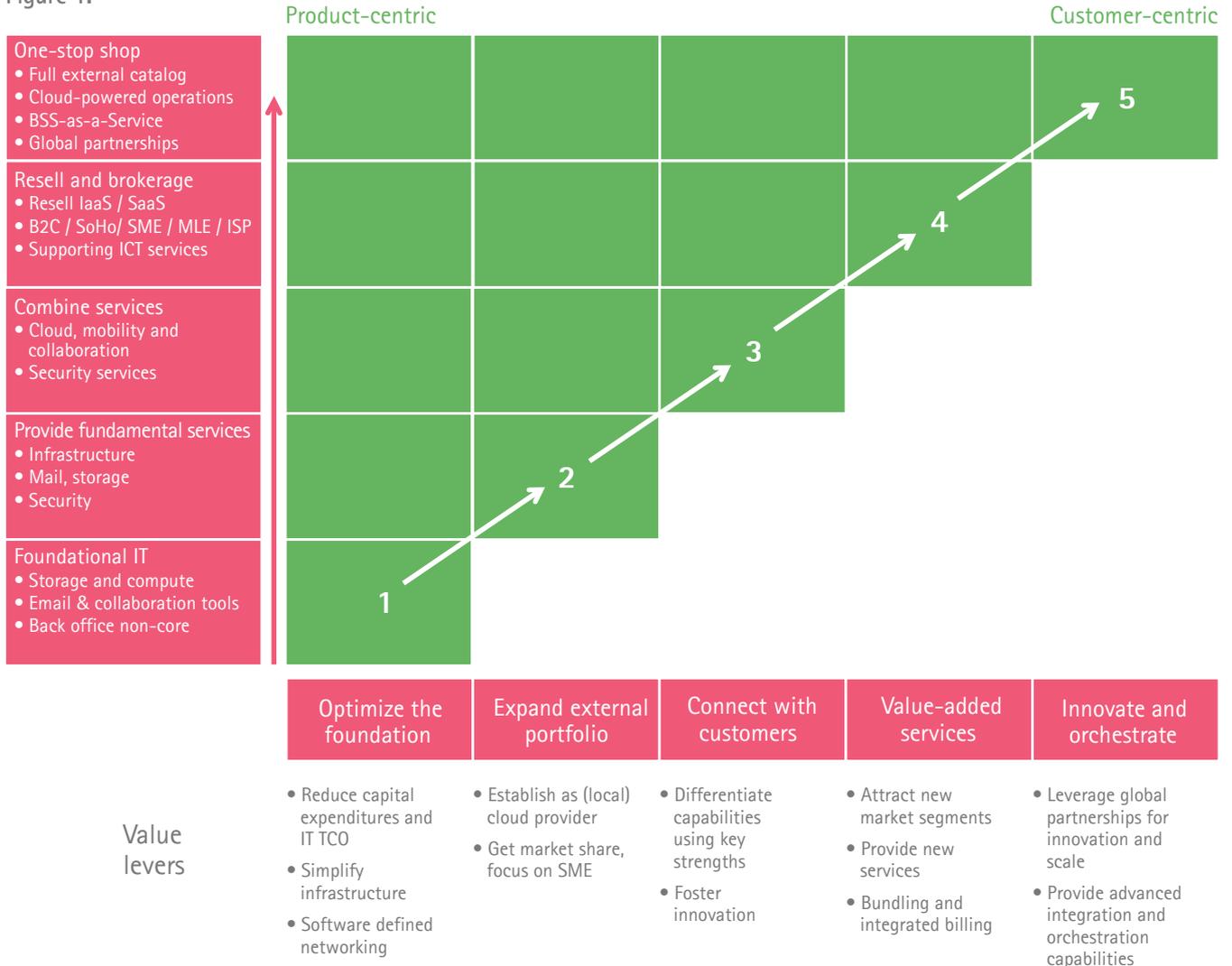


Journey to the cloud

Accenture's cloud maturity model for the communications industry



Figure 1:



CSPs are both cloud consumers and providers, with a drive towards cost reduction and revenue increase. As such, they are facing two related questions in the cloud journey: where to compete versus where to partner and how to combine investments for internal use and external provide.

Accenture has devised a cloud maturity model (see Figure 1) to help CSPs map their path to cloud maturity. It will help CSP leadership pinpoint their organization's stage in the journey, assess the upcoming opportunities and plan their best next steps. The model divides the journey to cloud maturity into five main phases.

Most CSPs are already on their way with step one, creating the right foundation by standardizing, virtualizing and automating their internal infrastructure. This foundation will not only help to reduce TCO and decrease time to market, it will also function as the stepping stone for step 2, where these services can be offered towards customers. In this stage, CSPs should also consider their sourcing

strategy for the collaboration capabilities. The answer will be predominantly determined by company size, with cloud being about economies of scale.

In the next 2 steps, CSPs can offer core capabilities, including infrastructure, collaboration and parts of security, towards it customers. This is the opportunity for CSPs to seriously enter the SME market with offering IT-related capabilities.

Steps 4 and 5 are all about creating customer value and differentiating from the main cloud vendors, by leveraging the key strengths (network, customer (billing) relationship and local presence) and offer a one-stop shop for ICT services, where the CSP has multiple sourcing options based on customer needs. This includes having a real service broker capability combined with (global) partnerships. Specific CSP domains, such as billing, location-information or M2M functionality, can now be offered as a service towards B2B customers and (independent) software vendors.

Networks and IT begin to mesh...

The power and performance of cloud computing architectures and the (increasingly mobile) devices through which users access cloud solutions are rising inexorably in line with Moore's Law, doubling every 18 months. However, the performance and capacity of CSPs' networks are improving only incrementally. This gap in growth rates effectively positions the network as the main constraint on future cloud delivery.

As a result, the ability to build cost-effective, next-generation, software-defined data centers is becoming increasingly important—especially considering rising prices for power and real estate. The compute layer has already largely been virtualized, and storage systems are close behind. The last piece is the network. Networks and IT assets are already starting to mesh—as demonstrated by the movement towards software-defined networking (SDN), which uses the power of virtualization to deliver flexibility and agility, and makes it easier to move to the cloud.

...as CSPs enter the cloud marketplace

Against this background, CSPs are entering the cloud marketplace in a variety of ways. Some have enhanced their cloud capabilities through strategic partnerships and/or acquisitions—examples in recent years include Verizon's acquisition of Terremark, and CenturyLink's purchase of Savvis. Others have taken a more organic approach, seeking to offer their in-house data-center storage and processing capacity externally in the cloud.

In combination, such strategies have seen CSPs as a sector become established providers of converged network/IT cloud services, with a market share estimated at around six percent of the global public cloud services market for Software as a Service (SaaS), and Platform as a Service (PaaS), rising to around 7 percent for Infrastructure as a Service (IaaS).¹



¹ Sources: Accenture Research analysis based on IDC, Saugatuck, and CSP2 Research.

