

Network Technology for Future E-Business

Mr. Somprasong Boonyachai

Chief Executive Officer and Chairman of the Executive Committee
Intouch Holdings Plc

Abstract

E-Business has driven growth of economy worldwide and will increase importance in the future as people become more connected. Keys to success of E-Business services are good quality infrastructure for performing e-Transaction; payment and product and service delivery.

Apart from demand for e-Services from end users, there is also demand to use network from new breed of service providers, ie, over-the-top providers. With large-scale moving demand and innovative services requiring large transmission bandwidth, network technology should be flexible for deployment, operation and long-term maintenance to ensure users can use e-Service anytime they want to use, from any place they are, on any terminal they carry.

Obstacles that may hold back development of infrastructure supporting E-Business is also addressed.

Network Technology for Future e-Business

Somprasong Boonyachai

King Mongkut's University of Technology Thonburi
10th International Conference on e-Business (iNCEB2015)

23 November 2015
Chatrium Hotel Riverside



Agenda

e-Business
driving
economy

Fulfilling
needs for
e-Business

Supporting
technology

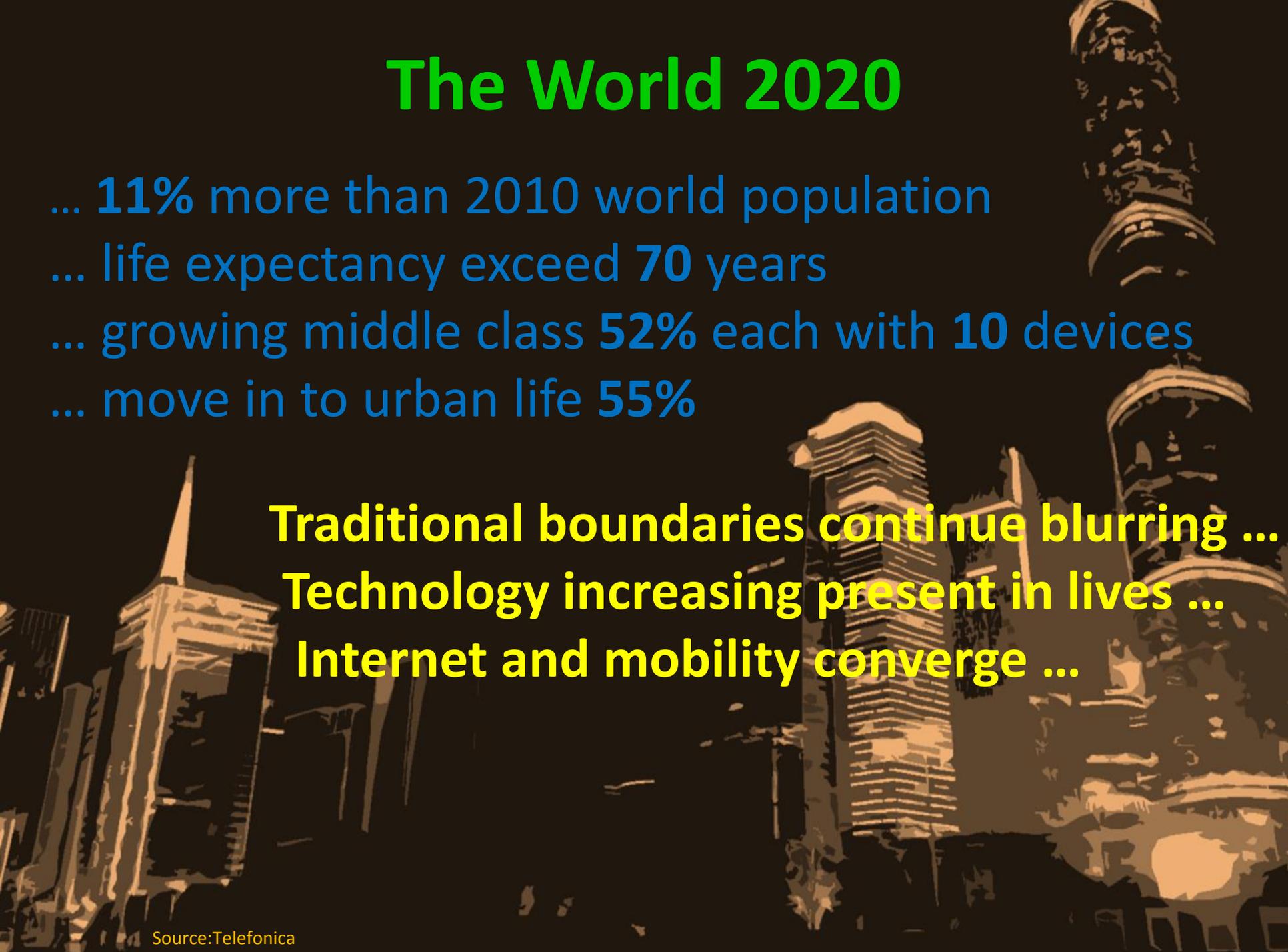
Examples

Obstacles



The Changing World

The World 2020



... **11%** more than 2010 world population

... life expectancy exceed **70** years

... growing middle class **52%** each with **10** devices

... move in to urban life **55%**

Traditional boundaries continue blurring ...

Technology increasing present in lives ...

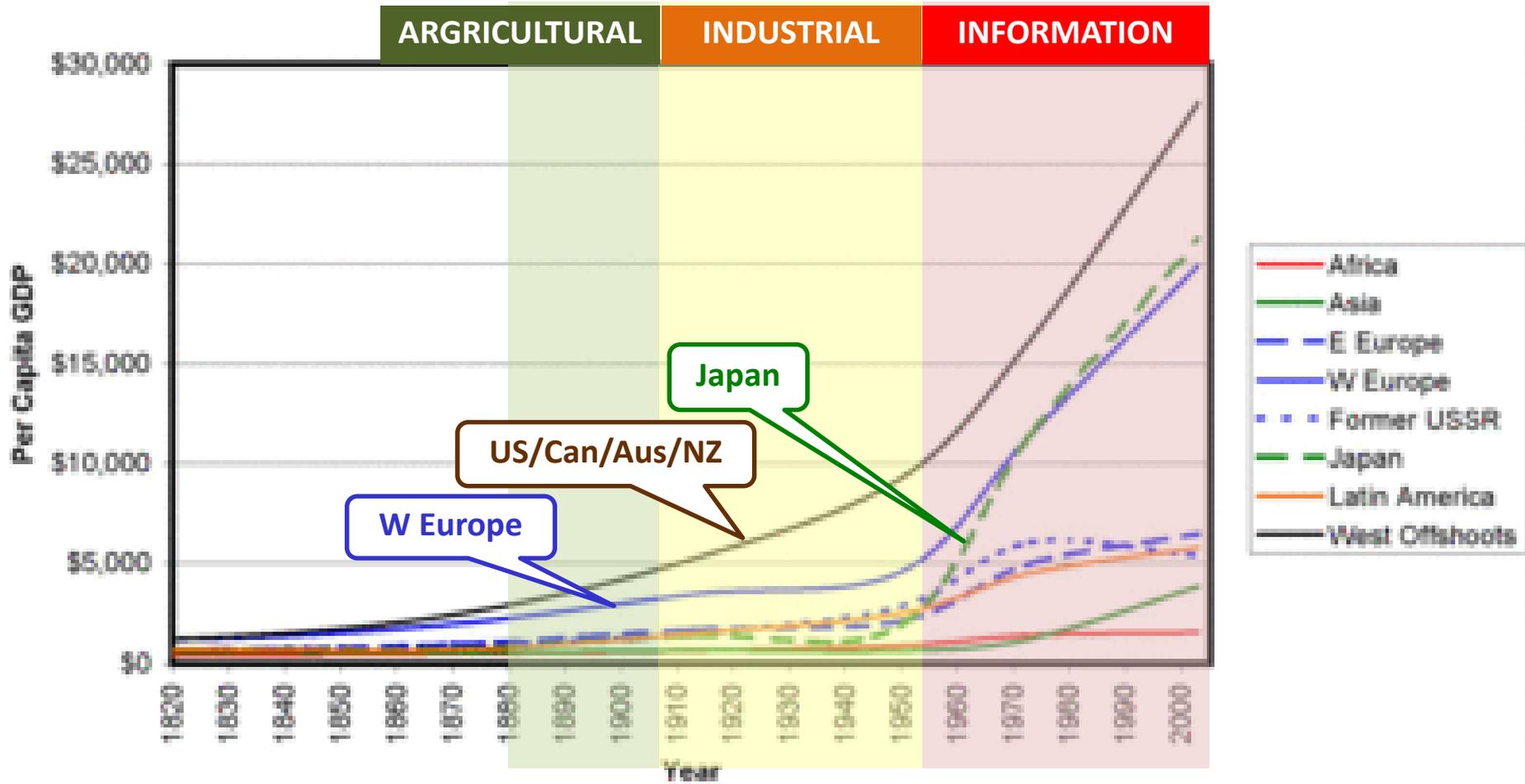
Internet and mobility converge ...

Digital Economy



an **economy** that is based on **digital computing** technologies

Per Capita GDP by World Region 1820 - 2003 (1990 International Dollars)



Source: Angus Maddison, "Contours of the World Economy, 1-2030 AD: Essays in Macro-Economic History," New York: Oxford University Press, 2007, 382.

