



# GSMA MOBILE WORLD CONGRESS 2013

## CONTENT OR TECHNOLOGY: WHAT ARE THE TRENDS DRIVING DATA DEMAND

MIKE WRIGHT, EXECUTIVE DIRECTOR NETWORKS

IT'S HOW  
WE CONNECT

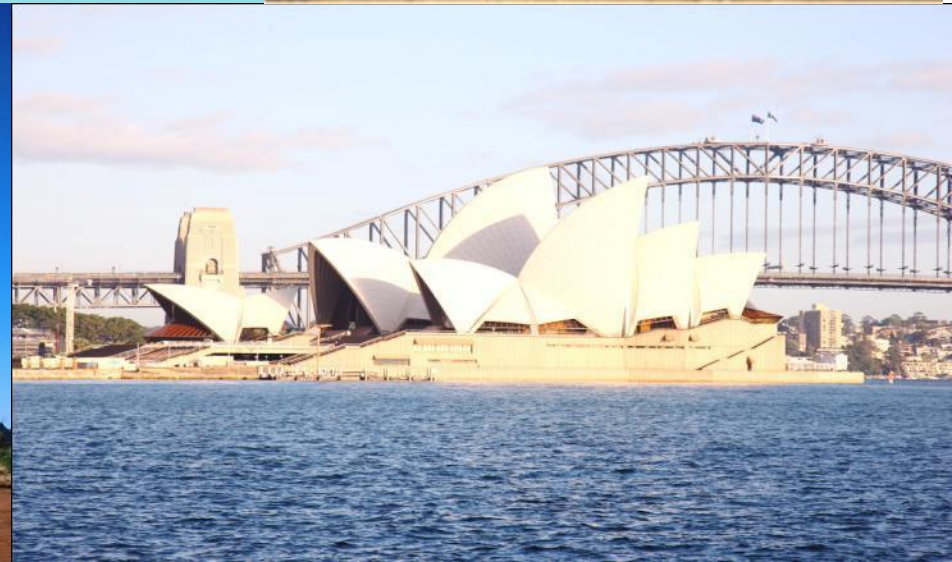


# THE CHALLENGE

IT'S HOW  
WE CONNECT

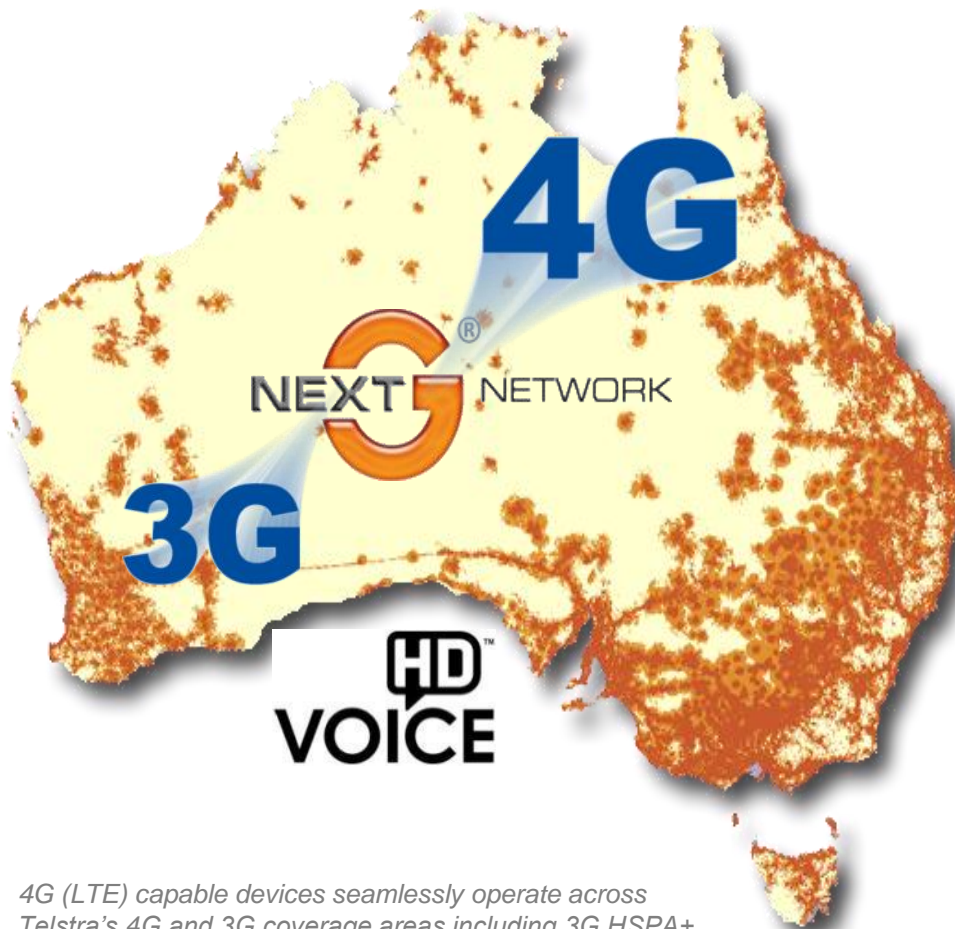


**The World's  
6th largest land mass  
9th lowest population density**



# OUR NEXT G<sup>®</sup> NETWORK

## A HYBRID HSPA+/LTE NETWORK



### 2.3 Million km<sup>2</sup> Coverage

- ✓ Plus over 1 Million km<sup>2</sup> out to sea.

### 99% Population Coverage

- ✓ 99% Population coverage of HSPA+
- ✓ No requirement for 2G fall back
- ✓ 80% DC-HSPA, 40% LTE Pops covered expanding to 66% pops by June 2013<sup>^</sup>.