Cloud computing

A quick primer

Cloud computing is a model for providing and sourcing information technology services on a "pay-per-use" basis through web-based tools and applications. Cloud services are "elastic"—highly configurable, adaptable and scalable, and generally require less up-front investment and ongoing operating operational funding than traditional IT models.

Clouds generally take one—or a combination—of four forms: private, public, hybrid and community.

Private clouds are dedicated to a single company for private use. They can be built within a company's premises—or located off-premise and owned and provided by an external third party—to deliver virtualized application, infrastructure and communications services for internal business users.

Public clouds are accessible to the public over a network, and are fully owned and provided by external third parties.

Hybrid clouds blend the benefits of public and private clouds, by enabling a company to retain confidential information in a private cloud, while providing access to the wider choice of cloud computing services available in public clouds.

Community clouds are collaborative resources shared between a limited number of selected organizations with common requirements and interests—perhaps in the same industry or geographical region—with the costs spread across the users. Community clouds can be hosted internally or by external third parties as a managed service.

All four forms of cloud computing can provide computing "on demand" at one or more of four levels.

- At the **infrastructure level**, companies use IaaS offerings to source raw computing resources, processing power, network bandwidth and storage on an on-demand basis. IaaS is the most basic cloud service model.
- At the **platform level**, PaaS provides infrastructure elements such as database, middleware, messaging, security, development tools and a presentation layer that are used to develop custom applications. It provides companies with an environment that supports rapid evolution of the software development lifecycle where there is a need for continuous change.
- At the **application level**, SaaS software application is delivered to the end-user encompassing any application and associated data which are centrally hosted on the cloud and accessed via web browsers, supporting device independence and anytime, anywhere access. Some customer relationship management companies, such as Salesforce.com, have achieved widespread take-up across many industries.
- At the **business process level**, cloud computing-based solutions—known as Business Process as a Service (BPaaS) offer an web-enabled, externally provisioned service for managing business processes. These solutions differ from application clouds in that they provide end-to-end process support, covering not just software but also people processes such as contact centers.

Cloud offers CSPs opportunities both internally and externally...

Efforts to harness the scalability, capacity and pay-per-use flexibility of cloud computing make it clear that the opportunities cloud offers to CSPs are twofold. Internally as in other industries CSPs have the potential to leverage cloud to deliver higher quality, more flexible and more scalable IT services at lower cost.

Externally, CSPs have the opportunity to deliver a new range of sophisticated cloud-based Everything-as-a-Service (XaaS) offerings to their customers. In doing so, they can leverage their own security and scale, while acting as first-party cloud service providers, and/or as resellers or “brokers” of third-party cloud solutions via direct or indirect alliance-based relationships. Potential exists for CSPs to sell their cloud services via partners, using a wholesale approach.

Potential synergies exist between the internal and external opportunity spaces. For example, CSPs could take their proven, best-in-class internal processes—such as billing—into the cloud, and offer them externally as billing-as-a-service to B2B customers such as utilities. However, the strength of globally established cloud players in areas like micro-billing means the competition in this space may be intense.

...but major challenges remain in each domain

These two areas of opportunity open the way for cloud's game-changing impacts across CSPs' business. However, many communications operators continue to face major hurdles in seeking to exploit cloud computing's full potential.

Internally, CSPs tend to have multiple diverse legacy systems—built up over many years of acquisitions and work-arounds—that are often custom-developed and not closely integrated, meaning they do not lend themselves easily to cloud migration. However, this challenge is also an opportunity to perform cloud migrations internally, and become their own credential when offering cloud services externally.

Externally, CSPs face cloud-powered competitors that are not only increasingly dominant in the cloud services market, but are also encroaching on CSPs' traditional space. For example, the amount of traffic carried on Google's network now makes it one of the world's biggest communications operators. As CSPs seek to respond to these competitive pressures and open up new revenue streams by offering cloud-based services, they cannot afford to ignore the sheer size and market presence of leading global public cloud providers such as Amazon, Google and Microsoft.

Cloud leaders' global scale gives them a competitive edge...

These established providers' economies of scale and large global customer bases enable them to offer public cloud services profitably at very competitive prices. This in turn makes it extremely difficult for CSPs—which tend to be smaller and nationally-based—to compete with them in offering cloud services. The challenge is even greater for CSPs that are accustomed to the relatively higher margins historically available from their legacy voice and data service offerings.

In the next few years, we believe competition in the public cloud services space will intensify even further, as some major global systems integrators enter the market. As they roll out their offerings, these players will bring to bear not just their scale, but also their pedigree of proven innovation, their services-oriented cultures, their strong security credentials and their ready-made global ecosystems of application developers.

The competitive pressures for CSPs also vary by geography. In the US, the dominance of Amazon and Google means CSPs must reinvent themselves before they can compete. In Europe, regional and national data protection regulations—which often require data to be held within specified geographical borders—mean CSPs are more sheltered from competition from the likes of Amazon. They will, however, still need to differentiate themselves to build large customer bases and revenues. In the Asia-Pacific region, Telstra has made progress as a

cloud provider in the relatively protected Australian market. But most other CSPs in the region have made little headway—and are facing increasing pressure from other CSPs with global reach.

...so CSPs need to choose carefully where to play

Given the competitive challenges, CSPs in all markets will need to be very smart in picking where to play in the cloud arena. They'll also need to align the precise balance and positioning of their cloud presence with their specific capabilities (whether grown or acquired), resources and their customer base.

The options include:

- Becoming a first-party provider offering its own capacity and services direct to customers in the cloud
- Acting as a cloud services broker, reselling third-party cloud services for a slice of the revenues
- Targeting national, regional or global opportunities
- Focusing on selling to specific segments such as consumers, governments, small and medium-sized businesses (SMBs), or corporate customers.

Over time, we believe this segmentation will become increasingly specific to different types of business customer, including addressing vertical industry segments such as “health cloud”, with significant value-added services offered on top of the raw storage, hosting and network-based capabilities.

Depending on each CSP's specific positioning, capabilities and customer base, each of these market approaches—and any combination of them—could be the optimal choice. Those that choose well will gain a powerful and profitable position as a cloud provider for their target segments, while making their internal operations more cost-efficient and agile than ever before. We'll now look in more detail at what the various market approaches could mean for CSPs.

Three phases of the CSP cloud journey

CSPs' journey to become cloud service providers consists of three phases, each opening up new opportunities, but also demanding higher investment in capabilities, service development, and customer sales and management.