Benefit to Economy

**Drive
productivity**

Efficiency

Effectiveness

**Create new
opportunity for
growth**

24*7

Coverage
penetration

**Promote
innovation**

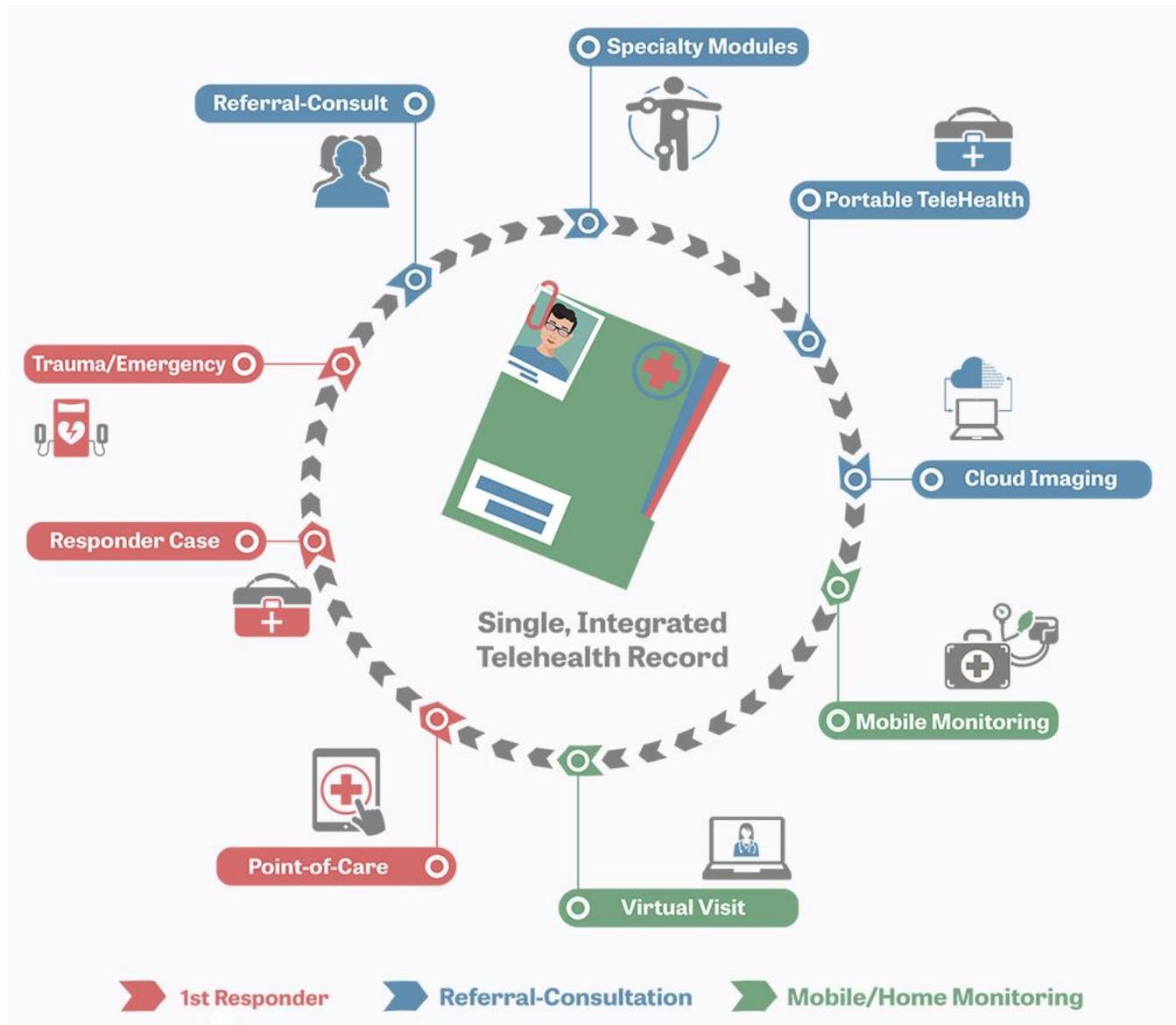
Social
enabling
operation

Network
organization

Digital Enabler Product/Service

Healthcare	Finance	Agricultural	Education	Transport
Tele-care	Mobile Banking	Weather forecast	Virtual classroom	Maps & navigation
Tele-medicine	Tax calculation	Market price	E-book	Transport service
	Personal finance	Smartfarm	Online Research	Traffic report

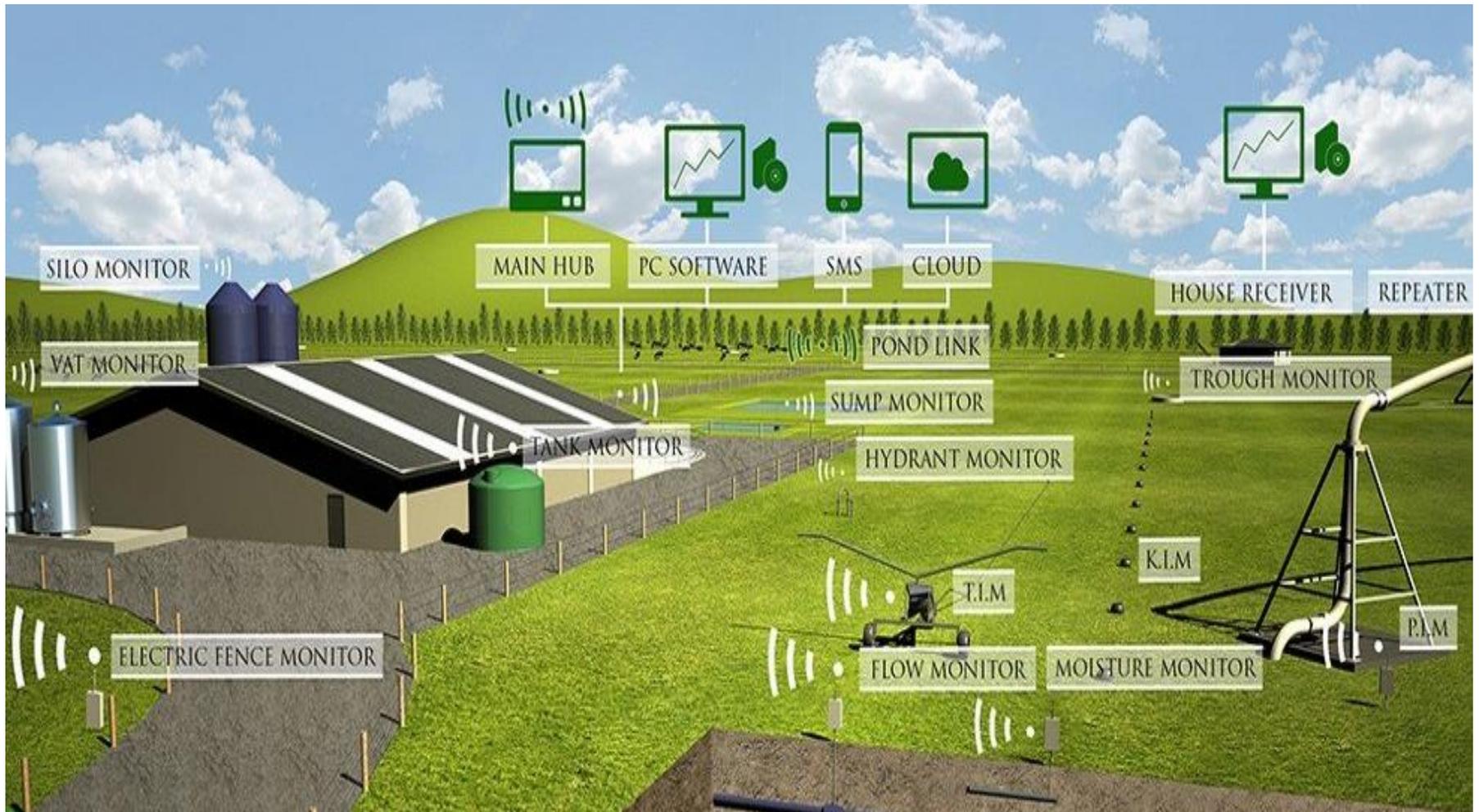
Tele-Medicine



Personal Finance



Smart Farm



Virtual Classroom

The screenshot displays a virtual classroom interface on a tablet. The main area is a whiteboard titled "WhiteBoard 1" with a toolbar containing a close button (X), a plus sign (+), a document icon (10), and navigation arrows. A floating "Attendee List (4)" window is positioned in the center-left, listing participants: Mark (You), John, George, Machlan, and Matt Purland. Each entry includes a profile icon and control icons for video, audio, and chat. On the right, a "Live Video Stream" shows a female teacher in front of a chalkboard with mathematical equations. Below the video is a "Chat" window with a "Disable All" button and a message history showing "Burke Kate: Hello", "Burke Kate: Can you guys hear me right", and "John: Perfect". A text input field and a "Send" button are at the bottom of the chat. The tablet's bottom navigation bar shows back, home, and recent apps icons, and the status bar at the very bottom displays the time 5:58, signal strength, and battery level.

