



4G - Racehorse or Workhorse?

GÜNTHER OTTENDORFER – MANAGING DIRECTOR, NETWORKS

Agenda

LTE Experiences

Optus network today and tomorrow

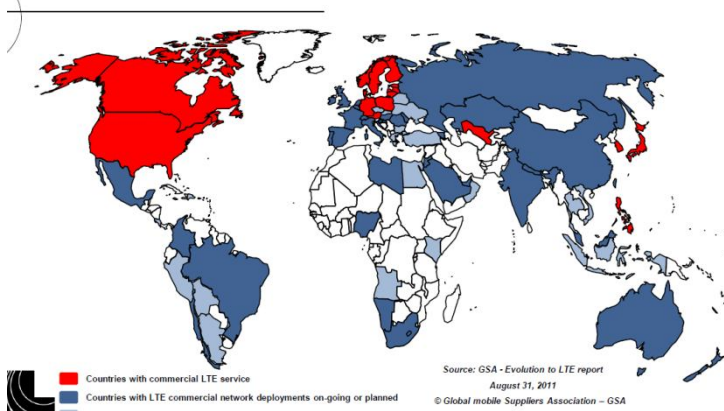
The 4G future



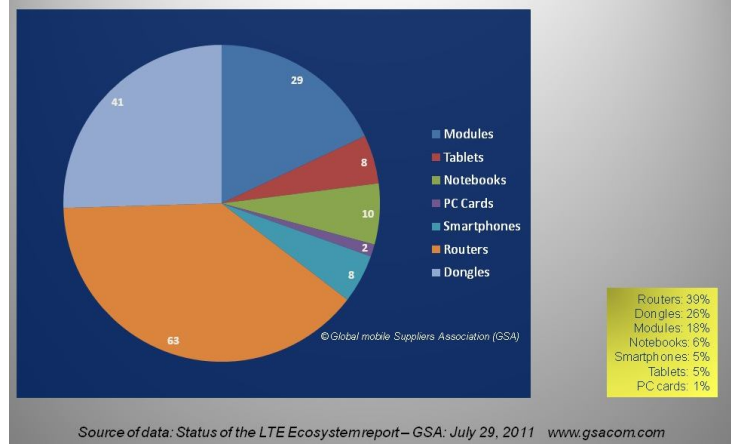
LTE Experiences

LTE FOCUS TO DATE HAS BEEN ON FDD 700 AND 2600 IN NORTH AMERICA/EUROPE. 1800 FDD ECOSYSTEM NOW GROWING WITH LOTS OF INTEREST IN EUROPE

237 operators in 85 countries investing in LTE
 □ 174 commercial LTE network commitments in 64 countries
 □ 63 pre-commitment trials in additional 21 countries
 □ 26 commercial LTE networks launched in 18 countries



