Risks, rewards, and strategies for successful CSP cloud transformation
Summary

In brief

As communications service providers (CSPs) embrace cloud technologies and capabilities across a whole range of functions, divisions, and lines of business, there is an opportunity to exploit an even bigger opportunity.

Rather than taking a bottom-up approach to cloud, it is better to put cloud at the center of corporate strategy. This means transforming the DNA of the company and transitioning from being a traditional telco to a genuine digital operator. Only by making this transition will CSPs be able to construct an operating model that enables them to expand into new markets – such as video and the Internet of Things (IoT) – using technology and processes that are agile, flexible, and efficient. Cloud transformation sits within this overall process of a wider digital transformation.

The starting point for such a transformation will be the CSP strategy for cloudifying its fixed, mobile, or integrated network. Most of the large operators – and operator groups – across the world have put together strategies and programs for the adoption of technologies, specifically software-defined networking (SDN) and network function virtualization (NFV). However, an Ovum survey of 67 CSPs conducted in October and November 2016 reveals that the majority of operators are still in the very early stages of network virtualization, with one in six having not yet migrated any of their network components to the cloud.

A holistic approach to cloud transformation

CSP transformation programs are not new. BSS/OSS transformations were a trend several years ago. But organizational friction, planning difficulties, and the sheer complexity of the CSP’s business and its IT systems meant that many of them failed. Cloud transformation starting at the network faces even greater challenges because of its scale and complexity.

Ovum view

To ensure that CSPs realize the full range of benefits from transformation, building a comprehensive cloud strategy and framework is essential. As important as the strategic considerations around new revenue streams and operational improvements is a recognition of the importance of strong governance and the need to secure short-to-medium-term “wins” in order to maintain support for longer-term objectives. Recruiting external support from vendors and consultants may also be needed to bring in expertise and a resource dedicated to effective transformation.
Within the broader goals of a cloud transformation project there are many specific issues and challenges. The evolution from being a CSP to a digital service provider (DSP) requires a deep understanding of new technologies and how to monetize them. These challenges include:

- Getting to grips with the technology itself and the need to understand a rapidly changing technology landscape.
- Understanding virtualizing network resources from concept to realization.
- Building a business case around new enterprise services and functionalities that are enabled by virtualization and
  - identifying new services with short-, medium-, and long-term potential.
  - forecasting revenues for these services and the operational savings that can be made by bringing them to market faster than was previously possible.

### Why CSPs need cloud transformation

Today's telecoms markets are characterized by the same services, broadly comparable network and service quality, and similar approaches towards pricing. Given that operators buy their technology and platforms from the same set of vendors, and that the telecoms industry has standardized the network technology, this is only to be expected.

When the operator business was growing rapidly – when there was still untapped demand for mobile and broadband services – this approach served the industry well.
But mobile, fixed, and broadband adoption is now slowing in mature markets, and competition remains fiercely intense. It is difficult for operators to innovate and create genuine, lasting differentiation. In the consumer market, CSPs are focusing on convergence and building multiplay propositions. TV is providing growth for many operators. In the B2B market many operators are attempting to evolve into ICT and cloud service providers. Digital service providers such as Google, Amazon, and Facebook have also disrupted the market for voice and messaging, creating huge markets for video services and applications that need connectivity support.

Embracing cloud technologies and ecosystems can help CSPs diversify to become digital service providers like the big Internet companies. But joining the dots between network and operations teams and multiple lines of business – and building a cloud strategy that provides benefit across different departments and divisions – is not something that CSPs find easy to do today.

Is cloud technology dictating business transformation or is business transformation dictating cloud strategy? Approaches vary between operators and regions, and for many it is not at all clear what comes first. As such, a huge amount of learning, strategizing, and consulting with third parties is needed to develop strategies that meet short-, medium-, and long-term objectives.

Telco cloud today: the sum of the parts is bigger than the whole

Cloud technologies and solutions have been embraced by most divisions and lines of business within the structure of telecoms operators. Cloud adoption has been pragmatic and on a per-needs basis. Cloud “fluency” has tended to sit within the IT function and, increasingly, the enterprise line of business. CSPs, and more specifically fixed and integrated operators, have invested heavily in building out cloud products and services for their customers in recent years.

