SMALL CELLS INNOVATION
UNLOCKING ICT – an enabler for innovative growth

JULY 2, 2013

Alcatel·Lucent

Small Cell Market Status
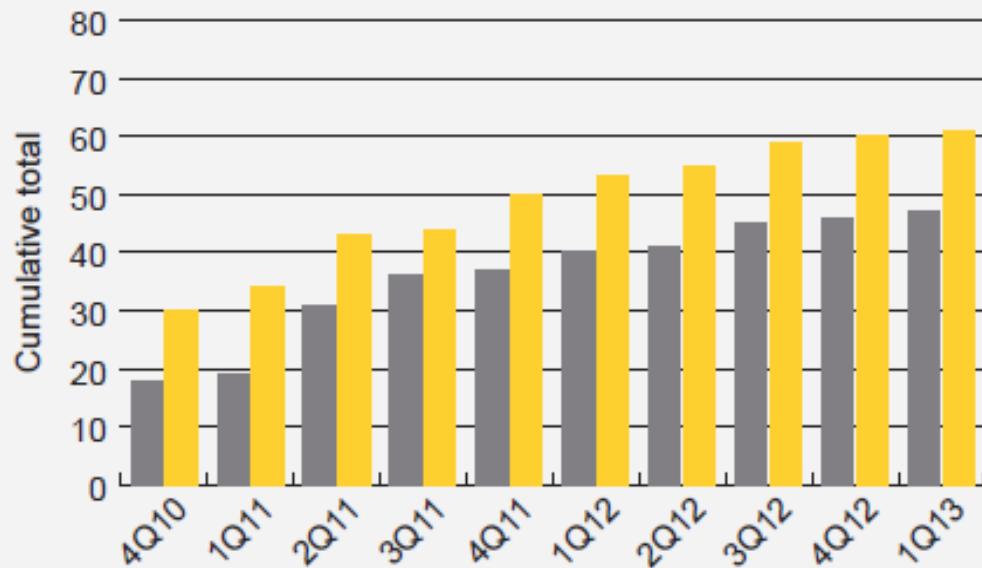## February 2013

Femtocell service deployments and commitments, cumulative totals, 1Q10-3Q12

Note: Figures refer to quarter-end
Source: Informa Telecoms & Media

Selection of pricing models for femtocell services

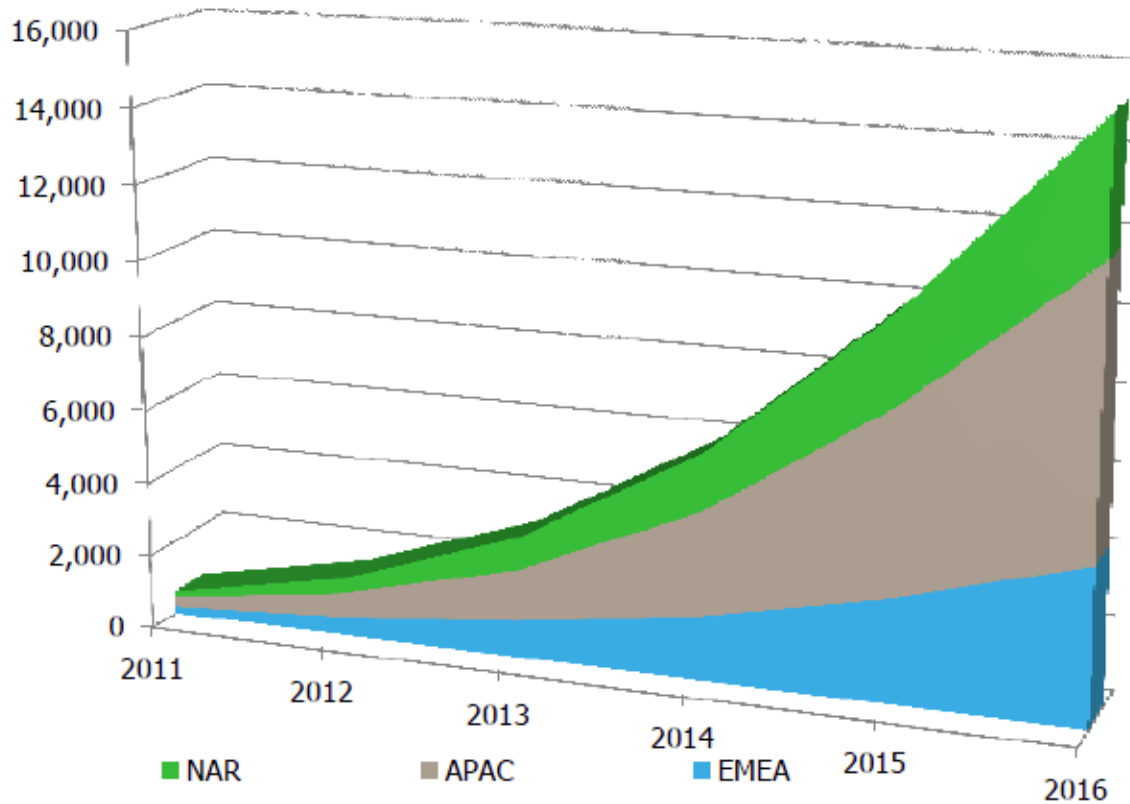| Market	Pricing model	Deployment examples
Consumer	Add-ons for unlimited calling	MoldTelecom, Sprint, Optus
	Free femtocell	Softbank, Vodafone (GR), SFR
	Low upfront fee	Vodafone (UK)
	High upfront fee	Vodafone (Italy, Hungary), Verizon
	Monthly fee	Sprint, Movistar, NTT DoCoMo
Enterprise	High upfront fee	All operators

