



## Fixed-Mobile Convergence for Mobile Operators

Mobile operators are embracing disruptive broadband technologies to deliver innovative new FMC services based on 3GPP standards.

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### → Fixed-Mobile Convergence for Mobile Operators

The mobile industry has been one of the world's greatest business success stories over the last century. In less than 30 years, mobile handsets have become a mainstay of daily life for more than 3 billion people around the world. Nonetheless, the industry's maturation presents fundamental business challenges for mobile operators.

**Revenue Growth:** As customer additions slow, mobile operators must continually identify new growth opportunities, as well as hold onto existing subscribers. Without doubt, increasing mobile service use at home and in offices represents one of the largest growth opportunities for mobile operators. However, despite high interest from subscribers in wanting to use their mobile phone as their primary phone, the cost and performance challenges of mobile services have prevented operators from being able to capitalize on this tremendous opportunity.

**Cost Control:** With mobile data usage continuing its rapid climb, mobile operators are beginning to feel the strain on their macro networks. In addition, with aggressive flat-rate pricing for data services becoming the industry norm, the capital cost to add the needed capacity to mobile networks is no longer being offset by expected revenues.

Fortunately, several technological forces are quickly changing the communications landscape: broadband, VoIP, Wi-Fi and femtocells. Until recently, it's been unclear how these technology mega-trends will affect mobile operators. In some cases, they have been viewed as potential threats.

Now, thanks to the 3GPP UMA/GAN and the emerging 3GPP Home Node-B (HNB) specifications, mobile operators can truly embrace these disruptive technologies and turn them into competitive advantages. By deploying fixed-mobile convergence (FMC) solutions based on these 3GPP standards, mobile operators can immediately leverage existing broadband access connections in subscriber homes and offices to seamlessly extend their mobile services indoors. As a result, operators can now offload their macro networks while delivering high-performance, low-cost mobile voice, data and IMS services in the locations subscribers spend most of their time – at home and work.

## → The FMC Opportunity for Mobile Operators

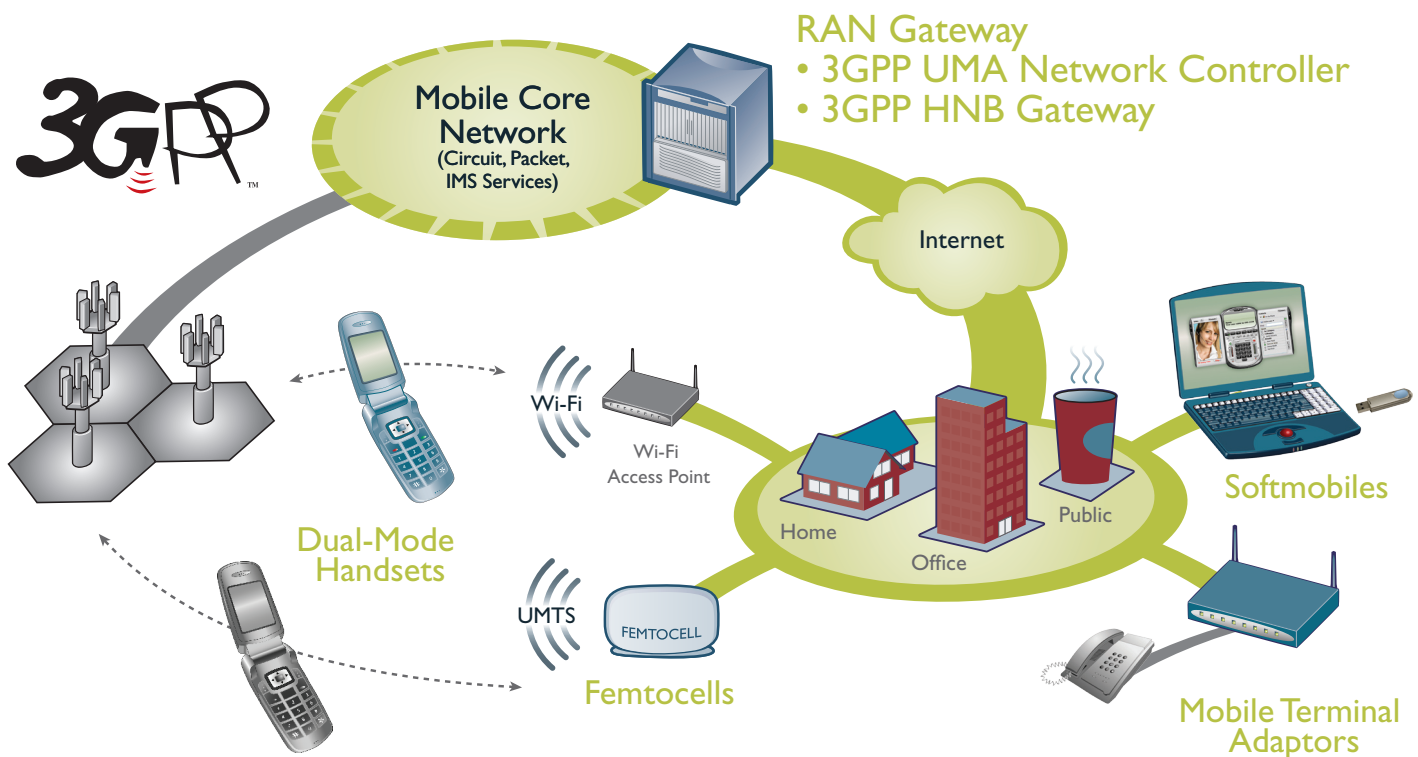
Mobile operators are looking to accelerate fixed-to-mobile substitution (FMS), battle the increased threat from VoIP providers and lower the cost of mobile data service delivery. Kineto products and services based on the 3GPP UMA/GAN and emerging HNB standards enable operators to leverage the cost and performance advantages of fixed broadband access networks to deliver compelling new FMC services.