WhiteBoard 1

Attendee List (4)

- Mark (You)
- John
- George
- Machlan
- Matt Purland

Live Video Stream

Chat

Disable All

Burke Kate: Hello

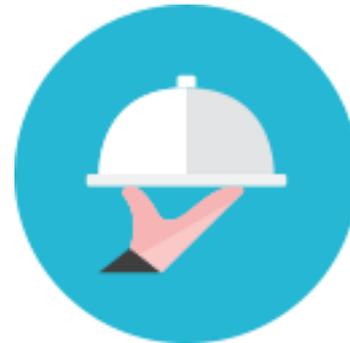
Burke Kate: Can you guys hear me right

John: Perfect

Send

5:58

Map and Navigation



New Business Model

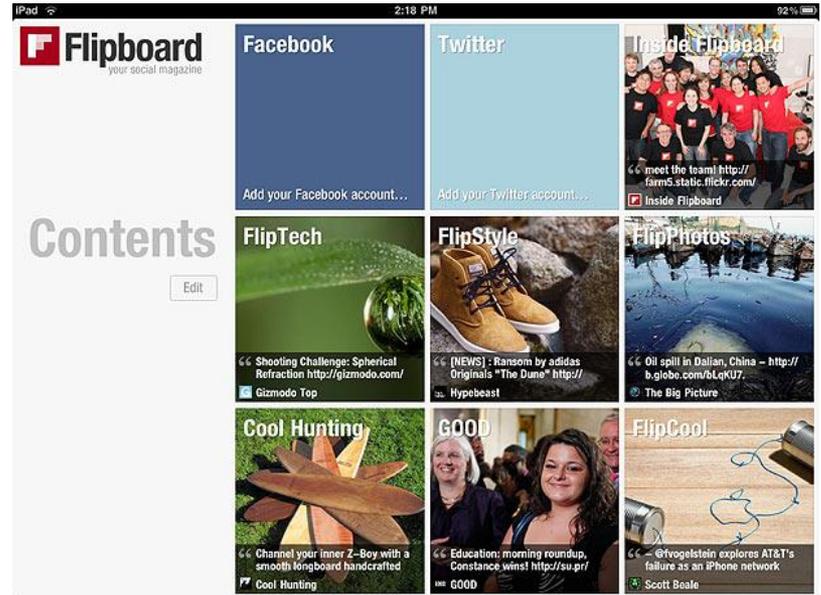


Value-Added Middle Man

Knowing People thru Reading Behavior



Amazon bought
Washington Post and
allow all consumers
to read Washington
Post



Flipboard pulls content
from providers according
to consumers' preference

Successful Middlemen



NO vehicle



NO content

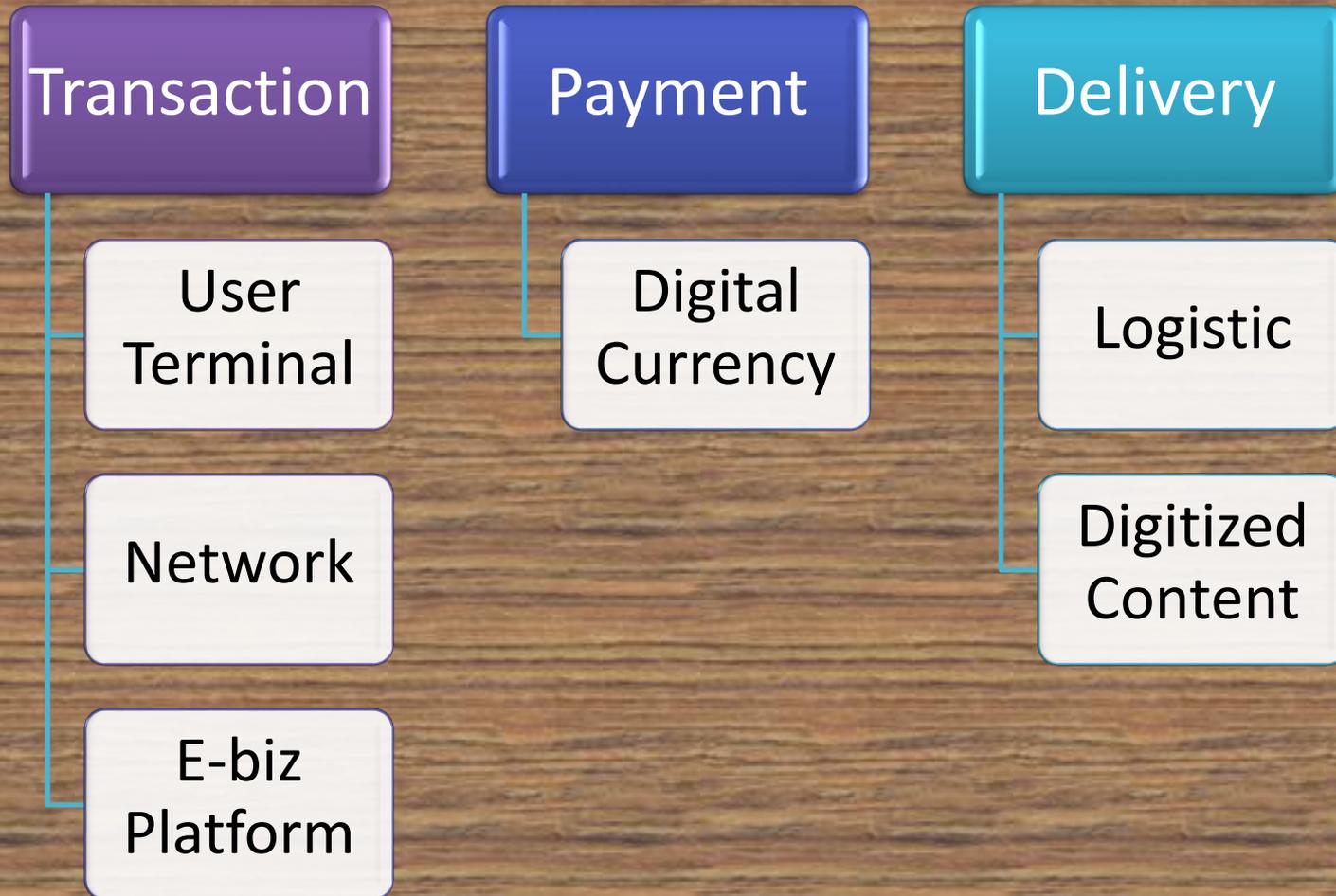


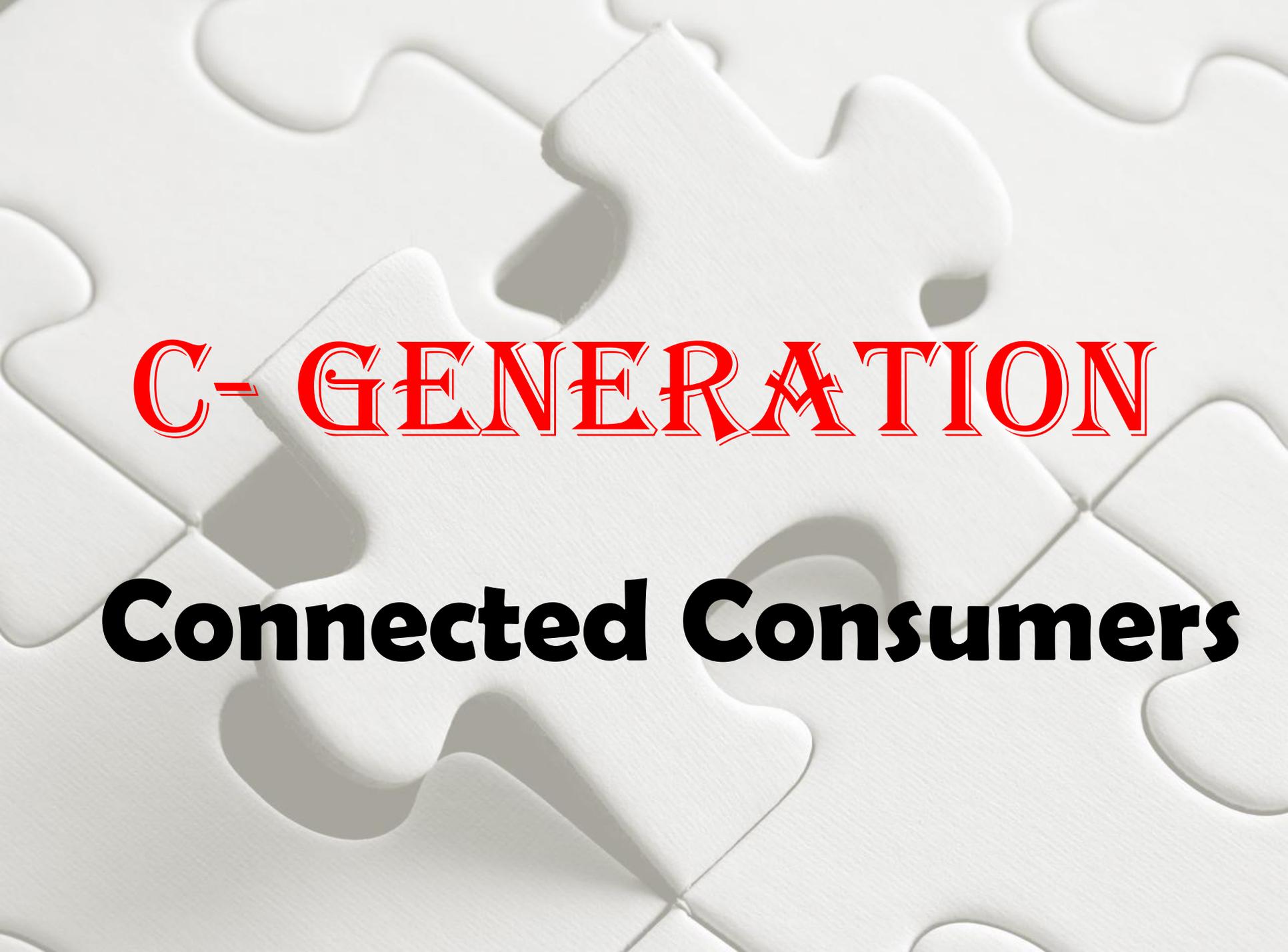
NO inventory



NO real estate

Drivers of e-Business





C-GENERATION

Connected Consumers

Public Internet Company Market Capitalizations – 1995 → 2015...

