ERICSSON

BRIDGING THE CTO/CIO GAP

CSPs can no longer afford the luxury of network and IT silos

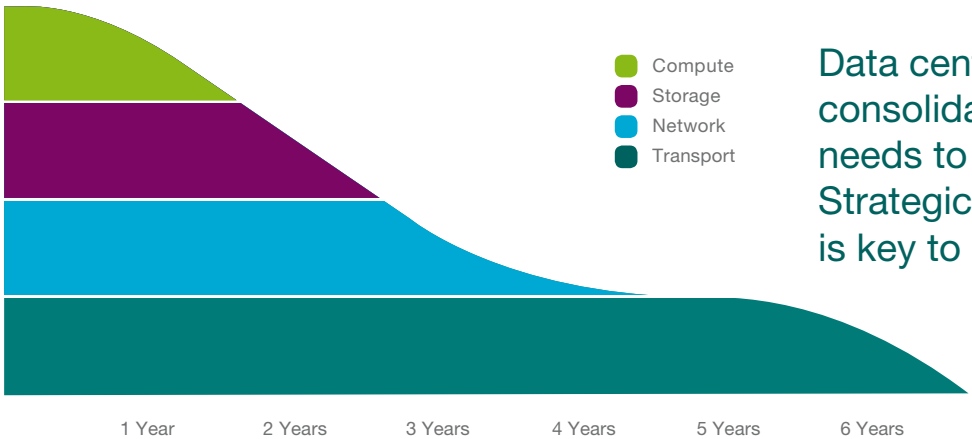
The needs of chief technology officers (CTOs) and chief information officers (CIOs) at communications service providers (CSPs) are attended to largely by separate groups of developers, engineers, vendors and consultants. While both are ultimately measured by the same balance sheet, the CTO looks at the top line first while the CIO focuses on the bottom line.

According to the Ericsson Mobility Report 2014, mobile data traffic grew 65% between Q1 2013 and Q2 2014, and is forecasted to grow tenfold from 2013 to 2019. Video is already the largest segment of mobile data traffic and is estimated to grow around 13 times by 2019. This explosive growth in demand for bandwidth, content and services has both CTOs and CIOs leading a charge toward a radical future of virtualization, cloudification, automation and orchestration. In some companies, both executives face this future with conflicting strategies – even as their worlds converge. It seems likely that a more integrated approach could help CSPs reduce costs, improve service levels and drive new revenues.

In Part One of this supplement, we consider how cloud transformation can bridge the CTO/CIO gap and, in Part Two, we discuss how operators can gain actionable insights from big data analytics.

Network functions virtualization (NFV) and software-defined networking (SDN) are being embraced eagerly by the revenue-generating CTO at most carriers. These two concepts are seen as potential solutions to a crisis caused by exponential growth in consumption of bandwidth and services. For CTOs – who are expected to balance future costs with projected revenues – the old way of doing things is looking more like a luxury every day, and the pressure to adapt and innovate is relentless. And so they are hard at work developing dynamic, automated networks that are more easily managed, allow nimble deployment and decommissioning of services, and make it possible to place workloads and content

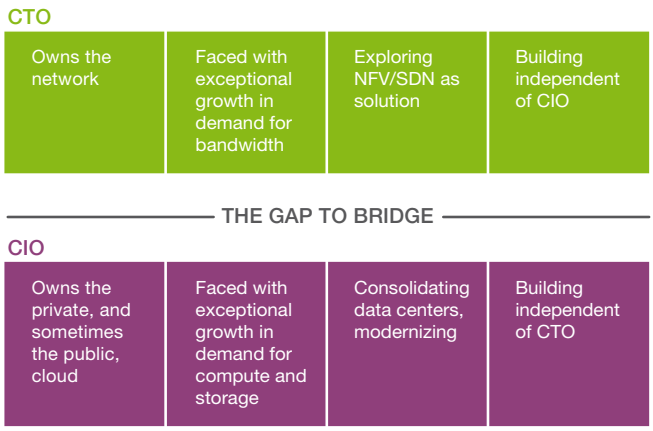
Time it takes for cost of a unit of data processed to drop by half



Data centers should be consolidated, but **content** needs to move to the edge. Strategic **use of networks** is key to both CTO and CIO.

closer to customers. They are not fighting this battle alone. Their counterparts on the IT side are seasoned veterans in the effort to minimize costs, as this is the key factor by which the CIO is judged. The IT trend toward data center consolidation, cloudification and everything as a service (XaaS) is driven by overwhelming pressure to cut operational and capital expenditure and increase agility.

The realities of the costs of the different components of the CSP infrastructure prescribe a more unified approach. Studies show that while the cost of compute resources are declining by roughly 50 percent each year, storage costs are declining by just 25 percent. Network appliance costs are declining nearly three times slower and – worst of all – transport costs are declining more than six times slower. In many cases, the CTO side of the business – which must bear the burden of transporting over-the-top video across the CSP's network to consumers – tries to compensate by designing a distributed network. Numerous small data centers are distributed near concentrations of customers, so that the content is as close to them as possible, and workloads are moved based on operational or business realities. This helps CTOs to improve customer experience by leveraging the CSP's biggest asset – the network. At the same time, numerous systems are virtualized and dedicated cloud environments are built for a variety of platforms as a service – independent of the cloud environments being created by the IT department. This approach is wasteful and unsustainable. While it is true that some revenue-generating services and processes have singular consumer, performance, or security requirements – many do not. Modern cloud technologies are sufficiently advanced that standardized infrastructure can be used to support all but the most unique services and processes.



On the IT side, CIOs should embrace the dynamic new networks being built by CTOs. The difference in compute and storage costs can be mitigated by placing storage strategically around the network. Content and workloads should be distributed strategically between branch offices and data centers that are as close as possible to their users. Workloads can follow the sun or be concentrated in the lowest-cost locations, thereby improving operational efficiency and reducing demands on the transport network that is shared with the network team.
The network and IT departments should utilize NFV and SDN in a way that is complementary. IT has to have access to the orchestration layer of SDN – at least through APIs. Without this access, they will not be able to trigger work flows that reconfigure the network to satisfy conditions in the OSS and BSS space they manage. A common SDN architecture across both groups is advisable, using white boxes where possible and providing unified access to distributed SDN controllers. In turn, the network team must be able to utilize the IT cloud – and even public clouds – to claim increased capacity in times of need. And the IT department should take a second look at applications running on proprietary or specialized hardware and pressure their vendors to virtualize and move to x86 platforms – as the network side already is.

None of this is easy. Automation and orchestration routines must be revisited. Service resiliency models will have to change significantly. New types of service level agreements must be concluded. But the most significant change required is one of mindset. The network and IT teams must be willing to work together toward common goals, without the comfort of a clear firewall between their respective functions. These departments have different aptitudes, but there is a pressing need for them to collaborate if CSPs are to make the most of the opportunities presented by virtualization, cloudification, automation and orchestration.

An overhaul of the global CSP infrastructure is already underway, but the most successful carriers will be those that find synergies between their network and IT departments. It will take time, expertise in change management and deep knowledge and understanding across business, IT and networks to modify the culture, methods and mindsets that have evolved over many decades. But this is the path to a future in which CSPs continue to add value by providing innovative services.

Find out more about Ericsson OSS/BSS and Cloud evolution: http://www.ericsson.com/spotlight

Ericsson
SE-126 25 Stockholm, Sweden
Telephone +46 10 719 00 00
Fax +46 8 18 40 85
www.ericsson.com