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# FierceWireless Webinar: Making the LTE Transition

**Keith Mallinson**
**Founder, WiseHarbor**

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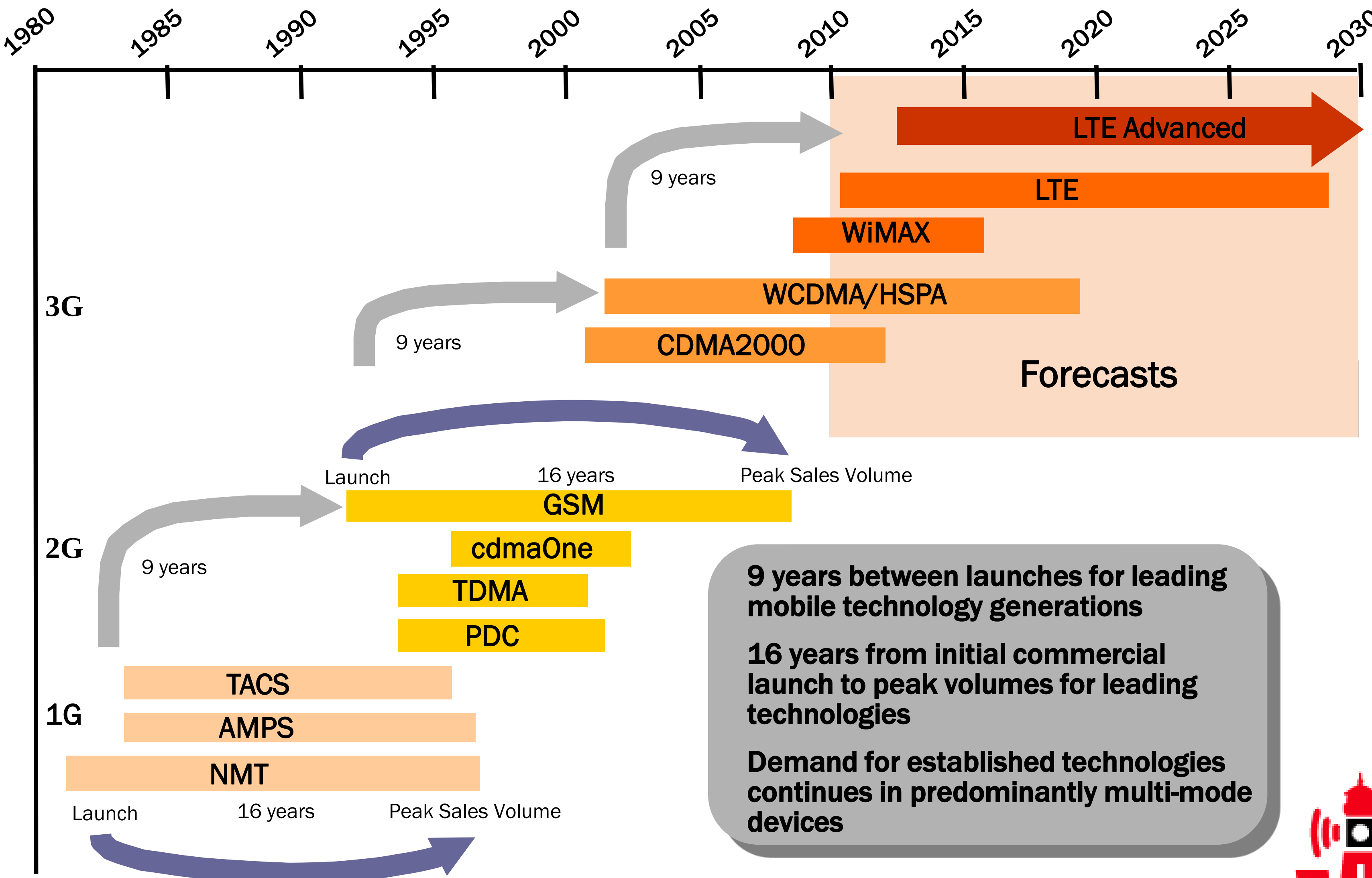
# Outline

