WHITEPAPER

# Next-generation enterprise service delivery – what do operators need?

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# SYNOPSIS

Operators are increasingly being turned to by enterprise organisations as a one-stop-shop for network solutions beyond mere connectivity; from basic internet and phone lines to cloud computing and more sophisticated network features which may have traditionally been provided by a specialist IT or systems integration vendor. Financial results in 2015 saw enterprise services continue to form a significant percentage of revenue generated for telecoms operators, with some estimates suggesting the market size will top $200bn globally in the next five years.

With growing emphasis on new data-consuming trends in the enterprise space, such as M2M, IoT, and cloud services operators are being faced with the challenge of how to not only manage the delivery of a new era of services, but to also create new and innovative solutions capable of supplying perennial connectivity and 100% reliability to customers.

This paper, produced in association with Amdocs, will explore some of the new technologies and assurance techniques helping operators deliver next-generation enterprise-ready services.

# AN ENTERPRISING APPROACH

A growing trend in the ICT sector is seeing enterprise businesses look to telecoms service providers to deliver one comprehensive solution for their connectivity and IT systems integration needs. Services which have traditionally been delivered by systems integration companies, who would provide outsourced IT solutions, are now more frequently being delivered by operators. Simultaneously, this trend raises a number of new opportunities and challenges for service providers delivering enterprise products.

Namely, there are the networking-based considerations a service provider must factor in when delivering next-generation solutions for its business customers. There are of course comprehensive SLAs, but beyond basic service levels there's a growing trend in the industry of automation, assurance and virtualization on the service provider network to maximise service delivery monetisation opportunities in the enterprise space.

Before getting into the intricacies of the technologies referred to in the previous paragraph, let's begin by looking at a couple of examples from recent financial result announcements which demonstrate the growing significance of enterprise services for some of the world's largest telecoms operators.

When Vodafone unveiled its H1 2015 results, it gave an update on the strength of its enterprise services business. It stated that enterprise services comprised 27.3% of total group service revenue, with European business being responsible for 32.3%. With total group revenue of more than £20bn for the half-year, we can speculate that enterprise services are worth roughly £10bn of revenue per year. As such, the imperative nature of the operator's network cannot be understated. It's moving towards increased investment in its network and technical R&D as part of Project Spring, a two-year accelerated investment programme dedicated towards accommodating increased mobile data demand and the convergence of fixed and mobile for both consumer and business.

As part of its enterprise-centric emphasis, Vodafone serves a variety of business services far beyond mere mobile voice and data. It is actively delivering M2M, cloud & hosting, and IP-VPN services to customers today, presenting a wide-array of networking challenges and requirements to the telco. That trend is only set to continue, as Vodafone revealed that M2M connections in H1 2015 grew by 29.9% year-on-year, to 24 million. This statistic is here not to highlight Vodafone's growing M2M business, but to illustrate the variety and relentlessly growing levels of data being transmitted across its network, and the new quality of service levels the telco is expected to continuously deliver, with the added expectation of unwavering availability.

Another one of the world's biggest telcos, Orange, also sees a significant proportion of its total revenues coming from enterprise business services. It's a growing one, too, and in Q2 2015 posted enterprise revenues of €1.63bn; which was not only a 3.3% year-on-year revenue growth, but also represents 16.5% of the group's total revenue for the quarter. One of the key business segments it's seeing impressive

growth in is its security and cloud services business, which is up 24.2% and 23.5% for Q2 and Q1 respectively. Its IT and integration business, meanwhile, grew 6.1% and 0.3% in the same periods.

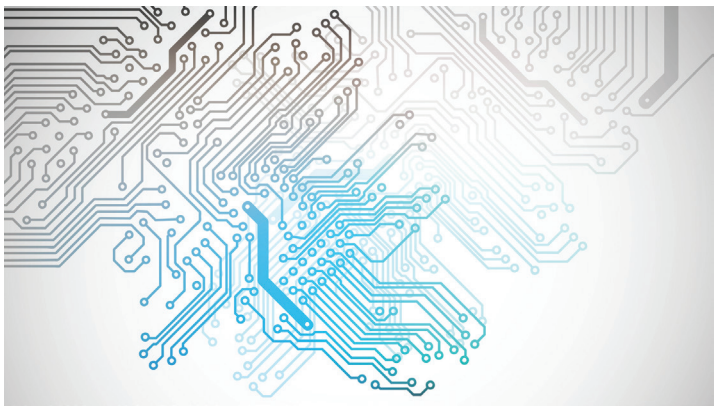
What these two examples illustrate is a significant and extremely lucrative market for service providers; operators literally have billions of Euros worth of business riding on enterprise services around the world. With more enterprise companies looking for a one-stop-shop for their network and managed services, it is therefore more important than ever for operators to optimise, assure and enhance their networks to ensure sustained, carrier-grade service delivery capabilities.