### High performing Network

- ✓ Multi-Gigabit capable Ethernet fibre to sites covering >93% of pops.
- ✓ Well under 1% voice drop rate
- ✓ World's largest HD Voice footprint (circuit voice)
- ✓ Low band 850 MHz HSPA for wide and deep coverage

### High performing business

- ✓ Low churn rate
- ✓ > 1.4M 4G services
- ✓ 13% PostP H/H ,17% MBB pen of LTE

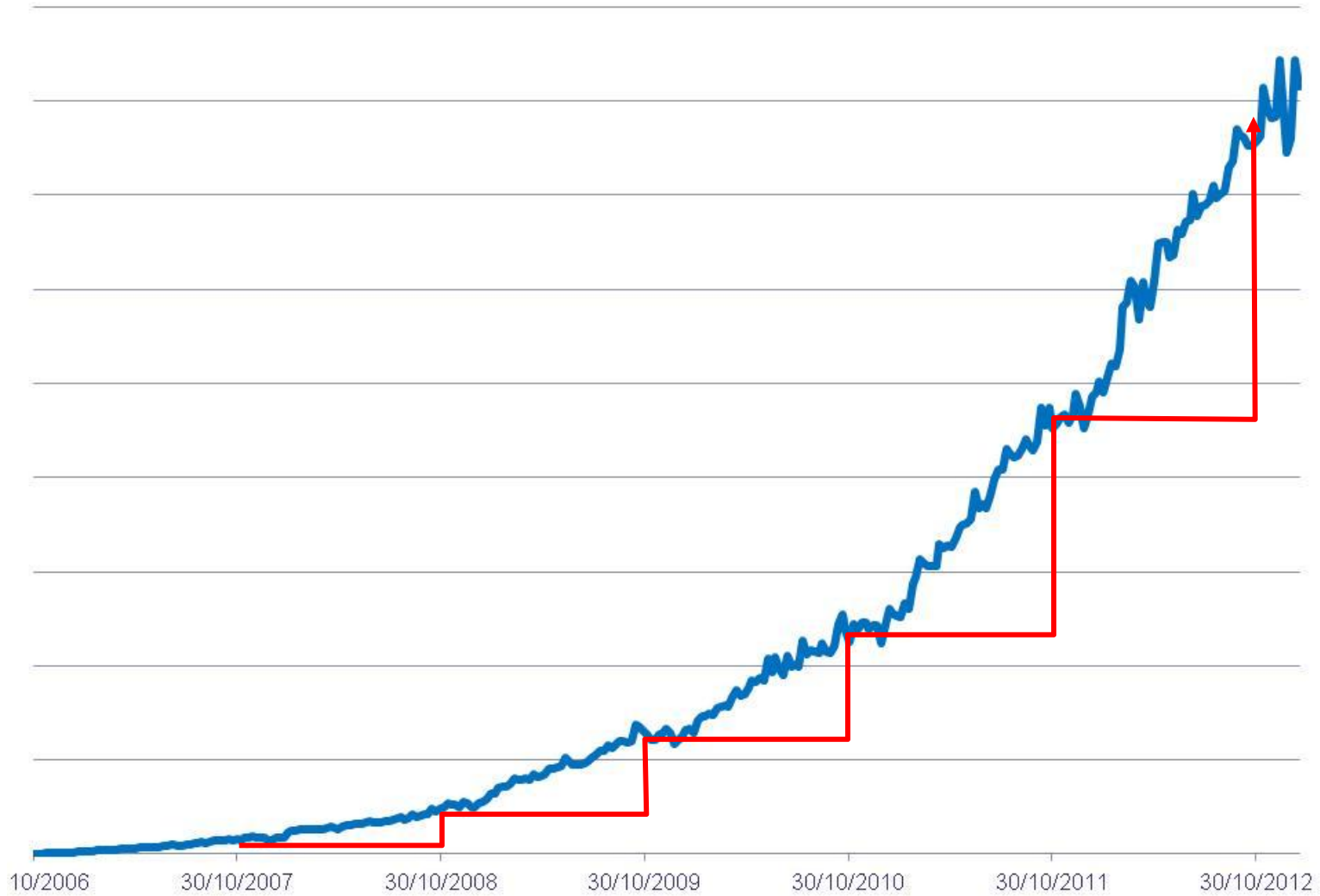
4G (LTE) capable devices seamlessly operate across Telstra's 4G and 3G coverage areas including 3G HSPA+ and Dual Channel which are available in selected areas.

<http://www.telstra.com.au/mobile/networks/>

\* Network performance stats are based on Telstra's National Field Testing #9 conducted in July 2012

