epsilon

TELCO 3.0

ELASTIC, FLUID AND INTELLIGENT MODELS FOR NETWORKING THE ICT SERVICES OF THE FUTURE

The global networking industry is entering an era of extreme change that is reshaping how service providers operate and deliver connectivity solutions. Old models need to be replaced and innovation must accelerate delivery of connectivity solutions.

The network remains fundamental to all communications services but like all aspects of the ICT ecosystem it needs to change and develop. The network has to mirror the services it is supporting. Otherwise, it will be left behind while hindering the Digital Transformation happening across industries all around the world.

Our industry is entering a third phase, where traditional boundaries and limitations are being removed and networking is becoming fluid, elastic and intelligent.

The first era of the communications industry or Telco 1.0 was built around basic voice services. Competition was minimal, monopolies were dominating and the market was in its infancy.

Telco 2.0 saw the emergence of voice and data with consumer mobile, long-distance voice, and point to point connectivity supporting basic enterprise applications which have defined the market. To date, network services have been built to serve these needs.

Networks today are impeding innovation rather than enabling it. The explosion of Cloud, Real-Time Communications (RTC), Machine to Machine Communications (M2M) and the Internet of Things (IoT) all demand network services that go beyond what is being offered by the traditional networking model. The network is the weak link that is slowing the development of these services and putting barriers up that limit growth.

Today, we are at the very beginning of a new era that will redefine what connectivity can deliver and revolutionise the role of networking in ICT. Telco 3.0 will deliver elastic, fluid and intelligent networking models that service providers and enterprises can shape to meet their specific needs. We're entering the era of intelligent cloud centric networking.

Networking can be a utility that is seamlessly integrated into existing platforms and able to accelerate innovation. Telco 3.0, the intelligent Cloud Centric Network is built to support the emergent networking needs of APIs, orchestration, Cloud-centric models, Real Time communication, Machine Learning, and Big Data.

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TELCO 3.0: NETWORKING THE FUTURE

The factors that challenge traditional networking models are present in the market today and demand a response from service providers. Cloud, M2M, IoT and RTC are all maturing and need a new model to grow in scale and scope. The ICT market has moved on while networking has stayed largely static.

These six drivers demand that service providers take action and rethink their approach to networking:

THE CLOUD IS MAINSTREAM

Questions around security and viability have been put to rest and enterprises around the world are implementing Cloud strategies. The worldwide Cloud computing market grew by 28% to $110 billion in revenues in 2015, according to Synergy Research Group. Cloud-based services demand the support of flexible, agile and efficient networks. The positive attributes of the Cloud need to be accentuated by the network rather than limited by it.

NEW CREATIVITY IN DEVOPS

Software developers and other IT professionals are developing new applications and services at an unprecedented rate. They are using their creativity to rapidly solve challenges within enterprises and are building, testing, and releasing software more frequently and with greater reliability than ever before. They need networks to support this rapid-fire innovation and that enable them to be continually evolving the ICT ecosystem with the full support of flexible and scalable networks. Traditionally, networks have not been embedded into applications – today that is changing; communication, security and quality of service in the network experience is as critical as the application itself. DevOps groups worldwide are looking for application based network solutions to meet this demand.

GROWING M2M AND IoT APPLICATIONS

M2M and IoT require networks that can evolve from serving a finite number of human customers to rapidly scaling to serve billions of networked devices. Networks that have been built to serve consumer mobile demand or basic enterprise apps are unqualified to meet the needs of M2M and IoT. These new phenomena demand high performance networking that scale economically. Without that, they will fail to deliver on their potential.

INTRODUCTION OF RTC AND BROWSER-BASED COMMUNICATIONS

RTC and Browser-Based Communications are inserting communications services into all kinds of applications. From mobile apps through to eCommerce platforms, they are lacking the ability to communicate into applications to create new experiences. The connectivity that sits behind RTC and Browser-Based Communications needs to be flexible enough to plug into any platform and support communications wherever its needed.

RAPID ADOPTION OF 'AS A SERVICE' MODELS

Gartner expects the Software as a Service (SaaS) market to be worth $37.7 billion in 2016 with 20.3% growth over the previous year. Similarly, it expects Platform as Service (PaaS) to grow by 21.1% and Infrastructure as a Service (IaaS) to grow by 38.4%. The "as a Service" model is a cost efficient and flexible one for accessing ICT services and infrastructure. In order to be successful, they require high performance networks that can deliver new levels of agility, reliability, and scale.