Top 15 Companies by Market Capitalization = 1995 @ \$17 Billion → 2015 @ \$2.4 Trillion

Global Public Internet Companies, Ranked by Market Capitalization

only 1 company
sustains

150 times market
capitalization

As of December, 1995

	Company	Home Country	Market Cap. (\$MM)
1	Netscape	USA	\$5,415
2	Apple	USA	3,918
3	Axel Springer	Germany	2,317
4	RentPath	USA	1,555
5	Web.com	USA	982
6	PSINet	USA	742
7	Netcom On-Line	USA	399
8	IAC / Interactive	USA	326
9	Copart	USA	325
10	Wavo Corporation	USA	203
11	iStar Internet	Canada	174
12	Firefox Communications	USA	158
13	Storage Computer Corp.	USA	95
14	Live Microsystems	USA	86
15	iLive	USA	57

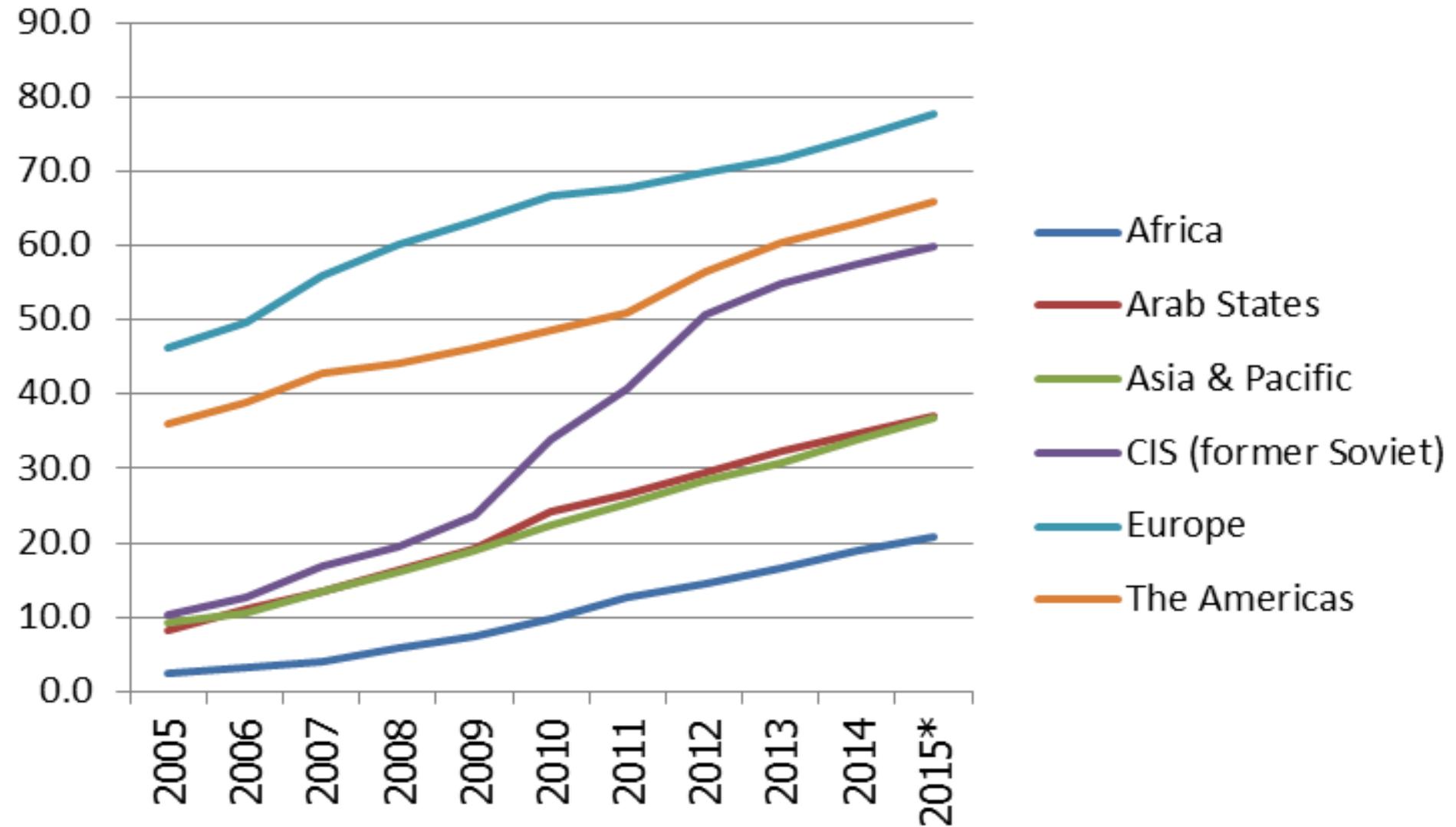
Total Market Cap of Top 15 \$16,752

As of May, 2015

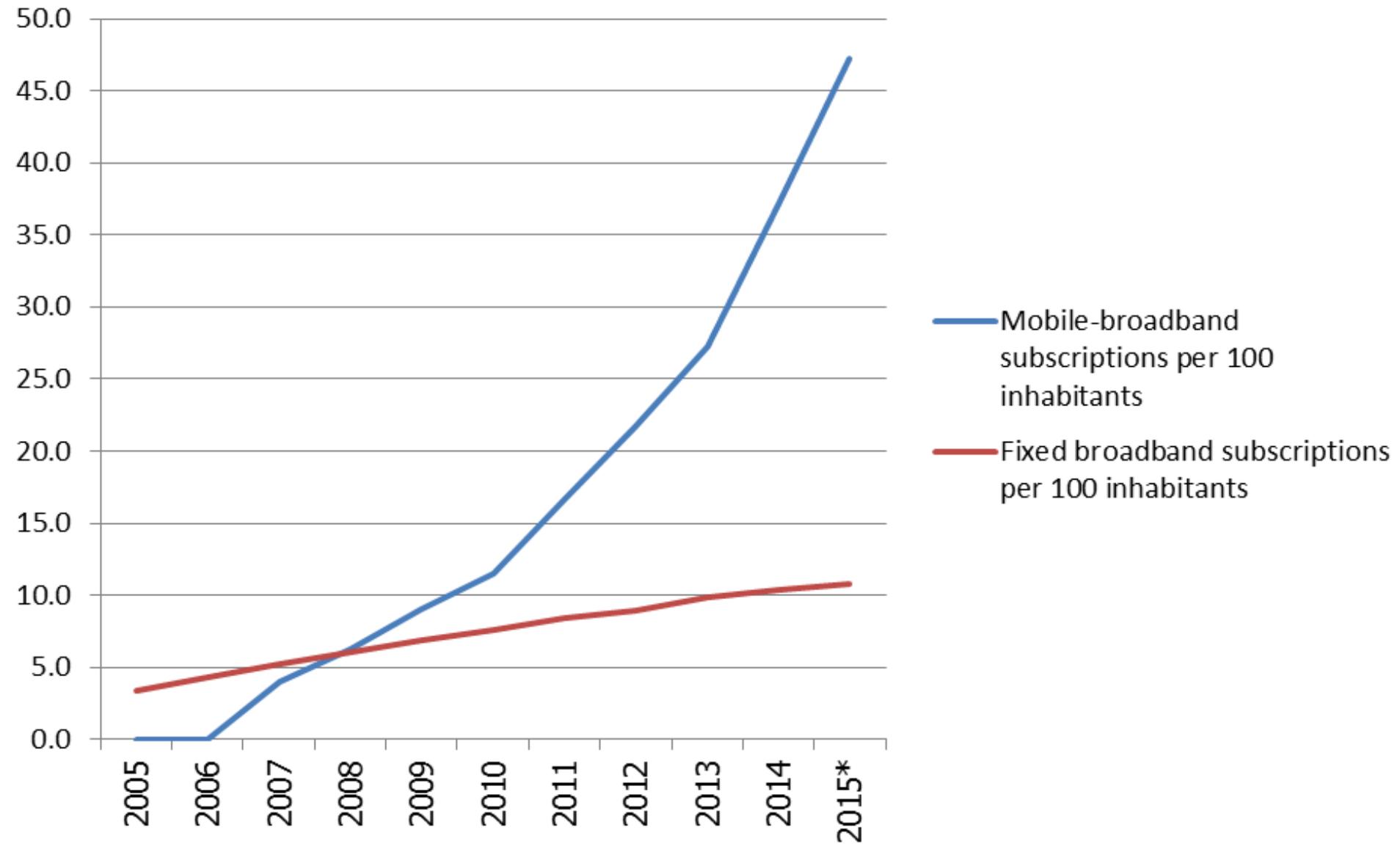
	Company	Home Country	Market Cap. (\$MM)
1	Apple	USA	\$763,567
2	Google	USA	373,437
3	Alibaba	China	232,755
4	Facebook	USA	226,009
5	Amazon.com	USA	199,139
6	Tencent	China	190,110
7	eBay	USA	72,549
8	Baidu	China	71,581
9	Priceline.com	USA	62,645
10	Salesforce.com	USA	49,173
11	JD.com	China	47,711
12	Yahoo!	USA	40,808
13	Netflix	USA	37,700
14	LinkedIn	USA	24,718
15	Twitter	USA	23,965