# BH TRAFFIC – EVERY YEAR GETS HARDER

IT'S HOW  
WE CONNECT

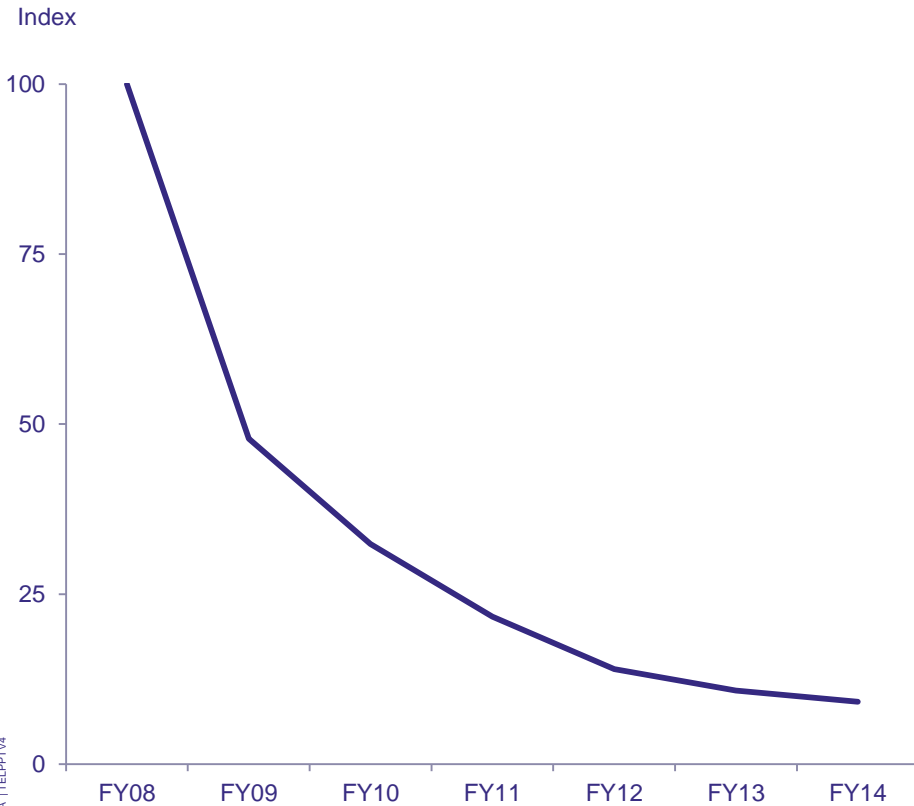


# EACH GENERATION OF NETWORK HAS DELIVERED COST OF CAPACITY IMPROVEMENTS

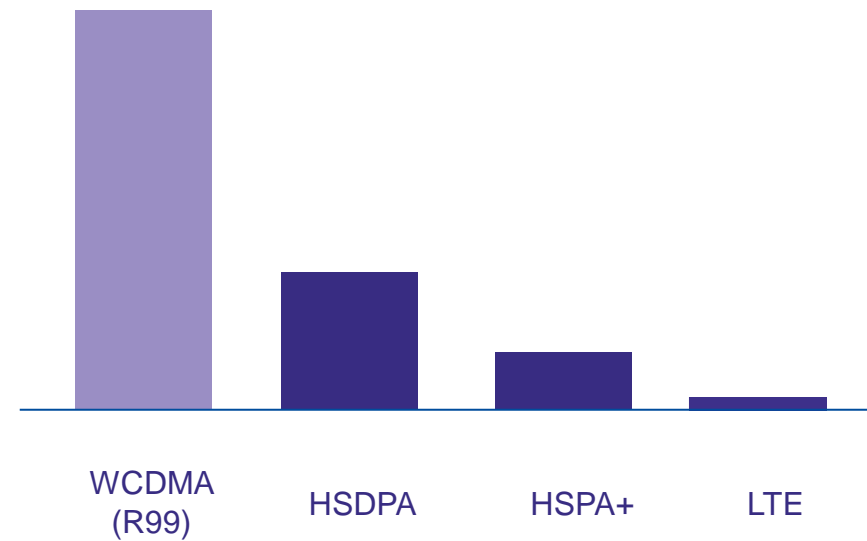
IT'S HOW WE CONNECT



## Relative Cost: Hybrid HSPA+/LTE



## Relative Technology Cost



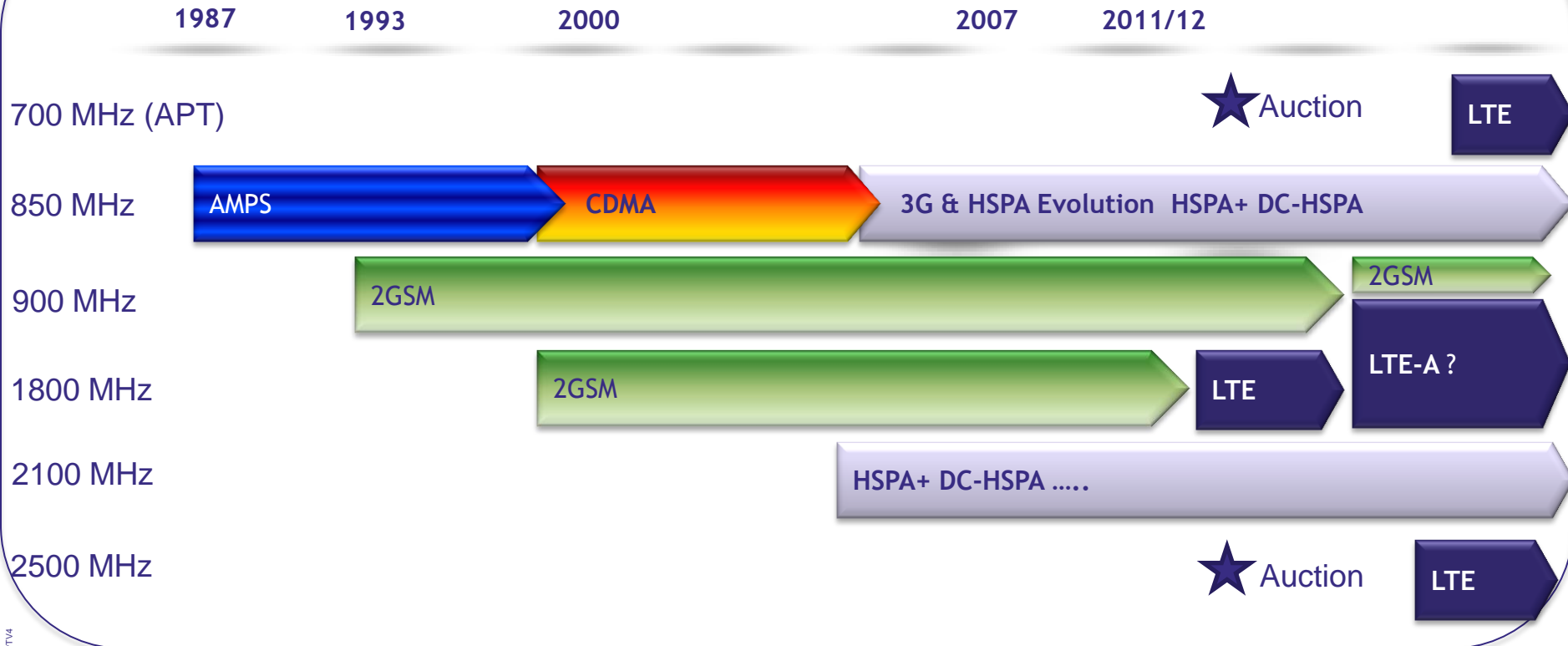
TELSTRA TEMPLATE 4x3 BLUE BETA | TELPPTV4