CHALLENGING MARKET CONDITIONS

Increasingly saturated mobile markets, price erosion in voice, new Over-the-Top service providers and a hyper- competitive landscape are all drivers for service providers to rethink their businesses. Cloud, next-generation communications and on demand services are the future for service providers. Legacy services are increasingly difficult to maintain with this new wave of services representing a path to increased profitability. The challenge is to support new services effectively and capture the opportunities they represent.

DELIVERING A STEP CHANGE

There are five things that are defining the future of networking. Unlike other technological advances in the communications industry, these represent step-changes that are being driven by customers and real demand in the market.

It isn't a case of developing a service and then selling it. Enterprises and service providers' expectations have changed. They want the network to be just as easy to deploy and manage as other ICT products and services within their business.

Network services remain the Achilles' heel for both enterprises and service providers. They need a model that is ready to deliver new levels performance as well as increased time-to-market, visibility and adaptability.

The alternative is to continue to use a legacy networking model with its lengthy and complex contracts that suit the service provider but not the customer. Long lead times slow innovation while customers want more control over their services. The legacy model was built to support legacy services and in today's Cloud-centric market the networking model has to be faster, more flexible and dedicated to enablement.

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FOUR PILLARS OF TELCO 3.0

ORCHESTRATION

A service provider's back office needs to be automated and streamlined to simplify processes and deliver a complete service experience. Quoting, ordering and billing can be delivered in a single instance that removes complexity and accelerates delivery. Orchestration can remove much of the human element from legacy networking models and instantly align the needs of applications with infrastructure in order to deliver an optimised experience for customers.

ON DEMAND INTELLIGENT NETWORK SERVICES

When the back office has a greater degree of orchestration, it is possible to deliver on demand connectivity and telco infrastructure. On demand networking enables customers to turn up secure services in minutes instead of weeks and serve demand immediately. They no longer have to exchange pricing via emails or meet potential suppliers in person, they can use click-to-connect provisioning to shape and adjust services to meet the changing needs of customers and their end users. This unlocks real Cloud agility because the network is ready to deploy services on demand.

NETWORK ANALYTICS AND ASSURING QoS

New intelligence in the network and continuous trouble shooting and optimisation will deliver the performance that Cloud, next-generation communications and on demand services need. End-to-end visibility from the transport to application layers enables service providers to deliver guaranteed Quality of Service (QoS) and Experience (QoE). When network behaviour is observed in real-time and simultaneously compared to historical network data, performance can be consistent and reliable. Machine Learning enables network environments to be continually optimised and shaped by new data captured across the network.

APIS

The API is the key to un-locking the potential of the broad eco system of cloud, network and application providers. Integrating networks through API's enables a global marketplace to exist, one in which a multitude of infrastructure and application services can be accessed and activated to create a true multi service offering.
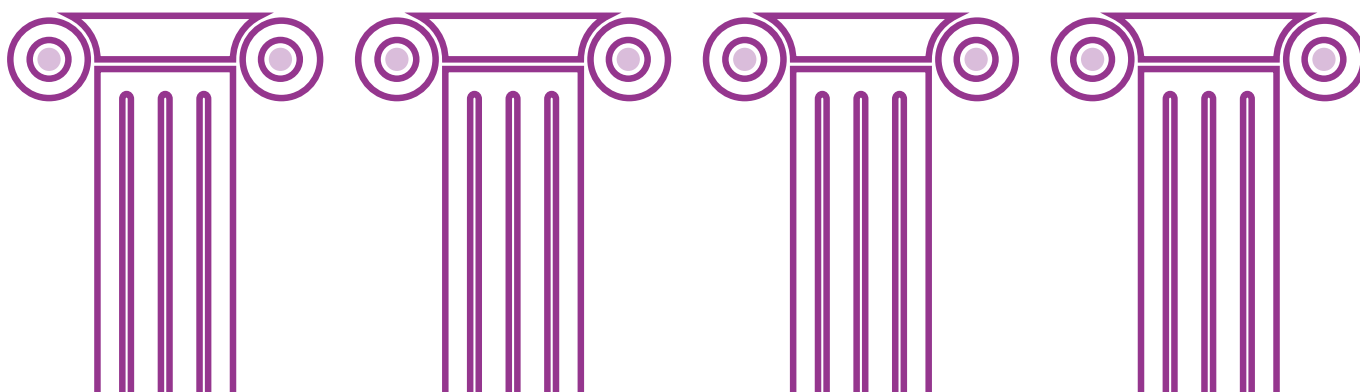
HYPER-SENSITIVE NETWORKING

By Jerzy Szlosarek, CEO, Epsilon

I see a couple of important things happening in the market that are driving change. Software and app developers are disrupting the market and that won't stop. They are generating new and innovative ideas every day and asking more and more of their network providers.

