Beyond connectivity: moving enterprise ICT to the operator cloud

Operators – you could be offering your enterprise customers much more. With most cloud services still falling short of what today's businesses really need, operators have a **unique opportunity** to step up and provide not just enterprise connectivity, but the **best clouds in the game**.

"With today's cloud offerings not yet fully meeting the needs of the majority of enterprises, operators have a unique and compelling value proposition"

ENTERPRISE ICT IS DIFFICULT to deploy, operate and manage – and it isn't getting any easier. New user trends such as bring-your-own-device, combined with the need to access massive amounts of information and applications anywhere, anytime and on any device, are putting enormous demands on ICT infrastructure. Enterprises have therefore been forced to invest significantly in improving the accessibility and scalability of their infrastructure and services in order to maintain an acceptable user experience while ensuring privacy and protecting valuable data from external and internal threats.

Enterprises find it uncomfortable that the total cost of ownership (TCO) and the benefits of such investments are often unclear. Besides, these activities are increasingly distracting enterprises from focusing time and efforts on running their core business – a distraction that is arguably an even greater cost that they need to shoulder.

The recent trend of enterprises deploying private clouds to address these issues promises both agility and efficiencies. However, enterprises also incur significant costs in terms of servers, storage, network, specialized personnel, real estate and power costs to deploy these private clouds. Enterprises rarely achieve the occupancy rates (utilization) on private cloud infrastructure that make the economics of such deployments work – a fact that public cloud services are already leveraging to attract enterprise customers. Furthermore, approximately two-thirds of enterprises lack the internal talent that would catalyze adoption of the private cloud [1].

While public or hybrid clouds resolve some of these questions, many enterprises are also unwilling to embrace such approaches to managing their infrastructure unless the infrastructure provider can guarantee the confidentiality, integrity and availability of the enterprise's most valuable asset: data. So far, this has been a challenge that hybrid or public cloud services have struggled to answer.

OPERATORS IN THE BACKGROUND

That's what the picture looks like for today's enterprises. So where do operators fit in? The answer is that in most cases, they're very much in the background. The majority of operators provide enterprises with connectivity services, without participating in the wider enterprise ICT market to any significant extent. Most enterprises instead rely on OEM vendors, system integrators, resellers or over-the-top (OTT) services to provide them with compute, network and storage services. As a result, many operators are experiencing marginal or declining growth in their enterprise businesses, and are urgently seeking opportunities to reverse this trend and create new value.

Some operators have tried offering value-added network services such as firewalls to enterprises. These services are typically realized through direct deployment at the enterprise premises – a process that can take several days, if not weeks, and which ultimately adds to the complexity of


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managing an enterprise network. Every enterprise also has a unique set of requirements that need to be factored in while deploying these services, which also contributes to the complexity and expense of designing and managing the solution. Once these systems have been deployed, they go through the normal lifecycles. In particular, software upgrades are cumbersome and scaling up typically involves forklifting hardware – making enterprise networks slow to adapt to new technology trends.

OPERATOR CLOUD – THE VALUE PROPOSITION

Network connectivity is undoubtedly the bedrock of all other application services. However, operators have an opportunity to look beyond connectivity and capture a significantly larger portion of the enterprise ICT market. With today's cloud offerings not yet fully meeting the needs of the majority of enterprises, I believe operators have a unique and compelling value proposition for enterprises to move their on-premise ICT infrastructure to the operator cloud. This value proposition can be divided into at least six areas.

I. PERFORMANCE GUARANTEES

Enterprises need end-to-end performance guarantees across their network and application services if they are confidently to host their critical ICT infrastructure in a cloud environment. An operator cloud is uniquely positioned to offer this guarantee. Since the operator controls the end-to-end connection all the way from the user up to the application service, the operator can offer a strict QoS Service Level Agreement (SLA) guarantee that the competition simply cannot match.

II. INCREASED EFFICIENCY

Running high-performance, scalable cloud-based infrastructure with the resiliency requirements similar to telecom networks is expensive. Such deployments can only be economically viable when the utilization of the data centers is high. Operators have the unique capability to consolidate network, compute and data infrastructure under a single operational, automation and governance domain. When coupled with the ability of operators to host the ICT infrastructure of multiple enterprises, such a consolidation can drive the efficiencies required to make cloud computing efficient for operators and generate savings that can be passed onto the customer.

III. ACCELERATED TIME TO MARKET

Operators have a head-start in coupling cloud systems with technologies such as software-defined networking (SDN) that enable them to introduce new services rapidly. In one study, Ericsson observed that introducing new offers and services can be a very time-consuming process that can sometimes take as long as nine to 12 months. With multiple new offers and services being introduced every year, lack of agility in responding to shifting market trends can become very expensive.

> "Only a highly secure and governable infrastructure will convince enterprises to embrace the operator cloud"

The study further observed that deploying services on a cloud platform could take up to 70 percent less time. Acceleration in the time taken to introduce services directly translates into additional potential revenues for the operator and their enterprise customers, and the competitive advantage for both parties improves with every new service introduced into the network. Such an agile platform also enables operators and enterprises to experiment with different offerings at a considerably lower risk.

IV. FULLY PERSONALIZED SERVICES

Different enterprises have different ICT needs. If enterprises migrate their ICT infrastructure to the cloud, they expect to have a "network slice" that gives access to a unique set of applications and services, just as they would with traditional on-premise equipment. Enterprises expect to be able to take advantage of the new capabilities that the cloud environment offers and to be able rapidly to scale and modify the applications and services that comprise the network slice.