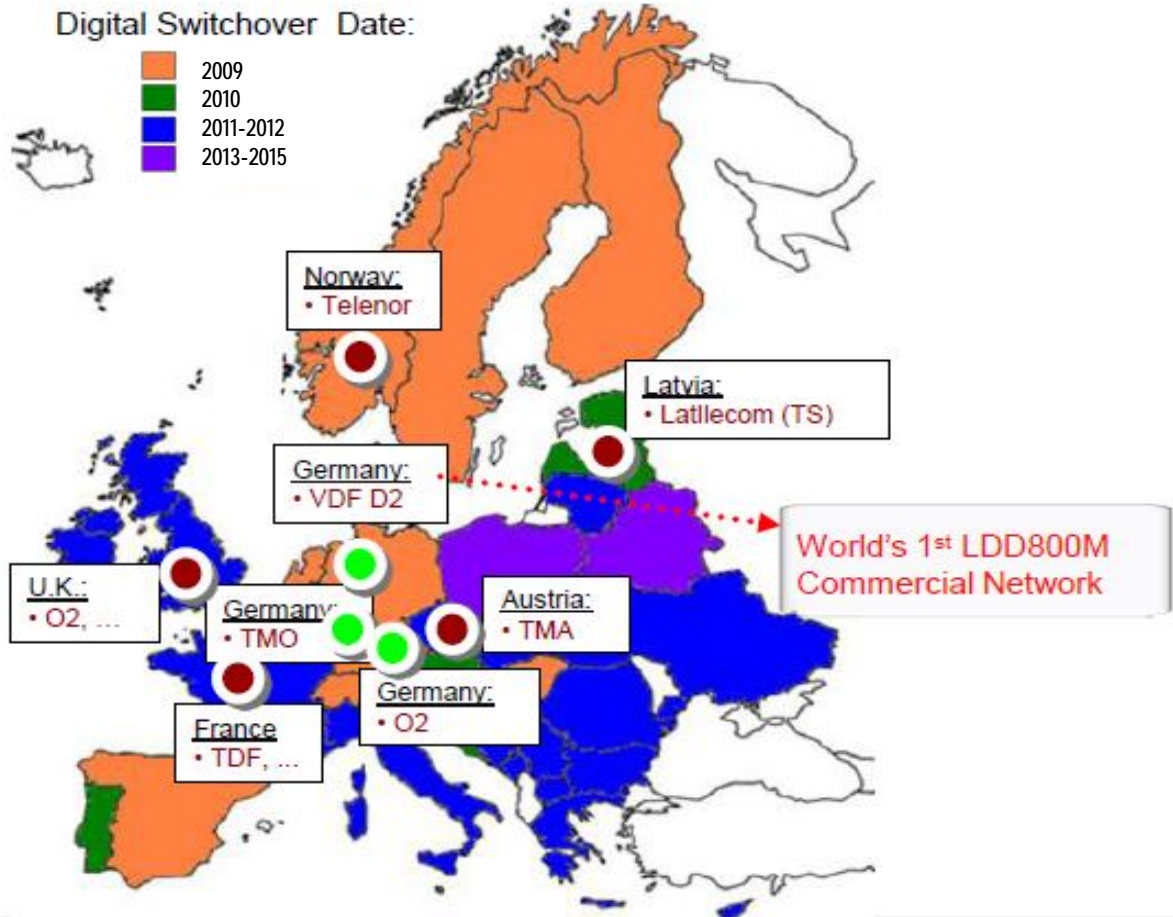
LTE Devices: 161 products by form factor



26 LTE FDD Commercial Launches in 18 Countries (any band)	Austria, Canada, Denmark, Estonia, Finland, Germany, Hong Kong, Japan, Latvia, Lithuania, Norway, Philippines, Poland, Singapore, South Korea, Sweden, USA, and Uzbekistan.
5 1800 FDD Commercial Launches in 5 Countries	Germany, Latvia, Lithuania, Poland and Singapore.
~40 1800 FDD Trials in 18 Countries	Australia, Belgium, Brazil, Estonia, Finland, France, Greece, Hong Kong, Indonesia, Malaysia, Namibia, Russia, Singapore, Slovenia, South Africa, South Korea, Thailand and the UK.
~25 2300/2600 LTE TDD Trials in 15 Countries	Australia, China, Denmark, France, Germany, India, Ireland, Japan, Malaysia, Oman, Poland, Russia, Sweden, Taiwan, USA.