\* Index based on Telstra derived network unit costs per MB (excluding OSS/BSS)

\* Excludes trends from GPRS & EDGE as not carried on the Next G<sup>®</sup> network

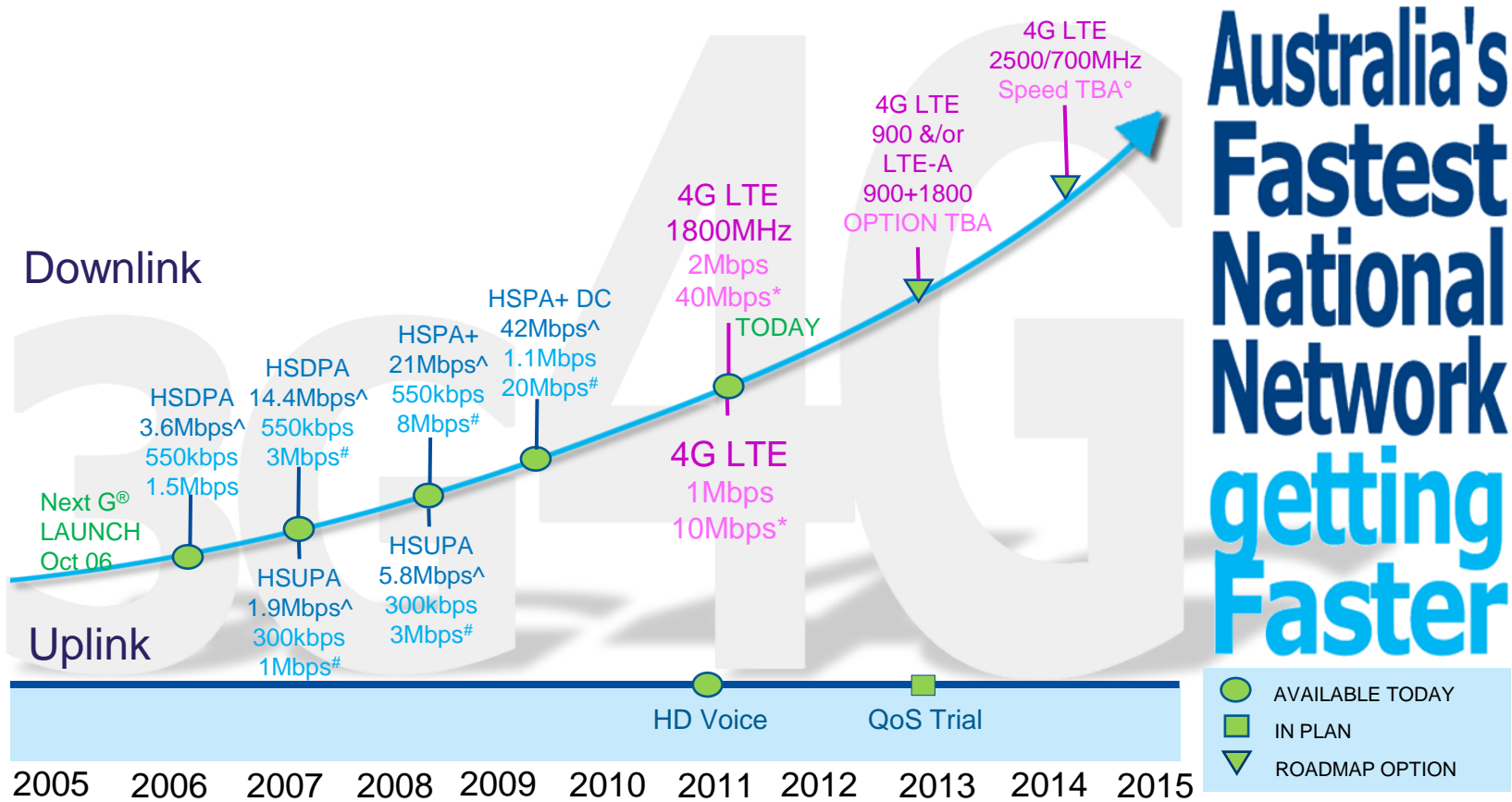
# TELSTRA HAS A LONG HISTORY OF REFARMING SPECTRUM

## 3GPP Evolution Path for Telstra



- Telstra has re-farmed spectrum and even closed networks to do so in the past
- Ongoing re-farming and evolution HSPA and LTE-A networks is a logical extension

# OUR ROADMAP: DELIVERING WORLD LEADING CAPACITY & PERFORMANCE



# Australia's Fastest National Network getting Faster

VERSION 21: 01<sup>ST</sup> NOVEMBER 2012

<sup>^</sup> 1.9, 3.6, 5.8, 14.4, 21, 42Mbps are technology rated peak downlink and uplink speeds. Typical customer speeds are lower as shown.