Source: Informa Telecoms & Media

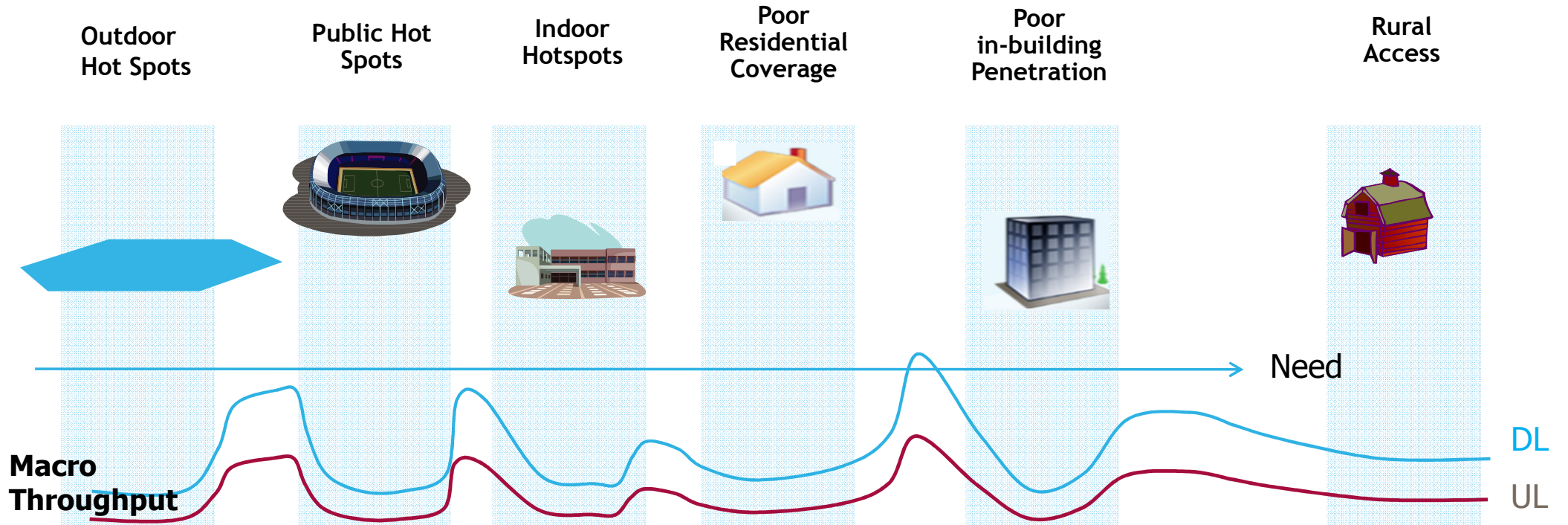**Small Cell Deployment is double from 4Q10 to 4Q12**

Alcatel·Lucent

HOW TO DELIVER BETTER QOE HERE?

25X INCREASE - 2011-16 (BELL LABS)

BELL LABS TRAFFIC INDEX 01/12

Chart axis values: 16,000 / 14,000 / 12,000 / 10,000 / 8,000 / 6,000 / 4,000 / 2,000 / 0