- **Phase 1**—where most CSPs are currently—involves “harvesting the low-hanging fruit” by offering services that are already in demand among enterprise customers, and where CSPs already possess significant expertise and the assets required to deliver the services. These offerings include:

- Services such as **hosting on demand**

- **SaaS enablement** for widely used

- Industry-standard office applications

- **Storage on demand.**

- **Phase 2** is when CSPs expand the portfolio of services established in phase 1, and grow their cloud customer base and revenues, without having to make major changes to their current operating model. Customer offerings in this phase include:

- **Cloud security services**, where CSPs can leverage their existing market positioning in managed security services

- **Unified communication as-a-service**, where they can

strengthen their market presence across messaging, voice over internet protocol (VoIP) and PBX

- **Wholesale capacity**, where CSPs can leverage their global

IP backbone and private multi-protocol label switching (MPLS) networks to offer processing capacity-as-a-service to both cloud service vendors and enterprises.

They could even, for example, white-label a complete CSP-focused cloud infrastructure solution for regional operators to rebrand as their own.

- **Phase 3** is the final stage in CSPs' cloud evolution, and requires them to significantly adjust their business model. Customer offerings in this phase include:

- **Billing-as-a-service (BaaS)**, with CSPs leveraging their experience in offering billing solutions, and potentially going to market in collaborative partnerships with

 - specialized billing providers

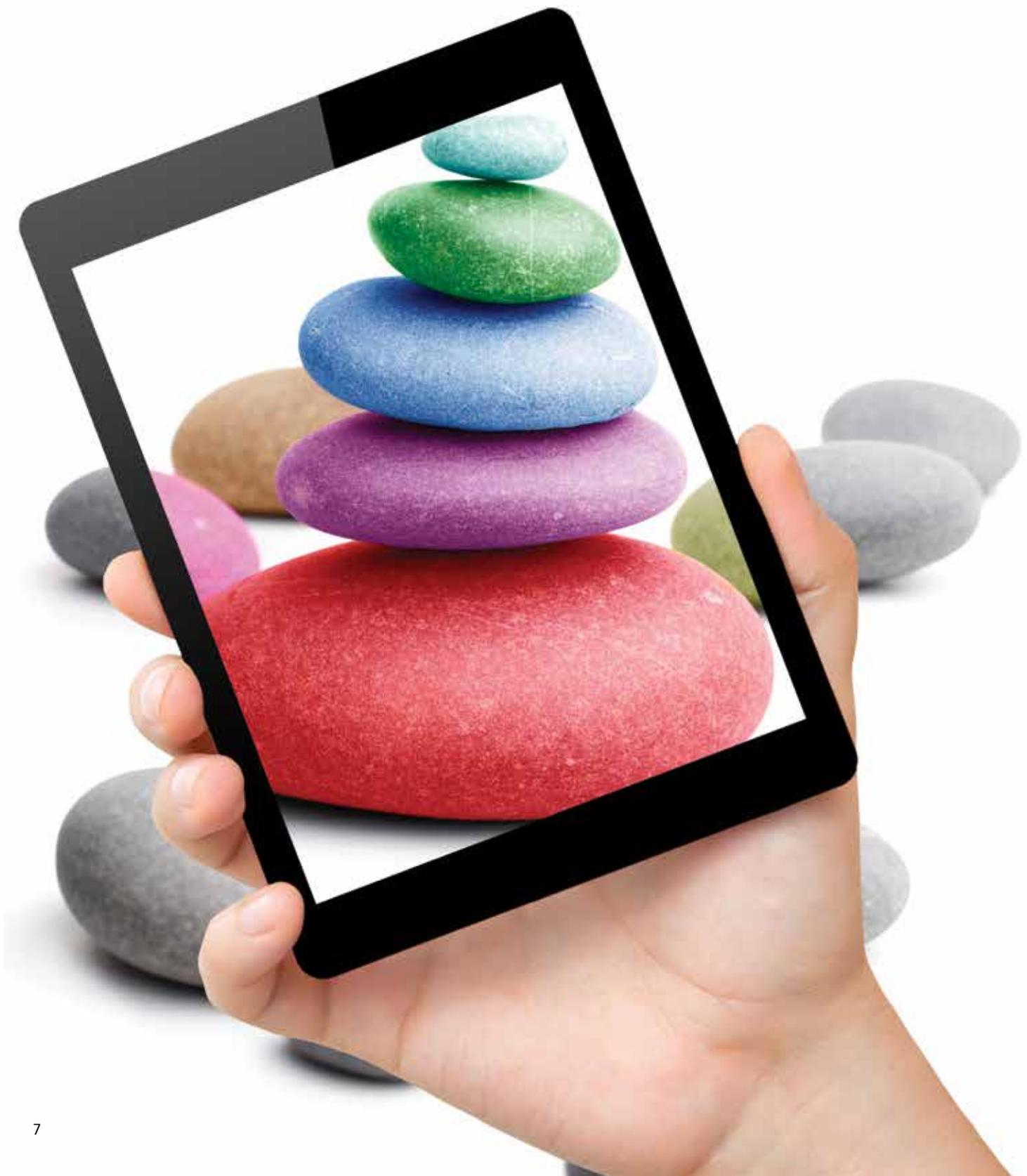
- **Acting as a cloud services broker**

 - or intermediary between end users and third-party cloud providers, leveraging their experience in delivering multiple services, and enabling end users to switch between cloud vendors without worrying about the operational aspects

- **Platform-as-a-service (PaaS)**, offering platforms that help customers build applications that improve their productivity and reduce costs.

Indeed, the rise of mobile apps is already pushing CSPs towards PaaS. The services in phase 3 require CSPs to gain significant experience in cloud service provision before launch—but could deliver rewards by differentiating their offering.

Seven ways CSPs will use cloud services to change the game in their industry



In recent years, CSPs have already migrated from being the “wireline guys” to the “wireless guys” and then the “data guys”. Throughout this ongoing process of reinvention, they have remained a trusted and valued participant in customers’ lives.

To survive and thrive in the cloud-enabled future, CSPs will have to undertake a further migration. The next stage in their evolution is to become “cloud guys” – not necessarily across all service areas and regions like the global cloud giants, but in a more targeted way in their chosen customer segments, industry verticals, functional niches and/or geographies.

This will involve adding adjunct capabilities, extending what they already have to enable them to offer cloud services, deliver solutions via the cloud, or both.

In taking this step, CSPs would be supported by the inherent strength of having already secured customer trust, relationships and an established client base. These factors are a major reason why, despite their scale disadvantages compared to the global cloud incumbents, CSPs have the opportunity to play a significant role in the cloud services marketplace of the future.

Those that seize this opportunity successfully will use cloud to change the game in seven main ways.

1 Shifting the industry mindset from vertical to horizontal, and from stand-alone to collaborative

CSPs have traditionally thought vertically—developing specific solutions in-house to meet a particular customer need, and then selling those solutions direct to customers. This approach has served CSPs well with legacy products like SMS to voicemail. But cloud will drive a radical change in CSPs’ mindset and approach by requiring them to switch to a horizontal view while maintaining an industry-specific vertical focus, and differentiating their offerings from pure commodity horizontal service offerings.