**Dual-mode handsets:** One of the most popular FMC applications, dual-mode cellular/Wi-Fi handsets represent an opportunity for mobile operators to lower costs while improving the coverage and performance of mobile services when subscribers are at home or in the office.

**Femtocells:** Femtocells are low-powered cellular base-stations deployed in the home or office to provide 'five bars' or full coverage and high-speed throughput for media-rich data applications.

**Terminal adaptors:** Mobile operators can now capture additional revenues by providing fixed-line home phone service, delivered from their existing mobile core network.

**Softmobiles:** Mobile operators are increasingly interested in delivering a full mobile experience, even for users connected to laptops. New softmobile clients provide a telephony interface to the mobile core network from the subscriber's laptop, ideal for international travel.



➔ **Dual-Mode Handsets – Using Wi-Fi to deliver low-cost, high-performance mobile services**

Fixed-mobile substitution (FMS) represents one of the largest growth opportunities for mobile operators. Unfortunately, the continued cost and performance challenges of delivering mobile services within homes and offices has limited operators’ ability to capitalize on this tremendous market.

To complicate matters, new VoIP operators are entering the market every year. Not only are they seeking to capture fixed-line minutes of use, they are also targeting indoor mobile use through wireless VoIP (wVoIP).

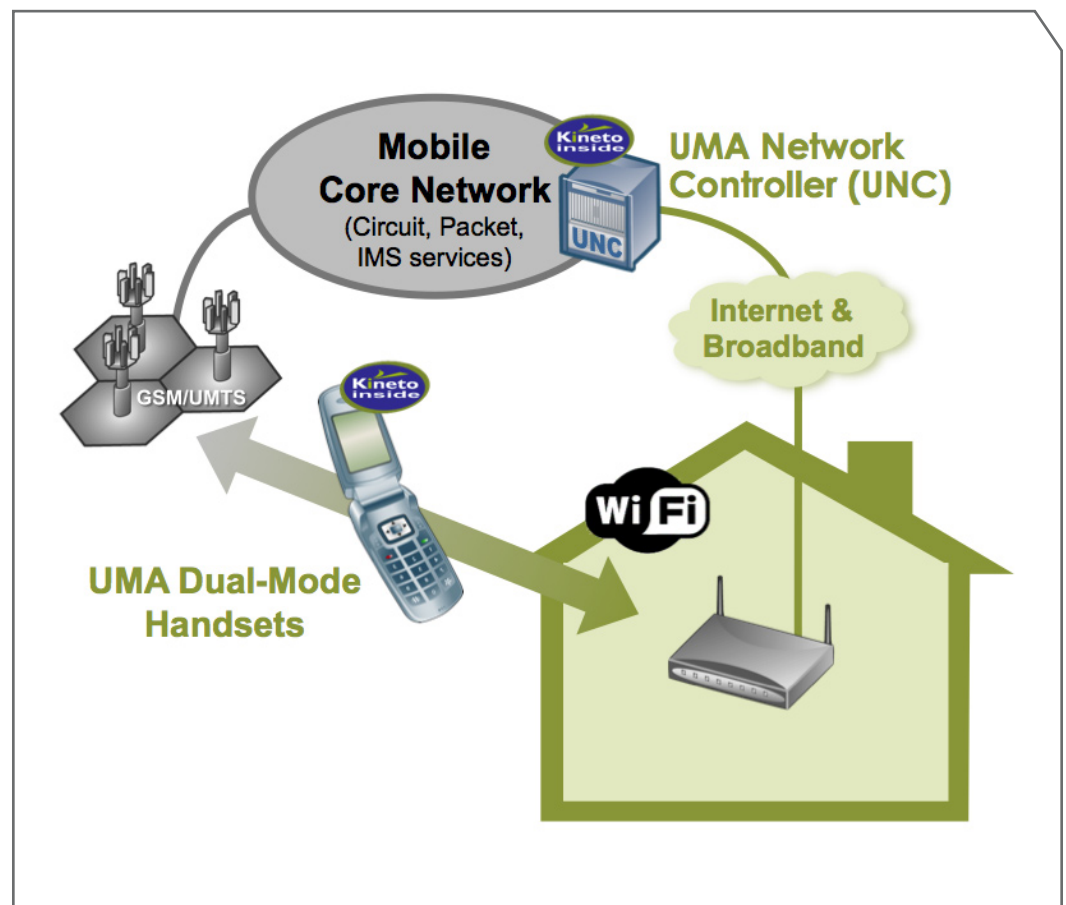
To combat this, operators can deliver high-performance, low-cost mobile service over home, office and public Wireless LANs with services based on UMA-enabled dual-mode cellular/Wi-Fi handsets . This results in mobile operators accelerating the tremendous FMS opportunity while addressing the growing threat from new VoIP operators.

**Operator Benefits**

- Accelerate fixed-to-mobile substitution
- Address threat from new VoIP operators
- Offload macro cellular network

**Subscriber Benefits**

- Low-cost, high performance mobile service at the home, office and hotspots



➔ **Femtocells – Provide high-performance mobile coverage at home**

Mobile operators have been searching for licensed indoor coverage solutions since the beginning of wireless networks. Unfortunately, the bulk of this opportunity (i.e. residential environments) has been beyond the addressable market for cost and operational reasons.