Total Market Cap of Top 15 \$2,415,867

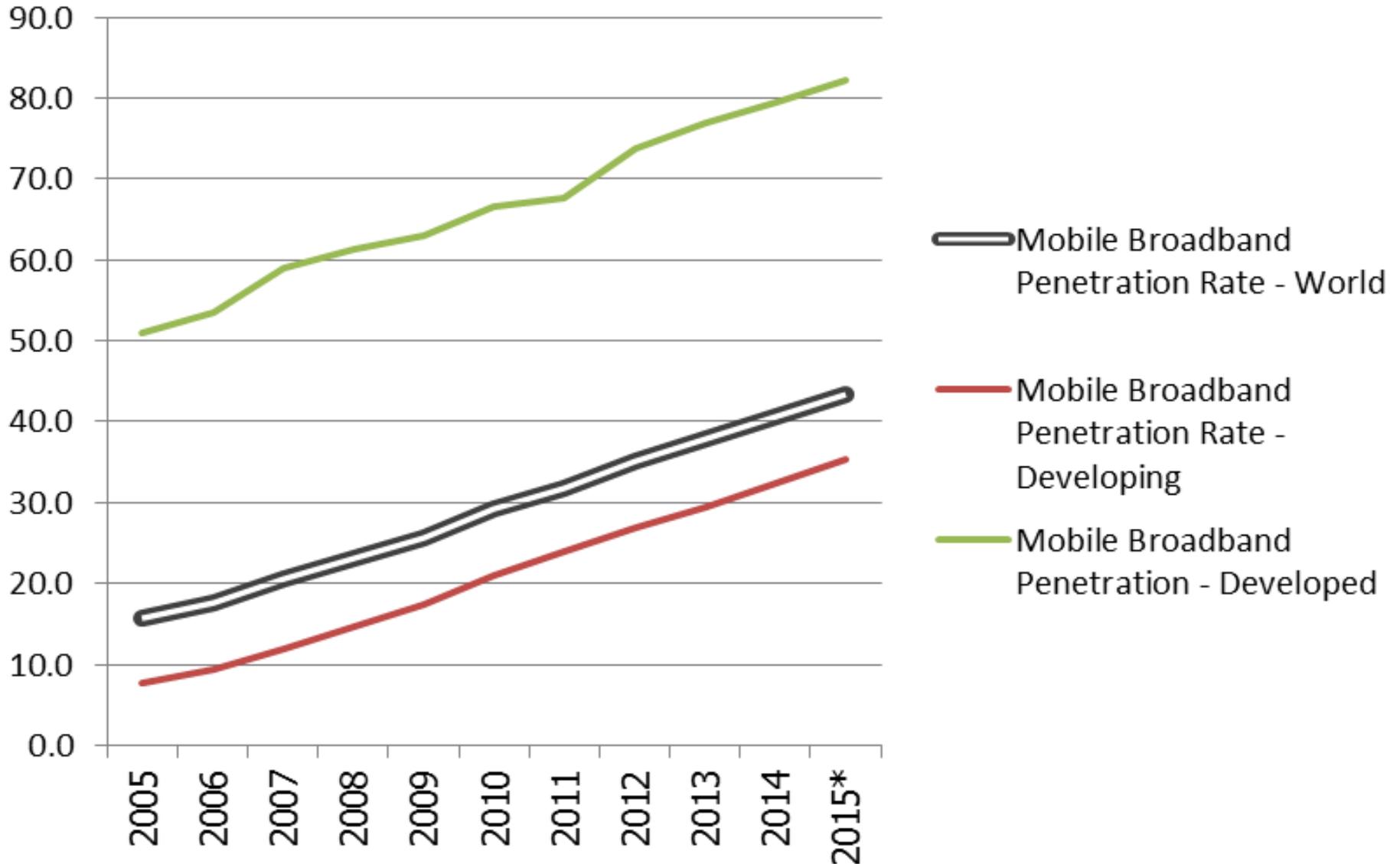
%individual using Internet



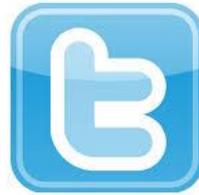
Mobile VS Fixed



% Mobile Broadband Penetration



Over-the-Top (OTT) Operator



NETFLIX



You **Tube**

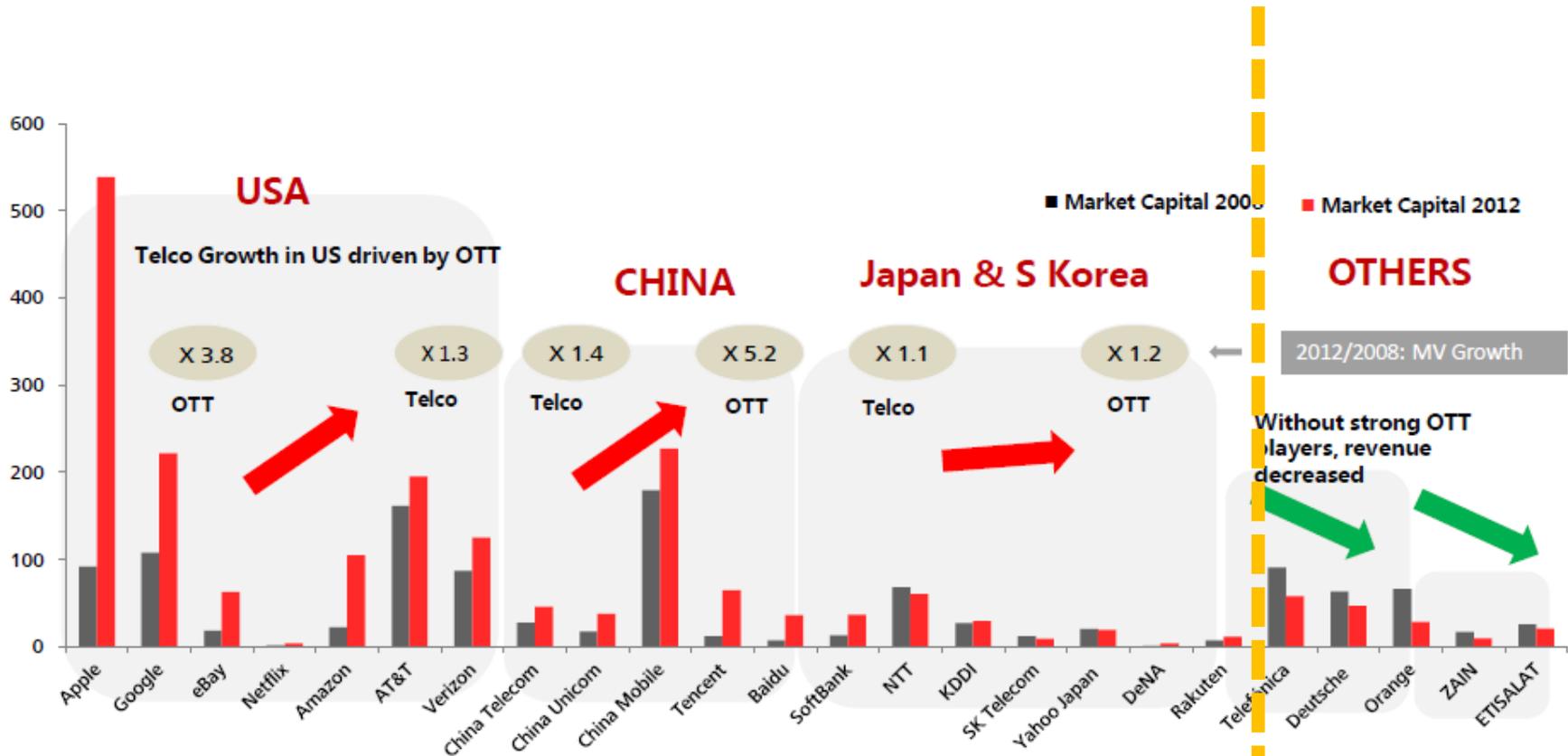
skype™

Google

Oops!