- **Mobile technology adoption lifecycles**
- **Drivers and barriers to next generation adoption**
- **Cost effective mobile broadband and LTE**
- **Outlook and forecasts for mobile broadband and LTE**

# Mobile Technology Adoption Lifecycles

# Mobile Technology Adoption Lifecycles – From Launch to Peak Demand




**9 years between launches for leading mobile technology generations**

**16 years from initial commercial launch to peak volumes for leading technologies**

**Demand for established technologies continues in predominantly multi-mode devices**

# 3G versus 2G: What was Revolutionary in 2004?

## Samsung Z105 3G Phone

Real-time video telephony, video on demand
Networks : UMTS 2100/GSM 900/GSM 1800
Dimensions : 95 x 50 x 26 mm
Weight : 132 grams
Talk time: up to 180 minutes

## Motorola RAZR V3 2G Phone

MPEG 4 video clips and 22kHz polyphonics
Networks: GSM 850/900/1800/1900
Dimensions: 98 x 55 x 14 mm
Weight: 95 grams
Talk time: up to 430 minutes

# Comparing Drivers and Barriers for UMTS and LTE

**UMTS in 2004**

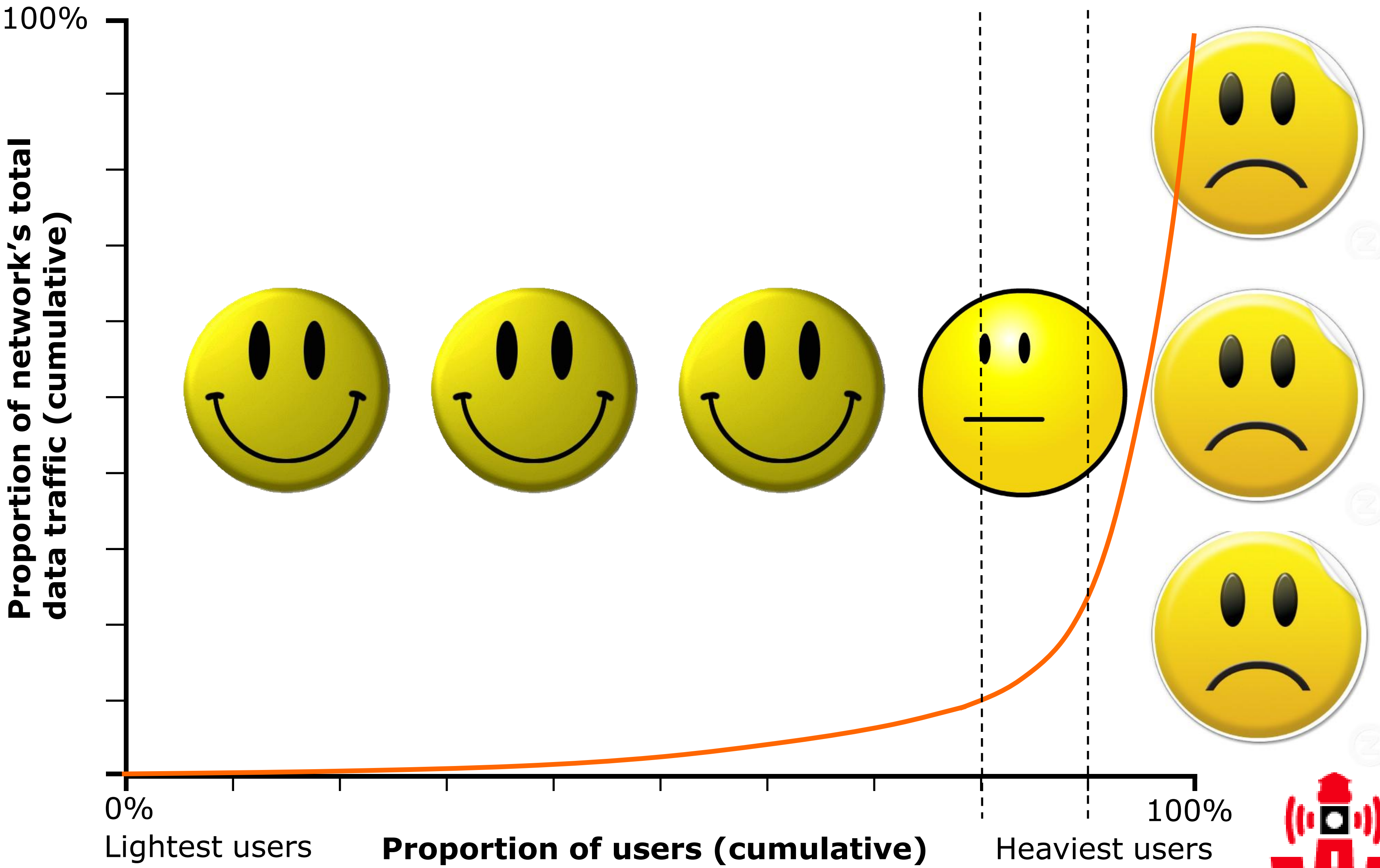
- 2100 MHz “3G spectrum” could only be used for UMTS
- Massive spectrum costs (e.g., $150 bn in Europe)
- Economic, tech and telecom sector collapse in 2001
- Embryonic data services ecosystem
- Weak demand for data services except SMS
- Disappointing data speeds with Release 99
- Handsets clunky, costly and with poor battery performance
- Low sales volumes, need for dual mode and above limitations made WCDMA products significantly more costly to buy and to subsidize
- But consumers were not willing to pay a premium initially due to the limitations and few benefits