**IT leads the network in cloud transformation**

Telecoms-operator adoption of cloud technologies is most advanced within IT. CIOs are generally open minded – and often enthusiastic – about pushing technology and systems into the cloud. Many still rely on existing vendors, although dedicated cloud solution vendors are beginning to emerge. Of all operators surveyed by Ovum, 61% said they had already moved more than half of their IT into the cloud (see Figure 4), while two in three respondents said that it would take up to another two to three years or more to complete this migration (see Figure 5).

**Figure 4: Most CSPs have started moving their IT into the cloud**

![Figure 4: Most CSPs have started moving their IT into the cloud](image)

The progress that is being made by CSPs is impressive, especially given the challenges that many CIOs face with the accumulation of IT systems over a 20- to 30-year period. Over this time, a
telecoms operator would typically have rolled out hundreds of products based on different generations of network technology and service platforms. This continual addition of products and price plans has resulted in an accumulation of IT systems or “boxes.”

**Figure 5: One in three CSPS will complete their IT cloud transformation in the next year**

![Cloud Transformation Chart](image)

Source: Ovum

Cloudification of the network is less advanced, but over the last two to three years a number of large operators have unveiled brave and daring visions for network transformation based on NFV and SDN. They include AT&T (Domain 2.0), Telefonica (Unica), China Unicorn (Cube-Net 2.0), Deutsche Telekom (Pan Net), and Singtel (Network 2020). Some have set themselves ambitious targets. By 2020, AT&T plans to virtualize and control more than 75% of its network using a new software-defined architecture.

While large operators have most enthusiastically embraced bold visions for transitioning to software-centric networks, a wider base of mid-tier operators have taken their first tentative steps into the cloud. Mobile operators across the world are now rolling out voice services over their LTE networks. Many have chosen to deploy cloud-based technologies in their core networks to enable voice over LTE (VoLTE) and Wi-Fi calling – a service that allows customers to make calls over Wi-Fi where there is no mobile coverage.

**Figure 6: Network cloudification is still in its early stages**

![Cloudification Chart](image)

Source: Ovum
Adopting a cloud-based technology for a new service, such as VoLTE, gives operators a chance to dip their toes in the water. Telefonica, for example, has a grand vision, and it recognizes the difficulties and complexities of moving into a multi-vendor environment, embracing open-source software, and building a new partner ecosystem. There are clear indicators that operators may need to accept a slower, more iterative approach than they originally hoped, learning from each other in collaboration as they go.

**Figure 7: Network cloudification is a long-term project for many**

![Pie chart showing when operators plan to complete moving their network to the cloud.](chart)

Source: Ovum

Cloudification starts at the core, but solutions are being developed for access networks. Fixed operators will only move access technology into the cloud on a piecemeal basis, alongside network bandwidth and equipment upgrades. In mobile, cloud RAN is part of the 5G vision, along with SDN and NFV.

**Telcos have evolved their enterprise cloud strategies**

When it comes to the status of cloud services, CSPs have gone through a steep learning curve. Many CSPs are present in the main cloud markets: infrastructure-as-a-service (IaaS), platform-as-a-service (PaaS), software-as-a-service (SaaS), and business-process-as-a-service (BPaaS). But their cloud revenues are still modest and represent less than 1% of total revenues for most CSPs according to Ovum’s own research. Attempts to develop public cloud (IaaS) services for consumer and B2B markets have largely ended in disappointment. Partnering with other cloud providers, rather than attempting to compete with them, has become a preferred strategy. For example, a recent agreement between BT and Deutsche Telekom will allow BT’s customers to get access to SAP and SAP HANA services from T-Systems' data centers.
Few telcos today (Deutsche Telekom is one exception) are competing head on with public cloud providers such as Amazon Web Services. Many telcos have found that their cloud infrastructure choices were neither flexible enough nor cost effective enough to allow them to compete.

Instead, CSPs are seeking to support enterprises in their adoption of multi-cloud approaches. Increasingly, businesses are dependent on applications from multiple providers and across multiple architectures. Telcos can play a valuable role here, providing cloud services interconnect products and partnering with systems integrators for cloud orchestration.

**Customer experience is a focus, but improvements and self-service approaches have been slow to emerge**

There can be no doubting the commitment to improved customer service in both B2B and B2C markets. For the last two to three years most CEOs have cited it as an absolute priority. IT budgets are, on the whole, increasing and a large proportion of this increased spend is on CRM systems.