Years: 2011, 2012, 2013, 2014, 2015, 2016

Legend: NAR, APAC, EMEA

TODAY'S MACRO ONLY APPROACH IS INSUFFICIENT

Outdoor Hot Spots

Public Hot Spots

Indoor Hotspots

Poor Residential Coverage

Poor in-building Penetration

Rural Access

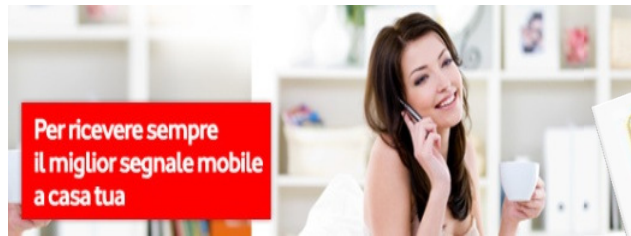Need

Macro Throughput

DL

UL

70% OF CUSTOMERS SWITCH BECAUSE OF POOR QUALITY

Alcatel·Lucent

SMALL CELLS ANSWER TODAY LIFE STYLE

- **The Best Mobile Experience & Life Quality**

- **Happy in all places … high-rise building & condo**

- **Plug & Play**

- **More fun with New Service & APPs**

Per ricevere sempre il miglior segnale mobile a casa tua

Per ricevere sempre il miglior segnale mobile nella sede della tua attività

Up to 5 bar mobile coverage in your home.

"Customers tell us it is life changing"

Guy Laurence
Vodafone UK CEO

AT THE SPEED OF IDEAS™

Alcatel·Lucent

HETEROGENEOUS NETWORKS (HETNET) PERFORMANCE
% GAIN IN MEDIAN USER THROUGHPUT (METRO VS. MACRO)

#MetroCell Per Macro	Gain in Median User Mbps
1	193%
2	300%
4	467%
10	960%

UNIFORM USER DISTRIBUTION

Metro Cell   Metro Cell

Macro eNB

ENGINEERED HOTSPOT DISTRIBUTION
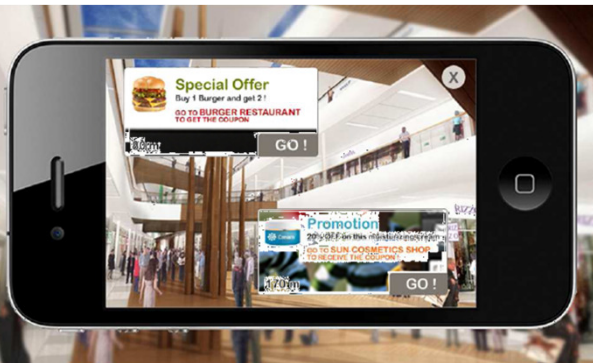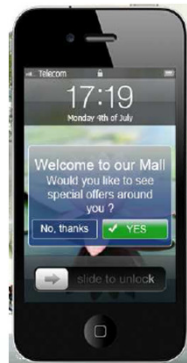
Metro Cell   Metro Cell

Macro eNB
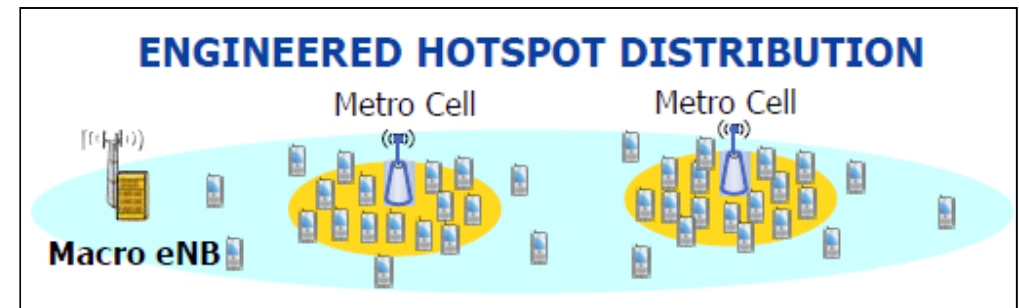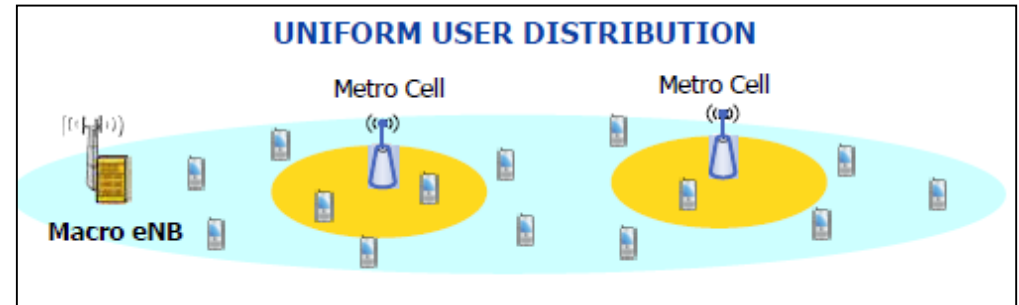
Good Small Cell planning provides cell splitting gains
Deliver the Better Performance & Customer Experiences

