

## Clarity on carrier cloud

*Staying the course, despite the odds being stacked against carriers*



Carrier's the world over are actively investing to find their niche in cloud services to drive growth, but few can claim success. In this viewpoint we argue that the vast majority of the industry appears to have started cloud investments based on unrealistic market expectations, and it's time to re-examine the facts and adjust course.

Too often, good ideas fail because managers are unwilling to invest capital and personal commitment to see things through; however, this could not be further from the truth for carrier cloud services. To gain a cloud foothold, collectively carriers have invested over \$40bn, on acquisitions, developing partnerships, and more recently investing in corporate venturing, building hard and soft assets, such as datacenter and proprietary applications. Whilst vast sums of money have poured into the development of public cloud activities, the reality is that few would claim to generate a commensurate profit from public cloud services and yet fewer still to have cracked "the cloud".

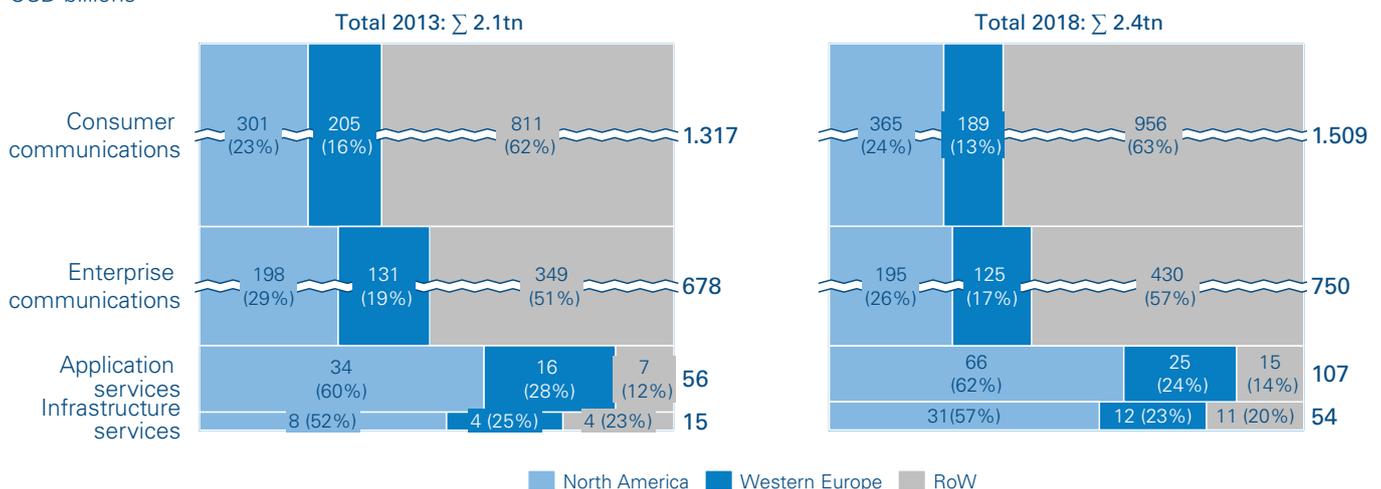
### Setting the "Cloud record" straight

Sizing the global communications and cloud markets is challenging, even for seasoned professionals. We have not attempted to size the industry from first principles, but instead rely on 3<sup>rd</sup> party sources to highlight our points.

For a relatively young service offering, the public cloud market is very exciting indeed, Industry analysts reckon the market was worth \$72bn in 2013 (see figure below). But not all cloud services are alike, under the hood there is a vast array of specific services that cater to particular needs. The largest segments are

### Global communications and cloud services market

USD billions



Source: Gartner, Arthur D. Little analysis

BPaaS and SaaS at \$34bn and \$22bn respectively. Combined these “Applications services” are estimated to be worth \$56bn, a whopping 80% of the total. While the application services market is expected to almost double reaching \$107bn by 2018, entry is anything but trivial. Because success requires capabilities, that quite simply, most communication service providers neither have, nor will ever care to develop or acquire. Furthermore these capabilities are mostly unrelated to the network.