utilizing existing network

Operator-OTT Coexistence



+ New users attracted

- Increase operator CAPEX

Consumer Behavior

Prompt

Purchase
on fact

Self-
service

Privacy
concern



Need for e-Business

Functional

Available

Secure

2way content flow

Emotional

Convenient

User controlled

Transparent

Network Infrastructure

Wireless

- Mobile
- Wifi

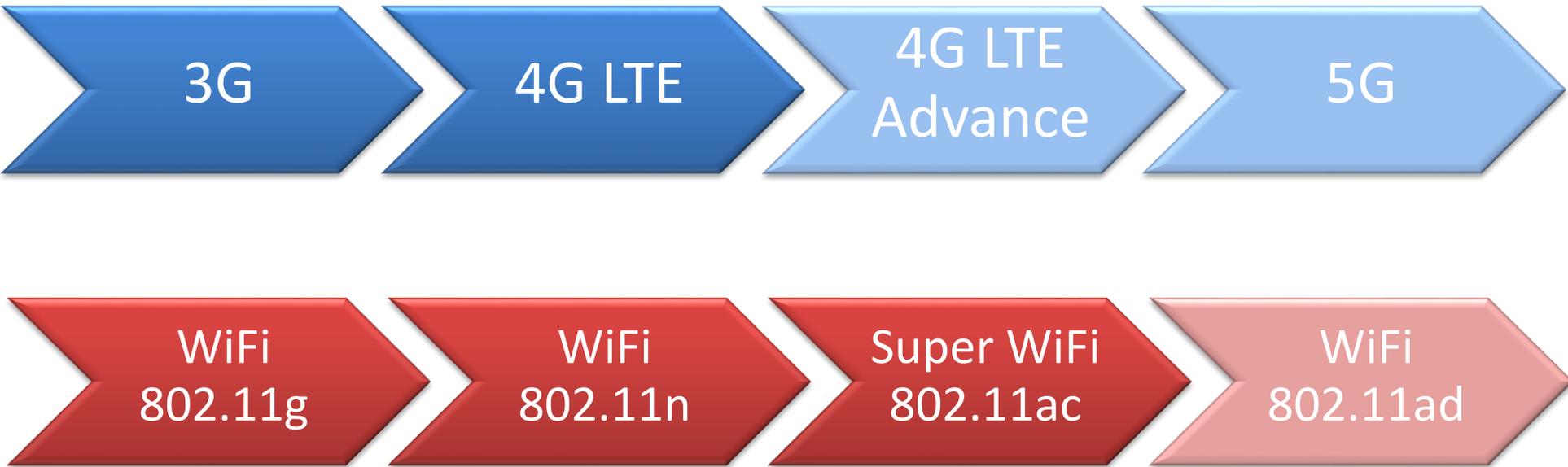
Wire

- Copper
- Cable
- Fiber

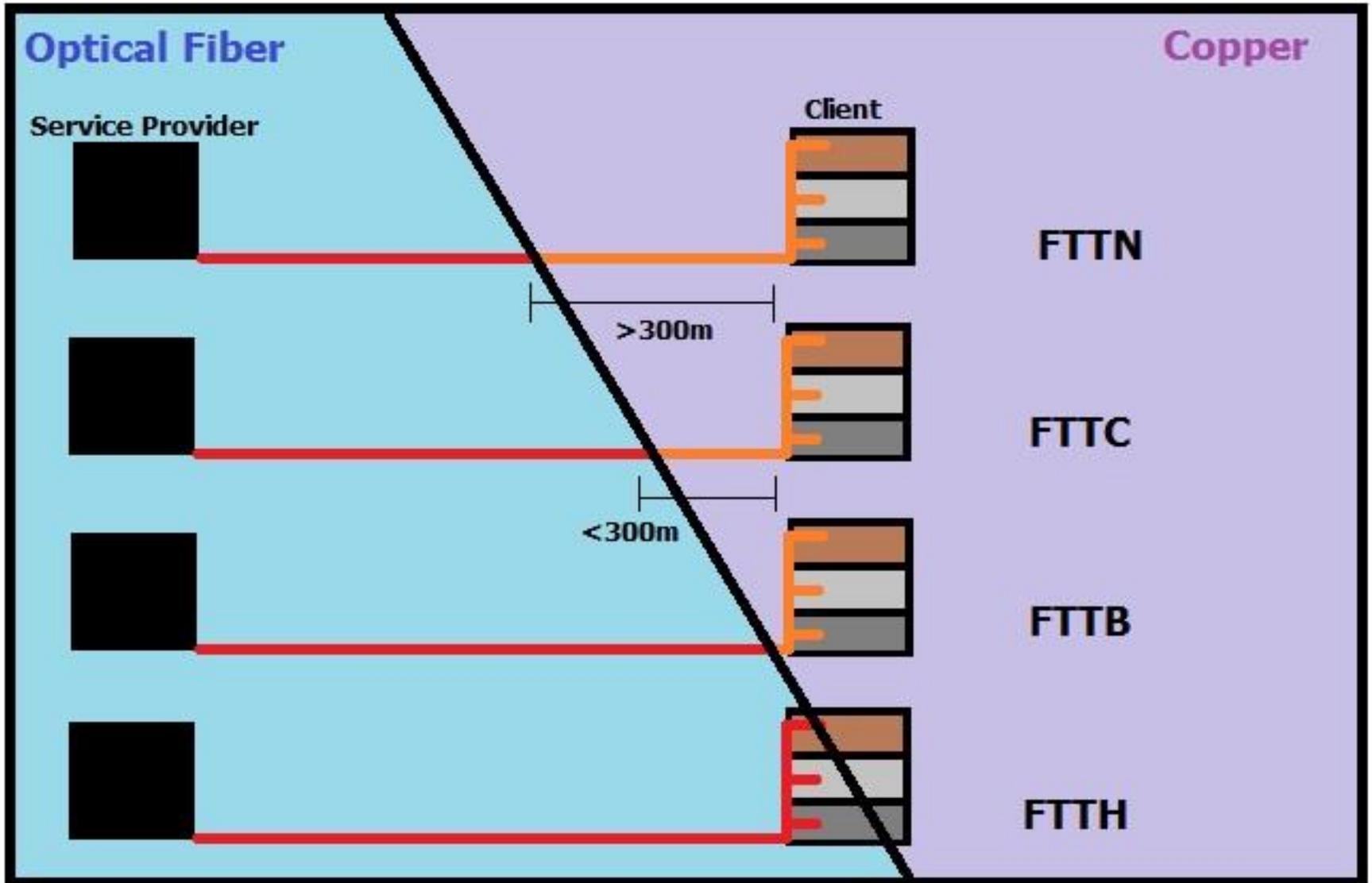
Satellite

- Fixed satellite