They want consistent and high performance networks that will enable them to not just roll out new apps and services but ensure that they are delivering an exceptional user experience. Software and app developers want to make communications part of all kinds of services because communications services are personal.

The network is critical to them but at the same time they don't want to be involved in investing in legacy network build models, stay away from traditional procurement or management models and are looking for a "telco cloud" approach. They want their networks to be instantly available, enjoy high performance and availability and integrate easily to a broad range of infrastructure and services. Network providers on the other hand understand the complexity of service level agreements (SLAs), QoS, multi-party transactions and billing. All of this is so far beyond a developer's core business.

That's where an opportunity emerges in delivering networking via a Platform as a Service (PaaS) model. That model makes sense to developers and it enables them to focus on their core business with networks ready to serve their needs.

At the same time, their users are hyper-sensitive to QoE. They will not tolerate any downtime or failures within the network. Users demand that their apps and services work perfectly every time otherwise they simply move on. The network becomes mission-critical in the most extreme terms.

Developers of these kinds of applications are demanding new networking models that can go above and beyond what is available today. There is immense pressure on network providers to deliver on an entirely new level. With platforms and performance central to their success, the key will be delivering a complete experience that acts as a foundation and enabler for innovation. multitude of infrastructure and application services can be accessed and activated to create a true multi service offering.

THE BENEFITS OF CHANGE

Telco 3.0 will deliver networking that matches the needs of today's applications and services and enable enterprises, service providers, Over-the-Top players (OTTs), and end users to benefit from networking that truly caters to their needs. It will deliver networks in a way that makes it simple and easy to innovate and deliver an ICT environment that is agile and consistent across the network stack and beyond. Telco 3.0 delivers benefits that include:

- **Streamlined access** to network services with a friction-free model that makes it simple to connect and deliver the applications and services of the future

- **Consistent and reliable networking** that delivers guaranteed QoS and QoE no matter where a user is located

- **Flexible networking** that can be shaped by customers to meet their specific needs

- **New cost efficiences** with opex-driven models that support Cloud adoption and enable users to only pay for what they use

- **New opportunities for innovation** with networking that can act as a foundation for the development and delivery of new applications and services

- **Integrated and on demand connectivity** to Cloud service providers, data centres and enterprise locations around the globe

Service providers that can adapt and transform their businesses will be able to capture new long-term revenues and successfully serve growing customer demand. The clearest benefit is that they can play a critical role in the Cloud revolution and position themselves as an important part of the next-generation of communications.