Delivering a stronger customer experience is incredibly challenging because of changing usage habits and higher expectations. Call centers are more likely to take calls on the quality of Netflix videos than on dropped calls; 24/7 connectivity is so essential to everyday life that service interruptions have become intolerable.

As such, we need new approaches, new technologies, and a new commitment to meeting the needs of customers. Making customer experience the responsibility of the marketing department does not work. It needs the focus of the entire business and the deployment of cloud-based technologies such as big data and predictive analytics to better understand and predict customer behavior.

**Building a cloud transformation program**

Cloud transformation involves taking a more holistic approach towards the adoption of new technologies across the business. This is a complex process and one which must necessarily start with the CSP committing to a medium-to-long term strategy. Once a CSP’s commercial strategy is clear, the organization must commit to building the right internal skills and structures to ensure that new technologies are exploited to their full potential.
Deciding what sort of CSP you want to be

A CSP that is committed to transforming its business and developing new lines of business should adopt a very different cloud transformation program from one that wants to be a price leader for the provision of basic telecoms services.

Ovum asked respondents to identify where they saw most revenue growth coming from in the next five years. The most popular answer, chosen by more than one in three respondents, was "cloud" services, followed by IoT, and consumer video and TV.

This push into ICT services, including IoT, should be one of the main drivers for cloud transformation, because for CSPs to be successful, they will need to have cloud solutions and capabilities to offer their customers. If CSPs do not have their own cloud capabilities, they will need to partner with other cloud services. This is something that a many CSPs are already doing – in some cases quite effectively – but in most cases this is merely helping them to drive value to their core services rather than building new revenue streams. In the case of IoT services, service providers with no cloud capabilities may have to satisfy themselves with revenues from connectivity alone.

Figure 9: Cloud services are the number one focus area for CSPs

Source: Ovum

Not all CSPs will have the confidence to base a cloud transformation program on new lines of business and revenue streams. Many will want to adopt a more conservative approach and use cloud transformation to become a more agile and more efficient provider of traditional communications and connectivity services. These CSPs may decide that the focus of their cloud transformation should be transitioning to a lower-cost, self-service model or introducing the customer experience more broadly.

Moving from silos to a single vision

Regardless of which commercial model a CSP decides to adopt, cloud transformation must be applied across the business. Successful cloud transformation programs will need different departments and lines of business to collaborate and jointly invest in new technology deployments. This will be a tremendous challenge for large organizations that have traditionally tended to work in separate silos. If CSPs are to develop and execute cloud transformations that trickle down and through their organizations, champions are needed at board level. And if that board-level champion is just one person, then he or she needs to be able to win the buy-in of fellow board members.

Typically, it falls to the CIO or the CTIO to educate and persuade the board that it is a priority. And this is where it gets tricky. It may take five years or more to change the DNA of a telecoms company
and to put cloud at its center. It is not unusual for CSPs to set out five-year visions. But setting out targets for new lines of business or network technology deployments is challenging. Cloud is different because it touches so many different parts of the business. This is why it is often easier just to allow individual lines of business and divisions to develop their own cloud strategies. A better approach is to consider where revenues will be coming from in the short-, medium- and long-term, and build the right cloud strategy to deliver and serve those lines of business appropriately with optimal network capacity.

Figure 10: Who within your organization is responsible for managing the cloud transformation program?

Source: Ovum

Digital shoots are starting to appear. Earlier this year, Telefonica appointed a chief data officer onto its board. AT&T’s chief cloud evangelist, John Donovan, combines the role of chief strategy officer and group president – technology and operations. Deutsche Telekom has consolidated its convergent network, innovation, and IT activities. Many CIOs, meanwhile, are becoming less operational, and separate roles are being created for IT innovation and IT operations.

But such initiatives are the exception rather than the rule. Most CIOs and CTOs work independently, despite the fact that the convergence of IT and telecoms means that many are working on overlapping initiatives. A cloud transformation program needs to see these two functions working hand in hand.

On a broader level, even for the largest, best-resourced operators, cloud transformation is so complex. The technology is evolving so quickly, its commercial implications for the business are potentially so far-reaching, and its impact on the company’s day-to-day operations are so profound, that outside skills and expertise are essential.