**LTE in 2011**

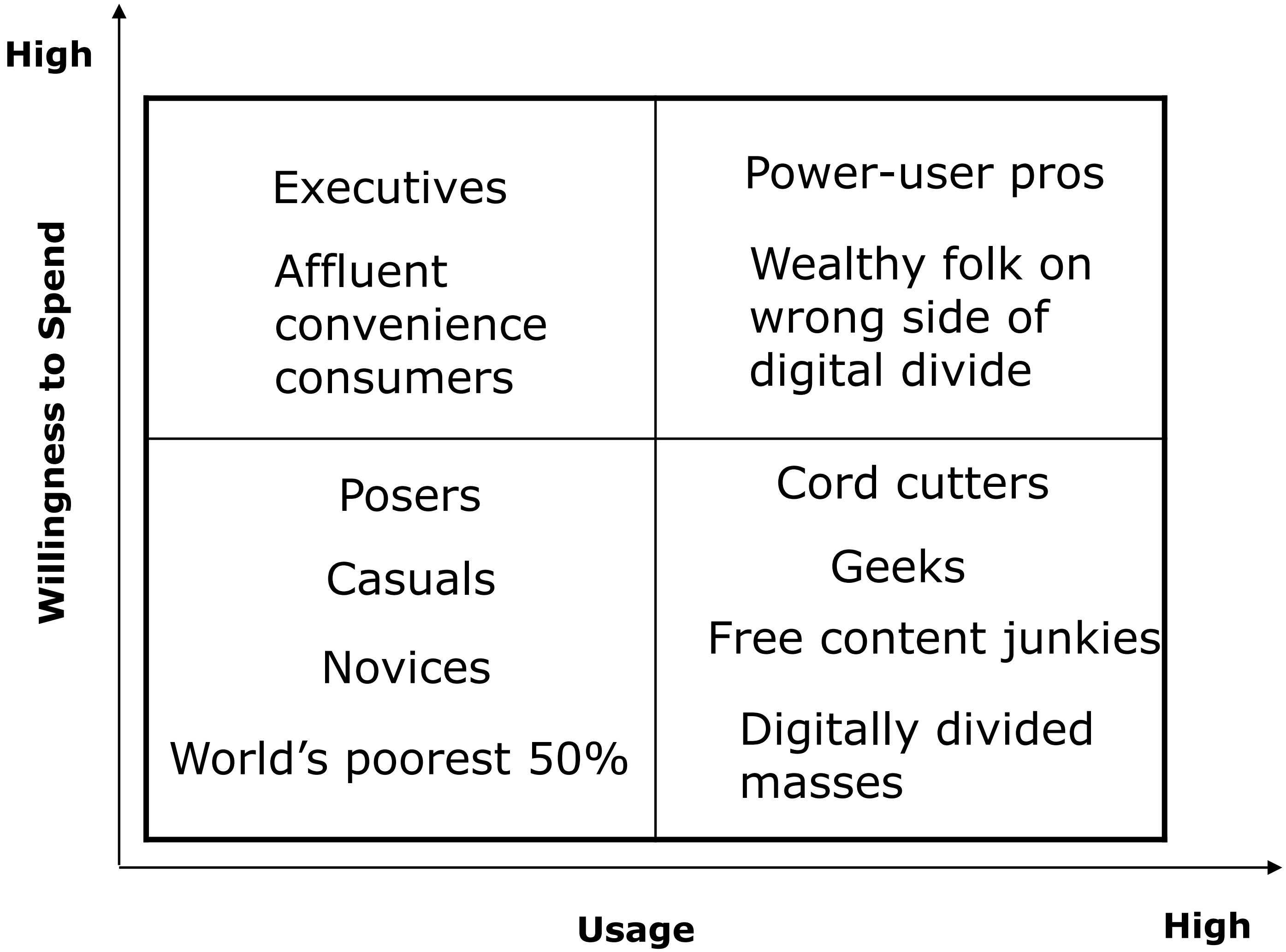
- Technology neutrality allows HSPA etc in new spectrum
- New spectrum is key – digital dividend 700/800Mhz and 2.5/2.6GHz in particular
- Will carriers overpay again?
- Economic collapse in 2008
- Emerging ecosystems (eg, iPhone App Store)
- Exponential growth in demand for data
- Will LTE perform any better than HSPA+?
- Will MIMO work in phones?
- Handsets somewhat similar to their existing 3G counterparts?
- Lower volumes and need for dual mode with multiple antennas could make LTE products significantly more costly
- Consumer price premium?