<sup>\*</sup> 4G SPEEDS: With capable devices customers can experience typical download speeds of 2Mbps – 40Mbps, and typical upload speeds of 1Mbps – 10Mbps in all capital CBD's (meaning within 5km from the GPO), associated airports and selected regional areas (meaning 3km of the regional town centre) covering more than 40% of the population. In other coverage areas, customers will automatically switch over to Telstra's fastest available 3G HSPA (High Speed Packet Access technology) enabled network speeds.

<sup>#</sup> 3G HSPA ENABLED SPEEDS: With capable devices customers can experience typical download speeds of 1.1Mbps – 20Mbps in all capital CBD's, airports, much of the associated metropolitan areas and many regional areas covering more than 80% of the population. Outside these areas, the remaining metropolitan areas and many other regional and rural locations typical download speeds are 550kbps to 8Mbps covering more than 97% of the population, and elsewhere 550kbps to 3Mbps. Typical customer upload speeds are 300kbps-3Mbps in all capital cities and major regional areas covering more than 93% of the population and elsewhere 300kbps-1Mbps.

<sup>°</sup> Subject to government auction process.

NOTE: Speeds may vary due to factors such as location, distance from the base station, local conditions, concurrent users, hardware and software configuration. For more details on speed & coverage areas visit: <http://www.telstra.com.au/mobile/networks/coverage>

# 4G LTE LAUNCHED SEPTEMBER 2011

A large, stylized "4G" logo in red and white, surrounded by a circular grid of orange and red squares. A red and orange beam of light extends from the bottom right of the logo.

TELSTRA 4G  
COVERAGE  
GOES WHERE  
OTHERS DON'T

THE NETWORK  
WITHOUT EQUAL

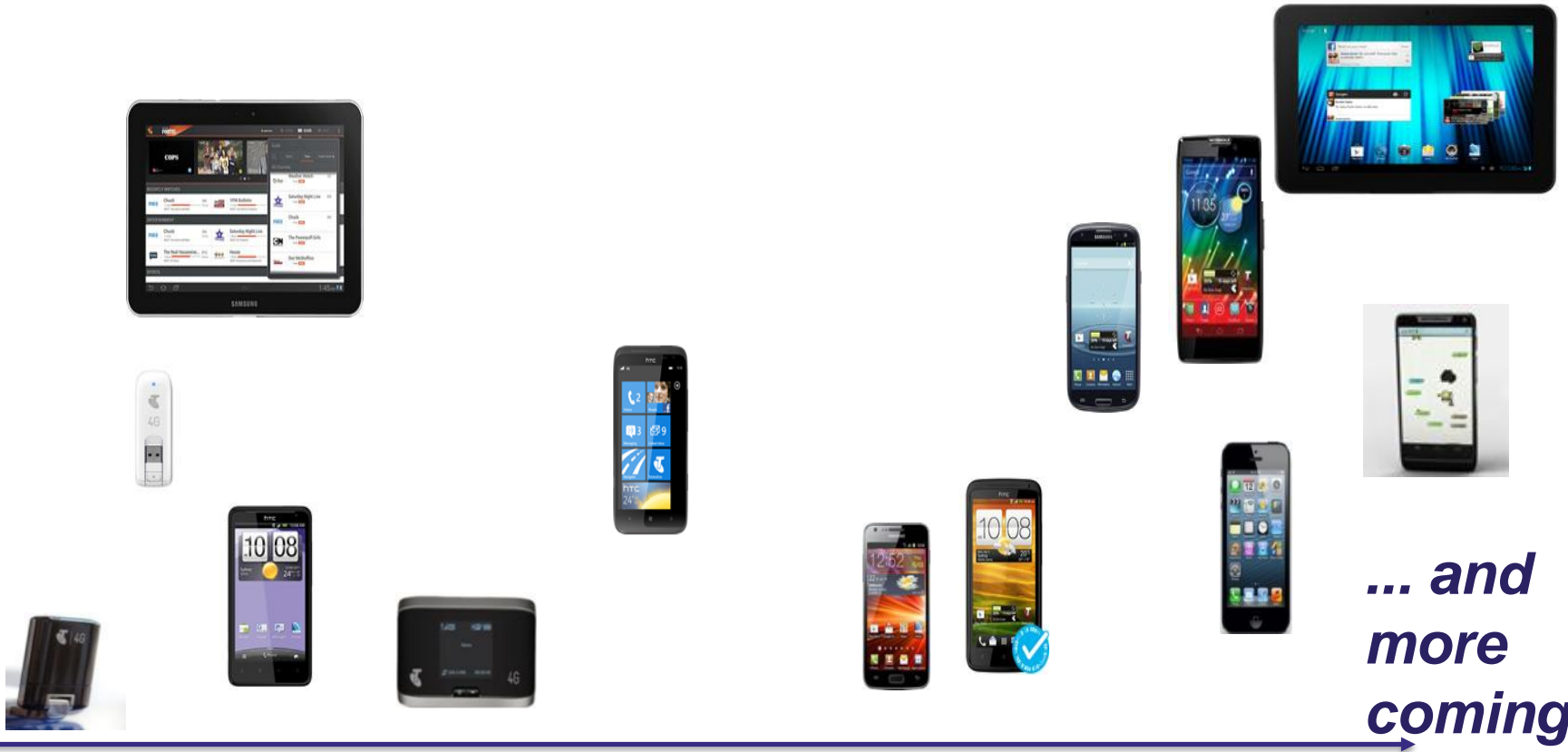
## 4G NETWORK STRATEGY NOV 2010

- ✓ Advanced LTE in Australia by 3-4 years
- ✓ Re-farmed 2G 1800 MHz spectrum
- ✓ Work with GSMA & GSA to promote the 1800 LTE band,
- ✓ LTE1800 is now the **World's most popular LTE band** with over 40% of all deployments in 1800\*



