



Femtocell Market Update & Latest News from Femto Forum

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Femto Forum - Chairman

Future Network and Mobile Summit

***European Workshop on Broadband Femtocell
Networks***

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The Femto Forum

- Promoting & enabling femtocells
- Not-for-profit, founded in 2007
- Independent, Inclusive, International

driving convergence worldwide

Aims

- Ecosystem Development
- Market Education
- Driving open standards



- 63 operators covering 1.7 billion mobile subscribers – 33% of total
- 74 providers of femtocell technology



Latest News on Femtocells

- Femtocell commercial deployments more than doubled from Q1 2010 to Q1 2011, to 21
- Strong pipeline: commitments to launch almost tripled, to 35
- Last year all deployments were residential – now one-third include enterprise
- Femtocells are getting bigger - first metro and rural deployments now commercial
- Femtocells are getting smaller – USB-connected and powered

Source: Informa Femtocell Market Status Report, March 2011



Evolving Femtocells

- Femtocell applications
 - Commercial services
 - Devices with application frameworks
- Smart offload
 - Femtocells providing natural extension of existing network
 - Integrated femtocell Wi-Fi products and strategies: best of both worlds
- LTE
 - Products emerging
 - Published internal APIs and guidance on network architecture to support consistent projects
- Operators calling for products



Femto Forum Vision

“Delivering a great mobile experience to one billion users via femto technology”

Femto Forum’s scope

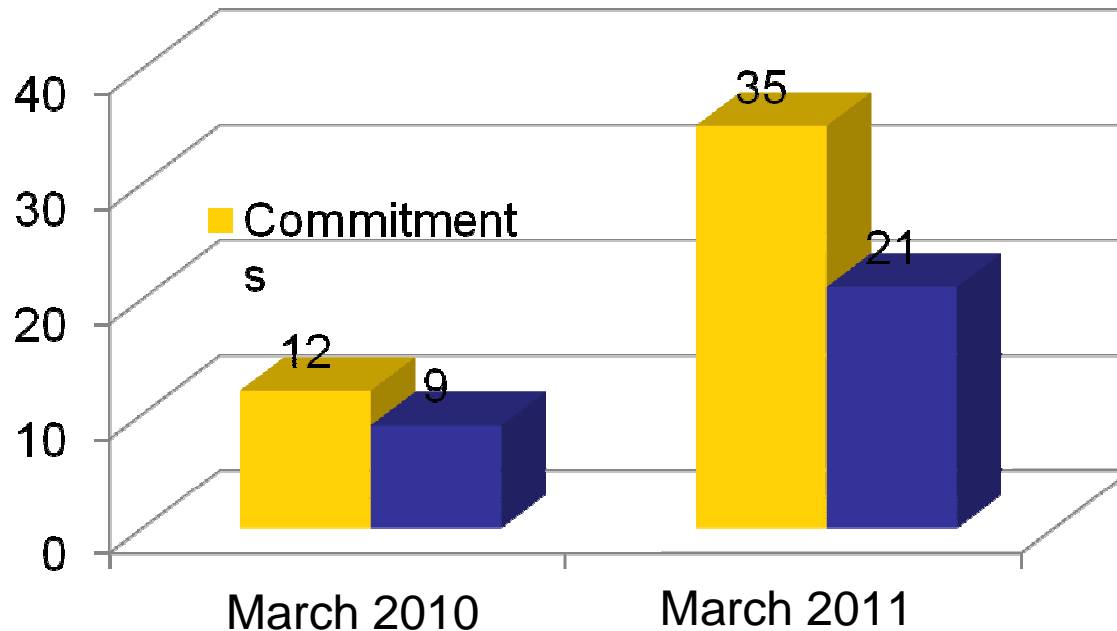
We support the whole range of small cell applications enabled by femto technology. This technology has been enabled by the advent of femtocells, but is broader than femtocells, including office and outdoor environments.