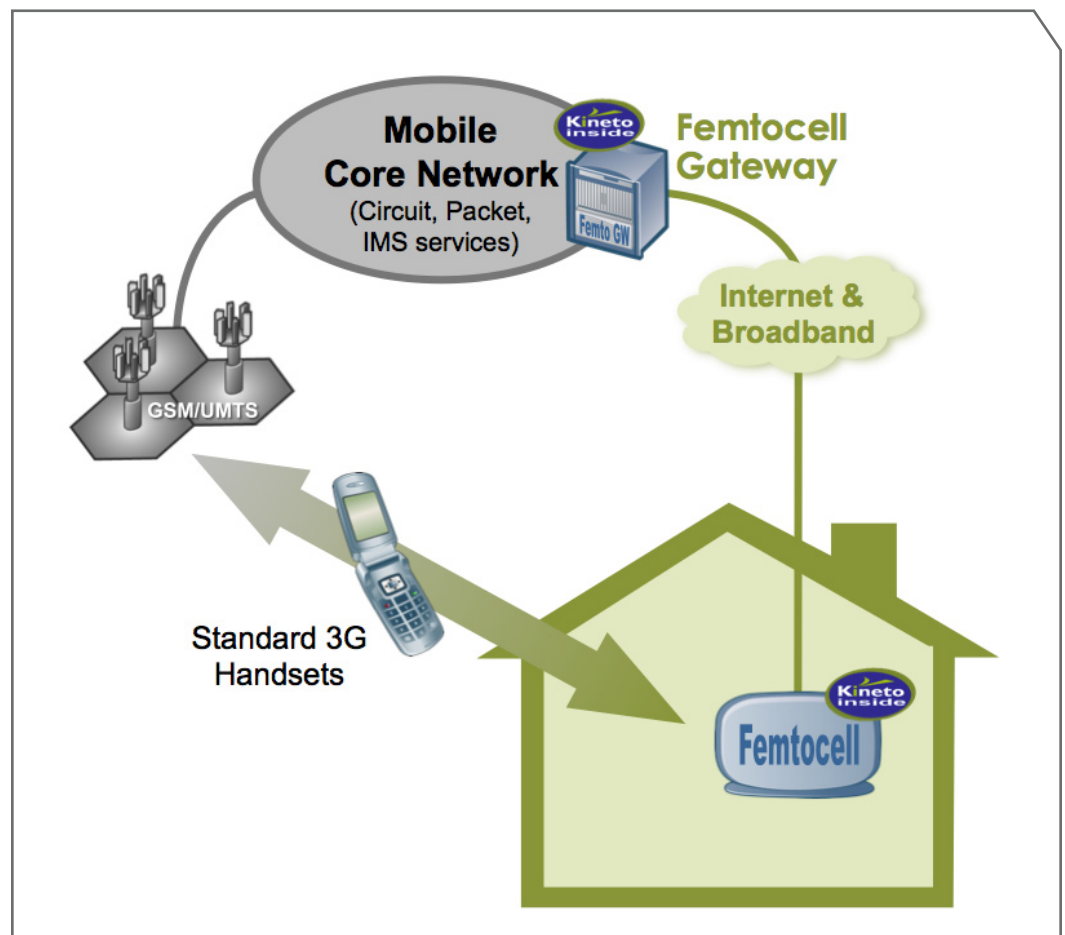
Operators can leverage a subscriber’s existing broadband connection to provide dedicated 3G coverage at home with UMA-enabled (and soon HNB-enabled) femtocells. As a result, mobile operators can lower churn by addressing indoor coverage challenges while at the same time lower capital and operational expenses by offloading traffic from the macro network.

**Operator Benefits**

- Reduce churn with high-quality 3G coverage
- Avoid capital expense by offloading the macro 3G network

**Subscriber Benefits**

- High-performance 3G coverage at home



➔ **Terminal Adaptors – Enter the rapidly growing fixed-VoIP market**

The global market for fixed-line VoIP telephony service continues to grow rapidly. These services typically generate between \$15 and \$25 per month in revenue for a fixed-line telephone service delivered to a subscriber over an existing broadband access connection.