SNAPSHOT OF EUROPE –IN ADDITION TO 1800MHZ , LTE 800MHZ IS BECOMING MORE PREVALENT THROUGH DIGITAL SWITCHOVER

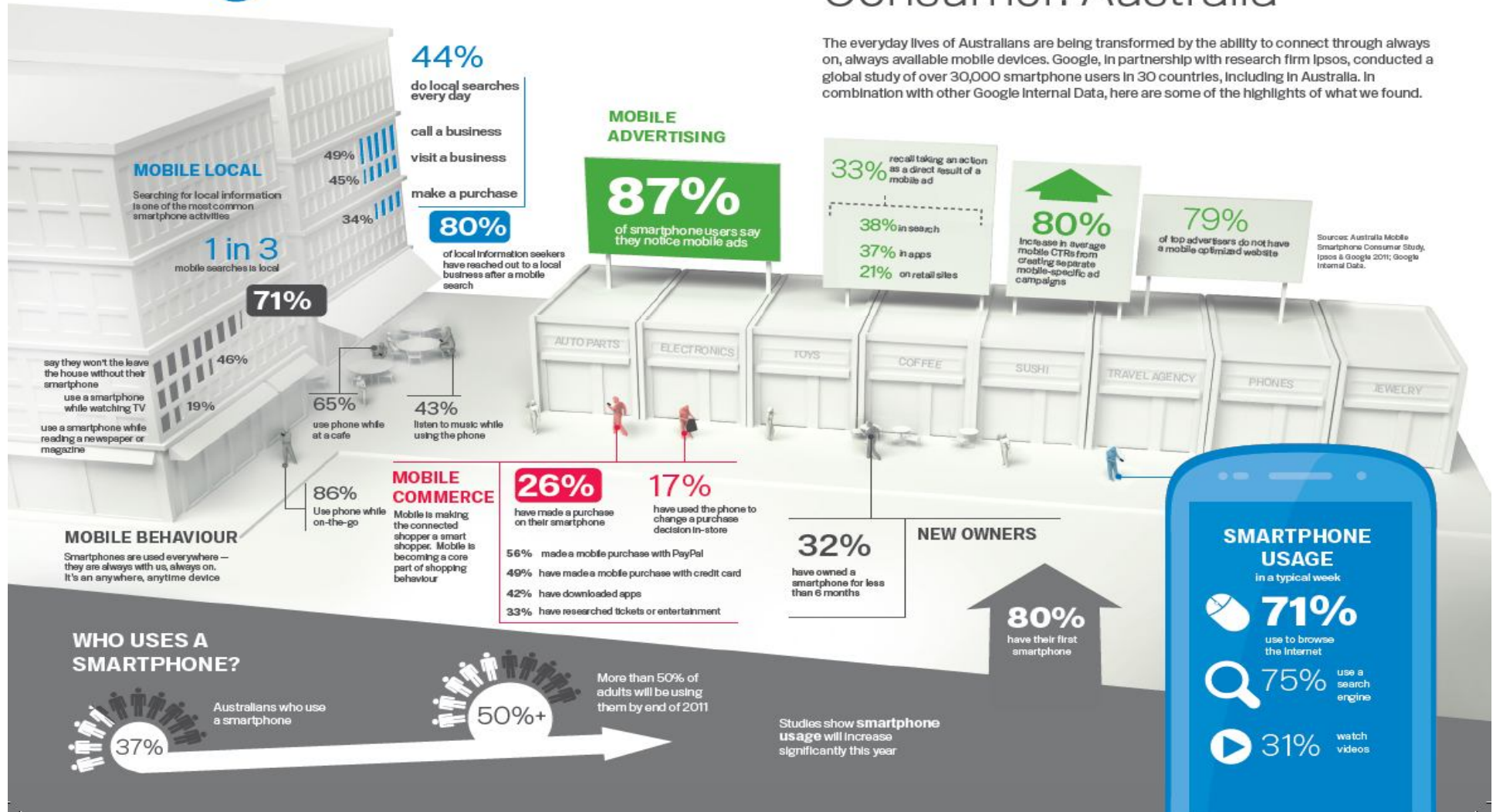


ACCORDING TO GOOGLE STUDY, AUSTRALIA NOW RANKS SECOND IN THE WORLD FOR SMARTPHONE PENETRATION



The Evolution Of The Mobile Consumer: Australia

The everyday lives of Australians are being transformed by the ability to connect through always on, always available mobile devices. Google, in partnership with research firm Ipsos, conducted a global study of over 30,000 smartphone users in 30 countries, including in Australia. In combination with other Google Internal Data, here are some of the highlights of what we found.