In the aforementioned case of Vodafone; in its half-annual results in September 2015, the chief executive, Vittorio Colao, emphatically reinforced the significance of network reliability in the running of its enterprise services business. The following statement came under the sub-header of "risk factors" in the financial results published by Vodafone.

"We have a number of high-value, ongoing contracts with corporate customers, including some government agencies and departments. Successful delivery is dependent on complex technologies deployed across multiple geographies, as well as relative stability in the requirements, strategies or businesses of our customers. Failure to deliver these enterprise services may lead to a reduction in our expected revenue and could impact our credibility to deliver on large, complex deals."

## TRIUMPHING CHANGE

As we enter 2016, the telecoms industry is witnessing a remarkable rate of technological change and innovation. Traditional means of architecting, operating, maintaining and administrating networks is rapidly evolving, as new solutions develop and become a must-have for operators looking to maintain both competitive advantage and customer loyalty.



One of the startling technological success stories rising to prominence is that of Network Functions Virtualization, otherwise known as NFV. NFV pertains to the virtualization of specific functions of the network which are currently done in hardware. This virtualization happens by consolidating the functionality of the hardware onto general purpose, high-performance and scalability servers which can be scaled back to more convenient parts of the network, such as the data centre or the network edge.

The theory behind NFV proposes several highly-touted benefits to the telco, the first of which is increased agility in delivering services owing to the flexibility of cloud computing and traditional ICT philosophies. Theoretically an operator running an NFV-enabled infrastructure is able to roll out new network services to its enterprise customers on an ad-hoc, self-service, or even on demand basis. The added splash of agility means the traditional process of rolling out new services by procuring and delivering the physical hardware, installing on-premises and the additional configuration time can be dramatically reduced from weeks and months to days or even hours. By chaining together a number of virtualized network functions (such as firewall, customer premises equipment and IP-VPN), operators can implement a level of service automation, whereby services are selected and automatically rolled out as and when required.

The often discussed benefits of NFV seem to sell themselves, but the excitement associated with the technology principle is currently in the process of moving from PowerPoint slides at conferences, to widely-engaged proof of concept trials, with live field deployments currently being deployed. It's still early days, but early adopters are beginning to benefit from virtualizing their network assets already.

Some recent research from Amdocs on operator attitudes to NFV and enterprise service delivery revealed a few areas of concern. From the operators polled, the three main areas of order delivery or self-service which require improvement relate to maintaining visibility across the entire order fulfilment chain, improving offer design and delivery processes, and creating compelling product catalogues for more sophisticated and enticing self-service capabilities.

As we've discussed previously, NFV is one of the budding mechanisms helping operators with a few of these challenges, and it's worth noting that of the same pool of respondents, 83% said they plan to use NFV to deliver services to their enterprise/SMB customers at some point in the next three years.

As things stand today, the operational aspect of delivering B2B is an intrinsically complex process, which presents a number of challenges for operators. Of course, even with the implementation of various NFV functions and virtualized service delivery methods, there will still exist an element of hybridity. There will be an element of combining traditional service delivery and virtualized.

Today, however, there exists a bottleneck in the current E2E enterprise service delivery pipe. This can be a result of the existence of multiple manual touchpoints in the chain and a high amount of segmentation – Amdocs research recently suggested about 28% of operators automate less than 20% of the Order to Activation (O2A) process. There are a lot of tickets involved, a lot of tasks and orders get bounced around between different IT and business departments; generally speaking there are a lot of stakeholders which can easily cloud the visibility of existing order.

Gaining visibility and clearing the bottleneck today is crucial for operators who are looking at adopting more evolved service delivery capabilities, like NFV. When managing a hybrid ecosystem there is a substantial level of complexity managing the E2E process efficiently; thus causing a high level of fallout. Fallout in this sense is caused when a bottleneck doesn't clear and specific orders fall through the cracks. Systems today, though, are generally more than capable of managing orders, and fallouts actually occur as a result of customer order change requests which restart and/or complicate the order, or cause it to fall through the cracks entirely. Naturally, this has a negative impact on customer experience and satisfaction from the operator's point of view.

Additional supporting research from Amdocs says that bringing in automation of the O2A process had three main areas of business benefit that operators most commonly identified. 82% said it will help prevent revenue leakage, another 82% said it will improve customer care 67% said it will help minimise the OPEX requirements of manually handling the chain.

The likely and ideal scenario in the future is a hybridised model featuring virtualized functions and traditional service delivery channels, which can enable a familiar approach while also utilising the agile and speedy benefits of NFV architectures.