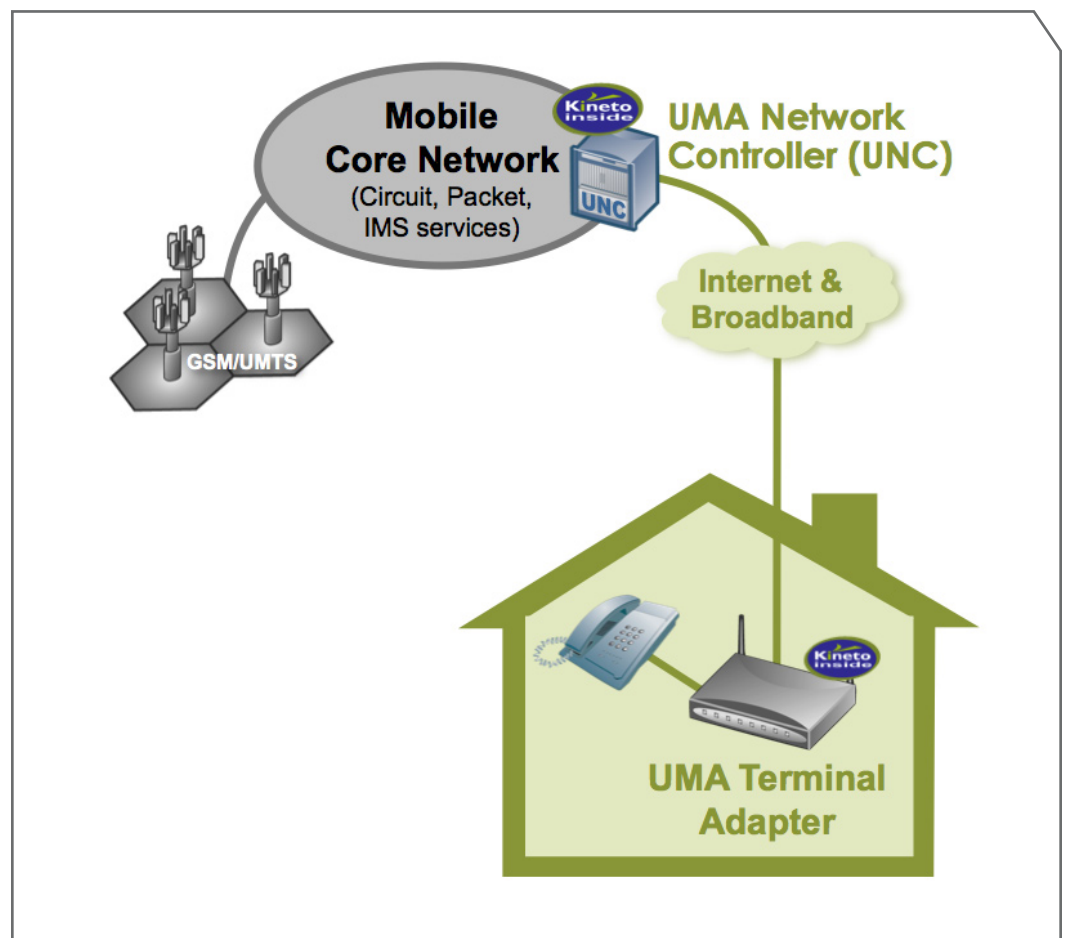
With the introduction of UMA-enabled terminal adaptors, mobile operators can now participate in this large and growing service opportunity. Fixed-line VoIP is an ideal service offer for mobile operators seeking to increase FMS and capture additional in-home minutes of use.

**Operator Benefits**

- Grow revenue with a mobile-branded fixed-telephone service
- Reduce mobile churn through bundling with a fixed service

**Subscriber Benefits**

- Low-cost, high-quality fixed phone line for home



➔ **Softmobile Clients – Low-cost calling for international travelers**

Connecting laptops to broadband at hotels and Wi-Fi hot spots has become a part of everyday life for international business travelers. Many travelers are now taking the additional step of using their laptops and broadband connection for the purpose of voice communications. Rather than use their mobile phones and pay roaming fees, many travelers are turning to softphone/VoIP services when making calls back home. This trend represents a real threat to mobile operators.