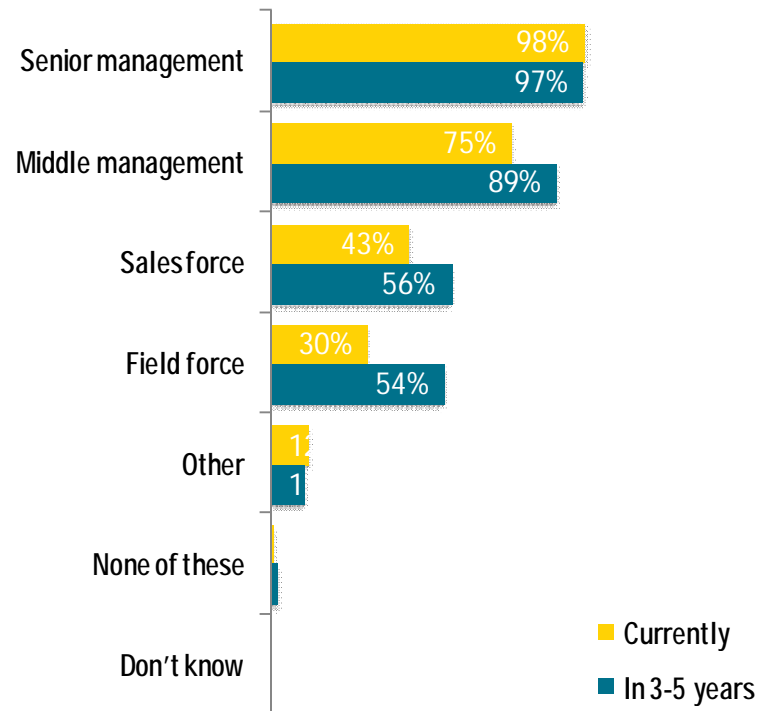


SMARTPHONE'S ARE USED WHILE CONSUMING OTHER MEDIA

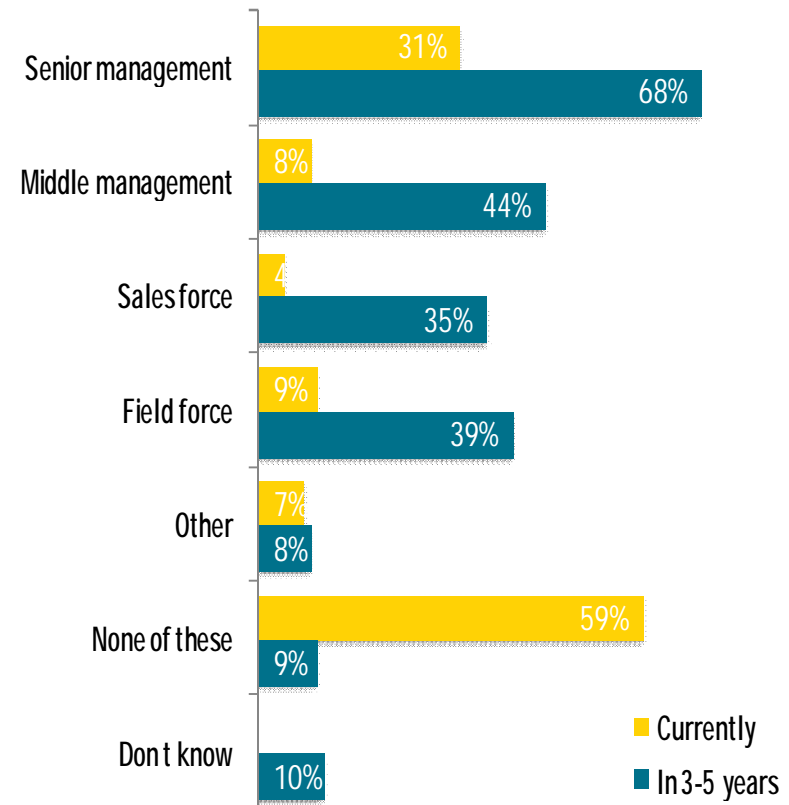


OPTUS FUTURE OF WORK STUDY SHOWED THAT BUSINESS CUSTOMERS EXPECT TO ISSUE SMARTPHONE'S WELL BEYOND THE EXECUTIVE SUITE

SMARTPHONE'S ISSUED TO...



TABLETS ARE ISSUED TO...