- Mobile satellite

Wireless Network

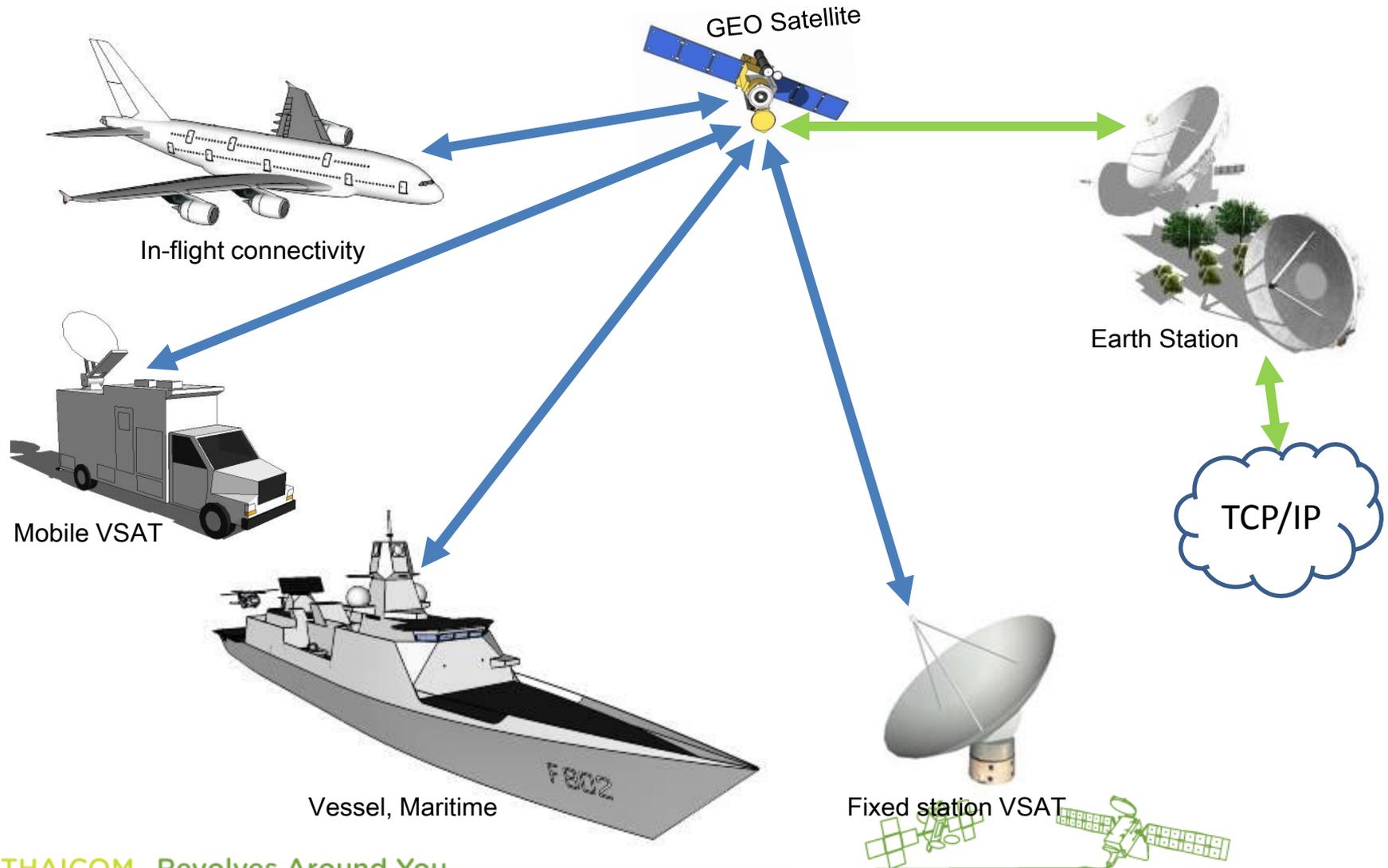


Wire Network

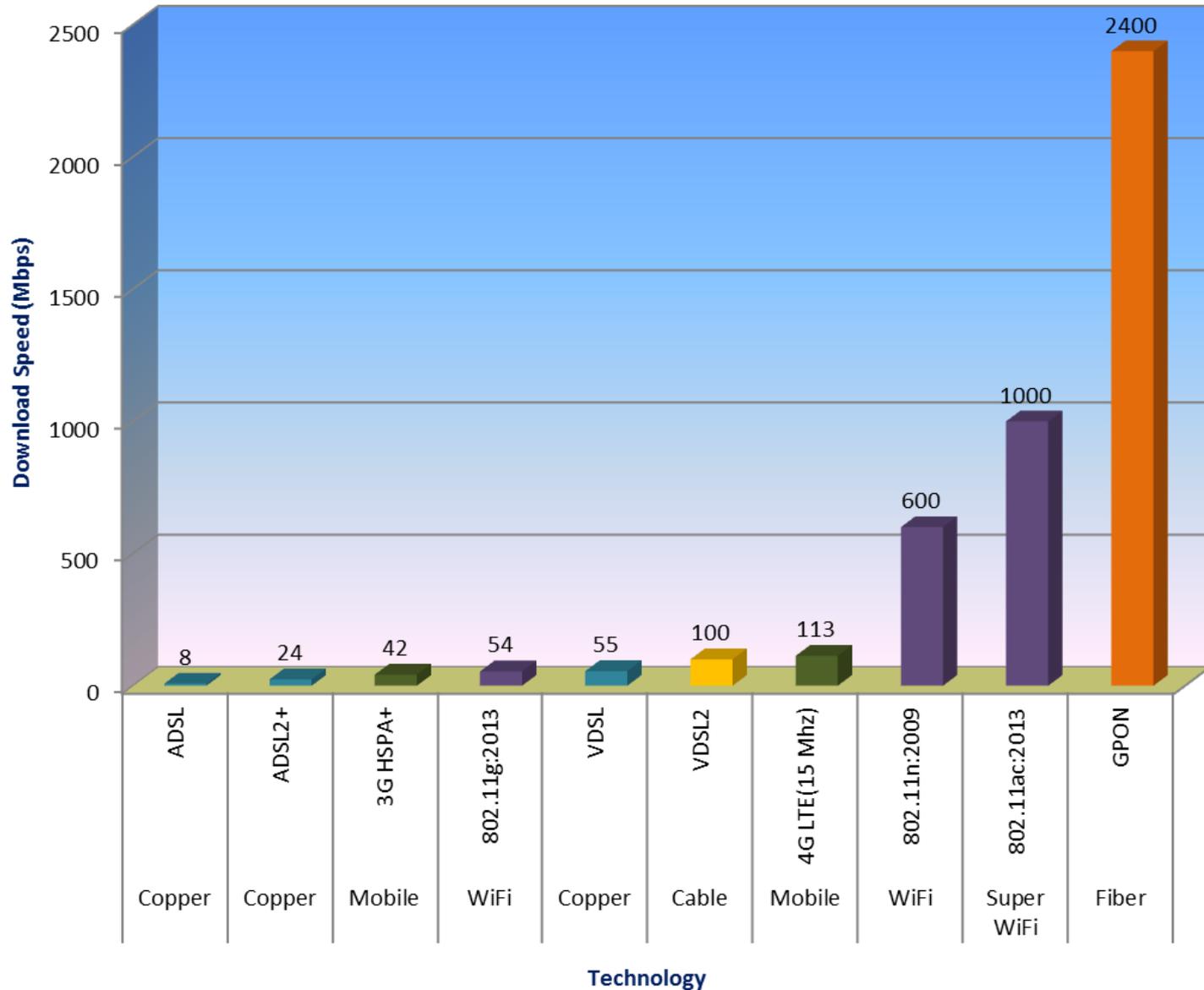


Satellite Communication Services

VSAT is a form of satellite communications of data, voice and video signals,

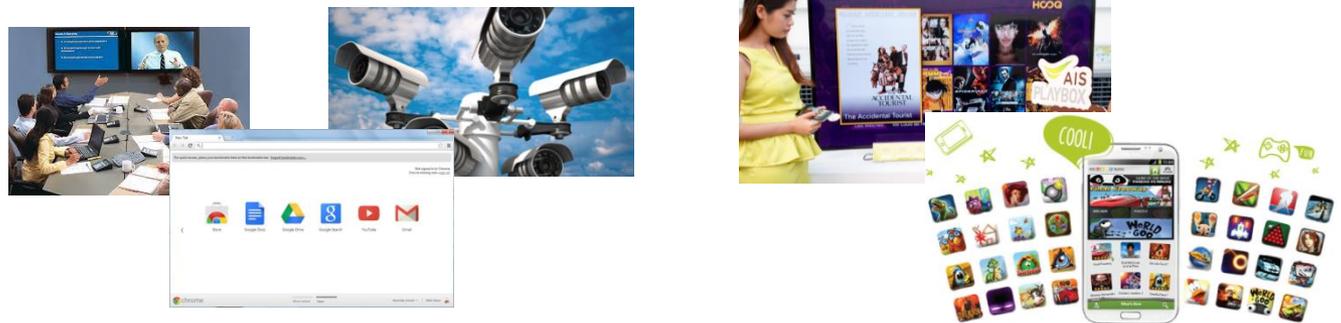


Technology Comparison



Infrastructure for Digital Services

SPEED	1 Mbps	25 Mbps
SERVICE	Internet Video Conference Remote Surveillance	Video on Demand HDTV Online Game
TECHNOLOGY	ADSL	VDSL Wifi Fiber