This will mean looking across the full range of information and communication technology (ICT) elements—communications, analytics, location-based services, hardware, software and support—and working out the best way to offer these in an integrated, bundled way via a single billing and contact point, often using collaboration and partnerships. Such an approach will enable CSPs entering the cloud space to leverage their three key advantages: access to networks; local presence,

knowledge and skills; and an existing billing relationship. It will also require CSPs to strengthen their collaborative ecosystems so they can continually form, manage and sustain a wide array of new partnerships and alliances with different types of collaborators.

Against this background, thinking horizontally will help drive three major changes for CSPs. They will be able to enter a variety of segments: cloud, analytics, SMB applications, machine-to-machine (M2M) services and so on. They will be able to expand their go-to-market approach using open application programming interfaces (APIs) and models like cloud service brokering. CSPs will also be able to use collaborative partnerships to bundle the service offerings that customers want—drawing on expertise and solutions supplied by their technology providers—resulting in potential expansion of the addressable market spend and diversification of their brand and value propositions.

The risks of not embracing cloud

At first sight, entering the cloud services space might appear risky for CSPs. However, the risks of not embracing cloud may be even greater. We believe communications operators that do not attempt to seize the cloud services opportunity will find that they continue to be hit by three severe impacts.

- First, they will be squeezed by OTT providers entering and cannibalizing their core communications services market, driving their traditional carriage revenues downwards.

- Second, they will find rising amounts of network bandwidth being consumed by flat-fee-paying customers.
- Third, unless they manage to tap into new sources of revenue, the first two factors will drive them towards commoditization and a role as a "dumb pipe".

To avoid these impacts and mitigate the risks they present, we believe CSPs need to expand into cloud services.

What does the cloud-providing telco of 2017 look like?

"By 2013 or 2014, equipment and Cloud Services vendors would very likely provide telcos with new, cloud-related capabilities.

- First, vendor offerings facilitated the virtualization of telco networks. As a result, telcos could achieve much higher levels of reliability and sustained low latency. With these improvements, telcos could offer compute and data center services such as Infrastructure-as-a-Service via the network, i.e., on demand.
- Second, vendors are likely to provide higher levels of security using cloud-based technology. For example, Alcatel-Lucent's Cloud Band lets telcos stitch together dissimilar switches to create Virtual Private Networks. These improvements might easily give telcos a performance advantage over Amazon and other cloud services providers.

- Third, vendors would be likely to alter traditional telco architectures and include a Cloud Brokerage Service in telco networks. This would let telcos draw upon families of application protocol interfaces (APIs). If this change became widespread, it would make it easier for telcos (and their Cloud Services independent software vendors) (ISVs) to provide applications to customers via a Cloud Management Platform or bus. In addition, by using such API families, telcos could offer business customers a way to migrate legacy applications onto mobile devices. They could also offer mobile devices that were open service platforms, not limited to working with a single operating system."

Source: Saugatuck, What Does the Cloud-Providing CSP of 2017 Look Like? June 25th, 2012.

2 Combining cloud, mobility and analytics to deliver a new wave of innovative and collaborative services at faster pace

CSPs' established strengths in networks, customer relationships and mobility position them to provide especially compelling cloud solutions—by leveraging mobile integration, analytics and location information to forge partnerships and drive innovative and collaborative services. We believe these services will include retail offers and advertising targeted at consumers' lifestyle and location (in partnership with retailers and consumer goods companies), m-payments (with banks and retailers), and infomobility (with vehicle manufacturers).

Rather than developing and delivering complex end-user offerings themselves, CSPs would create the building blocks for these partner companies to use, with open APIs to integrate and access the relevant capabilities. The partner businesses would then use these building blocks to enable new services, while sharing risks, costs and revenues with CSPs.

Cloud-enabled collaborative solutions are already emerging. Examples include cloud-powered video over mobile—including search—which has massive potential for CSPs, including as part of content discovery and social media style unified communications and collaboration (UCC) offerings, both for businesses and consumers. By providing APIs across devices, CSPs will make these video offerings easy for businesses to integrate and use.

CSPs can further differentiate themselves by collaborating with device manufacturers to pre-integrate core capabilities such as collaboration, video-to-video links and M2M capabilities on mobile handsets in an easy-to-use form. By leveraging their proven capabilities around mobility and networks, CSPs can become major players in the emerging M2M ecosystem. CSPs may also use location-based mobile advertising models

to open up new revenue streams, for example, by giving away handsets and funding them through advertising and transactional revenues.

3 Leveraging the cloud for security capabilities and to meet security and compliance requirements

Due to their economies of scale and global support models, CSPs have the ability to deploy and support controls in a rigorous and consistent manner. These same solutions would be cost prohibitive when implemented, on premise, at a smaller scale and supported around the clock for and by a single organization.

CSPs should look for gaps in their security capabilities and look to close those gaps by extending current security support capabilities with a Security-as-a-Service (SECaaS) model. SECaaS can provide a better return on investment than if each security capability is implemented and supported locally.

Integrating SECaaS products and offerings allows communications organizations to spend more of their time focusing on their main business offering instead of security.

Three key items to be addressed when planning security in the cloud:

1. Extending technical controls to the cloud
2. Augmenting contractual arrangements to address third-party risk in the cloud
3. Broadening security operational controls to share responsibilities

The level of effort companies will need to expend insuring security for their cloud

implementations will be directly related to the value of the data being stored in the cloud. If the data stored is public data—such as marketing data that is not sensitive and is available to anyone—the level of effort is very low. If organizations are storing sensitive customer personal information or customer billing data in the cloud, they will need to consider and comply with regulatory or contractual requirements, as well as the risk of and liability resulting from potential exposure.