In comparison, “Infrastructure services” that include cloud security, IaaS and arguably PaaS and various emerging forms of IoT PaaS, and Network APIs can benefit from close coordination with the network. While pure cloud players could credibly argue that carriers do not possess capabilities to develop and market these services, it is conceivable that over time such capabilities can be internalized. But these segments also represent the smallest markets, and collectively they are estimated to be worth only \$15bn. The good news is that analysts reckon that infrastructure services will experience a fourfold growth, to reach \$54bn by 2018, substantially higher than application services evolution.

By contrast the \$1,990bn communications market is x28 larger than the cloud market. On a like for like basis comparing business demand only, the \$680bn communications market with cloud infrastructure services the ratio is by a factor of x44 larger today and x14 in 2018. So the relevant cloud opportunity is small and is likely to stay that way until 2018.

## Playing and expecting to win against the odds

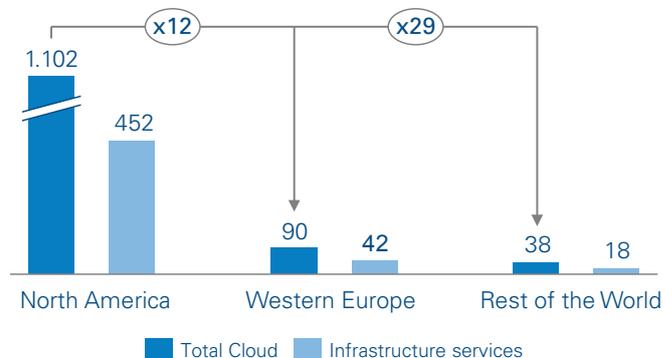
So what does this all mean for communications service providers? There is not a single response that is relevant to all carriers; it all depends on where you intend to do business and how many others are pursuing the same piece of the pie.

Analysts indicate that circa 330 or circa 55% of global carriers are actively investing in the cloud<sup>1</sup>. While theoretically cloud workloads can be placed almost anywhere, analysts indicate that workloads prefer North American presence to the tune of 60% of the total market. That’s great news for the 25 carriers that analysts reckon are active in North America, who can potentially expect an average revenue uplift of circa \$1.1bn for all cloud services and \$452m for Infrastructure services only, but irrelevant for everyone else (see figure).

For Western European carriers the story is somewhat different, with circa 25% of global cloud demand, but with 100 carriers chasing the carrier cloud opportunity, there is simply

## Average cloud revenues per active carrier, 2018e

USD million/Carrier



Source: Gartner, Ovum, Arthur D. Little

not enough business to go around for everyone. In fact our calculations suggest that the average European cloud carrier can expect to be only one tenth of the size of their North American counterparts. In the cloud space, being able to capture a minimum critical mass is key, to develop technology and software know-how to build reliable, credible and scalable services. In our view, most Western European carriers will not be able to achieve relevant scale to drive sustainable economics.

The story across the rest of the world is far bleaker, with an estimated 205 carriers chasing the remaining 15% of the market, with much worse odds, at one-thirtieth of their North American counterparts. For these carriers quite simply the market opportunity is not there to justify the effort of a standalone cloud investment.

If objective facts point towards the cloud opportunity is small, so why bother at all with the cloud? Well it’s not as simple as that.

## So, why bother at all with the cloud

This paper is by no means advocating that the cloud is irrelevant, quite the contrary, we are promulgating the view that it is of paramount importance to have strategic clarity on what is at stake and why cloud technology, products and go to market investments are as important as ever. We list four elements below.

### Cloud services are a critical component to grow and retain customers

Simply stated adoption of cloud technologies is vital, if the telecoms industry wants to remain competitive. Carriers the world over have lost momentum to young and nimbler startups. These companies have shown that innovative applications require and are best built upon flexible cloud infrastructure. Faced with this new type of competition, carriers have no choice, but to learn new cloud tricks, in the hope, that they too

<sup>1</sup> Of which: 25 are in North America, 100 in Europe and 205 across the rest of the world. Our calculations conservatively assume the number of carriers active in cloud services, to remain flat from 2013 to 2018 and these carriers capture 50% of market growth over the period to 2018.

can accelerate innovation and eventually shift the dial on key operating levers, such as unit customer spend and churn. Just to put things into context a 1% increase in customer spend would be worth \$12bn, whereas a similar reduction in churn could be worth as much as \$2bn.