# LTE/4G has been the fastest growing ecosystem to date

## 19 DIFFERENT 4G DEVICES AT DECEMBER 2012

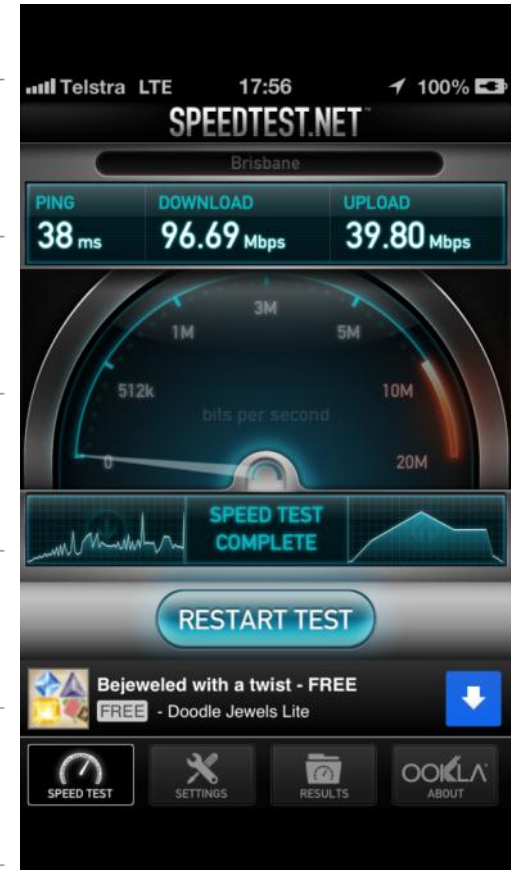
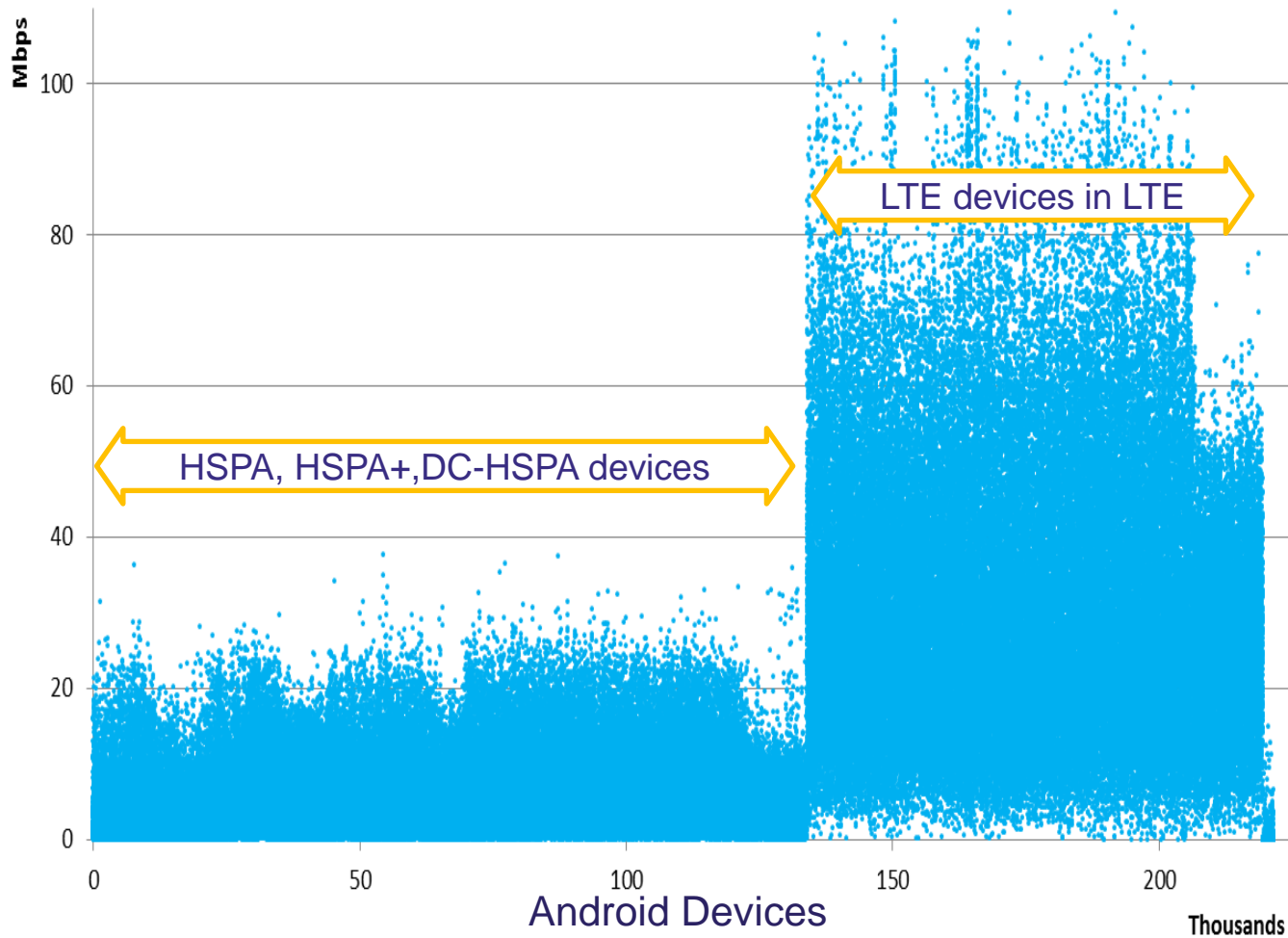