DATA USAGE IN THE AUSTRALIAN MARKET CONTINUES TO GROW THE OPEN NETWORK IS WELL PLACED TO MEET THIS DEMAND

SUPPLY

Improved Network Speed

Small Cells: WiFi & Femto

Base Stations

Spectrum

92%

CAGR
INCREASE IN
GLOBAL MOBILE DATA
TRAFFIC BY 2015*

DEMAND

Smartphone Adoption

Mobile Internet / Apps

Wireless Broadband

Device Proliferation

Aggressive Data Tariffs

CASE STUDY - TALKING FRIENDS APP - MOBILE DATA DEVELOPMENT RAPIDLY ACCELERATING





THE OPTUS OPEN NETWORK TODAY

OPTUS CONTINUES TO INVEST SIGNIFICANTLY IN THE OPEN NETWORK



We've delivered 3G competition to more than 200 towns Since 2009

We've expanded covering over 700,000km²

We've delivered 1000 in-building solutions, improving coverage for our metro customers

First 3G coverage to more than 14 towns

Femtocell Leveraging fixed network

In the last three years we've invested over \$1.6 billion in the Open Network

Over 660 mobile sites built during FY11

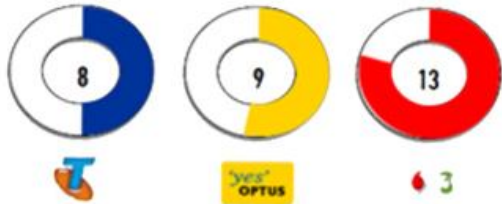
Our network coverage reaches 97% of Australians



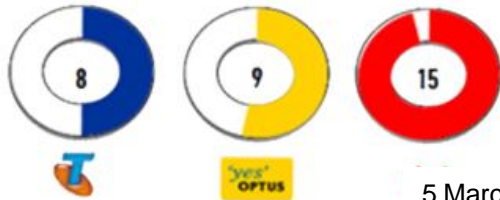
OUR ONGOING COMMITMENT TO INVEST IN OUR NETWORK MAKES US WELL PLACED TO COMPETE FOR LEADERSHIP IN THE AUSTRALIAN TELECOMMUNICATIONS MARKET

The Sydney Morning Herald

Average download times 3MB song (sec)



Average upload times 1MB song (sec)



5 March 2011

Comparative Testing in Brisbane



10 September 2011



Lifehacker

Kiama & Brunswick Mobile BB - NBN Trials

Optus arguably emerges as the most consistent player, with the best results at the Pavilion and solid ping times.

August 2011

“Optus’ Network performance remains impressive”...

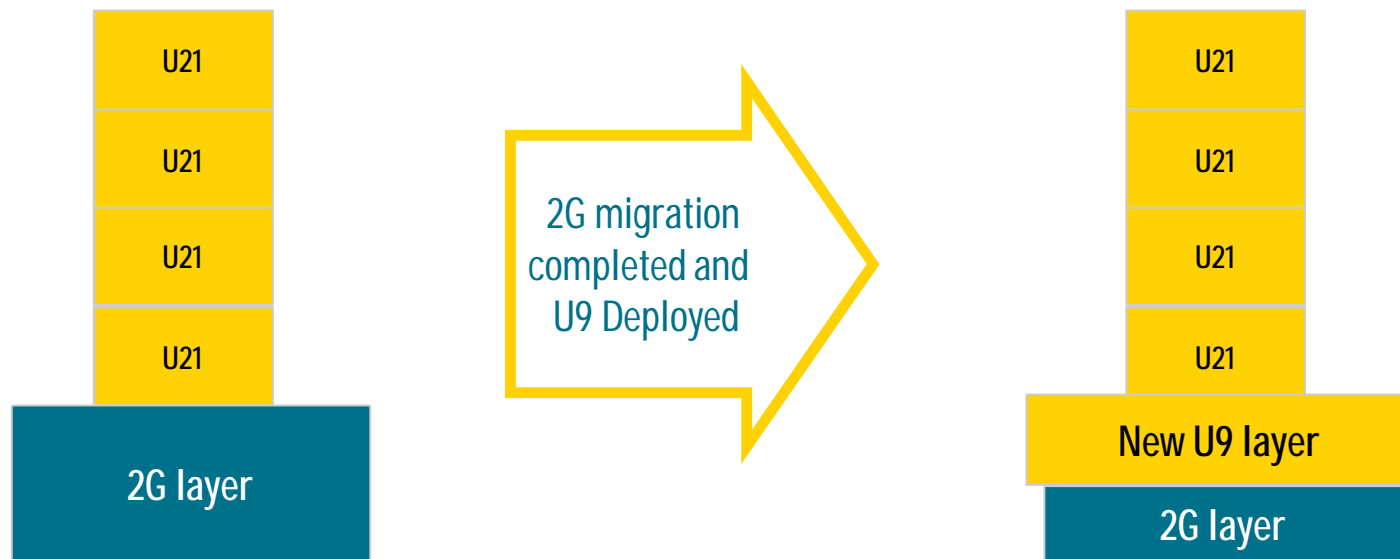
“The interesting thing here is how relatively close Optus’ best figures are to Telstra’s dual HSPA+”