# Cost Effective Mobile Broadband and LTE

# Happiness and Misery for Carriers with Mobile Data Costs



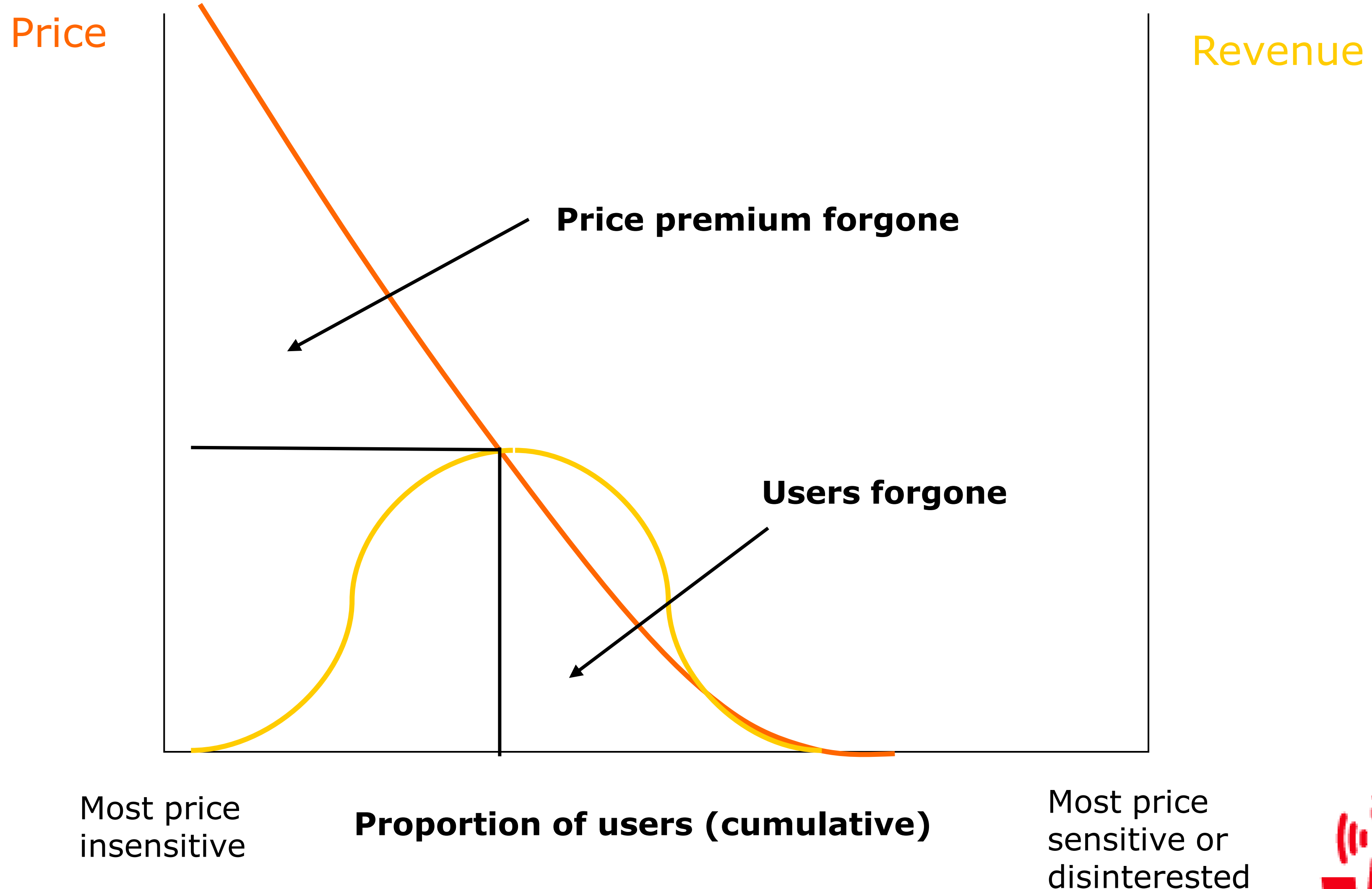
# Mobile Broadband Segmentation User Caricatures