Moving toward the new normal

Security-as-a-Service

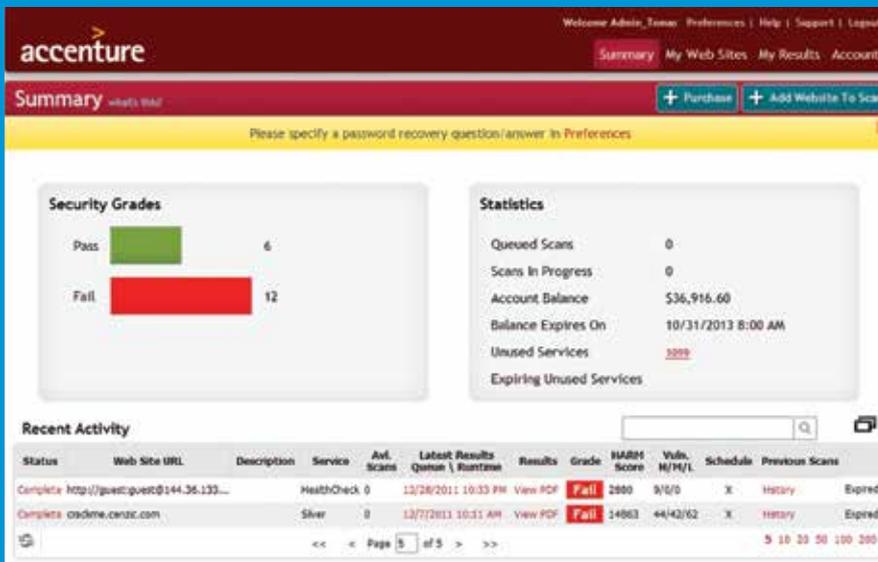
As cloud services mature, more CSPs' business customers demand security requirements be met by providers and third-party offerings. Many of these third parties are moving to cloud-based offerings to meet those needs. As CSPs move towards a cloud services broker, appropriate security controls must be available to meet customer demand. In the new normal, CSPs will support customers' demands for security services by offering a managed security service that leverages provisioning, governing and managing cloud-based security services as value-added cloud services to support customer adoption.

The services will cover all cloud models, IaaS to PaaS and SaaS, in the context of both private and public clouds and will support hybrid cloud integration with existing enterprise IT environments. The benefits for customers include delivery of security services, at scale, that would otherwise be cost prohibitive to procure, integrate and maintain.

As an example of Security-as-a-Service offered through a cloud broker, Accenture has developed a Web Application Scanning aaS (WASaaS) solution. This offering is specifically designed to help CSPs

and other customers understand the security posture of their applications quickly and cost effectively. WASaaS enables security assessments of web applications, mobile applications and static code analysis, with integration into broad cloud-based and on-premise governance risk and compliance products.

Figure 2: Screenshot of Accenture's Web Application Scanning as a service report output, designed to help communications customers understand the security status of their applications



4

Acting as a cloud broker to expand cloud offerings and move up the IT stack

As we noted earlier, the economies of scale now being achieved by established leaders such as Amazon make it difficult for other players—including CSPs—to compete profitably in public cloud IaaS. However, CSPs can leverage their established B2B relationships and strong reputation for security to sell cloud offerings to corporations and SMBs, and in the growing hybrid market space.

These companies already trust CSPs to manage their communications networks, so providing IaaS as well is a natural extension. By using connectivity as the core and then bundling cloud services around it, CSPs can then move “up the stack” by offering PaaS and, ultimately, SaaS. With some clients this may include CSPs selling internal capabilities—such as end-to-end billing—externally.

As well as selling their own capacity and services in the cloud, a more attractive route for many CSPs may be to act as cloud service brokers for corporations. This will involve reselling, integrating and orchestrating a range of in-house and third-party cloud services and providing overall security around these services. CSPs can do this by leveraging their established security capabilities, or teaming with other complementary providers to offer clients a full end-to-end service.

Partnerships with cloud vendors will play a vital role in CSPs establishing themselves as cloud brokers. With these in place, CSPs will broker an expanding array of third-party cloud services wrapped around core connectivity for functions like billing,

HR and facilities and administrative (F&A) costs, and in vertical markets like healthcare and infomobility. This approach is now extending to offering ERP in the cloud, including industry-specific solutions across mining, utilities and other industry sectors.

Many CSPs seeking to become cloud services brokers will be challenged to maintain sufficient profitability to make the service worthwhile. Cloud service brokering requires a very lean and low-cost operating model: the revenues from selling SaaS solutions are significantly lower than those traditionally available from selling licensed software—perhaps as little as 10 to 20 percent. CSPs will need to accept that the 40%-plus margins once generated by traditional voice services are a thing of the past, and that their future lies in reaping narrower margins from high-volume transactions in the cloud.

More generally, the opportunity to act as cloud services broker underlines how cloud supports the overall trend of CSPs moving up the value chain as integrated, single-source ICT providers. This shift will require CSPs to provide some form of professional services to their SMB and large enterprise customers. CSPs should seek to buy or build expertise in providing professional services, as this could become a major differentiator for cloud brokers in the future.

The cloud services broker

An emerging model for CSPs

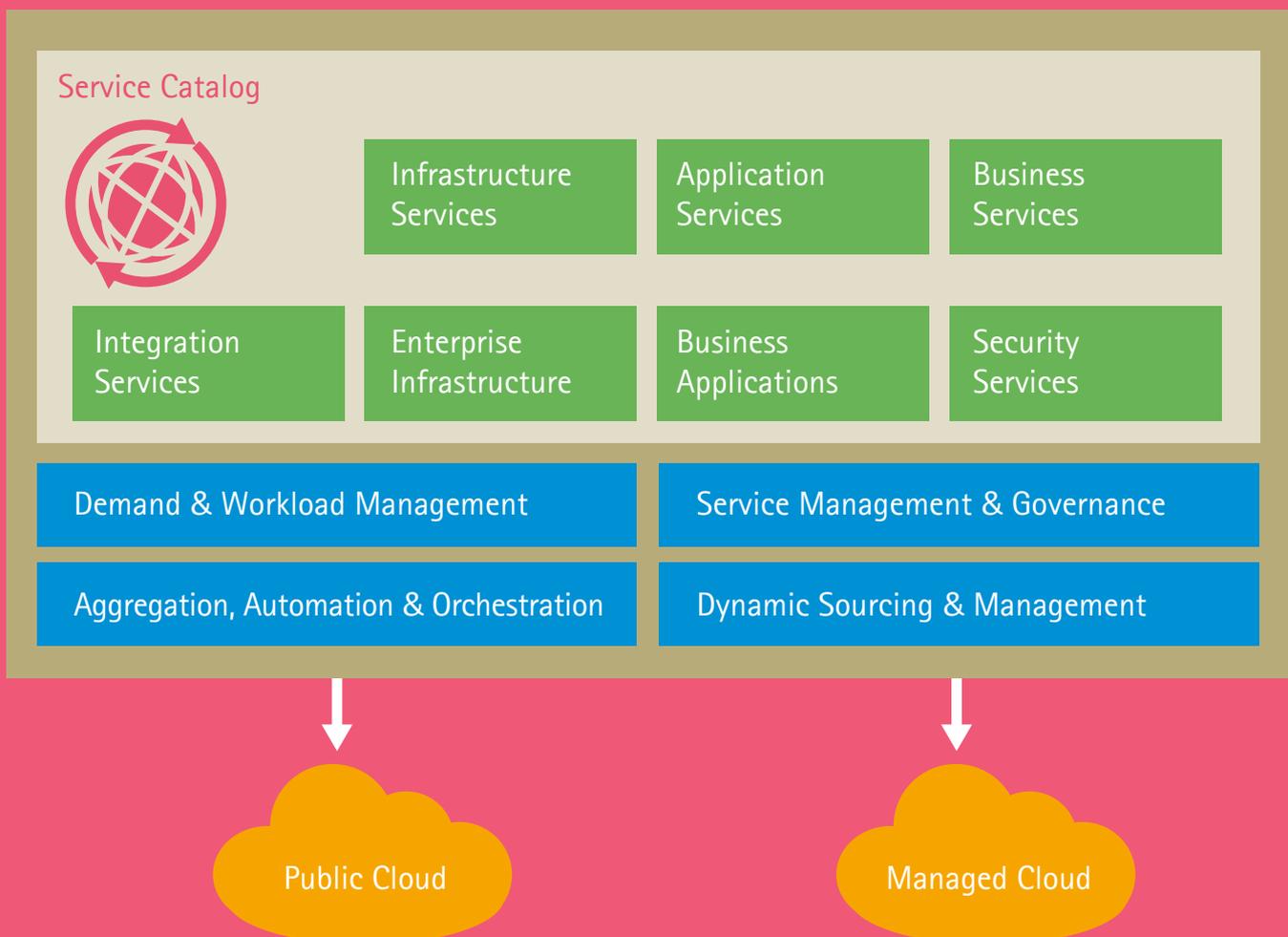
As CSPs' business customers continue to adopt cloud services and more third-party cloud offerings are developed to meet their needs, we believe many CSPs will move towards the role of cloud services broker. Under this model, CSPs will support customers' migration to cloud computing by offering a managed service that handles the processes of selecting, procuring, provisioning, governing and managing cloud services, and offers an orchestration platform and value-added cloud services (which may include cloud data security) to support adoption.

