

Future roaming enabling

Network providers require fit-for-purpose roaming solutions to accommodate rising volumes of data, realise efficiency and exploit new opportunities, says **Christian Wollner** at Deutsche Telekom International Carrier Sales & Solutions.

HOW ARE ROAMING REQUIREMENTS CHANGING?

The roaming market is evolving as consumers demand a combination of many more services. The proliferation of smartphones and tablets has changed market conditions dramatically, with the number of leisure roamers forecast to overtake the number of business roamers over the next two years and mobile subscribers now expecting high-speed internet access whenever they want, wherever they are, and as simple as possible.

At the same time, new network technologies are being more widely deployed, such as 4G LTE (long-term evolution), and next-generation networks (NGNs). With value shifting from transport to content and applications, wholesale solutions have to respond to future demand for IP interconnection, downward pressure on margins as a result of regulation, and an extended value chain that means supporting multiple business models and service types across a variety of networks and players.

This is why carriers such as Deutsche Telekom International Carrier Sales & Solutions (ICSS) have introduced fit-for-purpose roaming solutions designed to meet both current and future requirements. ICSS's premium-quality 'IP eXchange (IPX)' solution for example offers defined end-to-end quality of service for all types of current and next-generation applications across different provider networks. It also increases the ability of users to cooperate with other players in the IP world via one single platform.

Similarly, with 'Wi-Fi Mobilize', ICSS provides a carrier-grade service for data offload, international roaming and inter-standard traffic management. This enables customers to deliver a compelling connectivity experience to the smartphones and tablets of their subscribers by shifting traffic from overloaded 3G networks to often faster and lower cost Wi-Fi networks.

HOW DOES WI-FI COMPLEMENT CELLULAR AND WHY IS EVERYONE TALKING ABOUT 'OFFLOAD'?

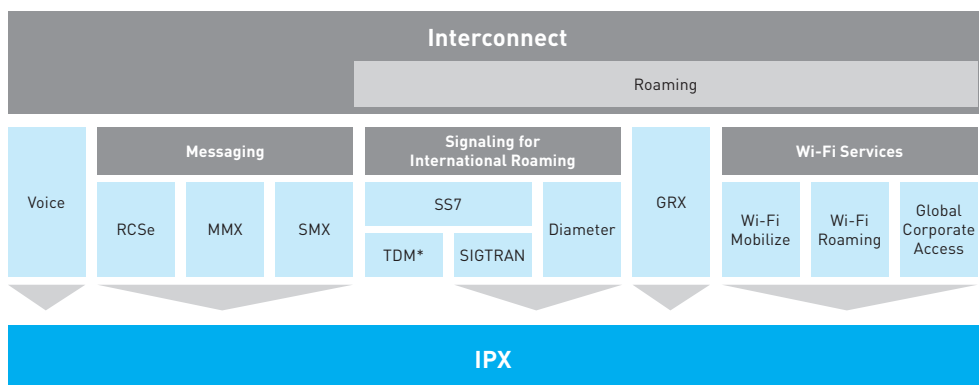
As data traffic volumes continue to rise, it is critical that mobile network operators (MNOs) are able to support both cellular and Wi-Fi connectivity. Although the term 'offload' has been a buzzword for some time, the renaissance of Wi-Fi is not limited to relieving the burden on overloaded 3G networks.

With Wi-Fi Mobilize, carriers and service providers have a one-stop solution that allows them to offer a convenient Wi-Fi experience for their subscribers and provide data access almost everywhere, with the convenience of a single bill and usage control.

At ICSS, we have invested extensively in Wi-Fi roaming over the last eight years and accumulated a wealth of experience and technology. As such, we have established a unique position as the only global Tier 1 interconnectivity provider to offer an integrated portfolio of cellular and Wi-Fi technologies. Our customers are able to benefit from instant access to our authentication platform and more than 150 Wi-Fi networks and one million hotspots worldwide. This also includes Wi-Fi connectivity on board trains and aircraft, with DT Inflight for example serving a growing number of airlines.

Increasingly, our customers not only request hub services for Wi-Fi roaming, but also entire solutions, such as mobile device software clients that we can provide under the customer's brand. We therefore provide our customers with full integration across the various mobile and wireless voice and data technologies and services to provide a seamless experience whether on cellular or Wi-Fi.

IPX as the basis for different solutions



*not IP-based



Christian Wollner,
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WHY HAVE COST AND SCALE BECOME SO IMPORTANT?