*... and more coming...*

Sep 2011      Feb 2012      Mar 2012      May 2012      Jun 2012      Oct 12

# SPEEDTEST.NET

## WHAT SOME DEVICES ARE REPORTING



Another Device  
In ideal conditions

While online speed test sites are not always robust, these sample results do show an indicative range of reported HSPA/LTE test results.

# EARLY WARNING – SMS & PHONE ALERT

IT'S HOW  
WE CONNECT



**EMERGENCY ALERT** Telstra

Home Create Message Show Messages viccf1 State: Victoria

Created Message ID: 126

### Enter Message Details

Campaign Identifier  
VIC CFA - 20091204 - Olinda Sassafras - Ember Attack

Validity Period (Hours:Minutes e.g. 1:30 for 1 hour and 30 minutes)  
0:30

SMS Message (135 of 160)  
Bushfire Emergency Warning from CFA. DDnong Ranges expect ember attack seek shelter now & check ABC Radio or www.cfa.vic.gov.au 4/12/09

Voice Message (287 of 4000)  
This is a Bushfire Emergency Warning from the Country Fire Authority. A bushfire is burning on the western face of the DDnong Ranges. Expect ember attack in your immediate area. Take immediate shelter and listen to ABC Radio or check www.cfa.vic.gov.au this message was sent on 4/12/09 at 11:47hrs.

Voice Type

Exchange Coverage  
Exchange Building  
Close

About Telstra | Service Desk Telephone: 1800 264 044



**EMERGENCY ALERT.**  
**BE WARNED. BE INFORMED.**

Since Launch 1 Dec 2009\*

- Upgraded Dec 2012 with mobile location
- Storm, flood, tsunami, bushfire, storm surge, chemical incident and missing person emergencies

## YOU MAY RECEIVE EMERGENCY WARNINGS ON YOUR PHONE

Emergency Alerts are sent by emergency services to landline telephones based on the location of the handset, and to mobile phones, based on the billing address. In the case of an emergency, you may receive a voice message on your landline or a text message on your mobile phone. If you receive an Emergency Alert and want more information, follow the instructions in the message or find your local emergency service on this website.



# EMERGENCY COMMS & RESTORATION

IT'S HOW  
WE CONNECT



## Wireless Broadband for Emergency Services

Wireless Broadband dongles, routers  
Emergency communications kits

## Satellite Cells Emergency Communications & Restoration

Coverage operational within 90 mins



# ARTC NATIONAL RAIL CONTROL OVER NEXTG

IT'S HOW  
WE CONNECT



Rationalisation of six separate radio Units per cabin

UL227

Train No:	UL227
Loco No:	9010
NextG:	-
Satellite:	-
Speed:	-1.0
Km Position:	0
Track No:	-1
GPS Time:	2009/02/07 17:02:09
vs Timetable:	-
No. Wagons:	-
Gross Tonnes:	-

Industrial Drive

**Australian Rail Track Network of communications and control over cellular.**

**Telstra built 62 macro and 16 tunnel systems to give required total footprint**

# WIRELESS BROADBAND APPLICATIONS

IT'S HOW  
WE CONNECT



**Onboard service helicopter to Abrolhos Islands**



**Monitoring Wildlife**



**Onboard Royal Flying Doctor Aircraft in Queensland**



**Oil Rig Bass Strait**



**Health Solutions**

# EARLY M2M :MONITORING THE GREAT BARRIER REEF OVER HSPA

IT'S HOW  
WE CONNECT



Aust Institute of Marine Science – real time reef monitoring 100km to sea

# RAPIDLY EMERGING M2M



M2M HELPS BAKERS PROTECT THE QUALITY OF THEIR DOUGH



M2M PUTS FARMERS IN CONTROL

This machine-to-machine (M2M) solution provides remote access to real-time temperature data and includes the Telstra Wireless M2M Control Centre™ platform for managing wireless SIM connections.

