



Broadband statistics and customer expectations

Christoph Legutko

Wireless Standards and Regulations Manager
Intel Corporation, Global Public Policy

Chisinau, 04.05.2010



Broadband future:

1 Billion "Connected Mobile Clients" in 5 Years

Core Business

Client PCs



Windows, Mac OS



Strategic Growth Areas

CE
(Internet)



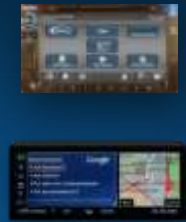
Mobile
Internet
Devices



Low-Cost
PCs



Embedded

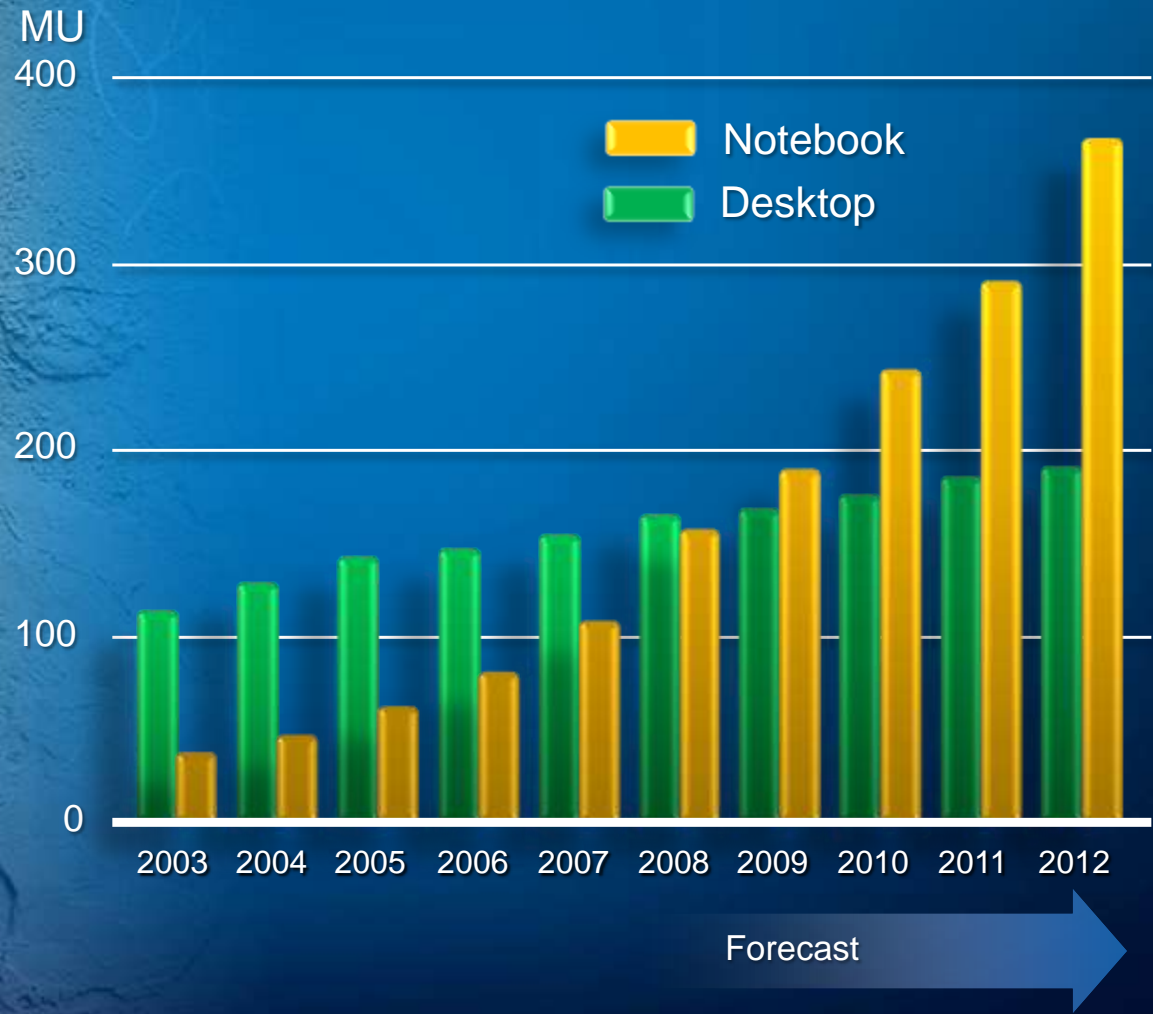


Microsoft Windows / MeeGo Linux-based OS / Services Port of Choice



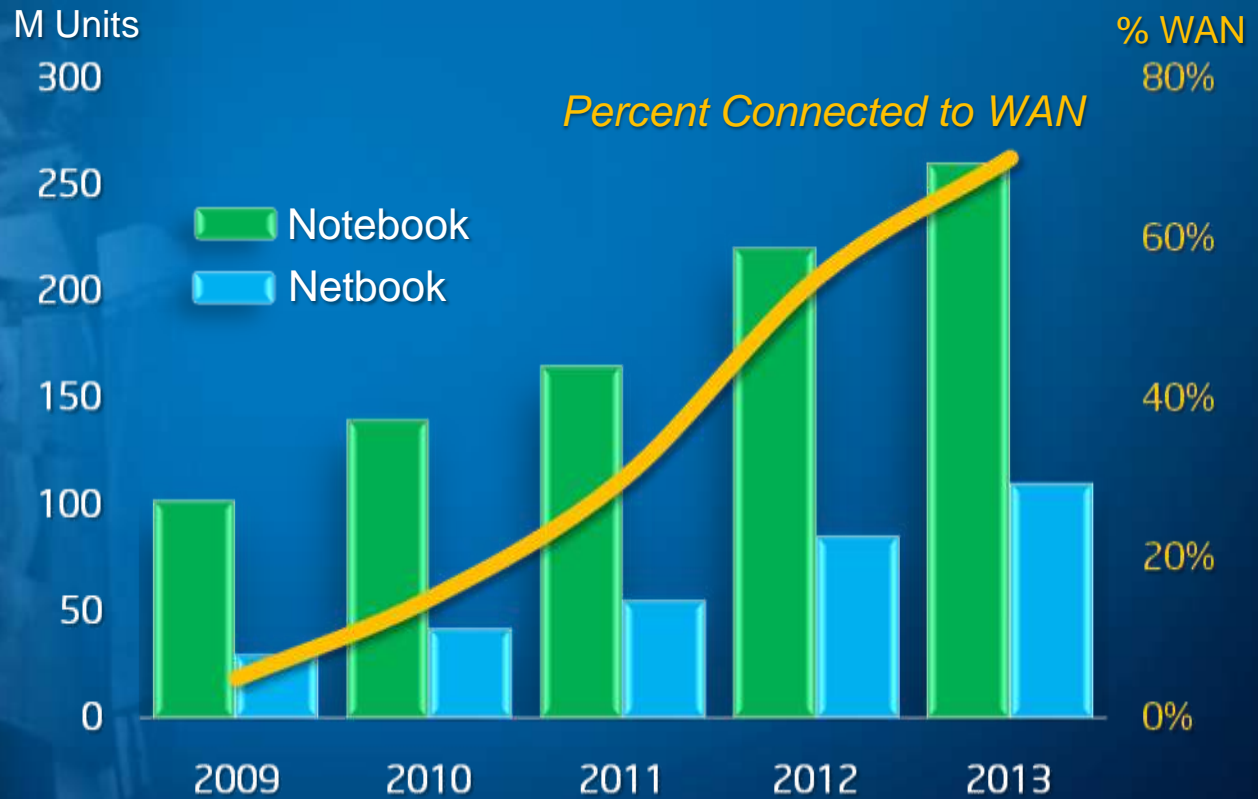
One Architecture Across Multiple Mobile Client Platforms

PC access to the internet: mobile overtook desktop ...



