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.
Accelerating global expansion of VoLTE

3 billion VoLTE subscriptions by the end of 2020

Mobile voice services building on VoLTE
VoLTE is a telecommunications specification (by GSMA, IR.92) defining how to enable mobile voice services over packet switched networks, such as LTE (4G), Wi-Fi and 5G. It creates a foundation for globally interoperable consumer, business and enterprise voice and communication services across LTE, Wi-Fi and 5G. It enables operators to offer high-quality, simultaneous voice and communication services and 4G/5G mobile broadband on smartphones and other voice capable devices. VoLTE is delivered via the IP Multimedia Subsystem (IMS)**

Voice and communication services trends and outlook
Service providers continue to evolve their networks to support VoLTE-based services. These have now been launched in more than 210 networks in 100 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 are estimated to reach 3 billion at the end of 2020 and 6.4 billion by the end of 2025. This will account for almost 90 percent of all combined LTE and 5G subscriptions. The shutdown of 2G and 3G networks will accelerate VoLTE adoption and VoLTE roaming agreements. VoLTE will support subscribers and roamers with voice services, as the current most used 4G voice solution, Circuit-Switched Fallback (CSFB), will not work without 2G or 3G.

VoLTE, the foundation for enabling 5G voice calls
VoLTE (using IP Multimedia Subsystem, or IMS) is also the foundation for enabling 5G voice calls, SMS, rich communications services (RCS), and new communication services on 5G devices. IMS is the only standardized voice solution for 5G, and there is no CSFB of voice from 5G. 5G voice will be deployed stepwise in 4G and 5G networks, using LTE-NR dual connectivity, Evolved Packet System fallback and voice over New Radio (VoNR). Successful end-to-end testing of 5G voice (VoNR) and 5G video calling with network infrastructure and the device ecosystem has been conducted.

** IP multimedia subsystem IMS

¹ GSA (May 2020)
VoLTE industry insights

- VoLTE subscriptions are estimated to reach 3 billion at the end of 2020 and 6.4 billion by the end of 2025 (Ericsson Mobility Report, June 2020)
- Most VoLTE service providers expanding with multi-device
- IoT voice in early market phase and will require cost-efficient deployment

Device availability
There are over 2,650 VoLTE-enabled 4G devices, of which around 85 percent are phones. More than 40 5G phones include VoLTE support. VoLTE-enabled smartphones also have enhanced functionalities, such as the latest voice codecs and native video calling. There are more than 165 models supporting HD Voice+ (Evolved Voice System, or EVS), and more than 400 devices capable of video calling over LTE (ViLTE).

Building next generation voice services using VoLTE
The latest service provider market offering is smart speakers with voice calling capabilities, using the same mobile phone number as that of a smartphone. This builds on VoLTE multi-device network capabilities which tie several devices, such as phones, smartwatches and smart speakers, to the same phone number. Over 90 service provider networks support cellular smartwatches enabled with voice services.

Other VoLTE-based services include additional phone lines on the same phone, shared phone lines, video calling, enterprise collaboration services in combination with mobile HD voice, and voice for IoT devices. 5G-related service innovations for consumers, enterprises and industries are being explored, including combinations with AR and VR. 5G interactive calling – combining a 5G voice call with real-time content sharing, for example, joint web browsing on 5G smartphones, or business and enterprise media sharing between different devices and endpoints – could become a radically improved, mainstream 5G voice service in the future.

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2 GSA (May 2020) modules, smartphones and other types of devices, supporting different regions and frequencies
3 GSA (May 2020)
4 GSA (May 2020)
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 LTE, Wi-Fi and 5G

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*IP multimedia subsystem IMS
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