June 2011



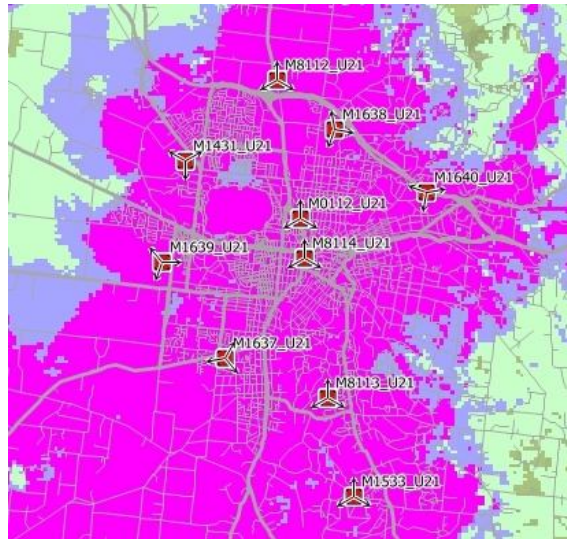
ONE OF THE WORLD'S LARGEST 3G 900MHZ SPECTRUM MIGRATION PROGRAMS WILL PROVIDE ADDITIONAL 3G CAPACITY AND COVERAGE IN METRO

Optus has completed spectrum migrations and activated 3G at 900MHz in over 30 regional markets. We will modernize and upgrade over 3,000 sites across Australia