Source: Gartner, Q1'09

... And mobile PCs will be connected to the Internet



WAN Connection is Essential

... And These New Devices and Applications Are Rapidly Overloading Existing Networks

Commerce



Information



Productivity



Entertainment



Medical



Communication



Education

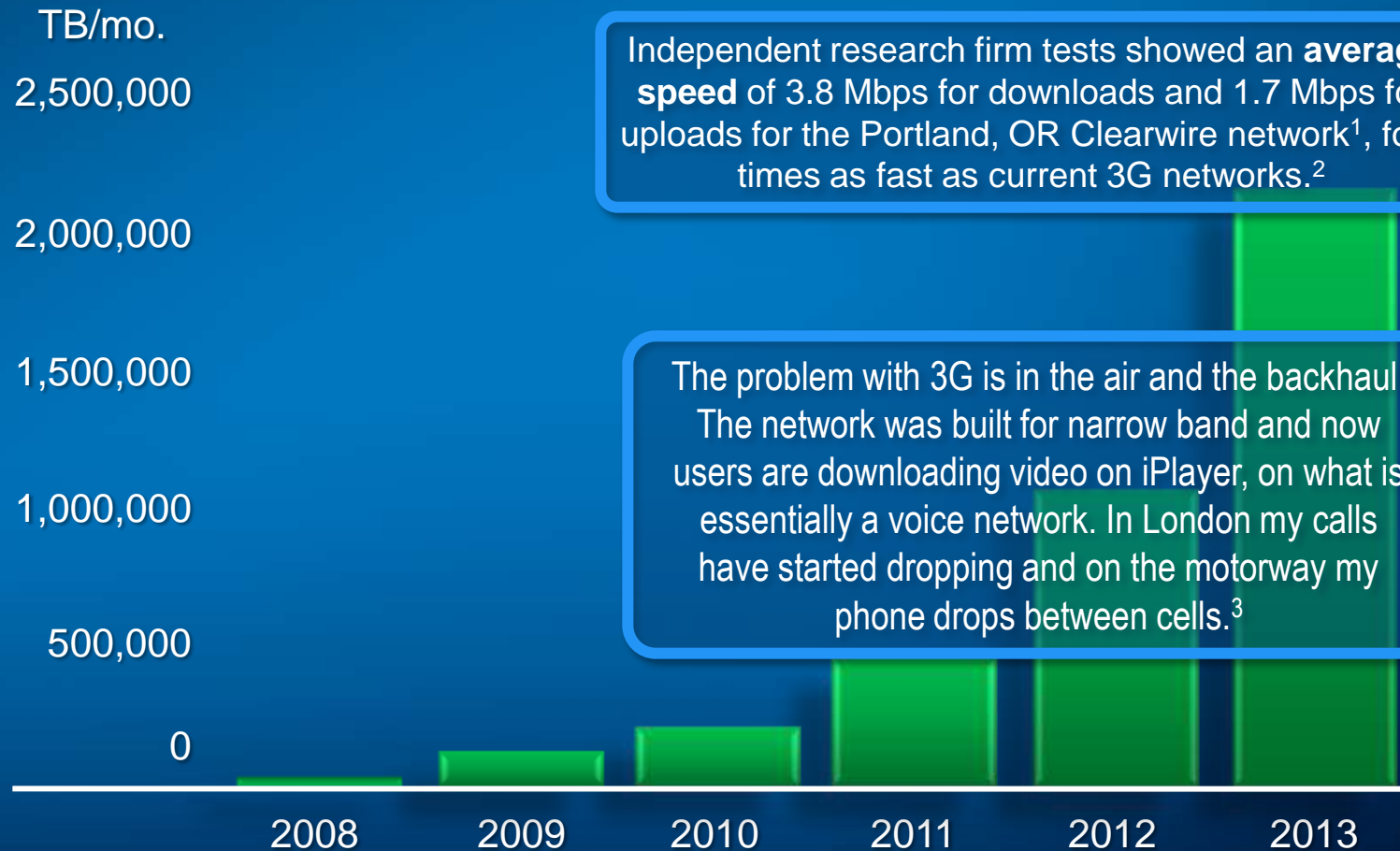


“Watching a YouTube video on a smartphone can use the same capacity on the network as sending 500,000 text messages simultaneously.”

02 technology Chief Derek McManus

How Will Operators Meet Demand?

Global Mobile Data Traffic Growth




Source: Cisco Visual Networking Index, July 2009. Forecast, 2008 -2013

[1] Signals Ahead Research, Volume 5, No. 11, 9 September, 2009.

[2] **Saul Hansell, Sprint Banks on WiMax to Win Back Market Share, New York Times, 27 September 2009**

[3] "U.S. 3G Networks Deliver Less Than Expected," Phillip Redman, Gartner Research, 22 January 2009.