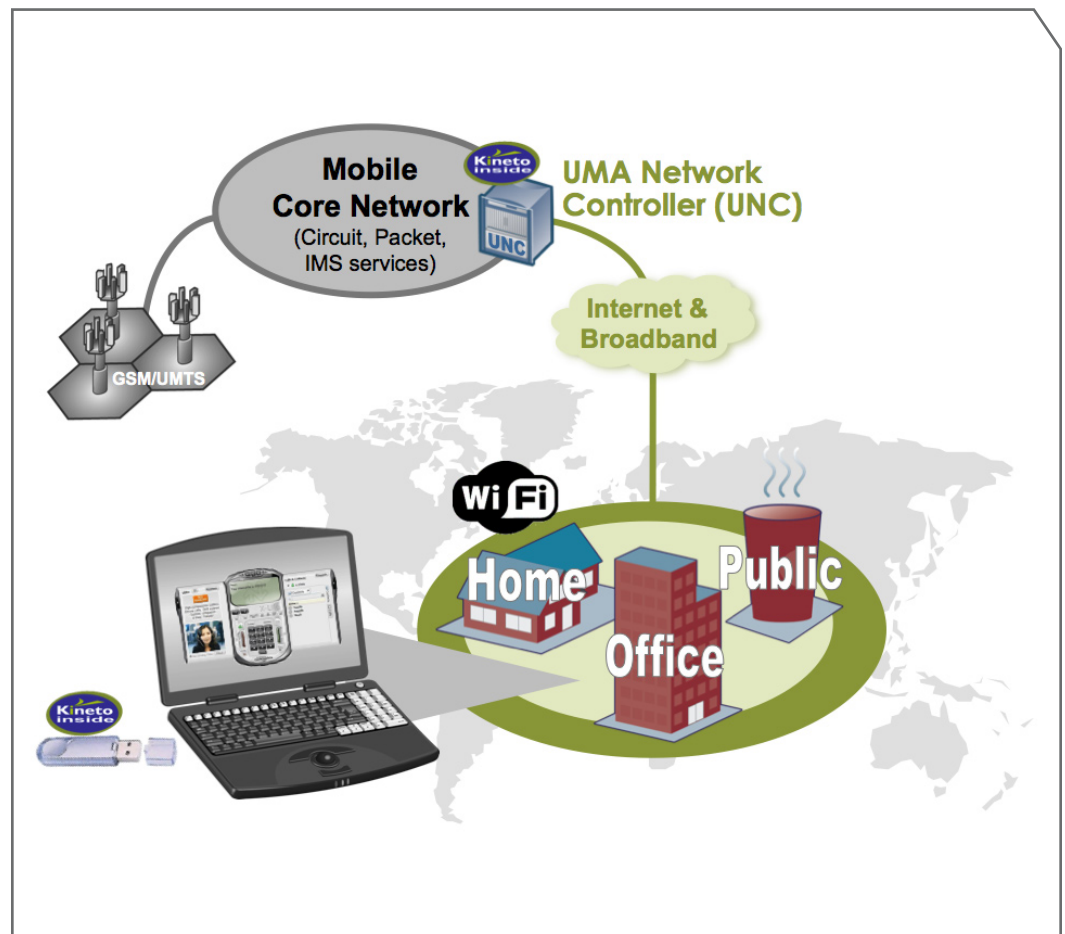
Fortunately, mobile operators can now leverage their UMA deployments to turn this threat into an opportunity. By offering UMA-enabled softmobile products, mobile operators can enable subscribers to make ‘local’ mobile calls from their PC/laptops as if they were in their home country.

**Operator Benefits**

- Address growing threat from new VoIP operators
- Attract and retain high-value subscribers

**Subscriber Benefits**

- Low-cost mobile calling when traveling abroad



### → Kineto's 3GPP-Compliant FMC Solutions

Kineto provides software solutions to mobile infrastructure and device vendors that enable the rapid development of FMC products and services compliant with the 3GPP UMA/GAN and emerging 3GPP HNB standards.

As the leading provider of RAN Gateway software solutions to mobile infrastructure vendors, Kineto has software products that enable the rapid development of UMA Network Controller and Femtocell Gateway products compliant with the 3GPP UMA/GAN and HNB standards. Major infrastructure vendors can provide operators with a RAN Gateway that functions as both a 3GPP UMA Network Controller (UNC) and Femtocell Gateway (HNB-GW). By deploying a Kineto-based RAN Gateway, mobile operators have the ability to leverage one system to offer a number of compelling FMC services, including dual-mode handsets, femtocells, terminal adaptors and softmobiles.

Kineto is the leading supplier of UMA software solutions to mobile device vendors and its solutions enable the rapid development of dual-mode handset, femtocell, mobile terminal adapter and softmobile products compliant with the 3GPP UMA/GAN standard. Proven in numerous commercial products, the company's UMA client software and support services can significantly accelerate time-to-market for mobile device product and platform vendors.

### → Conclusion

FMC represents a tremendous growth opportunity for mobile operators. Existing 3GPP standards, such as UMA/GAN and HNB, provide a technology platform to address the most common services, including dual-mode handsets, femtocells, terminal adaptors and softmobile clients.

Kineto is the leading provider of software solutions for these standards, and is the key innovator behind their development. Utilizing these solutions based on 3GPP UMA/GAN and HNB specifications, mobile operators can embrace disruptive technologies and turn them into competitive fixed-mobile convergence strategies.