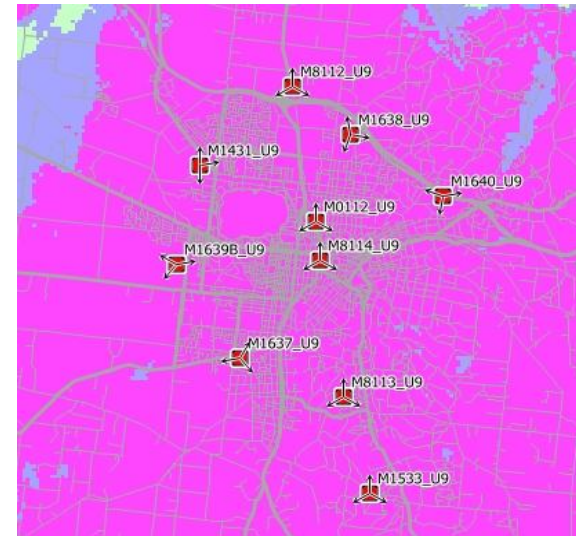


CASE STUDY - BALLARAT SPECTRUM MIGRATION AND 3G 900MHZ ACTIVATION SAW POSITIVE RESULTS FOR OUR CUSTOMERS

BEFORE



AFTER



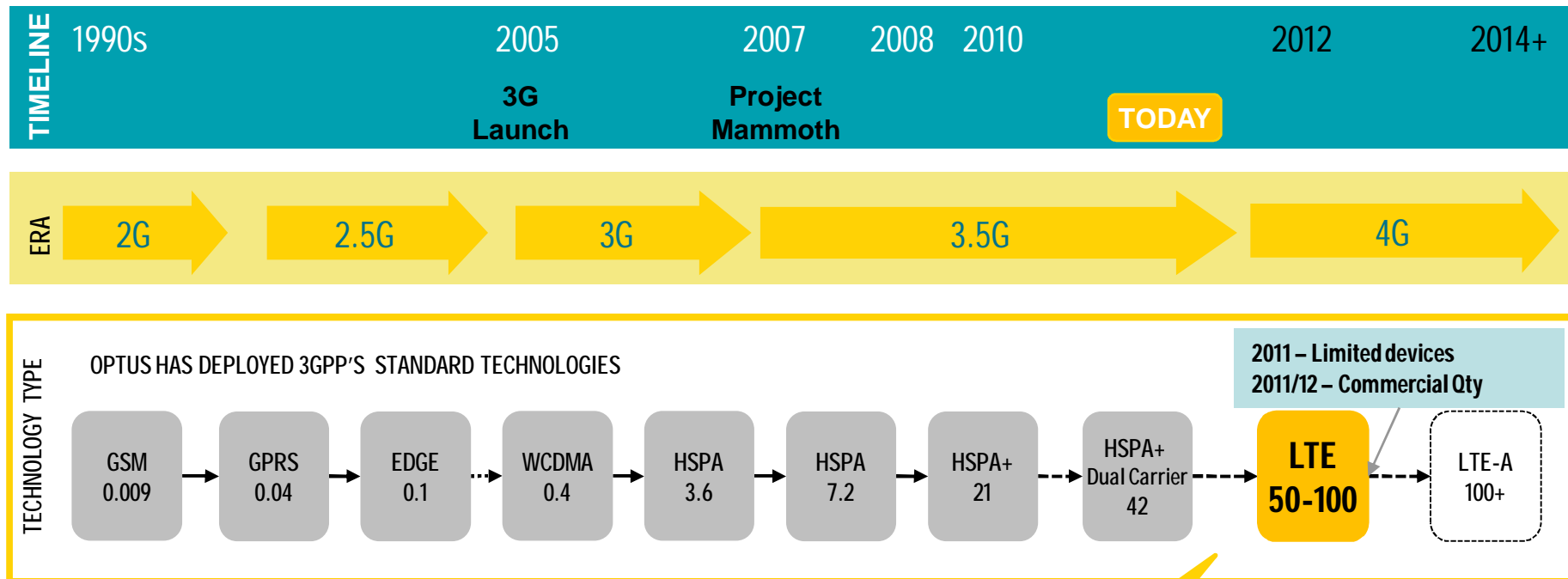
- IN BUILDING COVERAGE
- EXTERNAL ANTENNA ONLY
- ON-STREET COVERAGE

METRIC	BEFORE	AFTER
3G Voice DCR	1.07%	0.46%
2G Voice DCR	0.78%	0.54%
HSDPA Accessibility	89.29%	99.92%



THE OPTUS OPEN NETWORK TOMORROW
We say 'yes' to LTE

WE SAY 'YES' TO LTE - THE NEXT STEP FROM HSPA AND THE NEXT EVOLUTION IN THE OPTUS OPEN NETWORK.



KEY FEATURES:

- > Lower latency (< 20ms)
- > Higher throughput speeds (>70Mbps)
- > Higher spectral efficiency
- > Flatter network architecture

CUSTOMER BENEFITS OF LTE ARE FASTER THROUGHPUT, LOWER LATENCY AND MORE CONSISTENT USER EXPERIENCE.

1.

FASTER SPEEDS

Particularly upstream and cell edge performance. >50Mbps down, 20Mbps upstream in Field Tests, >70Mbps in Lab Test Phase 1 Trial.

2.

REDUCED LATENCY

Improves time-critical applications such as video conferencing, gaming, Average of 25ms in Trial Phase 1.

3.

INTEROPERABILITY (ROAMING BENEFITS)

Short Term Backwards compatible with 3G.
Medium Term Interoperable across all spectrum bands, and technology flavours.

4.

MORE CONSISTENT PERFORMANCE ACROSS THE CELL

Consistent performance to the edge of the cell vs. 3G which reduces coverage as the cell users increase

