What is VoLTE and how could it modernize your voice service offering to your customers

This guide briefly describes voice evolution and the drivers for transformation, what end-user services VoLTE enables and industry insight numbers for VoLTE.

ericsson.com/VoLTE
Accelerating global expansion of VoLTE

VoLTE growing fast in all regions
Service providers continue to evolve their voice networks to VoLTE-based services. These have now been launched in more than 200 networks in over 90 countries.1 VoLTE services are being deployed using cloud technologies, to enable cost-efficient network operations, easier capacity scaling and faster service deployment. VoLTE subscriptions, estimated at 2.1 billion at the end of 2019, are projected to reach 6.4 billion by the end of 2025, and to account for more than 85 percent of combined LTE and 5G subscriptions.

VoLTE, the foundation for enabling 5G voice calls
VoLTE will also be the foundation for enabling 5G voice calls, SMS and new types of communication services on various 5G devices. This will be deployed stepwise in 4G and 5G networks, using LTE-NR dual connectivity, Evolved Packet System fallback and voice over NR. New use case uptake and device availability There are more than 2,500 VoLTE-enabled device models.2 The latest models also include the most recent high-definition voice codec Enhanced Voice Services (EVS). This provides improved audio and music quality within calls on VoLTE-capable devices, including 5G smartphones, as well as better call reliability across LTE and Wi-Fi. More than 165 EVS-capable device models are available, and EVS has been deployed by 20 service providers³.

VoLTE, enabling new use cases
The first service providers have now launched voice calling capabilities on smart speakers using the same mobile phone number as on a smartphone. This builds on the VoLTE multi-device network capabilities, where several devices can be tied to the same phone number, such as phones, cellular smart watches, smart speakers and other devices. There are now more than 80 service provider networks with cellular smartwatches enabled with voice services. Video calling over LTE (V/LTE) is now provided in around 20 networks, and there are 395 device models⁴ available. Other services based on VoLTE include additional phone lines on the same phone, group numbers, different types of enterprise collaboration services in combination with mobile HD voice, and voice in IoT devices. 5G-related service innovations for consumers, enterprises and industries are being explored, including combinations with AR and VR, and interactive calling.

1-4 GSA (Oct 2019)
VoLTE industry insights

- 2.1 Billion VoLTE subscriptions in 2019 expected to reach 6.4 Billion in 2025 (Ericsson Mobility Report, Nov 2019)
- More than 2500 VoLTE enabled device models available today (GSA Oct 2019)
- Cloud benefits are now a reality: automation, operational savings and time to market
- Voice being reinvented with digital assistants and voice control
- Most VoLTE service providers expanding with Wi-Fi calling and multi-device
- IoT voice going from exploration to market launch requiring new efficiencies and scale

VoLTE creates a foundation for interoperable consumer and enterprise communication services on different devices across LTE, Wi-Fi and 5G.

**Building next generation voice services using VoLTE**
VoLTE is delivered via the IP Multimedia Subsystem (IMS)**. It enables operators to offer high-quality, simultaneous communication and data services on smartphones and on many other devices, across LTE, Wi-Fi and 5G.

Many operators are already deploying VoLTE over cloud-based core networks, to support more cost-efficient network operations and faster scaling of capacity.

This network evolution builds upon Network Functions Virtualization (NFV)* and enables faster launches of new services. It has been agreed in 3GPP standardization that VoLTE technology will be the foundation for enabling 5G voice calls.

**New consumer and enterprise use cases with VoLTE**
Services that can already be launched as an addition to HD voice include: Wi-Fi calling, HD voice+ (improved voice quality and music within calls with the Enhanced Voice Services (EVS) codec), video communication, IP messaging with evolution to chatbots and content sharing within calls.

Several devices, such as smartphones and tablets, can share the same phone number (multi-device), while a single phone can use several phone numbers (multi-line). New communication service use cases in a 5G context are being explored, such as augmented reality (AR) and virtual reality (VR).

*Network Functions Virtualization (NFV)
** IP multimedia subsystem IMS
Voice evolution and drivers for transformation

**Level 1:** Since the introduction of GSM for plain old telephony we have seen an evolution on fixed to mobile migration, or rather on fixed to mobile substitution, as many households today don’t even have a fixed line voice connection any longer. With the introduction of packet data services with GPRS in 2G, HSPA in 3G and now 4G we have also seen a very strong evolution towards smart phones with voice and data bundles.