## Carrier Cloud is a defence for the VPN's

Mission critical corporate networks are a core element of a carrier's offer. These networks offer virtual private connections between Corporate HQ and data centers with regional and branch office networks. Such networks provide customers with QoS, CoS and security based on strict SLAs. These networks came into being, prior to the arrival of mass-market broadband and therefore enjoyed a price premium that analysts estimate at \$6,400 per port or 6-8 times the comparable cost of a dedicated "best-effort" internet connection.

The design tenet of such networks is the existence of a central node that houses business critical applications. Consider for a moment if that node were to be moved (progressively) into a public cloud, would there still be the need for such type of private connectivity? Maybe not. Because if a solution can be found, to enable business critical applications to be placed in the public cloud and accessed by customers over best-effort public networks, surely the same best effort networks could also become acceptable for use by regional and branch offices staff. Our analysis shows that in the unlikely scenario of a complete migration away from virtual private to Public IP networks, could put at risk as much as \$48bn.

## Cloud is fast becoming a base-line service in the ICT proposition

"Cloud is the platform of the future" vendors both software and hardware alike are bombarding governments, corporate and SMEs with this tune. The marketing noise has created a lot of inertia and genuine interest to change the corporate IT status quo, including but not limited to the adoption of public cloud services. While each client situation is unique, discerning customers will expect vendors to offer both public and hosted private clouds as part of a global ICT proposition. The mind-set shift brings with it both opportunities and risks for ICT focused carriers. The change enables acceleration of the development of IT services and/or managed services businesses, potentially based on Telco proprietary cloud stacks developed from open source technologies (e.g. Openstack). Today, more than 300 carriers are offering a Telco-Cloud value proposition, of which 100 are European and 25 are North American carriers. However, for those who are unable to keep up with the forever-changing cloud business dynamics, it will be a major step backwards.

## Carrier cloud is part of the future network roadmap

The impact of cloud does not stop at service creation. Cloud is also expected to become the network production platform of the future. Cloud technologies along with the "Winning technology pair" network function virtualization and software defined networking, enables all-IP, programmable and automated networks. Combined, these technologies allows webscale like carrier business designs, and could also allow 3rd parties such as OTT's, ISVs, Developers, and above all, the Carriers themselves, to tap into the full depth of network capabilities, creating new revenue streams. Arthur D. Little has jointly with Bell Labs estimated the impact of re-architecting the business using these technologies in Europe. Assuming our estimates are indicative of potential for all carriers, the impact of making the change is worth \$250-300bn in operating costs globally.

## Conclusions

Carriers outside of North America determined to continue "Commercial cloud" development, would do well to rethink a stand-alone approach, because the pay-off is not commensurate to the risk. Building a credible cloud services portfolio will require deep pockets to build technology and software capabilities. Whereas providing exciting and sticky SaaS and BPaaS functionality will require carriers to find ways to create new value from co-opetition with familiar ISVs. Both will require perseverance and patience to drive forward for an unknowable outcome.

With the odds stacked against the vast majority of telecom operators, developing and operating proprietary clouds cannot make economic sense. Nevertheless, it is important the industry persist with its cloud ambitions. Under the circumstances, the only way to drive forward the cloud imperative is to steer clear from going it alone.

Rather carriers must seek alliances with each other, as well as partnerships with ISVs, pure-cloud and IT services companies to construct commercially viable and economically sustainable propositions. Such propositions should not focus on replicating Amazon, Google or Microsoft Azure plain vanilla cloud offerings; rather they should examine how carriers can use the network as a source of differentiation to compete with these commodity cloud providers. Even North American carriers agree, Verizon is seeking partners to deliver a global carrier cloud proposition via its GC3 program, whereas AT&T has pursued multiple deals with the likes of IBM, Microsoft and CSC to accelerate development.

We hope that this viewpoint provides food for thought, and we look forward to support you on your cloud journey.

## Glossary:

API:	Application Programming Interface
BPaaS:	Business Process as a Service
BYOD:	Bring Your Own Device
CoS:	Class of Service
IaaS:	Infrastructure as a Service
ICT:	Information and Communication Technologies
IoT:	Internet of Things
IP:	Internet Protocol
ISV:	Independent Software Vendors
PaaS:	Platform as a Service
QoS:	Quality of Service
SaaS:	Software as a Service
SLA:	Service Level Agreement
SME:	Small Medium Enterprise

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