

Success story:

World-record HD voice quality with a cloud VoLTE network



ERICSSON

In
collaboration
with

vodafone  

October 2018

Netherlands' first cloud-based VoLTE and Wi-Fi calling network

Wanting Dutch customers to have the best possible voice services, VodafoneZiggo and Ericsson united to successfully install the country's inaugural cloud-based, end-to-end voice over Long Term Evolution (VoLTE) and Wi-Fi calling solutions. VodafoneZiggo now has the world's best voice quality score.

About the customer

VodafoneZiggo provides fixed, mobile and integrated communication and entertainment services. A venture between Vodafone Group, one of the largest telecoms companies, and Liberty Global, the biggest international TV and broadband company, VodafoneZiggo serves about 5 million mobile subscribers and 4 million fixed subscribers/households.

www.vodafoneziggo.nl



Rising to rival

VodafoneZiggo is a joint venture between Vodafone (mobile) and Ziggo (fixed), in order to be competitive in the crowded Dutch market. They complement each other to offer converged services to consumers and enterprises.

Over a short time, VodafoneZiggo has won an extensive amount of new B2B business because of its full set of services, including its strong media and video portfolio.

VodafoneZiggo has launched a converged proposition, offering customers with a mobile and fixed subscription benefits, such as double data and additional media channels. They also extended this to their Red Together deal, where a family can share a large data bundle.

"When you want to innovate, there will be people who say: 'it's too early', 'it will not work' and 'it cannot work', but when you think there is a challenge and the whole industry needs to move in this direction, you say – let's take on the challenge."



Matthias Sauder,
Director of
Mobile Networks,
VodafoneZiggo

The opportunity

- Improve customer experience and satisfaction by introducing cutting-edge voice services over LTE and Wi-Fi
- To prove an even greater rival to other Dutch communications companies

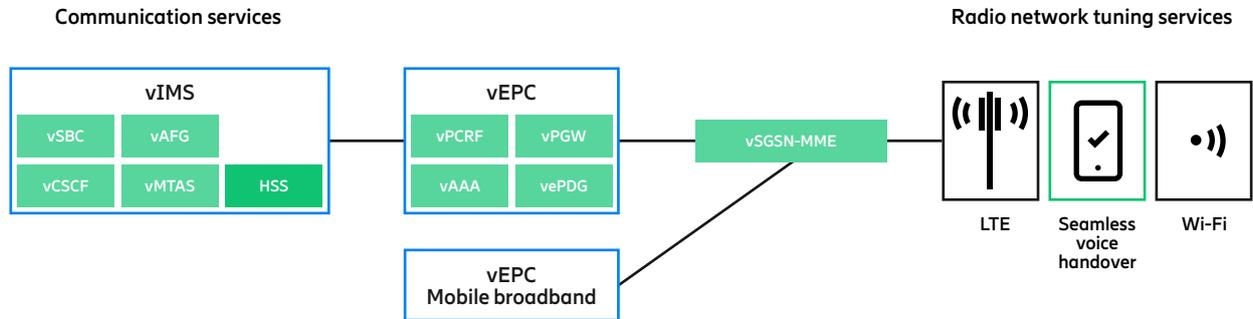
The solution

- Ericsson and VodafoneZiggo united to provide state-of-the-art VoLTE and Wi-Fi calling
- Implementing a world-leading live commercial, cloud-based, end-to-end VoLTE network to enable VodafoneZiggo to become the most competitive communication service provider on the Dutch market
- Commercial Network Functions Virtualization (NFV) deployment of IP Multimedia Subsystem (IMS) and Evolved Packet Core (EPC)
- Radio network tuning optimization services to secure high voice quality over LTE

The result

- One of the world's best HD voice over LTE (VoLTE) quality networks, receiving 396 out of a maximum 400 points in independent, external network testing company P3's benchmark
- Fast call set-up times, ensuring immediate connection when customers make calls
- A great reduction in dropped call rates

Figure 1: High-level overview of VodafoneZiggo’s NFV-based mobile network for communication services and mobile broadband



Creating a clearer voice experience

VodafoneZiggo made an industry-early decision for a full-scale move to NFV in 2015, and began to devise a strategy for effective implementation. After working together for more than 15 successful years, VodafoneZiggo had just one partner in mind – Ericsson.

When the organizations started the project, virtualizing core networks for commercial purposes was almost unheard of. Undeterred, both Ericsson and VodafoneZiggo took on the challenge and built strong local and global teams to overcome obstacles.

They set about strategizing the entire project, knowing that preparation and regular meetings were key to success. Both committed full support and assembled the best solution architects, integrators and project managers among others, alongside great governance.

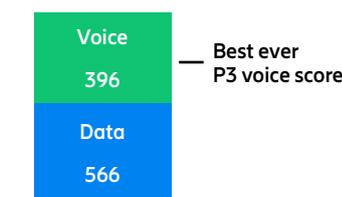
With ambitious timelines from VodafoneZiggo to launch VoLTE smartphones onto the Dutch market, Ericsson started to launch VoLTE based on virtualized common infrastructure as a first commercial service, kick starting a plan to run all network functions over cloud in the future.