Femto technology includes key attributes such as:

- Scalability
- Automated configuration and optimisation
- Rapid, cost effective deployment
- Efficient use of available backhaul
- High capacity density and user experience



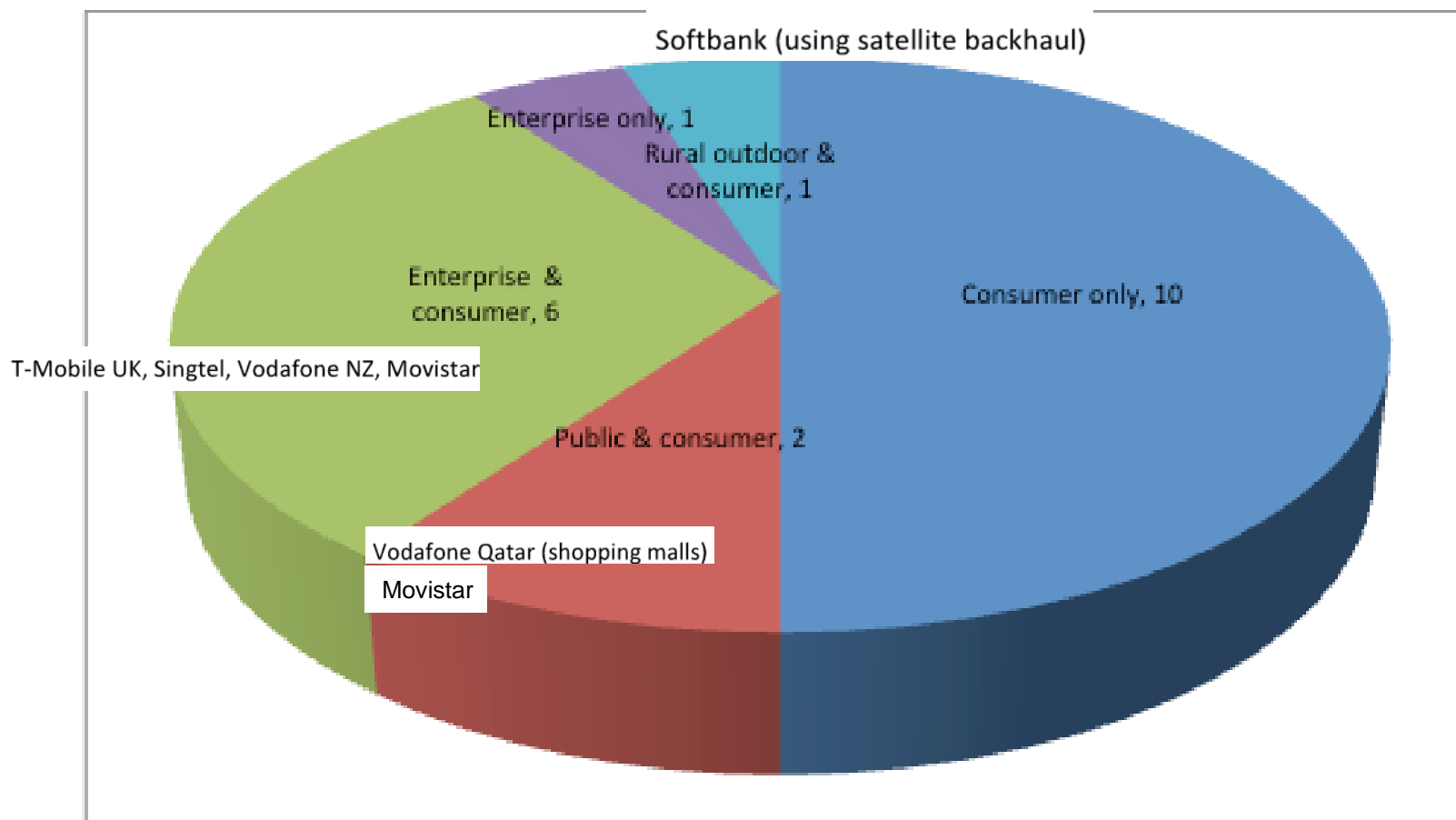
Strong Growth in Deployments and Commitments



