Smart calling – multi-line
Multiple phone numbers on the same device
Telecommunication service providers can evolve and provide a more flexible and attractive mobile voice service experience for their customers. This can be achieved by leveraging the mobile voice service in 4G (using VoLTE), which creates a foundation for interoperable consumer and enterprise communication services on different devices across 4G, Wi-Fi and 5G.

Explore how service providers can monetize the multi-line voice service, and increase revenue, reduce churn and attract new customers.
The concept of Smart Calling

Smart calling enables users to benefit from a more flexible voice and messaging service user experience on different types of “smart” devices; smartphones, smartwatches, etc.

Several devices, such as smartphones, smartwatches, laptops and other voice-capable devices (using VoLTE), can be reached with the same mobile number (multi-device).

A single phone could also have several “virtual identities” (phone numbers) in addition to the primary identity (phone number) of the SIM card (or eSIM) — a multi-line service. The user can thus select by whom to be reached dependent on the role and time of the day (work, private, home, and several temporary phone numbers).

With a shared number functionality several people can be reached on the same number, e.g. a family number or a temporary team number.

The service provider messaging service (SMS/MMS) can be used on different devices and numbers. Additional voice, communication and messaging related use cases and services will also be developed in the future as part of the Smart Calling.

Multi-line user benefits

Instead of having several phones or the limitation of a dual-SIM phone, you can now have several identities available on your smartphone. You can still be reached on your primary identity (number) of your subscription, but now also on new virtual identities enabled by your service provider. Different roles in your life might require different numbers e.g. private number and work number.

You can control on which numbers you want to be reached on during different times of the week and hour, virtual numbers can be used for:

- Private mobile line
- Work line
- Home line (could also be a shared family line)
- Dating line
- Temporary line when selling things online
- Community helpline

An example illustration of how the service interaction could look like is shown in figure 1 when a new phone line is activated, and also how to charge for the new line, directly on the phone screen.

Fig 1. Example of how to activate a new phone line directly via the smartphone screen, and how to flexibly use the different phone lines.

This also provides the flexibility to decide during which days and hours of the day you want to be reached on the different phone lines.
Service provider monetization of multi-line

Service providers could increase revenue, attract new users and reduce churn by enabling the possibility to flexibly add new phone lines, based on the user needs. It could either be new phone lines that the user pays extra for every month as a top-up of the regular smartphone bundle. Or, it could be paying for an additional line for just a few hours or days. Some examples are listed below and are exemplified in figure 3.

- Increase average monthly revenue per user by selling additional phone line subscriptions, e.g. private, work, temporary lines (per week, day, hour)
- Offer combined solutions (multi-device, multi-line, shared number)
- Build brand value by differentiating with the new offering
- Retain subscribers (lower churn rate)

Fig 2

Fig 2. Example of how to monetize multi-line voice calling on top of the regular smartphone bundle
Only service providers can enable smart calling in a mobile network

The solution used in a mobile network to deliver voice services in 4G, 5G and Wi-Fi is the IP Multimedia Subsystem (IMS), another industry name for this technology - Voice over LTE (VoLTE). It enables service providers to offer high-quality voice and communication services, simultaneously with mobile broadband data services on smartphones and many other devices, across LTE/4G, Wi-Fi and 5G.

Only service providers can deliver these types of services over a mobile network with:

- High-quality voice everywhere; even if the network is congested with mobile data traffic (surfing, streaming etc), the voice service will always be prioritized in the network to provide a high-quality voice service. The voice calls are seamlessly moved between mobile accesses, over 4G, Wi-Fi and 5G, to provide un-interrupted voice calls when the user moves between cell towers.
- The mobile phone number is the unique identity which users can be reached on and can easily call anyone who has a phone number.
- Transfer ongoing calls between different devices, across 4G, Wi-Fi and 5G.

Fig 3. High level network overview - how smart calling works in a mobile network
What do I need in my mobile network to launch multi-line voice calling to my customers?

Multi-device requires implementation of Voice over LTE (VoLTE, where the IP Multimedia Subsystem (IMS) delivers the telephony services) in your mobile network. To enable voice calls on more devices, you need new SW on top of your IMS infrastructure.

- Ubiquitous LTE coverage in your market (LTE, EPC et c)
- Ericsson IMS (VoLTE) with new software features in MTAS (Multimedia Telephony Application Server) and SBC (Session Border Controller)
- Device onboarding with Ericsson Secure Entitlement Server
- Device SW application

IMS will also be used to deliver 5G voice services. Thus, the multi-device functionality will work in future 5G networks as well.

Find out more about VoLTE

If you have not already deployed VoLTE in your network, find out how to do this easily with Ericsson’s cloud-based solutions. Also find more information about the generic benefits and technology for VoLTE.

VoLTE will also be used to enable voice calls in 5G networks, including new innovative services. Find out more about the technical network evolution aspects of 5G voice, as well as inspiration on new 5G innovations for voice and communication services for consumers, business and enterprises: Learn about mobile network evolution aspects of voice over 5G.

More about Ericsson’s VoLTE solutions and products: Cloud VoLTE and Evolved Communication

VoLTE will also be used to enable high-quality business and enterprise services. Find more here: Enterprise communication
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.