Alcatel·Lucent

MORE FUN with APPLICATIONS

Delivering a New Consumer Experience

GEO-LOCALIZED NOTIFICATIONS
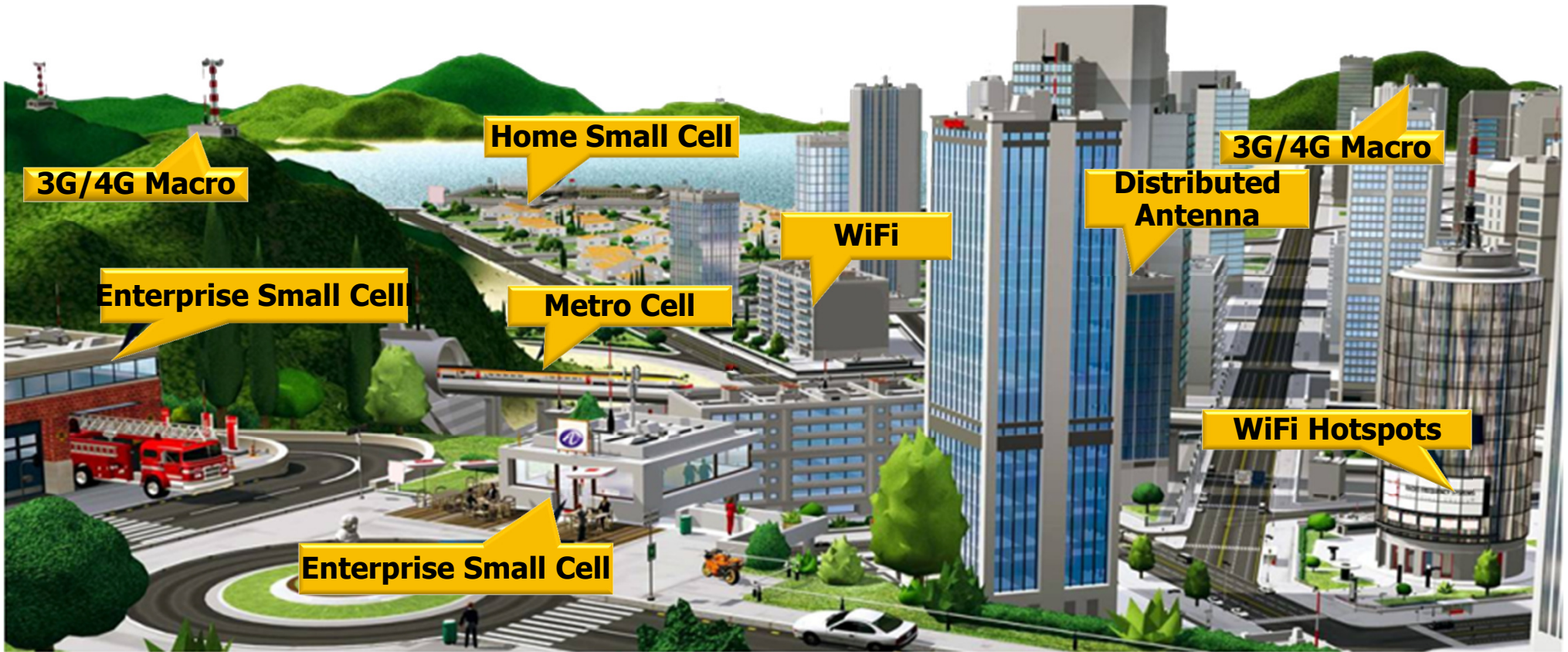
e-Shopping

VIDEO CONFERENCING

CHILD TRACKING

LIVE VIDEO STREAMING

AUGMENTED REALTY

Alcatel·Lucent

MACRO NETWORKS ALONE WILL NOT DELIVER SUPERIOR DATA QOE

3G/4G Macro

Home Small Cell

3G/4G Macro

Enterprise Small Cell

WiFi

Distributed Antenna

Metro Cell

WiFi Hotspots

Enterprise Small Cell

HETNET = MACRO + METRO + SMALL CELLS + WIFI

Alcatel·Lucent

Summary

- **Easy, Fast & Flexible to deploy with Small Cells & lightRadio™**

- **Match with Life style & Business… Small Cells Power range from 20mW and more…**

- **Sustainable solution with Small Cells & lightRadio™ create Big Capacity, Smart Architecture to realizes TowerCo**

- **Lower TCO**

- **Beautiful**
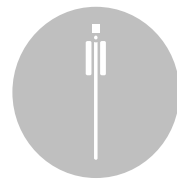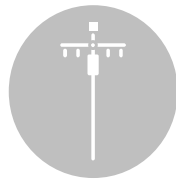
Thank you

AT
THE
SPEED
OF
IDEAS™

EXPER#1ENCE & QOE
SERV#1CE
REL#1ABILITY
RO#1