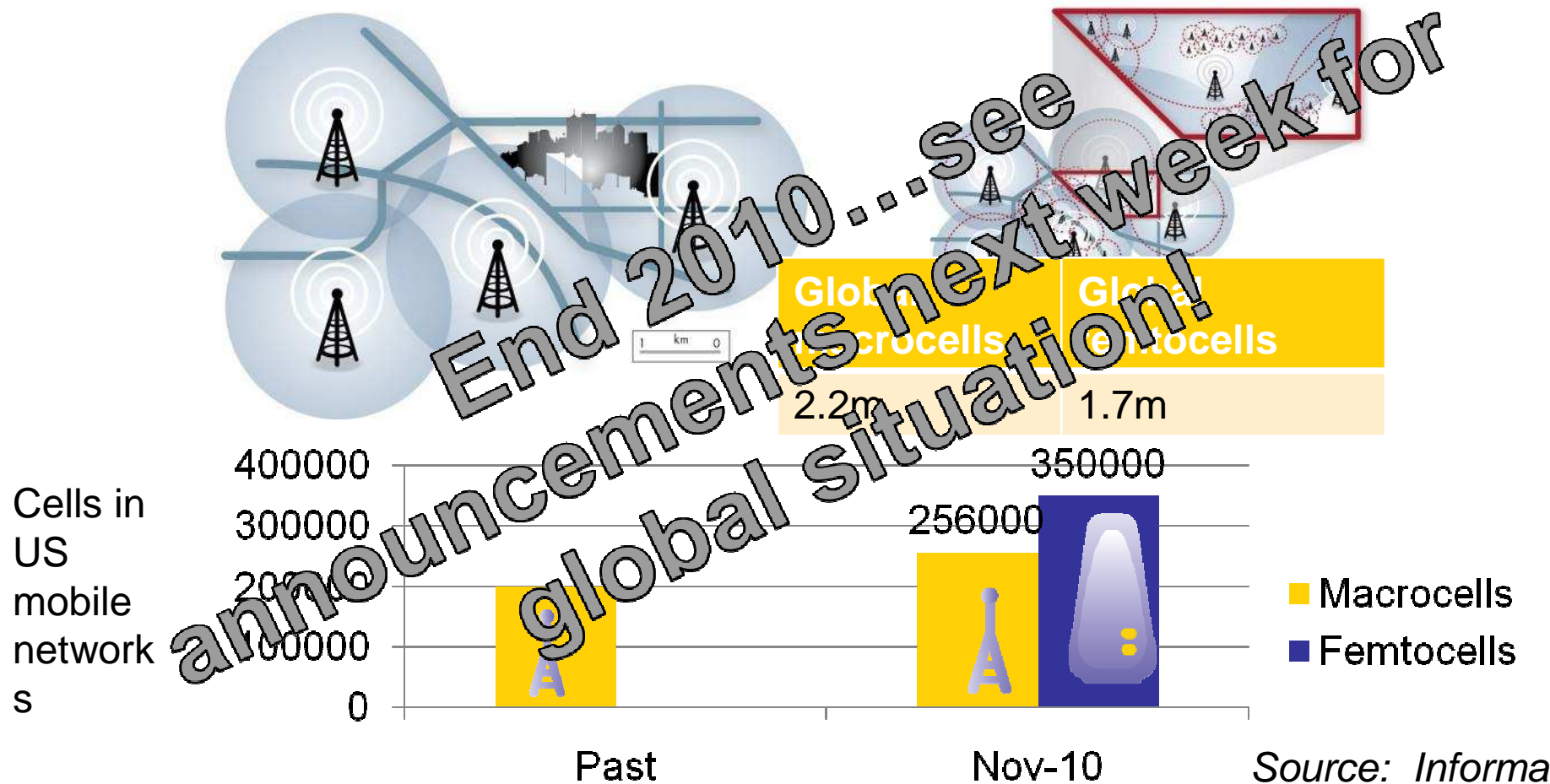
New deployments since March:

- MTS (Russia)
- MegaFon (Moscow)
- Orange (France, Romania)
- Optus (Australia)
- Zain (Kuwait)
- Vodafone (Italy, Hungary, Australia)

Diversifying Deployments



The shape of mobile networks has changed...





driving convergence worldwide

Identified and Overcame Deployment Barriers

Business Case

Femto Forum publishes detailed findings from femtocell business case study

New results show femtocell business case is both positive and robust to varying operator situations, and can even work on cost savings alone for

heavy data users.

Spectrum Efficiency

FEMTO FORUM STUDY CONCLUDES THAT CELL-TO-CELL INTERFERENCE BETWEEN FEMTOCELLS AND THE MACRO NETWORK IS NOT A BARRIER TO DEPLOYMENT

Femtocells can deliver a significant increase in mobile network capacity and play a key role in increasing mobile data speeds

Standards

Worlds first femtocell standard published by 3GPP

News Archives

Three-way cooperation between 3GPP, Femto Forum and Broadband Forum creates new standard in record time enabling operators to deploy standards-based femtocells

Ecosystem

End-to-end system producers 		Other enablers
Products 	Network Elements 	
Components & Software 		

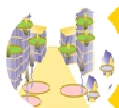
Femto Forum Priorities for 2011



Encourage operator deployments (identifying motivations, overcoming obstacles, spreading best practice)



Consumer attitudes and value proposition



Metro/outdoor cells



Integrated Femtocell / Wi-Fi Networks



LTE femtocells



Enterprise Femtocells



Service enablement



Open interoperability



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Key Findings Global Femtocell Survey



PARKS
ASSOCIATES

6,100 consumers in 6 countries

60% of consumers are interested in femtocells

Voice coverage

- Main driver for femtocells is in-building voice coverage – and is main driver for consumer rating of mobile operator

Churn Reduction

- Voice service improvement alone could prevent 42% of consumers switching operator in the next 12 months

Wi-Fi complementary

- 83% of heavy Wi-Fi phone users find femtocells very/extremely appealing

Added-value services

- 68% of femtocell fans found at least one advanced femtocell service very/extremely appealing

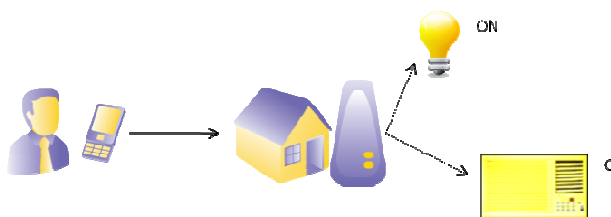


Femto Forum LTE Special Interest Group

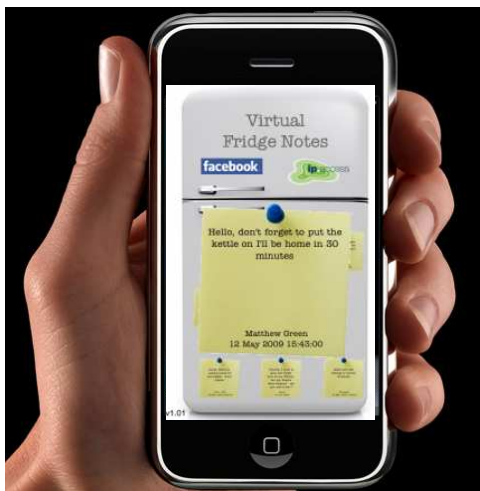
- Chaired by Vodafone
- Mission: To ensure that the LTE femtocell requirements, specifications, product recommendations, and guidelines are delivered to allow operators to offer compelling new LTE services
- Some goals for 2011:
 - Provide clarity on choice of architectures according to operating environment
 - LTE femtocell service requirements and concepts
 - Use of spectrum bands for LTE femtocells
 - Assessment of LTE multiradio combinations
 - High level LTE femtocell product specification
 - LTE femtocell deployment guidelines