The fact that telecommunications subscribers use a combination of many more services has meant the various types of market players continue to diversify across MNOs, mobile virtual network operators (MVNOs), over-the-top (OTT) service providers, content and media providers, and traditional fixed network operators (FNOs).

The potential for those providing the network interconnects to support this ever-growing range of services is clear, but as the number of business opportunities increases, so too does market complexity. Major global trends are driving the need for the seamless convergence of networks and the industry as a whole is moving towards all-IP and NGNs, yet many of the interconnects available today are based on legacy TDM and leased-line solutions.

Upgrading such solutions to accommodate the rising volumes of data traffic and provide international roaming for IP-based services is costly and although network providers could build their own IP interconnects, there is no guarantee that the capacity they implement today will meet their requirements in the future.

Furthermore, both wholesale and retail business models have to evolve to reflect the fact that roaming is on its way to becoming a commodity business. The fall in prices presents a major challenge in Europe in particular, where the European Commission has established an extensive regulatory framework governing telecoms networks and services.

Additional pressure comes in the form of the new models of service delivery employed by OTT players, who use the public internet for transport of traffic and provide in-app voice and messaging services, therefore offering end users a low-cost alternative to long-distance fixed and MNO core services.

HOW CAN NETWORK PROVIDERS MEET THESE CHALLENGES?

Fierce competition and regulation, as well as the mounting challenge posed by OTT players to conventional revenue sources have resulted in a significant squeeze on interconnect margins. It is therefore more important than ever for network providers and communications service providers to cut costs with an intelligent approach to outsourcing and find innovative solutions to ensure a constant revenue base.

ICSS offers multiple IP-based network solutions to MNOs. Three letters form the entryway to this rich collection: IPX. This universal access cloud with robust quality of service and security brings a large portfolio of roaming and interworking services to network providers and communications service providers.

It includes IP-based next-generation voice and messaging from established mediums such as SMS and MMS, to the brand new RCS-e (Rich Communication Suite-enhanced), where we are already seeing the initial signs that MNOs can actually win back market share from OTT players with a richer suite of messaging services.

At the same time, IPX paves the way to delivering all kinds of seamless roaming across mobile standards such as 2G, 3G, and LTE, as well as Wi-Fi. With our IPX solution, we can connect our customers with 1,400 networks worldwide based on flexible, unlimited capacity usage – for roaming connectivity via GRX and signalling, for messaging interworking, as well as for voice.

The tricky part is in accommodating the complexity of conversion between different standards, or the various

implementations of standards and protocols. For example, ICSS helps with conversion between ANSI (North America) and ITU (global) implementations, and between the IP-based and legacy, non-IP-based world. Assuring seamless connectivity between bearers (2G, 3G and 4G LTE) is also becoming extremely important, as is the ability to support the integration of Wi-Fi as a micro-network into the macro-network landscape.

WHAT COMES NEXT?

With LTE being deployed in different markets worldwide, operators need to ensure seamless 4G services for their subscribers wherever they are. LTE offers considerable opportunities for operators due to the significant increase in data usage. However, before LTE technology is expanded to international roaming, both carriers and MNOs face significant challenges: complex technology, fragmentation in terms of the multiple frequencies employed, interoperability and interworking, and billing and settlement.

To ensure a smooth transition to LTE roaming, operators need an interconnection provider that can assure global interoperability with other providers. ICSS's IPX platform is not only LTE-scalable but also compatible with diameter signalling. Diameter is the LTE equivalent of the SS7 protocol used for signalling in 2G/3G cellular networks and is essential for the successful deployment of LTE roaming.

Those operators developing LTE networks in their home country will need to provide subscribers roaming abroad with the same next-generation network quality and higher speeds. As soon as they have their local LTE networks deployed, they will be looking to partner with a network provider that has interconnections with the most networks worldwide.

WHY ARE FLEXIBILITY AND INNOVATION SO IMPORTANT?

As high-end network infrastructure, operational structure and services continue to move towards a commodity market, operators will have to adapt to the ongoing change in the way subscribers consume communications services and roam across network and international borders.

The leading players in the future will be those that can be sufficiently flexible and innovative in terms of infrastructure, business models, and service delivery; in addition, a smart combination of innovative products is crucial to guarantee long-term success.

Deutsche Telekom International Carrier Sales & Solutions (ICSS) is an integral part of DT's International Businesses unit within the Europe organization. As one of the largest carriers in the world, ICSS provides global voice communication, internet connectivity to millions of eyeballs, and global roaming and messaging on next generation platforms, as well as smart content distribution, media exchange, and virtual carrier solutions.

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