Mobile Voice vs. Mobile Internet

Traffic Equivalents*

1 Smartphone = 30
Handsets

1 Laptop = 450 Handsets

A network optimized for mobile voice cannot handle high numbers of mobile internet users

~ 10 Kbps Constant Rate



1-5 Mbps Burst Traffic

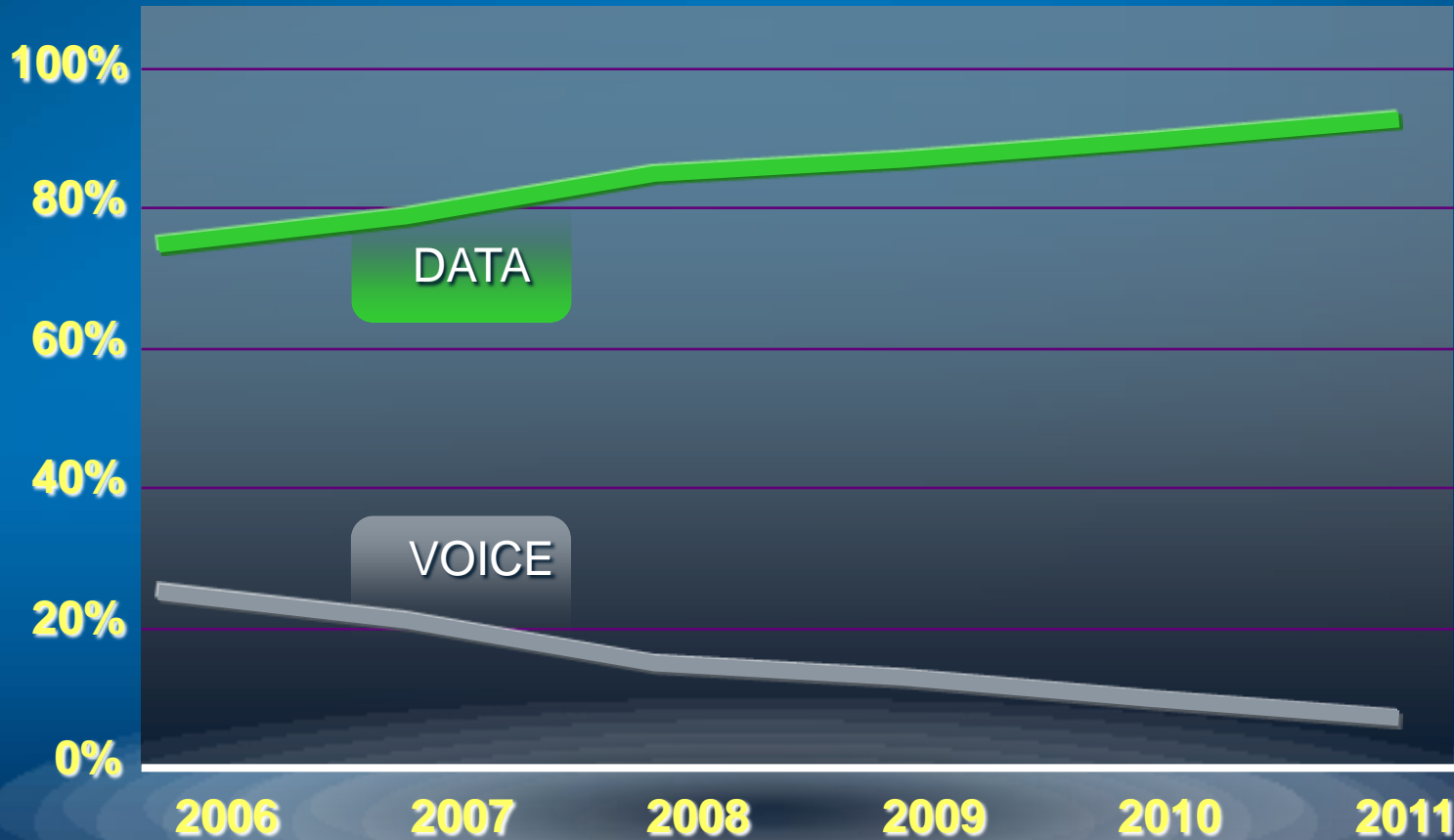
More Spectrum Needed

More Backhaul And Different Network Architecture Required

Mobile Internet Requires a Technology Revolution

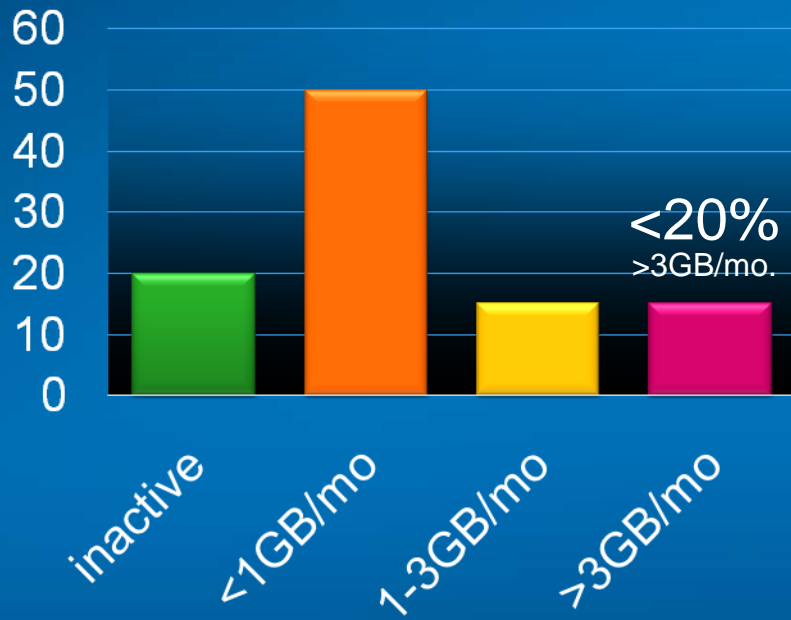
Data Traffic is Taking Over Voice Networks