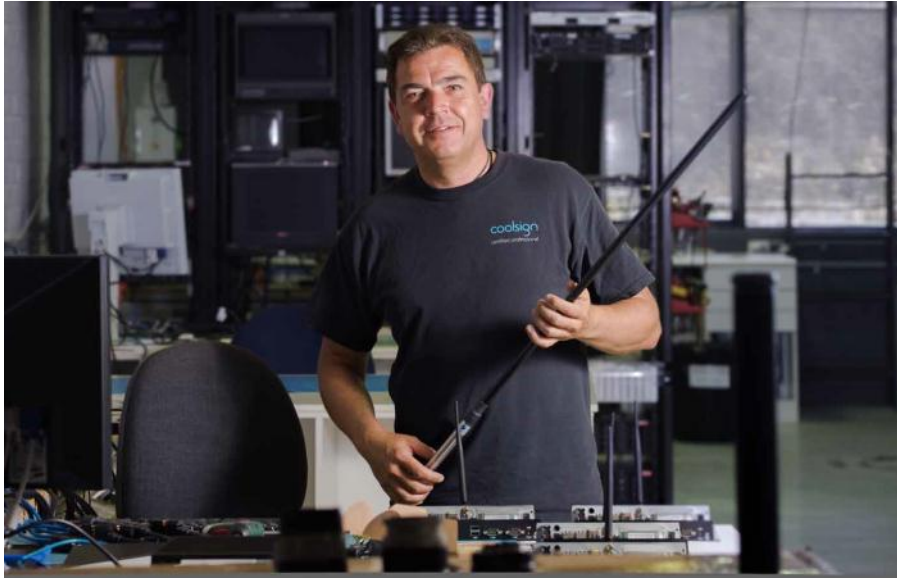
Obseervant placed monitoring units at Gilgai to capture water usage and remote cameras to capture images of their stock movement. The images and data are then transferred to Obseervant Global's management application over the Telstra Next G Network® through the Wireless M2M Control Centre, which the Harvey's can then access online 24/7 via a web browser on their iPad, smartphone or PC.

M2M Monitoring of  
Environment for Bakers

M2M Video Monitoring of  
Farming



# RAPIDLY EMERGING M2M



"If the screen is in the middle of a concourse you'd have to run cables all the way from the exchange," explains Coles.

M2M delivery of Media  
To Shopping Centre Signage

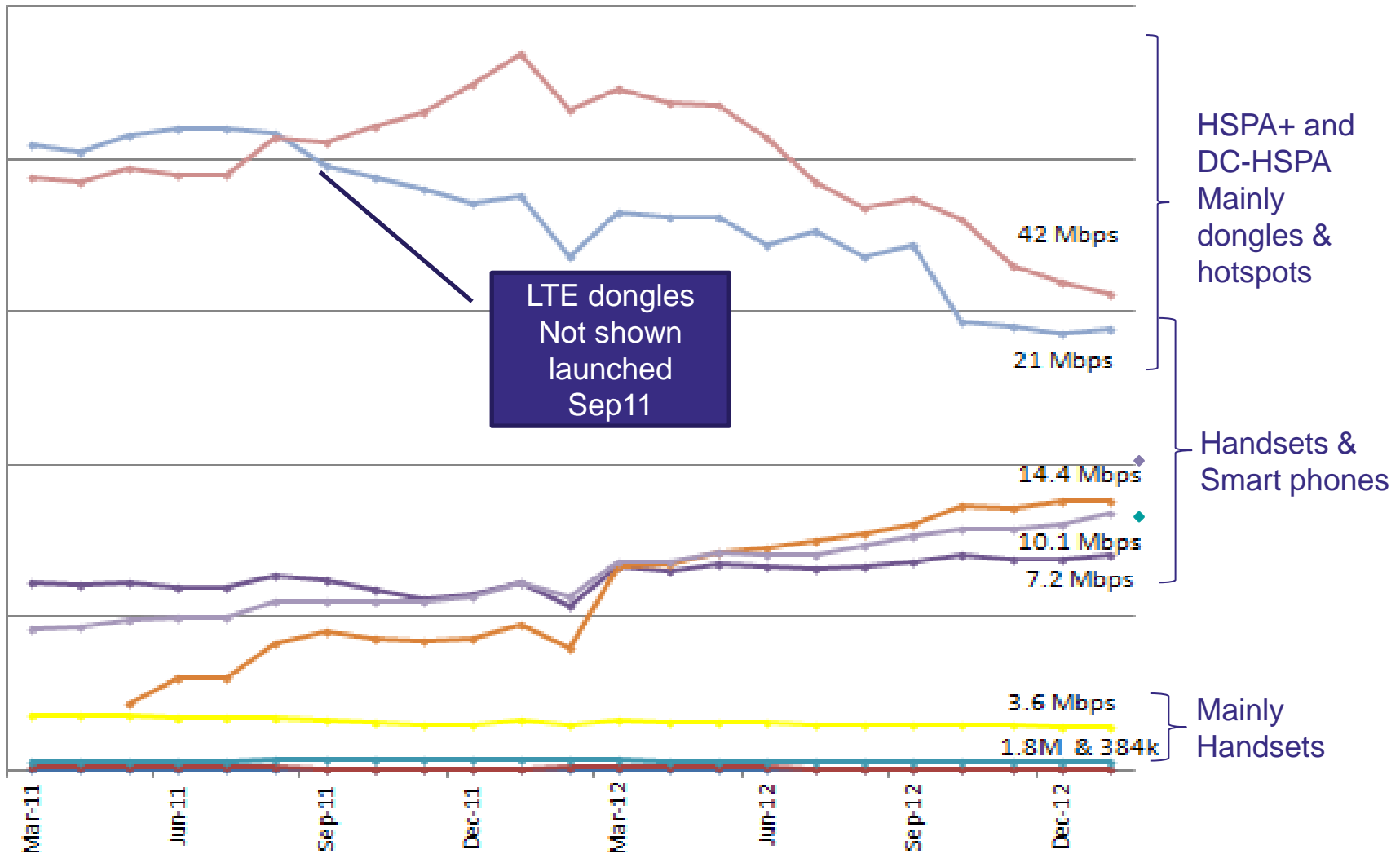


M2M HELPS TRACK AND MANAGE TRAILER AND UTE HIRES  
ACROSS THE COUNTRY

M2M Monitoring of  
Hire Trailers

# CONTENT OR TECHNOLOGY? BOTH !

IT'S HOW  
WE CONNECT



Higher speed devices use more data in dongles and handsets  
Use per device is rising – driven by applications/content