The market has already moved beyond voice and data so service providers don't have much choice. Cloud adoption is growing as well as innovation in other services. They can either remain focused on voice, data and basic value-added services or rethink their approach to the market.
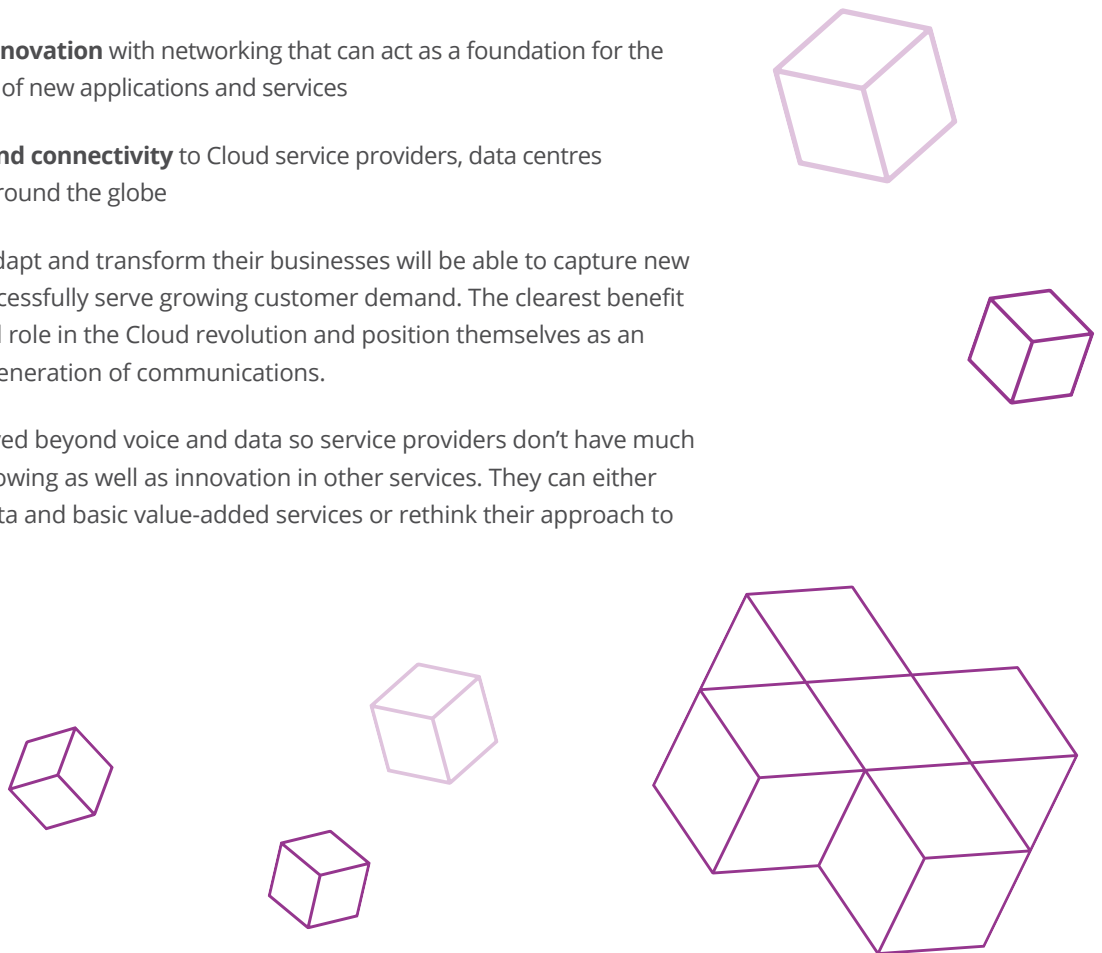
ENABLING AN ECOSYSTEM OF INNOVATION

Telco 3.0 is an opportunity for service providers to transform their businesses to serve real and growing demand. They can move beyond conversations about price erosion in legacy services and reshape their businesses to capture new revenue from new growth areas.

Growth from voice and data were limited by geographic reach and subscriber bases while growth in the Cloud is almost limitless. Service providers that are able to effectively support the Cloud will help drive Cloud adoption and that will increase demand for connectivity. The Cloud ecosystem is hungry for reliable and flexible bandwidth and service providers that can deliver will become critical and essential to their customers.

For developers, Telco 3.0 will give them the networks they need to innovate and deliver new services globally. The network should not slow their ability to execute on their ideas and should allow them to further disrupt the market. Developers that have access to high performance networking that can adapt to their needs will develop new services that drive connectivity demand.

Enterprises will benefit from a rich and growing ecosystem where they can access on demand connectivity that is as agile and flexible as their Cloud services. They will be able to gain the full benefits of the Cloud and be able to rely on networking to support their growth no matter where it is happening.