As a core and radio network vendor, Ericsson implemented its innovative products, including virtual IP Multimedia Subsystem (vIMS), virtual Evolved Packet Core (vEPC) and NFV infrastructure based on HP hardware and VMWare, as well as system integration to transition from traditional technology to the new cloud-based VoLTE and Wi-Fi calling solutions.¹

World-record HD voice quality

The project resulted in one of the world’s best HD voice quality scores in a live commercial, cloud-based, end-to-end VoLTE network. VodafoneZiggo achieved the world’s highest ever voice quality score – 396 out of 400 – measured and benchmarked by the independent network testing company P3. P3 regularly measures voice and data quality in many operator networks worldwide. VodafoneZiggo was one of the world’s first operators to deploy VoLTE and Wi-Fi calling, using virtualization/cloud technologies.

Figure 2: Global voice and mobile broadband data network quality benchmark test results



VodafoneZiggo Test results,² April 2018

VoLTE, the basis of new IP-based communication, means VodafoneZiggo’s customers can enjoy faster set-up call times and evolved communication services, simultaneously with fast LTE mobile broadband on LTE smartphones. Today, VodafoneZiggo has launched HD voice over LTE and Wi-Fi. In the future, they could build on their VoLTE network, adding further user services, such as HD+ voice (new voice codec EVS), video calling, IP messaging, content sharing within calls, web communication, and voice for Internet of Things (IoT) over Cat-M1, across smartphones, wearables and other connected devices.

Simple and cost-efficient Wi-Fi calling has extended VodafoneZiggo’s voice coverage. The solution has eliminated dropped calls. Customers are also experiencing better voice services indoors because they can use their home Wi-Fi access points to make voice calls via the mobile core network, in case cellular signals have poor reach in their homes. If the user leaves the home Wi-Fi coverage while on a call, the call will automatically handoff to cellular LTE coverage outside, so the customer will never drop a call.

This is all clear proof that cloud-based core networks can deliver a high-quality, end-user voice service, in combination with tuning the radio network for good voice coverage.

VodafoneZiggo is now the Netherlands’ number one voice network and number four globally. It has more than 50 percent of voice traffic on VoLTE and this figure will increase fast. The company is also reaping the benefits of virtualization, such as general opex savings and the faster launch of new services, which mean less hardware and energy consumption, positively impacting sustainability.

Following completion and being very early adopters of cloud and NFV technologies, VodafoneZiggo has had many reference visits and calls from other operators keen to learn about virtualization/cloud network experiences and end-user benefits.

“We are one of the first operators in the world to deliver a fully virtualized solution.”



Matthias Sauder,
Director of
Mobile Networks,
VodafoneZiggo

VodafoneZiggo achieved:

- The best-ever voice score
- A top-5 data+voice score (historically)
- A top-4 data+voice score (in the last 24 months)
- The 16th-place data score (historically)²

“The key benefits of the project for end users are all about HD voice quality, faster call set-up times and fewer dropped calls.”



John Zijlmans,
Ericsson KAM for
VodafoneZiggo

Evolve today's voice service for the future

Ericsson's VoLTE solution, the foundation of new IP-based communication, enables new high-quality services like HD voice, HD voice+ (next-generation voice codec), video calling, IP messaging, content sharing within calls, enterprise collaboration, web communication, and voice for IoT (Cat-M1), across various connected devices. Calls can be made and transferred across multiple devices, such as smartphones, wearables, laptops, etc. On the same device, several phone numbers can be used for different needs (work, home, private, etc.).

Wi-Fi calling is an easy, cost-efficient way to extend operator voice coverage. Ericsson can deploy these services within weeks through its Fast VoLTE Launch pre-integrated solutions.

Learn how to evolve your voice services for today's needs and prepare for 5G:

www.ericsson.com/en/digital-services/offerings/voice-services

Ericsson VoLTE:

www.ericsson.com/en/digital-services/offerings/voice-services/Voice-over-LTE

Ericsson Cloud Packet Core:

www.ericsson.com/ourportfolio/cloud-core/cloud-packet-core

¹ Ericsson products included:

Virtual IP Multimedia Subsystem (vIMS): virtual Session Border Controller (vSBC), virtual Call Session Control Function (vCSCF), virtual Multimedia Telephony Application Server (vMTAS), and virtual Authentication Federation Gateway (vAFG). Virtual Evolved Packet Core (vEPC): virtual evolved Packet Data Gateway (vePDG), virtual PDN Gateway (vPGW), virtual Serving GPRS Support Node-Mobility Management Entity (vSGSN-MME), vSAPC (Service-Aware Policy Controller (PCRF (Policy and Charging Rules Function))), vIPWorks (AAA (Authentication, Authorization and Accounting) and DNS (Domain Name Server)), and Home Subscriber Server (HSS).

² Mobile network performance test, performed in the Netherlands by network testing company P3, April 2018.

Ericsson enables communications service providers to capture the full value of connectivity. The company's portfolio spans Networks, Digital Services, Managed Services, and Emerging Business, and is designed to help our customers go digital, increase efficiency and find new revenue streams. Ericsson's investments in innovation have delivered the benefits of telephony and mobile broadband to billions of people around the world. The Ericsson stock is listed on Nasdaq Stockholm and on Nasdaq New York.

www.ericsson.com