Furthermore, an external organization, for example a consulting firm or a vendor, may be required to help overcome resistance to change from different parts of the organization. The first phase of a transformation program will likely mean different departments losing control of their IT as new solutions and approaches are sought that work across previously separate and distinct silos.

Skills and culture

Despite the best of intentions and much effort and investment, CSPs are not yet truly digital. CSPs’ first forays into “digital" saw many set up digital operations at arm’s length from their core business. This gave them the opportunity to apply different pay structures and working conditions. But many of these digital business units have been shut down, and operators have set themselves the bigger task
of making the whole of their businesses digital. Only a very small percentage of staff were recruited for their digital skills.

To this end, AT&T has set up a dedicated training program called Workforce 2020 to retrain half of its 280,000 staff in digital skills such as cloud-based computing, data science, and coding. Employees who have been retrained filled half of all technology management jobs at the company. It is not just digital skills that need enhancing. Working culture and practices are also different in digital companies. People need to progress to working in DevOps environments with shorter product cycles. AT&T reduced its product-development cycle time by 40% and accelerated time to revenue by 32% after adopting new working practices and processes.

**Exploiting digital technologies**

Regardless of whether a CSP sees future growth in enterprise or consumer – or as a bit-pipe provider – digital tools and capabilities, such as big data analytics and APIs, should sit front and center of any cloud transformation program.

CSPs have endeavored in recent years to create value in their business through the deployment of big data and APIs. There needs to be an acceptance within the CSP that for these digital tools to achieve their full potential they need to be part of a cloud transformation program with strict governance and realistic, medium-term targets in terms of measurable benefits.

It is not obvious where responsibility for big data should sit within a business. As a result, the proper investment in time, people, and processes is often missing and big data projects yield disappointing results. To extract the maximum value from big data, it needs to sit as a central project, function, and team working across the entire business – network, customer service, operations, and both the enterprise and consumer lines of business. Proper investment to ensure the quality of data and deciding which third-party data to bring in are both crucial to maximizing value. Industrializing technology and processes and training and empowering people to use it properly are needed to maximize its adoption.

All cloudification, SDN, and NFV projects put APIs at their center. But CSPs need to decide precisely how they plan to use APIs as part of broader partnership programs and what sort of ecosystems they plan to build. AT&T has the most ambitious API program of any CSP and it measures its success on usage rather than monetization. Other CSPs need to formulate their own strategy and approach.

**Comitting to a cloud transformation program**

Each cloud transformation program is unique based on the CSP's legacy technology deployments, its place in the market, and its future direction.

Tactical and strategic considerations shape CSPs' cloud transformation programs. The extent to which a CSP is prepared to insource key strategic IT functions to manage and orchestrate an ecosystem of cloud technology and applications providers will determine how big a transformation it is prepared to undertake. Seeking assistance from vendors and consultants will be essential for all small- and medium-sized service providers seeking to take a proactive approach.

Similarly, waiting for existing network technologies to pay back their initial investments will be a key factor determining the speed of transformation projects.
Seeking out best practice is absolutely crucial and is one of the key benefits of working with external partners. They will have new skills and insight into emerging use cases and business models.

**Cloud transformation progress report**

Of all operator respondents in the Ovum survey, one in two said they were in the middle of a cloud transformation program or were close to completing one. Few, however, have finished a program.

In the last 18–24 months, the main objectives of cloud transformation programs have started to change. CSPs, including Orange and Deutsche Telekom, have started to downplay the benefits in terms of cost savings and have paid more attention to improvements in agility – making operational, commercial, and product decisions more quickly – and the ability to deliver improved customer experience.

Ovum is increasingly hearing C-level executives, especially in Europe and North America, talking about productivity enhancement as a necessary business outcome. In order to achieve reduced costs and enhanced business operations, it is important to get the right cloud strategy in place at the earliest opportunity. This cloud strategy must align with the organization’s overall strategic intent – their desired end-state as a DSP.
Ovum Consulting

We hope that this analysis will help you make informed and imaginative business decisions. If you have further requirements, Ovum's consulting team may be able to help you. For more information about Ovum's consulting capabilities, please contact us directly at consulting@ovum.com.

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