LTE DEVICE AND NETWORKS ARE NOW BECOMING MATURE



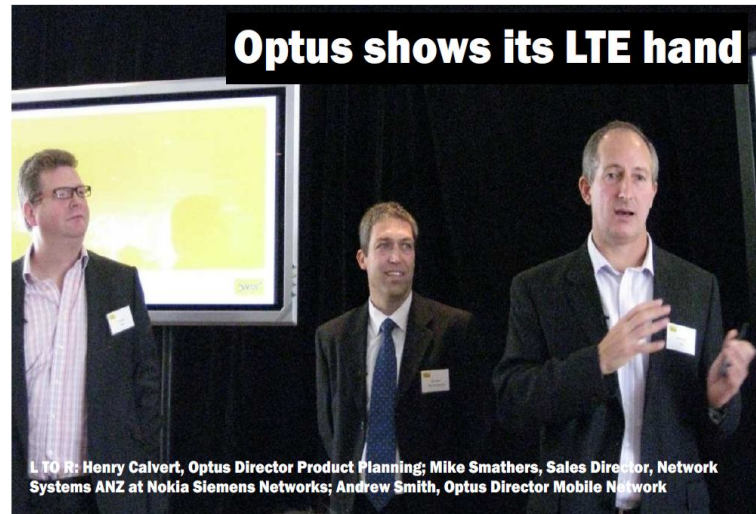
Sydney: Pymble and Eastern Suburbs
Optus and SingTel LTE Trial



Demand for data growing



LTE Ecosystem ready in 2012





THE OPTUS OPEN NETWORK
The 4G Future

FOR THE FUTURE OF 4G IN AUSTRALIA 700MHZ SPECTRUM IS IMPORTANT OPTUS IS THE FIRST TO SECURE A TRIAL LICENSE TO DEMONSTRATE ITS CAPABILITY

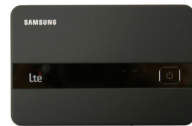
700MHz will be **vital** for delivering **LTE**, especially in regional Australia, because of its ability to propagate over **longer** distances and penetrate **in buildings**.
Optus was awarded Australia's **first** licence to trial LTE in the **700MHz** spectrum

- Optus will be deploying a test site in Bendigo with Huawei to test the range and capability of LTE at 700MHz. The trial will be operational from this month.
- The trial will be tested using commercially available devices:

MBB DONGLE



MBB PORTABLE WIFI



MBB FIXED ROUTER



TABLET




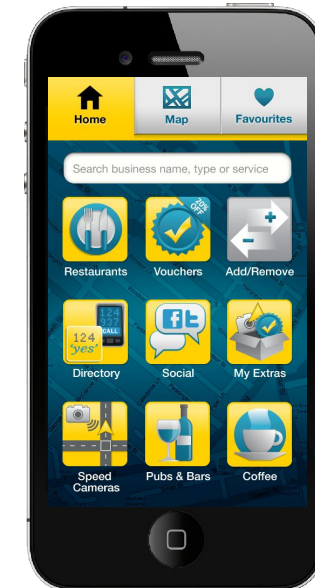
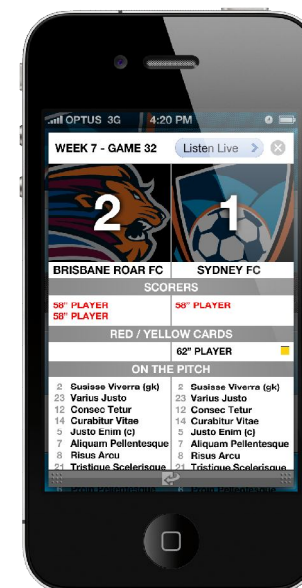
HANDSETS



DIGITAL LIFE - PRODUCTS WE'VE LAUNCHED

We've launched digital services ahead of our traditional competitors, delivering against core needs we've identified within the market

Find		Optus Now						
Communicate					Call Buddy	My Account	Email & Collaboration	Web SMS
Entertain				TV Now	TV & Video	Vidspot		
Protect				Optus Smart Safe	Business Backup	Mobile Security		
Work	 <p>OfficeApps CONNECTING YOUR BUSINESS TO THE CLOUD</p>							



WE WILL CONTINUE TO INVEST AND EXPAND OUR NETWORK CAPABILITY IN THE FUTURE

Mobile 2012 and beyond

CONTINUE
regional
expansion

INVEST
in metro
network depth

UPGRADE
network
to HSDPA+

LAUNCH
LTE network
and services

With the continuing significant investment, Optus is bringing choice and competition to the Australian telecommunication market

THANK YOU FOR YOU ATTENTION.

ANY QUESTIONS?



'yes'
24
OPTUS