



Smart calling — shared line

Additional phone line
shared within a group



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 a shared number 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; smart phones, smart watches, etc.

Several devices, such as smartphones, smartwatches, laptops and other voice capable devices (using VoLTE), can be reached with the same mobile phone 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 the Shared line 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.

Shared line user benefits

Shared line is a functionality that makes it possible to reach several people on the same number, e.g. a family number or a temporary team number (compared to one fixed home number shared by several people).

Applying this concept to mobile telephony would mean that an end-user would have multiple lines, one for personal calls (to the personal smartphone or other devices) and one for calls to and from the shared number. Multiple lines can be achieved by the multi-line functionality with dedicated client support on the smartphone.

One scenario could be that a family has a fixed phone line that is also available on all the individual family members’ smartphones. An incoming call to the family number would ring on all smartphones and also on the home devices. For example, an old fixed phone, or a more modern device like a smart speaker, that is enabled with service provider voice calls. An outgoing call from the family number on one smartphone would be presented as a call coming from the family number.

Future enhancements could be transferring of a call to other members in the family/team.

Fig 1

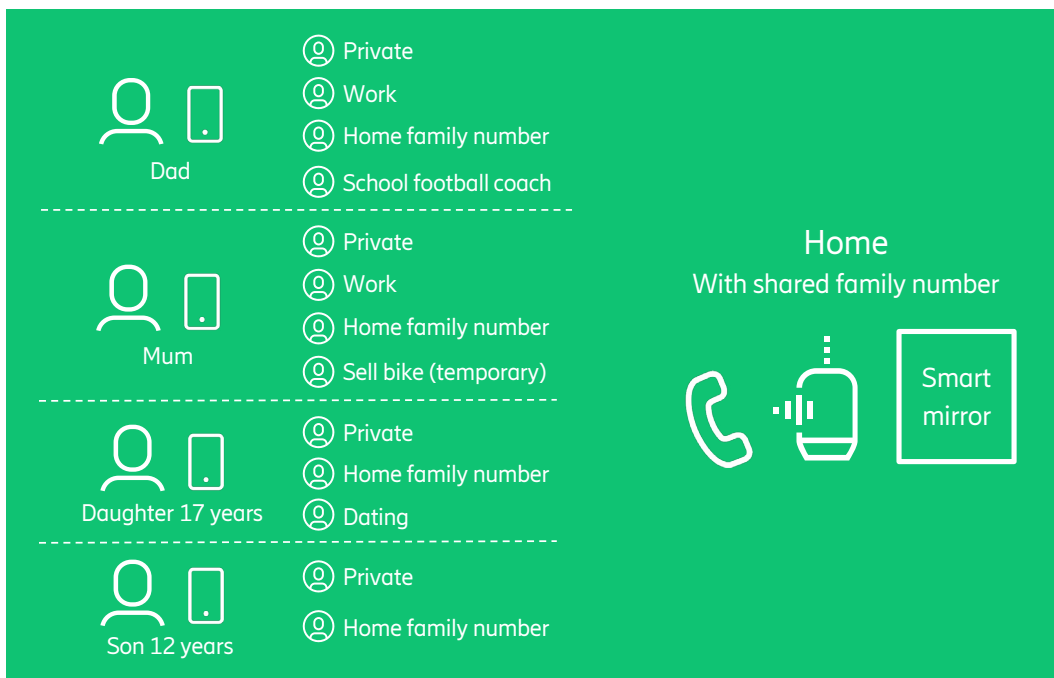


Fig 1. Shared number, shown in a family bundle context, with examples of several telephony enabled home devices. This example is also combined with the extended multi-line concept with additional phone lines for Dad, Mum and daughter.

The administrator(s) of the family calling (usually the parents) could manage the individuals’ different phone lines and when each person can be reached on

the phone number. For example, the Mum can decide during what times of day and weekday the 12-year-old son should be reachable on his different phone lines.