Achieving this, however, requires a level of management, or what is known as orchestration. The orchestration layer sits above the VNFs and interfaces with both north and southbound application programming interfaces (APIs). By implementing an appropriate level of NFV, thus creating an NFV-infrastructure (NFVI) and having an orchestration tool managing the spinning-up and spinning-down of services, telcos can give their enterprise users the ability to self-select what solutions they need and when.

A further 75% of respondents said that sophisticated orchestration tools will be fundamental to the successful management of hybrid services comprised of both VNFs and traditional network elements.

One of the biggest hesitation factors associated with the adoption of NFV however is the risk associated with changing a winning formula. With functions and network services currently being delivered responsible for such a high percentage of operators' enterprise-generated revenues, operators should look to take an incremental approach to VNF rollout, instead looking to virtualize non-mission-critical functions first to ensure the stability and success of the solution. Once a successful NFV strategy and implementation can be proven in a controlled way, then further NFV implementation becomes less risky and more viable for more vital functions.

2015 saw more than 30 live operator deployments in the NFV arena, the majority of which are focussed on enterprise service delivery functions (such as virtualized customer premises equipment).

So NFV has developed a more tangible status since its conception three years ago, and early adopters of the technology are beginning to reap the fruits of their labours in getting this new technology initiative off the ground.

# CONCLUSIONS

So what can we conclude from this discussion revolving around enterprise service delivery mechanisms. Firstly, it's evident from looking at various financial results from 2015 that some of the larger operators are more heavily investing their resources and efforts into delivering more comprehensive enterprise services. This has been of particular significance with the case of Vodafone, where we saw that the telco is now reaping roughly a quarter of its annual revenues from enterprise services, including M2M.

Vodafone said that it's been investing more heavily in enterprise service delivery elements of its network infrastructure in the form of Project Spring. A number of operators are following suit with early live use-cases for network functions virtualization being focussed on easy-wins with enterprise-ready virtualized functions being targeted. Incidentally, both Vodafone and Orange (which we also focussed on in the paper) are early adopters of NFV tech.

NFV promises a lot, and it will surely help operators develop new and previously impossible ways of more innovatively serving enterprise customer needs; however it is still an emerging technology and one of the key challenges to be overcome in order to develop a fully integrated NFV infrastructure is how to manage and orchestrate a virtualized network. Orchestration would appear to hold the key to gaining real benefit from NFVI (NFV-Infrastructure) as, without it, the networking stack would be full of disparate network functions all requiring manual spinning up and spinning down. Orchestration holds the key to automating and benefitting from real efficiency gains in the new network topology.

With these factors in mind, it is hoped that the O2A service delivery chain can be made more effective and reliable, maximising time for delivery while minimising the risk of fallout and the negative consequences that inevitably come in tow.

# SPONSOR'S COMMENT

With growing commoditization of the consumer market, service providers are increasingly focusing their attention on the rapid growth in the B2B sphere. More and more, competition is honing in on the tremendous opportunities that lie beyond the traditional realm of B2B business enablement – centering on enterprise connectivity and business generation solutions. But for service providers, this means developing new capabilities that will enable them to develop services that add business value in a highly-complex, digitized and virtualized world.

So before they can effectively offer such solutions to the enterprise market, they must first overcome a host of challenges:

- They need to customize services to tailor-fit each business' unique requirements
- They need to deal with an acquisition process that is usually fragmented and long, where orders tend to be more complex to fulfill and deliver
- They need to cope with increasing expectations from enterprise customers, who have become accustomed to agile delivery methods of over-the-top (OTT) players such as Amazon and Google. This includes seamless, flawless, automated and personalized services and processes, with integrated capabilities for self-service administration, customized projects, multi-site support, and more.

As a market leader in customer experience software solutions and services for the world's largest communications, entertainment and media service providers, Amdocs takes a unique approach towards supporting the end-to-end service lifecycle for enterprise customers.

Our B2B offering enhances the order delivery lifecycle for enterprise customers with increased agility, improved time to cash and enabling cost reductions for the delivery of complex, B2B orders.

By automating and orchestrating the complete enterprise lifecycle from lead to care, we enable service providers to offer their enterprise customers an accurate and unbroken delivery process, beginning at the quotation stage, through to ordering, fulfillment and billing. The impact of this is the knowledge that the B2B customer will receive exactly product or service that was quoted and ordered, accurately billed, and on time.

Amdocs also supports the rapidly developing market for network functions virtualization (NFV) services, enabling hybrid order execution and assurance for both traditional and virtual services.

For more insight into this research, and how Amdocs can help you capture these new revenue opportunities, contact your local Amdocs representative or visit www.amdocs.com.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