Femtocell-enabled Services

Secure home access



Home messaging



- Presence, location, context and remote access
- A bridge between the mobile and home networks
- Unlocking content, sharing and social networks on your mobile

Chameleon home screen

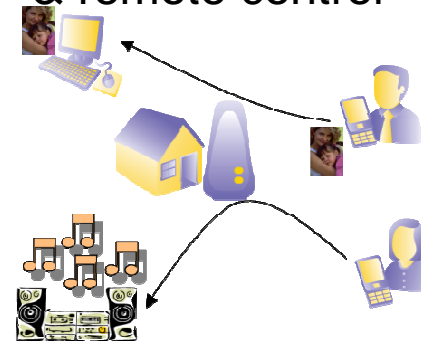
UX-Zone changes the home screen to mirror your environment



Mobile Zone Screen

Home Zone Screen With femtocell apps

Picture synchronisation & remote control



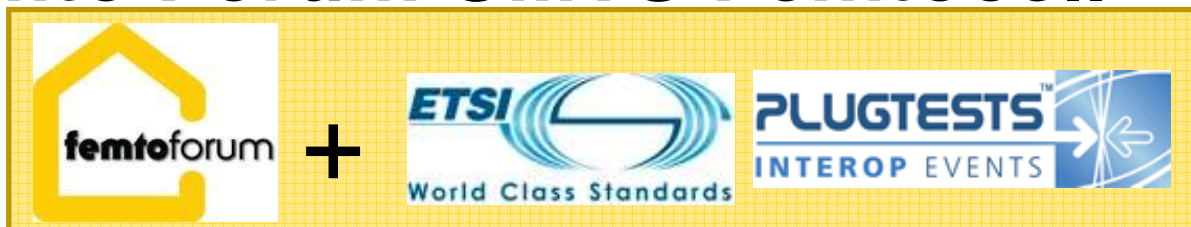


Recently Completed: a New API for Femto Services

- An **industry-wide agreed set of API specifications** that enable advanced mobile applications based on femtocell technology.
- **First applications have already been built** based on these specifications by Forum members for operator customers.
- The API **provides femtocell awareness information** so developers can incorporate enhanced presence, context and location-sensitive features into new and existing apps.
- In parallel Femto Forum **worked with Broadband Forum** to update TR-196 Femto Access Point Service Data Model, to enable support for femtocell applications. This allows mobile operators to use their **standard management systems to remotely provision and configure advanced femtocell applications** on their customers' equipment as well as issue repairs and updates.



Second Femto Forum UMTS Femtocell Plugfest



- Plugfest took place in February 2011
- Focused on Broadband Forum TR-196 femtocell management standard
- Interoperability tests were conducted between femtocell access points, management systems, security gateways and femtocell network gateways
- The plugfest also tested the IPsec/IKEv2 security protocols which allow femtocells to communicate over the public Internet to operators' core networks in a highly secure manner
- 13 participants:

Ablaze Wireless, Acme Packet, Alcatel-Lucent Telecom, Alpha Networks, Argela, Askey Computer Corporation, Huawei, Institute for Information Industry, NEC Corporation, Node-H, Nokia Siemens Networks, PicoChip and

Third plugfest planned for June



Summary

- The femtocell market is growing strongly
- Femto Forum is supporting and tracking today's femtocell market
- Femto Forum is working to enable the next waves of femtocell

Femto Forum Timetable 2011

Date	Event	Venue
June 7-23	Femtocells World Summit	London
September 13-16	Femto Forum Plenary	Kuala Lumpur
September 6-8	China Femtocells Symposium	Beijing
December 6-9	FF US plenary - Femtocells Americas (5-6)	US