Overall, the communications market will be more vibrant and exciting than it has ever been. Telco 3.0 will provide the foundation for a new era of innovation where networking enables new applications and services, new levels of performance, and new experiences in ICT.
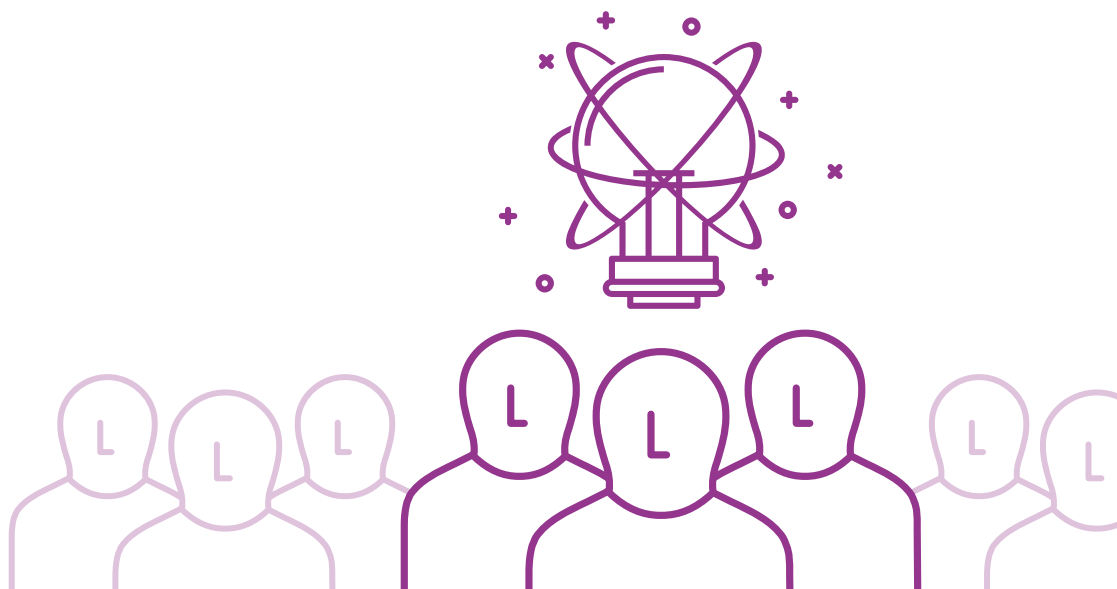
TELCO 3.0 IN REAL TERMS

Telco 3.0 will deliver an on-demand ecosystem that brings together different communications services in a single online portal. It will use orchestration, intelligent on demand network services, network analytics and APIs to deliver voice and data from a single seamless platform.

The outcome of Telco 3.0 is friction-free access to Cloud connectivity, port-to-port networks, voice transit, Global SIP and last-mile connectivity. It removes the inefficient manual processes from procuring these services and replaces it with a fully automated platform. From a single portal, users can access and add modular apps, offering them the freedom to customise and control their services.

- **On Demand Ethernet** enables users to connect to global cloud service providers as well as from port-to-port globally

- **Intelligent Networks** support voice transit with guaranteed QoS and QoE

- **Global SIP** enables connectivity between local and regional SIP providers around the world

- **Software-Defined Wide Area Networks (SD WAN)** offers last-mile connectivity to data centre and sites

THE REAL TERMS

TELCO 3.0

EPSILON:
A HISTORY OF DISRUPTION

Epsilon has been on its journey towards Telco 3.0 from day one. It was launched in 2003 with the goal of making connectivity simpler. Over the years that has meant different things but it has stayed focused on giving customers simple and flexible services that support their growth.

Beginning with interconnection for voice, Epsilon grew into a global business dedicated to finding new ways to connect customers and drive their success. It filled a gap in the market for customers who wanted a simple connectivity solution that could reduce lead times, remove risk from the commercial framework and provide a high level of customer service satisfaction.

Epsilon grew steadily and built over 45 PoPs across Europe then expanded globally to serve demand for its solutions. It developed virtual hubs for colocation and interconnection and developed an eCommerce solution for global connectivity that would eventually evolve into its CloudLX Cloud connectivity platform.

The emergence of the Cloud fit naturally with Epsilon's approach and it quickly adapted its unique model to deliver Cloud enablement. Today it is using its simple and efficient approach to connectivity to support its customer's Digital Transformation and accelerate Cloud adoption.

Epsilon has taken its history of disruption and evolved its business from a regional wholesale carrier to Platform as a Service (PaaS) provider supporting the most innovative applications and services around the world. Its next wave of innovation will come in the form of APIs that plug into existing customer platforms and deliver high performance global networking on demand.

VISION
To deliver global connectivity and services on demand via automation, portals and API's to and through multiple segments and channels.

MISSION
At Epsilon, we have a mission to make global connectivity simple. We have established an innovative and collaborative culture always with the customer in mind and strive to provide the best customer experience possible.

ABOUT EPSILON

Epsilon is a global managed network service provider, extending carrier grade voice and data connectivity services to the world's Communications and Cloud ecosystems. The company offers a smart network utility that combines on demand infrastructure, automation, web-based portals and APIs to give partners friction-free access to global connectivity for resolving complex global networking demands.

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