# Pricing Flexibility and Innovation

- Pricing is crucial means of innovation and market development
  - **AT&T Wireless' Digital One Rate national "bucket" plans (1998)**
  - **Orange first in the UK with per second billing (1994)**
- Data usage and usage-based charges are very difficult to understand or estimate in advance
  - **Bill shock**
  - **Dashboard displays will help**
- Flat rates are simple to understand and easy to administer
  - **Leave money on the table with those that can afford more**
  - **Exclude those who want to pay less for more modest or occasional**
  - **Fair usage caps introduced to prevent excessive usage**
- Mobile broadband pricing innovation
  - **T-Mobile USA dropped caps, but throttles monthly usage above 5Gbytes**
  - **Pricing based on content or applications transactions more meaningful to consumers than per Megabyte charges**
- Network neutrality policing
  - **Regulatory uncertainty in US, Europe and elsewhere for fixed and wireless**
  - **Could constrain business models and pricing flexibility**

# The Flat Rate is so 2009



# Mobile Broadband Plans from Vodafone UK

- **Mobile broadband starter**
  - £15 ($23) for 3GB of data - go online for up to 100 hours
  - free USB Modem
  - no long contract - use it for just 30 days at a time
- **Free netbook (Samsung N130)**
  - £30 ($46) for 3GB of data per month
  - 24 month contract
- **TopUp and Go mobile broadband**
  - No contract - no fuss
  - Go online for 30 days from when you top up
  - Top up anytime - 3GB costs just £15
  - All this for a current promotional price of £30 ($46) - normally £35
- **Mobile broadband via your phone – tethering packs**
  - £15 a month for 3GB or £25 a month for 5GB
  - Making calls over the internet and sharing data files not included
- **Overage and abroad**
  - £15 per GB overage; CSR advised me against foreign usage