The managed service can cover the full spectrum of cloud services, from IaaS to PaaS and SaaS, and from private to public cloud solutions—that will coexist with customers' legacy in-house systems. The benefits for customers include delivery of the right applications solutions to the right users at the right time, stronger and more consistent governance and security, and lower total costs of ownership.

To help CSPs develop and offer cloud services brokering solutions to their customers, Accenture has developed an industry-specific variant of its established Accenture Cloud

Platform (ACP) solution, called ACP for Service Providers. ACP for Service Providers is specifically designed to help CSPs get cloud services brokering solutions up and running quickly and efficiently, as an alternative to the cost and effort of developing these services in-house. ACP for Service Providers enables CSPs to provision infrastructure resources—including compute, storage, and network—across multiple IaaS providers, and also includes Testing as a Service, a Big Data platform, and Application Development Tools in the Cloud, with the capability to progress to development tools in the cloud and PaaS.

Figure 3: Schematic of the cloud services broker model





Accenture's Innovation Center for SAP Solutions in Australia

Launched in collaboration with Telstra

In Australia, Accenture is partnering with Telstra to provide businesses with SAP solutions in the cloud, including the HANA in-memory analytics platform. Under the collaboration, Telstra provides SAP licensing, network, compute and storage infrastructure, while Accenture manages systems integration, migration, SAP application maintenance and help-desk services.

The offering is driven by the Accenture Innovation Center for SAP Solutions in Australia, which was launched jointly with Telstra in 2012. Based at the Telstra Customer Experience Centre in Melbourne, with virtual presentations accessible Australia-wide, the Innovation Centre provides leading-edge, fully scalable SAP solutions for Australian enterprise and government organizations.

The Center also enables customers to create an infrastructure they can use to perform proof-of-concept trials and explore emerging delivery models such as cloud and mobility. This opportunity also helps customers understand analytics through real business-oriented scenarios, and allows them to take advantage of the leading-edge offerings from SAP, Accenture and Telstra to realize value by transforming their businesses.

CSPs launch vertical market cloud offerings

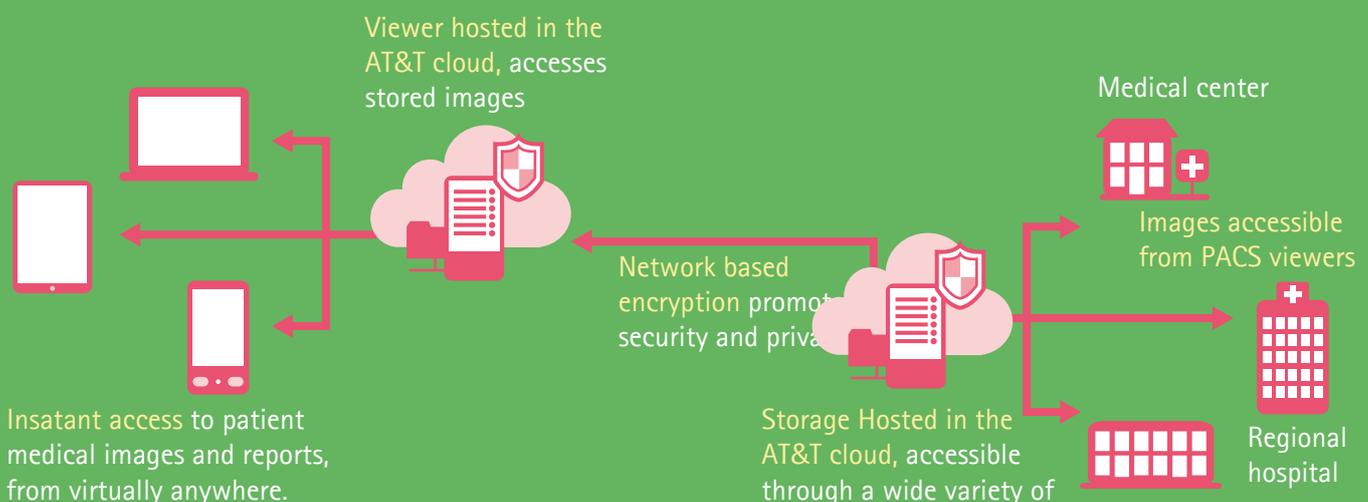
A number of CSPs across the world — including the likes of AT&T, Orange, Telstra, BT, and Telecom Italia — now have bundled cloud service offerings in place for dedicated verticals such as healthcare, finance, and transportation. These solutions

are generally designed to address common vertical industry challenges while also offering robust security.

A recent example of a vertical offering is AT&T's Medical Imaging in the Cloud. Targeting medical

centers and hospitals, this solution helps healthcare companies leverage the cloud to tackle key challenges such as high data volumes and the need for reliable data security, data availability and business continuity.

Figure 4: AT&T's Medical Imaging in the Cloud



Source: http://www.corp.att.com/healthcare/docs/medical_imaging_cloud.pdf

5

Enabling and accelerating SMBs' journey to the cloud

CSPs have already deeply penetrated the SMB customer segment; they are often trusted and longstanding providers of multiple fixed and mobile services. Currently, SMBs also tend to be low adopters of cloud services. This partly reflects the fact that SMBs—especially those at the lower end of the size range—tend not to have an IT department to manage and integrate different cloud services.