Percentage of Overall Traffic

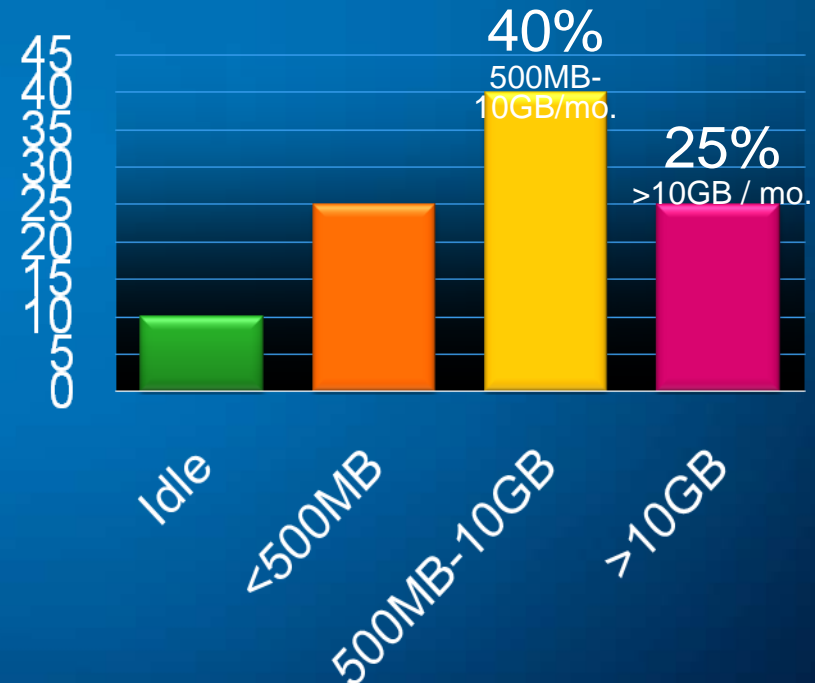


Enabling new mobile broadband experience

3G PC Data Usage



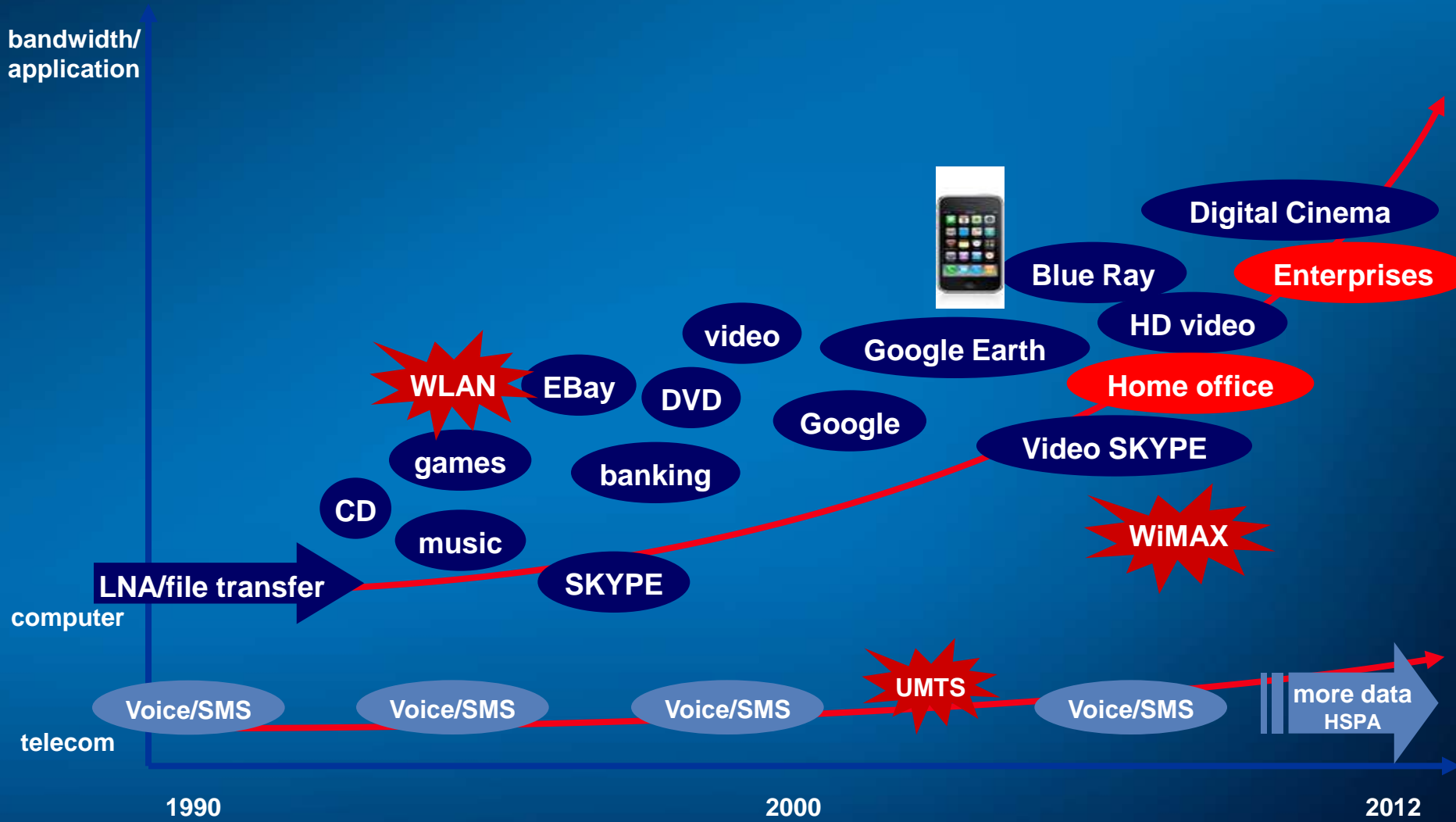
WiMAX Data Usage



- Data usage expands when true broadband becomes available
- WiMAX capable of providing primary broadband, not just mobile
- 3G cost/bit and performance unable to meet BB experience expectations