The operator voice business has been challenged by Over-The-Top (OTT) solutions that offer free and advanced voice services with downloadable SW clients. The OTT threat has strengthened over time as free Wi-Fi access has become more a rule than an exception, and as the competition among service providers has resulted in low prices on data buckets that can be used for OTT voice. Consumers expect easy-to-use, innovative and well working communication services on their smartphones and other devices.

**The next steps in the operator voice evolution has just started and it’s about:**

**Level 2:** Introducing a more feature rich voice service with IMS* in order to stay relevant for consumers and offer advanced services to business users to drive customer experience as well as revenue per user. The voice enrichment is enabled by new IMS based services such as Smart Calling where users may use a multitude of devices to make/receive phone calls using the same number, transfer calls between devices as well as having multiple phone lines on one device. To drive the uptake of business users, more is needed; offerings consisting of cloud based microservices, targeting different enterprise segments.

Providing a true value-add to business users will be key for success. If you want to learn more, please visit our Ericsson Communication Accelerator page.

**Level 3:** Making voice a new interface for communication with voice control will soon become a modus operandi for most of us. Telling devices what to do and when, voice control will also be amended with Bots. Bots will tell humans what to do and when. With fully automated systems for provisioning through eSIM we see a possibility for a dramatic increase of devices making life more convenient for everyone.

**Level 4:** Growing the voice and video communication business with industry type use.

Voice will be crucial for IoT use cases. Voice communication will enable interaction with devices for various use cases.

- Voice for CAT-M1 devices
- Voice steering
- Voice bots

Other things that are being explored are Augmented Reality, Virtual Reality, Mission Critical Communication and Network Slicing.

If you want to learn more about how a VoLTE network is designed from a technical point of view, and how voice services will be delivered over 5G, read this blog and white paper: Communication services over 5G.
Improve customer experience and examples of how to monetize VoLTE services

VoLTE is enabling new services for operators (such as HD voice and Wi-Fi calling), who are looking to build additional value for their end-customers and for upselling on their current subscription plans. Below are a few customer cases listed, showing some benefits that voice has enabled for their offerings and also how monetization can be made.

**Voice over LTE**
- **Improve with higher-quality user experience**
  - High LTE surfing speed while making calls and fast call set-up time of 2-3 seconds.
  - Save battery—stay on LTE and avoid switching to 2G/3G which consumes power.
  - Crystal clear HD voice quality—as if you were standing next to the person you talk to.
  - Make calls over best available connection—LTE or Wi-Fi.
  - Part of postpaid plan: voice, SMS, MMS according to existing plan.

**Wi-Fi calling**
- **Reduce churn and attract new customers by overcoming indoor coverage challenges for voice calls**
  - Make and receive calls in areas where no cellular coverage is available.
  - Users do not have to download an app, they just need to connect the Wi-Fi calling enabled smartphone to any Wi-Fi network.
  - No additional charge to use the service.
  - All calls will come out of plan/bundle’s minutes allowance.

**Voice calls for cellular smartwatches**
- **Operator example of upselling**
  - Buy the watch via operator shop:
    - Upsell opportunity of plan and watch for operator including provision for operator shop.
  - Or from another retailer:
    - Upsell opportunity of operator smartphone plan.
  - Voice and SMS usage will be deducted from smartphone plan.
  - Charging up to $10/month subscription price.
How Ericsson can support you deploying VoLTE

People are changing the way they interact with technology as it becomes more intuitive. New services with voice communication are growing fast. Service providers can partner with Ericsson to simplify, expand, and scale their business, and address these new and fast-growing use cases for VoLTE based communication services.

Be first to market with innovations through partnerships
The Ericsson VoLTE offering enables evolved end-user communication using a multitude of innovations from eco-system partners on a great variety of devices, running over any access technology and dynamically using the mobile phone number identities that the user wants to be reachable on.

Maximize the cloud potential
The Ericsson VoLTE offering is cloud ready and fully optimized for cloud deployment, agnostic to the underlying infrastructure for both media and control plane and includes critical automation to simplify creation and maintenance of end user services.

Deploy VoLTE in weeks
VoLTE solutions can be deployed into a multi-vendor network in weeks through industrialized delivery and test capabilities.

Expand service provider offerings
Service providers can build on their Ericsson VoLTE network and expand with enterprise communication solutions, building on unified communication, WebRTC and Cat-M1 for IoT voice services, developed together with partners. Ericsson’s VoLTE solutions support 5G voice and future innovative communication services for consumers and enterprise users.

Explore more on VoLTE [www.ericsson.com/VoLTE](http://www.ericsson.com/VoLTE)

Get in touch with Ericsson about VoLTE