We believe these characteristics make SMBs a major market opportunity for cloud-enabled solutions. Offering cloud services to help SMBs leverage cloud computing's pay-per-use costs, scalability and flexibility is a natural extension of the services that CSPs are already managing and delivering for their SMB customers.

Selling business technology services to SMBs is still a people-to-people business, and SMBs often source their needs from smaller local and niche resellers. So, there is clear potential for CSPs to open up their networks and create portals to let SMBs access specialist third-party SaaS solutions in a consistent and unified way, using a single point-of-contact and billing relationship.

This approach offers a win-win both for the CSP—which sells the infrastructure services and shares the revenues for the customized cloud applications—and also for the cloud application provider, which gains the benefits of wider customer access and scale. Ultimately, this collaborative arrangement may evolve into a model similar to mobile apps, with an array of custom apps available via the CSP's SMB portal, without the CSP having to get involved in the detail of what the application actually does.

The sheer size of the SMB segment—and SMBs' need for support in managing, integrating, and maintaining security around cloud applications—will enable CSPs to sell third-party SaaS offerings bundled with connectivity. Some services, such as billing, might be sold direct from CSPs' own internal systems and data centers, while others—like standard office productivity applications—will be brokered. A growing number of CSPs are already offering their business customers industry-standard suites such as Microsoft Office 365 in the cloud.



6 Moving to agile, lower-cost, cloud-powered operations—including shorter innovation adoption cycles and new agile business models

Alongside the potential to sell cloud solutions to customers, the advent of cloud technologies also presents major opportunities for CSPs to improve the cost effectiveness and flexibility of their own IT, becoming more competitive across their operations. However, this will take time; many CSPs currently have diverse and in some cases fragmented IT estates that are not easily migrated to the cloud.

As a result, CSP use of the cloud to provision internal IT capabilities is still quite limited. However, growing numbers of CSPs are implementing an API layer that enables legacy systems to “talk cloud” and link to cloud-based capabilities such as analytics and M2M. If the internal IT function is not able to provide access to these capabilities, then the business

units will start to procure them from other cloud players—a situation that is already a reality for some CSPs. As well as preventing this fragmentation of IT, creating a cloud-enabled API layer can also deliver further benefits for CSPs both in their internal operations and their external services.

Internally, implementing an API layer can help CSPs unlock more insights and increase efficiencies in their business and networks. Over time, cost and user pressures will drive out legacy applications and processes, as the demand for flexibility and pay-per-use costing of cloud-based services increases. Externally, a cloud-enabled API layer can open the way to new services and capabilities—for example, by allowing CSPs to offer

formerly internal applications and processes to external customers in the cloud.

Just as players like Amazon and Telstra began by building capacity internally and then rolling out externally, so the distinction between CSPs as “consumers” and “providers” of cloud services will fade over time. In many cases, we believe CSPs will both use cloud services themselves, and also broker those same services to their customers. In parallel, the trend towards the “cloudification” of CSPs’ networks will continue, giving them greater agility and scalability while shifting the balance from fixed to variable costs. This development goes hand in hand with cloud APIs and the move to the M2M-enabled “internet of things.”

Cloud computing will also require CSPs to shorten their innovation adoption cycles—and will simultaneously provide them with the means to do this. In a cloud-powered environment characterized by agile development approaches, CSPs will no longer have a window of six to 12 months in which to assess, produce and deploy new technology innovations. Product and service development in the cloud will enable CSPs to reduce this time frame dramatically to a few weeks.

Rising adoption of cloud services will also see CSPs adopt new business models and move up the value-added stack, elevating their role above traditional focus on connectivity. Device providers have now recognized that devices will no longer deliver the high (and rising) revenues they once did, and that they must respond by moving into content services, often in partnership with CSPs. More generally, new and emerging digital platforms will continue to present CSPs with opportunities and threats—and they will need to be more agile and adaptive if they wish to continue to play a legitimate role in the enterprise space.



7

Forging global “constellations” of national providers to build cloud services on a competitive scale

Many CSPs are focused mainly within their national borders—and since they are regarded as national flag-bearers, the question of who owns them is a contentious and heavily regulated political issue. More positively, they are seen as trusted and secure providers by governments, businesses and consumers in their core territories. At the same time, data regulations in many parts of the world—notably the European Union—restrict the storage or transmission of individuals’ personal data outside the home jurisdiction or region, making some customers wary of using global cloud providers.

Together, these factors have a number of impacts. The protectionist sentiment and national regulation surrounding CSPs make it difficult to drive cross-border industry consolidation, so achieving global scale is harder than in less regulated

sectors. However, local regulation also means CSPs are often well-placed to build up a strong national or regional cloud business partly sheltered brought by the full force of competition from the global cloud giants. This opportunity can be strengthened by CSPs winning cloud supply contracts with government bodies.

As CSPs’ nationally based cloud businesses gain traction and momentum, we believe they will then move to gain global reach, scale and credibility—not through M&A-driven consolidation, but through collaboration. Echoing the approach they have already taken with mobile voice and data roaming, CSPs will form cross-border “constellations” to provide bundled menus of cloud services, and share assets and service customers globally in a more seamless and cost-effective way—and with a wider array of solutions—than they could each achieve on their own.

CSPs forge strategic partnerships to enhance their offerings in SaaS

Many major incumbents across the world have created partnerships to provide applications in the cloud.

- AT&T has launched a new version of AT&T Synaptic Compute-as-a-Service under a cooperative agreement with VMware.

Source: https://www.synaptic.att.com/clouduser/html/productdetail/Compute_as_a_Service.htm

- Verizon—in partnership with Virtual Holding Technology—has launched a new cloud-based CRM solution, Voice Call Back.

Source: http://www.virtualhold.com/pressReleases/2012/051012_Verizon_VHT.html

- NTT America extended its Recovery-as-a-Service portfolio with the addition of Cloud Recovery, in partnership with Geminare.

Source: <http://www.us.ntt.com/en/newsroom/press-releases/press-releases/article/ntt-america-expands-recovery-as-a-service-portfolio-raas-introduces-cloud-recovery-solution.html#.UiC7gqQo7IV>

- In Australia, Telstra has released a new public cloud contact center solution powered by IPscape.

Source: <http://www.destinationcrm.com/Articles/CRM-News/Daily-News/Telstra-Releases-Public-Cloud-Contact-Center-Solution--83563.aspx>

- In Germany, T-Systems and Fraunhofer Society are developing IT-based logistics solutions in the cloud.