An operator can easily expose policy, network and application capabilities through open and programmable interfaces that allow enterprises and orchestration systems to dynamically adapt the enterprise network slice to rapidly changing business needs. Operators can use SDN to offer highly granular personalization, and individual users can even be assigned a unique network slice. This ability to control and adapt application services has the capability to differentiate the operator cloud offering and make it more attractive and complete than OTT services that simply offer point solutions to specific problems.

V. PAY-PER-USE

When enterprises need to scale existing application services or try new ones, they incur significant costs in terms of planning and deploying real estate, power, server, and network and data capacity. When the TCO and benefits of such an operation are unclear, such costs become a barrier for adoption of new services, especially for smaller enterprises.

As discussed at the beginning of this article, some operators have already tried offering value-added network services such as firewalls to enterprises, typically through direct deployment at the enterprise premises. Cloud offers the chance to modify this idea into something much more effective. Through cloud services, operators can offer a wide range of previously under-served small businesses the same tools as larger businesses. For example, virtual network functions such as firewalls and content-security applications are ideal candidates for operators to start offering as pay-per-use services. Furthermore, a feature-rich platform-as-a-service offering that encourages application developers to build on the operator's platform further enhances the value of the offering.

While all businesses can benefit from the low barrier for using these services, such a strategy could result in a large number of small and medium-sized enterprises adopting them. Unlike the competition, operators can then offer these enterprises connectivity bundled with value-added services and performance SLA guarantees, transforming operators into a "one-stop-shop" for an enterprise's ICT needs. Such a "no-fork-lift" service offering enables a large number of small and medium businesses to adopt cloud-based ICT services, in turn improving economies of scale for the operator.

VI. AN END-TO-END INDUSTRY PARTNER

Trends such as large-scale adoption of cloud computing and the explosion of mobile devices are increasingly disrupting the business models and technologies of almost every industry. These industries are urgently looking for technology partners to help them navigate this change – and operators naturally fit the bill.

For example, the automotive industry is today looking to use cloud-based services to make driving safer and more pleasant by adding infotainment, applications and communication services into cars. The health care industry is looking for cloud solutions that help with patient management, electronic health care records, e-prescription and remote patient monitoring. The media industry, meanwhile, is looking for cloud solutions that help deliver on-demand content management, multi-screen delivery and personalized video experiences.

Successfully meeting these challenges requires a technology partner who can put together customized, telco-grade end-to-end solutions for each specific industry vertical. And with their unique capability to provide these solutions, operators are well positioned to ride this wave.

THREE SUCCESS FACTORS

Operators have the capabilities to deliver on each of these six areas today. However, there remain several critical success factors that operators must also address in order for the operator cloud to fulfill its full potential. In fact, there's even more at stake – get these factors right, and operators will have three more components to add to the value proposition already described.

I. GUARANTEE SECURITY AND PRIVACY

It is no surprise that 74 percent of enterprises cite concerns about security and control of their data assets as the primary reason for preferring a private cloud solution [2]. Enterprises need strong

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solutions that can enforce regulatory and application policies about where data can reside, who can access data and who can change data. In the event of a challenge or compromise to cloud infrastructure, the latter must be able to provide verifiable evidence to prove compliance.

Operators need to address these fundamental challenges in order to make their clouds attractive to enterprises. An operator must offer a risk-managed, commerce-first infrastructure and operation that can be governed, be proven to be compliant by third parties, and have real-time situational awareness on all assets and integrity. Only such a highly secure and governable infrastructure will convince enterprises to embrace the convenience of migrating their IT infrastructure, especially data services, to the operator cloud. Public and hybrid cloud providers have yet to address this challenge satisfactorily. As a result, operators who can crack it – and it's worth remembering that operators already have long experience in running secure, highly governed telecoms networks – have an opportunity to differentiate their cloud offerings even further.

II. ENSURE A GREAT USER EXPERIENCE

User experience considerations in enterprise software mainly focus on making often-complex functionalities work together well, rather than on making it easy for a user to configure and maintain the service on offer.

Operator cloud offerings need to offer enterprises easy-to-use interfaces that enable users to configure and maintain ICT services with minimal effort. User experience in enterprise software starts from the moment a user thinks about the need for a service, and goes all the way up to configuring and maintaining the service, including how well the service plays with other applications and legacy infrastructure deployments. Every step of the deployment process must therefore be easy to understand, use and maintain so that the enterprise ICT environment can ultimately be handled by users who are not technically specialized – just as internet users do not need specialized training to use today's web browsers.

As with the question of security and privacy, so far relatively few players have focused on providing a great user experience to enterprise users. So as well as a precondition for success in the enterprise cloud space, this area also represents a unique opportunity for operators to differentiate their clouds even further from the competition.

III. PROVIDE A CLEAR MIGRATION PATH

This ease of user experience must cover every aspect of the cloud transition. As a result, it should also extend to the migration path that allows enterprises to transition from massive existing legacy infrastructure to cloud-based services.

CONCLUSION

Enterprises can benefit greatly from moving their ICT infrastructure into the operator cloud. The performance guarantees, increased efficiency, accelerated time to market, fully personalized services and pay-per-use possibilities of this cloud represent a unique value proposition for businesses of almost every size and sector. And as ICT radically disrupts business models and technologies in an increasingly wide range of industries, the operator cloud stands out as the foundation of customized, telco-grade end-to-end solutions for each specific industry vertical.

However, operators must act quickly. Incumbents and OTT players are making acquisitions to bolster their expertise, and three success factors should be addressed if the operator cloud is to fulfill its potential. Operators need to consider security and privacy, the user experience and migration paths – and in doing so, they have a chance to strengthen their unique value proposition still further. ●

"As ICT radically disrupts a wide range of industries, the operator cloud stands out as the foundation of customized, telco-grade end-to-end solutions"

▶ REFERENCES

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[2] ibid.

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