Service provider monetization of shared number

Service providers could build different types of bundles to monetize shared number, especially for a family context, depending on their market specifics. If there are still a lot of fixed telephony users, this could be a way

to modernize this service, by tying it to the smartphone bundles, and also to introduce and sell new modern home devices, like smart speakers, smart mirrors etc.

Fig 2

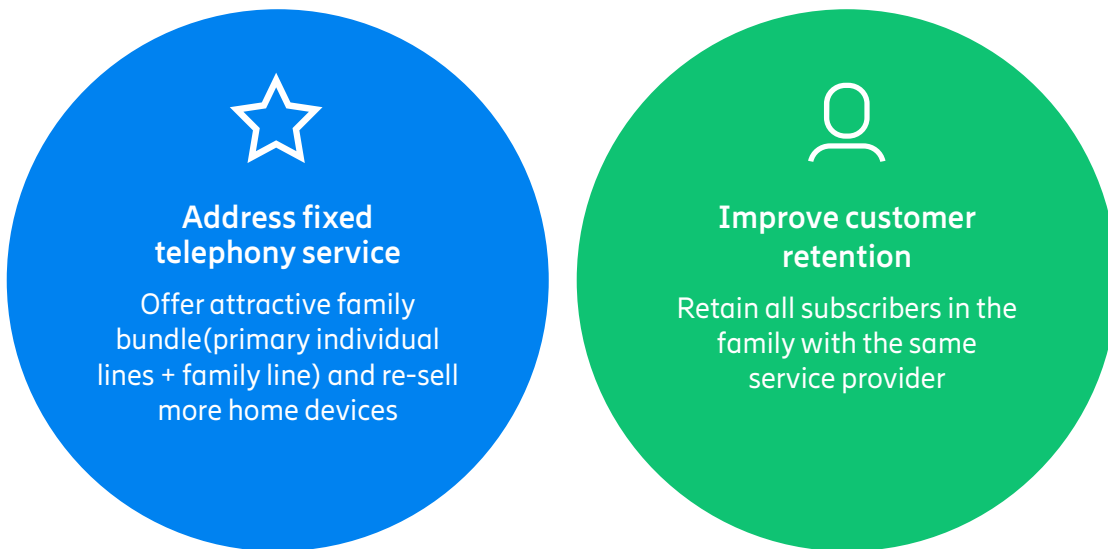


Fig 2. Examples of the service provider values of shared lines for families.

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 is 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.

Fig 3

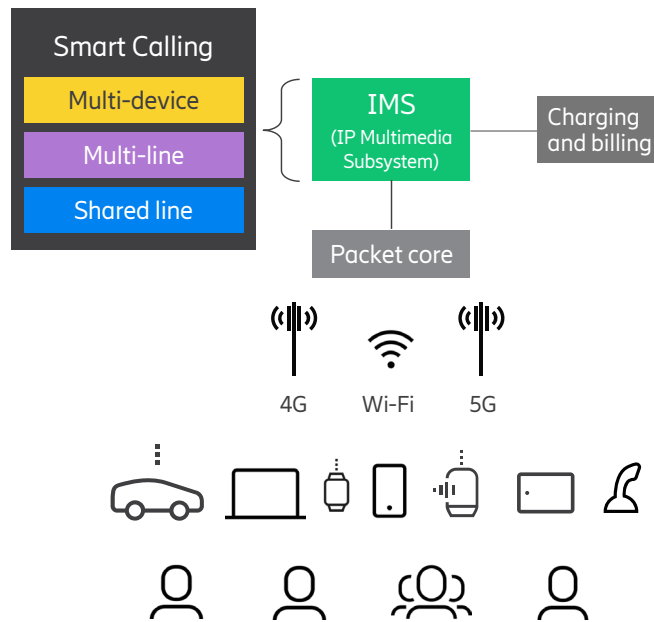


Fig 3. High level network overview - how smart calling works in a mobile network

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 can be moved seamlessly 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 call anyone who has a phone number.
- Transfer ongoing calls between different multi-device capable devices, across 4G, Wi-Fi and 5G.

What do I need in my mobile network to launch multi-device 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 etc.)
- [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](#)

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