Source: <http://www.t-systems.com/news-media/cloud-marketplace-for-logistics-sector/824522>

CSPs' window of opportunity into the cloud



As well as intensifying the “burning platform” for CSPs’ traditional services, the advent of cloud computing also creates a turning point for the industry—a window of opportunity for the leaders of CSPs to incentivize innovation in new ways, and transform the culture of their organizations to fuel new cloud services.

This profound cultural and technological change will also require CSPs to take a holistic view of cloud computing, and advance from a mindset of selling communications offerings to selling business transformation. This, in turn, will demand that CSPs acquire the ability to segment their client portfolios in new ways, providing and/or coordinating elements such as client training, consulting and organizational redesign—often through partnerships with specialized providers.

By bundling these value-added elements into the cloud solutions they offer

their customers, CSPs will be able to differentiate themselves from the global commodity cloud service providers. However, the window of opportunity for CSPs to establish this differentiation is not likely to be open for long. It will probably start to narrow within the next two years, as the global cloud incumbents move towards selling Business-as-a-Service solutions.

To seize this opportunity with speed and certainty, CSPs will need to move fast and make changes—including incentivizing innovation and collaboration—more effectively. They will need to shift their

skills bases towards selling business-sensitive solutions, developing more sophisticated pricing and bundling models, and collaborating in new ways with complementary partners to deliver complex end-to-end services.

Cloud computing will change the game for CSPs. Those that prioritize the right actions today will maximize the chance that when the game does change, it turns in their favor.

By 2017 CSPs could have transformed towards major players in the global cloud ecosystems

“If [communication service providers] perform well as cloud service providers and cloud service brokers (CSBs), they could begin to affect prices, competition, and future cloud services development. The pricing impact would be due to the fact that if CSPs served a large part of the enterprise, SMB and consumer market for cloud services and applications, they would have substantial market power and could influence supply and prices.”

Overall

- The CSP of 2017 will base its business model on Cloud Computing and Cloud Services
- They will act as Cloud Services Brokers or as a “cloud middleman”.

Cloud and Business focus

- The cloud services-providing CSP of 2017 offers “everything-as-a-service” to all

- By 2017, CSPs begin to place any application on any device using a sophisticated cloud management platform
- CSPs will focus on preserving relationships with key customers
- CSPs will orchestrate relationships with a wide range of vendors that create and support cloud services.

Source: Saugatuck: What Does the Cloud-Providing CSP of 2017 Look Like? June 25th, 2012

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Koen v d Biggelaar has been working in the communications industry for the past 15 years, focusing on strategy, IT and network architecture, and service delivery platforms. He is currently a principal consultant focusing on cloud strategy, working with clients using cloud as enabler for new business models. He has also been part of the team defining the Accenture cloud strategy. Koen is based in Amsterdam.

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Mark Boyle is the managing director for cloud computing and mobility in Accenture's Asia Pacific operations. Prior to his current role, Mark was responsible for the Accenture technology business in more than 12 countries in the Asia Pacific region. A key responsibility for Mark's current role is to lead technology innovation in Asia Pacific and to engage with clients around the potential impacts of cloud and mobility to their marketplace and within their own enterprises. Additionally, Mark was appointed as a senior advisor to the Chinese Government's Ministry of Commerce and works closely with Chinese officials on the implementation of their technology innovation agenda.

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Robin Murdoch is a managing director within Accenture's Communications, Media and Technology business, advising top executives from the world's leading consumer electronic, internet, media and communications companies. He helps our clients focus on the development and execution of strategies that capitalize on the changing digital landscape. Robin leads Accenture's global strategy practice for communications, media and technology, providing strategic advisory services to clients.

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Valerio Romano is the Cloud Global Lead for Accenture's Comms industry practice, Media and Technology area. In this role, he focuses not only on the huge impact cloud is having in this segment in transforming client relationship and production processes, but also on the new opportunity created by cloud for telco companies that have now become cloud service providers.

Valerio's team has created a version of the Accenture Cloud Platform specific to service providers to help them sell cloud services to small and medium businesses, enterprises and large accounts. Using the open-source foundation of Accenture Cloud Platform, this system allows telco providers to launch cloud services in a few weeks and to align service provision cost to their cloud business, according to the 'pay-as-you-grow' cloud paradigm.

Valerio is also leading Accenture's CMT Technology Consulting and Infrastructure Services business in the EALA region.

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John (Jack) Sepple is the Senior Managing Director for both Infrastructure Services and the Accenture Cloud strategic initiative. In his Infrastructure Services role, Mr. Sepple manages teams across consulting and outsourcing to help clients transform infrastructure end-to-end—from data center and workplace to network, security and operations—and take advantage of high growth technology trends. The teams work across the infrastructure lifecycle of innovate, solution, transform and operate to create more agile, scalable, secure and flexible infrastructure.

In managing the cloud strategic growth initiative, Mr. Sepple leads a team focused on helping clients plan, implement and manage cloud services, including infrastructure-, platform-, software- and business process-as-a-service. This includes the Accenture Cloud Platform unit that develops proprietary solutions and cloud broker services that position Accenture for further growth around the cloud.

Prior to assuming his current roles, Mr. Sepple served as Global Managing Director, Network and Accenture & Cisco Business Group. His responsibilities included overall operations including sales, solution development, and delivery excellence. Previously, he was the North America campaign and Cloud lead for Accenture's Communications Media & Technology operating group.

About Accenture Communications Industry Group

Accenture's Communications industry practice serves leading communications service providers in an increasingly evolving and dynamic competitive environment. Accenture helps Communications industry clients face the challenges to connect with the digital consumer, increase revenues, develop and launch innovative products and services quickly and optimize network performance while reducing costs. The combination of our consulting, technology and outsourcing experience, paired with our deep industry knowledge, helps us verify that we bring the right solutions and resources to enable our clients to unlock profitable growth, improve operations and achieve high performance.

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About Accenture Cloud

Accenture is uniquely positioned to help organizations use the cloud for competitive advantage within a complex digital marketplace. With a full range of cloud services, from strategy and implementation to migration and a cloud brokerage, we help clients plan for, integrate and manage in a hybrid world where cloud and legacy systems co-exist. We combine those insights with our industry knowledge, delivery experience and diverse ecosystem to drive innovation and transform complex environments into high-performing digital businesses.

Accenture has worked on more than 6,000 cloud computing projects for clients, including more than 60 percent of the Fortune Global 100, and has more than 8,500 professionals trained in cloud computing.

About Accenture

Accenture is a global management consulting, technology services and outsourcing company, with approximately 266,000 people serving clients in more than 120 countries. Combining unparalleled experience, comprehensive capabilities across all industries and business functions, and extensive research on the world's most successful companies, Accenture collaborates with clients to help them become high-performance businesses and governments. The company generated net revenues of US\$27.9 billion for the fiscal year ended Aug. 31, 2012. Its home page is www.accenture.com.