# Outlook and Forecasts for Mobile Broadband and LTE

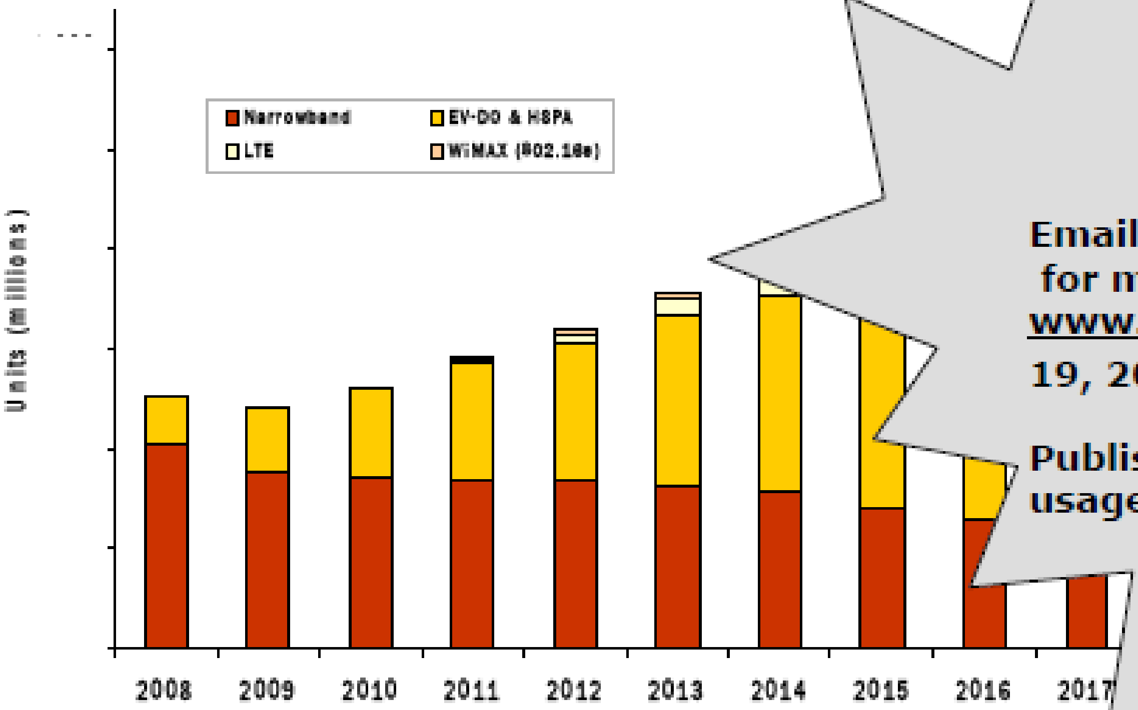
# Outlook for LTE

- **Mobile broadband has the opportunity to repeat for Internet access and data the success achieved by cellular in connecting 4 billion people for voice and text**
- **Prospects for LTE and LTE Advanced are excellent with high capacity, performance and low cost per bit**
- **WiMAX will be eclipsed with introduction of TD-LTE**
- **LTE adoption and success should be measured over a decade not just a year or two**
- **LTE will be substantially about devices other than phones and dongles**
- **Substantial amounts of new spectrum at reasonable costs are essential**

# Coming Soon from WiseHarbor: Extended Forecast for Mobile Broadband with LTE

- **Forecasts device sales including narrowband and broadband with segmentation for LTE and WiMAX technologies**
- **Forecasting horizon reflects long adoption timeframes for new mobile technologies**
- **Includes phones and non-phone devices with clear segmentation between these categories and between embedded and discrete devices**
- **Includes forecasts for average selling prices and total market revenues as well as unit sales volumes**
- **Enables clients to generate their own forecasts based on modified assumptions to those applied by WiseHarbor**

# WiseHarbor Extended Forecast: All Device Types




Source: WiseHarbor

Email kmallinson@wiseharbor.com for more information or visit www.wiseharbor.com around May 19, 2010 for launch announcement

Publishing subscriber and service usage forecasts later in 2010

# Thank You

www.wiseharbor.com

**My most recent FierceWireless columns**

**April 23, 2010 | Network neutrality dysfunctionality**
http://www.fiercewireless.com/europe/story/mallinson-network-neutrality-dysfunctionality/2010-04-23

**March 29, 2010 | LTE will bridge the digital divide**
http://www.fiercewireless.com/europe/story/lte-will-bridge-digital-divide/2010-03-29


**Keith Mallinson**
**Founder**
**WiseHarbor**
Phone: +1 617 418 3977
+44 20 7193 0339

Email: kmallinson@wiseharbor.com
URL: www.wiseharbor.com