Customer expectations

Applications



computer applications drive bandwidth demand

New Applications Drive Bandwidth Consumption

Average Smartphone user on a 3G Network

400 MByte/month

Average iPhone user in NY and San Francisco⁽²⁾

800 MByte/month

Watch DVD quality movie on Netflix.com

4.7 Giga Bytes

Listen 30 minutes a day of Pandora

1.2 Giga Bytes/month

Watch 30 minutes daily sitcom using Hulu HD

5.8 Giga Bytes/month

Upload 5 minute SD video clip to Facebook 10X

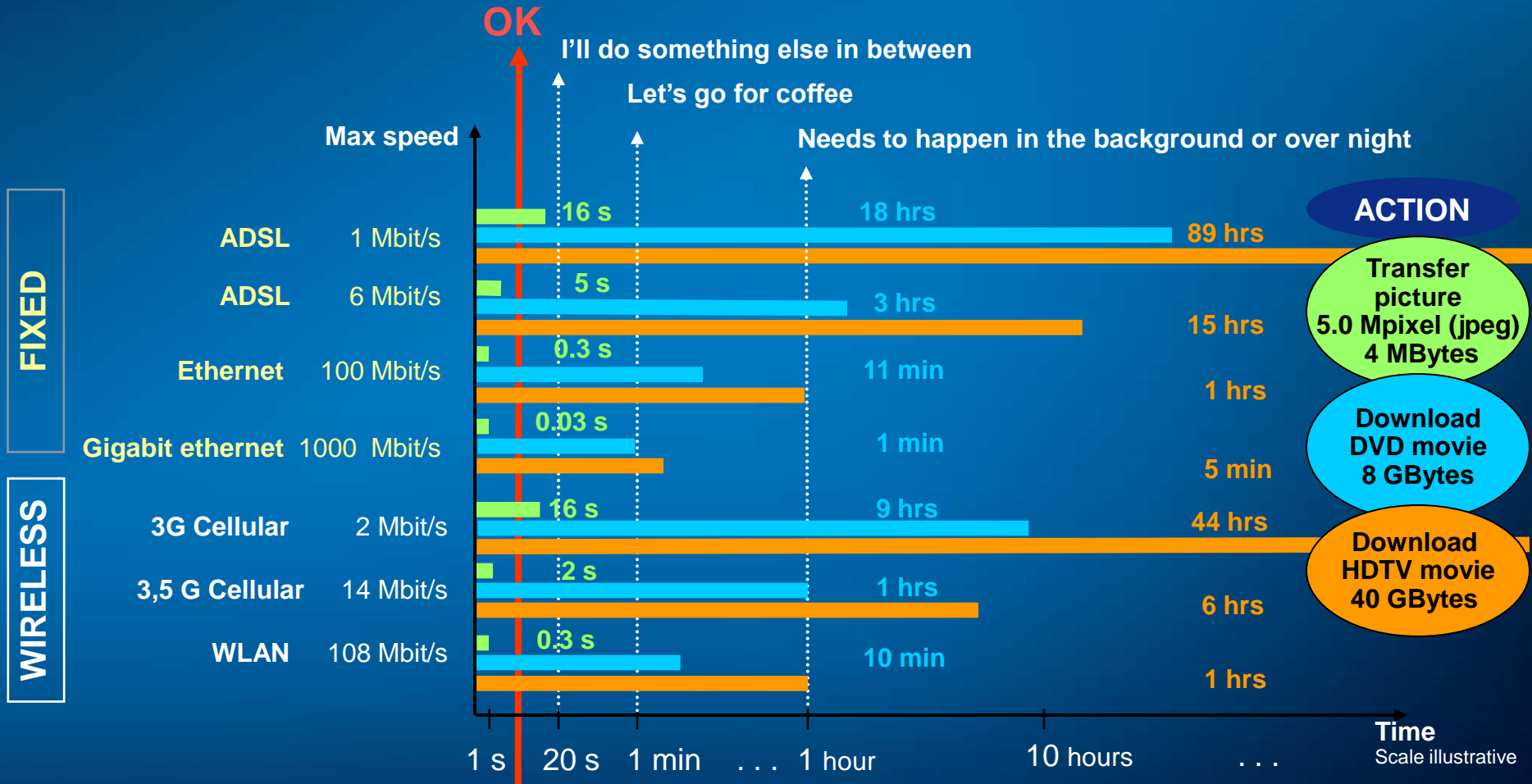
1.2 Giga Bytes

Sync photos with your Nikon SLR and Flickr

5 Giga Bytes

average user's byte "consumption" / month

100++ Mbps wireless connectivity is needed for good user experience



7s = valuable time for person to wait



Thank You