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 across all regions
VoLTE creates a foundation for interoperable consumer and enterprise communication services on different devices across LTE, WiFi and 5G. VoLTE has been launched in more than 155 networks in over 75 countries across all regions*. The number of VoLTE subscriptions is projected to reach 5.4 billion by the end of 2023, accounting for around 80 percent of combined LTE and 5G subscriptions**.

VoLTE available in smartphones for all markets
The global proliferation of VoLTE-enabled smartphones continues unabated; there are already more than a thousand VoLTE-enabled models available from all major device vendors supporting different regions and frequencies. Devices are built using VoLTE capabilities integrated into chipsets supporting HD voice, HD voice+, video calling and SRVCC, among others. Key VoLTE features are supported in devices and RAN delivering high-quality voice and efficient capacity for the combined voice and data services. Devices and RAN have been designed to adapt to radio conditions for seamless mobility, optimized battery consumption and call latency.

* GSA Aug 2018
** Ericsson Mobility Report June 2018
VoLTE industry insights

— 650 million+ VoLTE subscriptions, expected to reach 5.4 billion in 2023 (Ericsson Mobility Report 2018)
— In total 229 operators are investing in VoLTE in 107 countries including 156 operators with deployed/launched VoLTE voice services in 76 countries, up from 145 in 70 countries (GSA August 2018)
— on 1,800+ devices (GSA August 2018)

— 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

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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.

Several 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-persona). 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 the consumers and business users, to capture more business to VoLTE and 5G. The voice enrichment is enabled by new IMS based services, such as multi-device where end-users may use different kinds of devices to make phone calls, just using the same mobile phone number. They can also transfer ongoing calls between the devices. For business and other users, the multi-persona service can be used to encourage users to port their fixed phone number to the mobile, offer phone number for groups, e.g. family or a small company.

**Level 3:** Selling voice through new distribution channels such as the automotive and housing construction industries. As the voice service expands into these kind of industries, the number of operator voice and data subscriptions increases dramatically. In the construction industry every new car and building potentially mean sales.

**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

*IP multimedia subsystem IMS
Improve customer experience and examples of how to monetize VoLTE services

Voice is enabling new solutions 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 NFV 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. The Ericsson VoLTE solution will support 5G voice and future innovative communication services for consumers and enterprise users.

Explore more on VoLTE www.ericsson.com/VoLTE
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