Manage Network for Future

Fixed and Mobile convergence

- Usage distribution
- Seamless handover

Flexible platform

- Planning and deployment
- Operation
- Security

Facility Management

- Site location
- Facility sharing

Device Compatibility

Manage Content for Future

Content Management

- Content aggregation
- Content Placement

Content analysis

- Upsales
- Optimize infrastructure

Privacy

- Confidentiality
- Integrity
- Availability

Obstacles

Supporting System

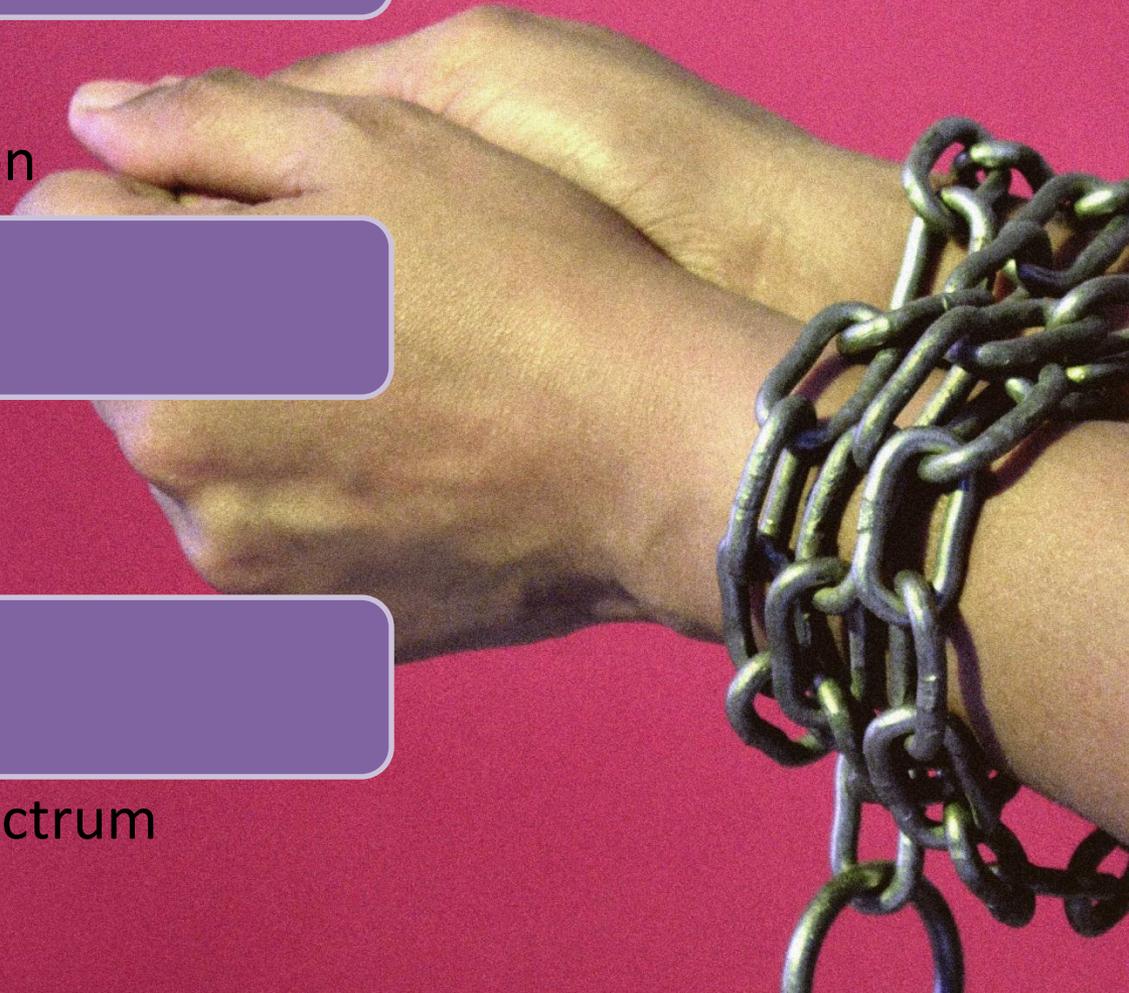
- Logistic
- Cross border regulation

Business Model

- Ecosystem
- Tax

Technology

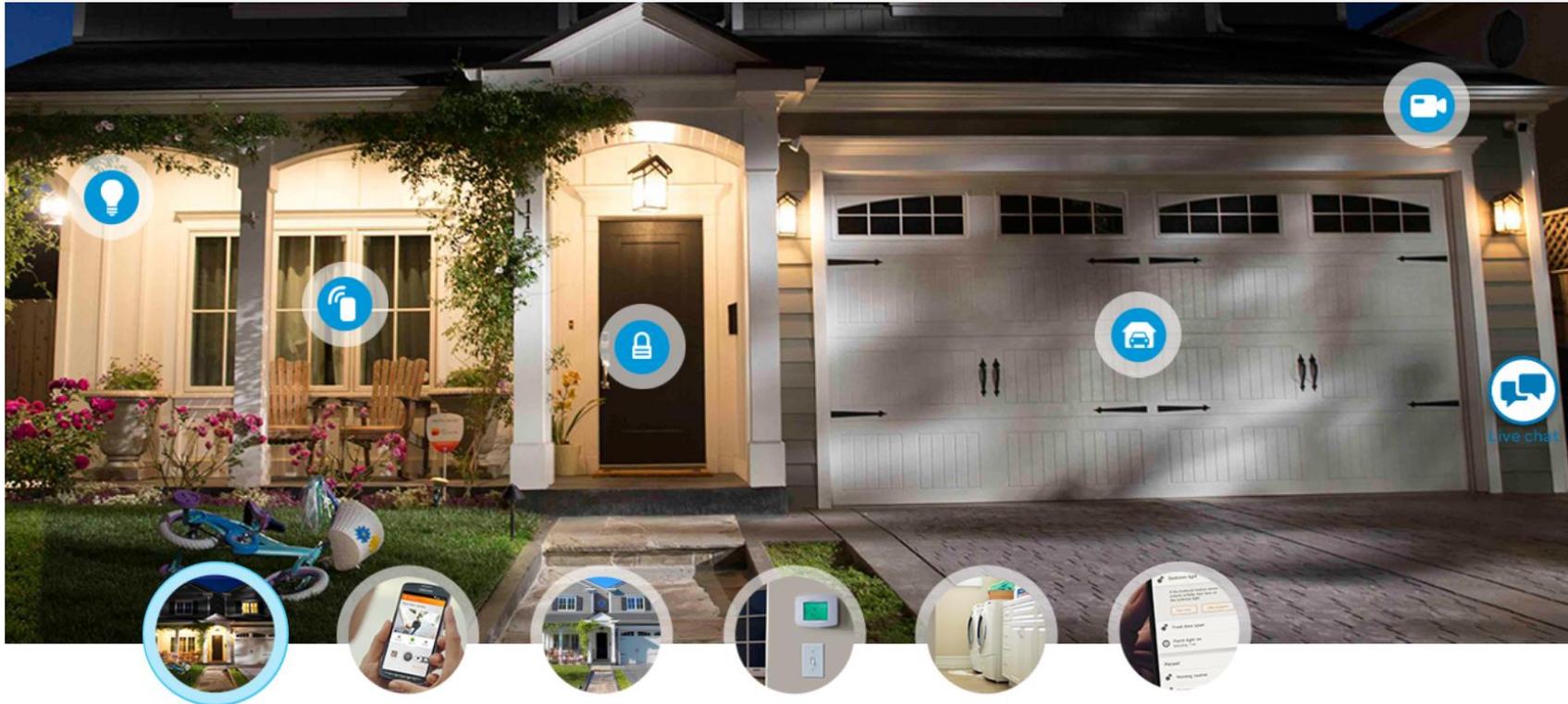
- Limited frequency spectrum
- Interoperability





AT&T Digital Life

Fiber To The Home and 4G LTE



Home security

Video monitoring

Door control

Energy management

Water detection

Custom programs

Zacks Equity Research “AT&T sees a **\$18billion market** of auto home security while **penetration rate is only 1%**”

Sichuan Telecom 012

0-Video

1-Broadband FTTH

2-Mobile

Key Success Factors

HDTV as free
basic service

Fixed Mobile
Convergence

Content
aggregator

BT-EE QuadPlay



Telephone

Broadband

TV

Mobile



AT &T acquired Direct TV

AT&T #2 in mobile

Telephone

Broadband



TV

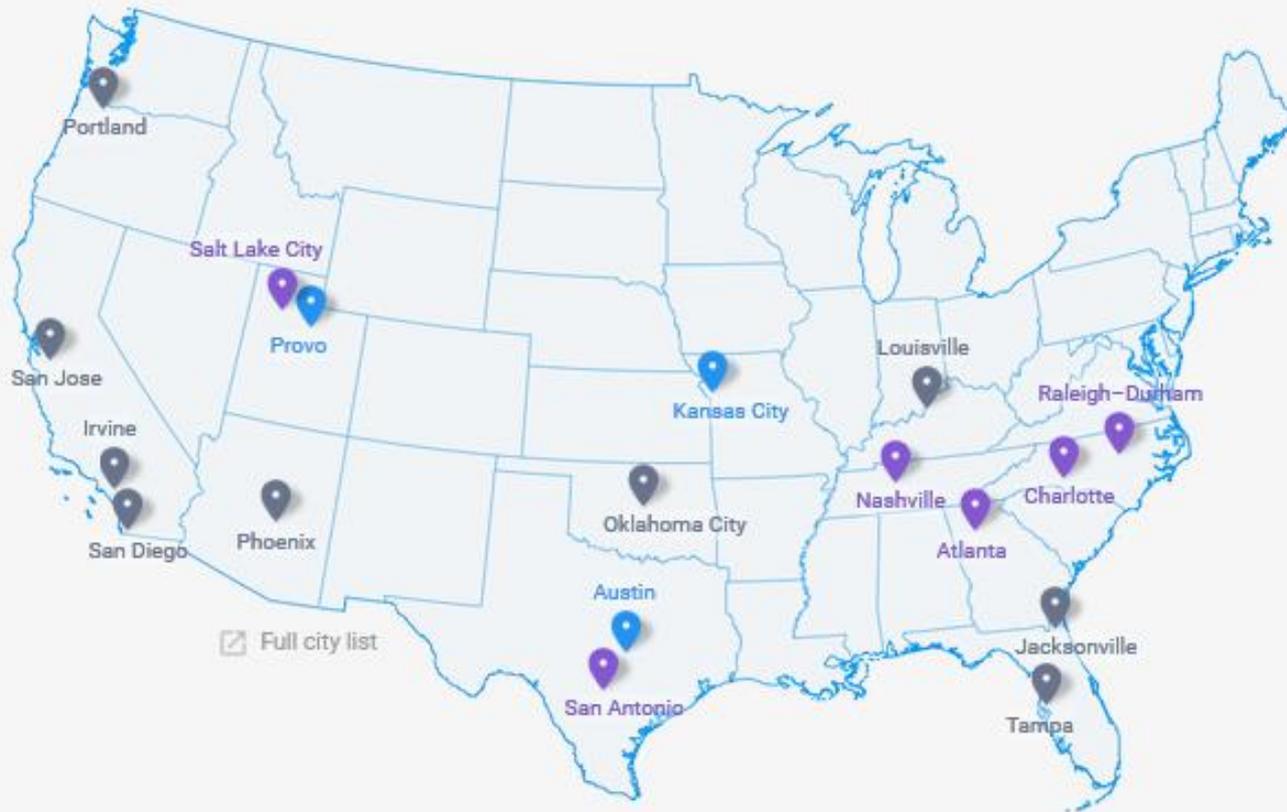
Mobile



#2 in Satellite TV

Google Fiber

Google Fiber was founded with the goal to make the web faster and better. Since we launched in 2012, we've been humbled by the overwhelming response. We want to bring Fiber to more people and places and are starting with these cities.



 Current Fiber city  Upcoming Fiber city  Potential Fiber city

Google Fiber



Your DVR can do more

Record up to 8 shows at once (not that we know why you would). And with two terabytes of storage on the Network Box, save up to 500 hours of TV.



Crystal clear HDTV

With a fiber connection, a bigger pipe means less compression. Our network has the bandwidth to bring you HD in all its glory.

Google Fiber



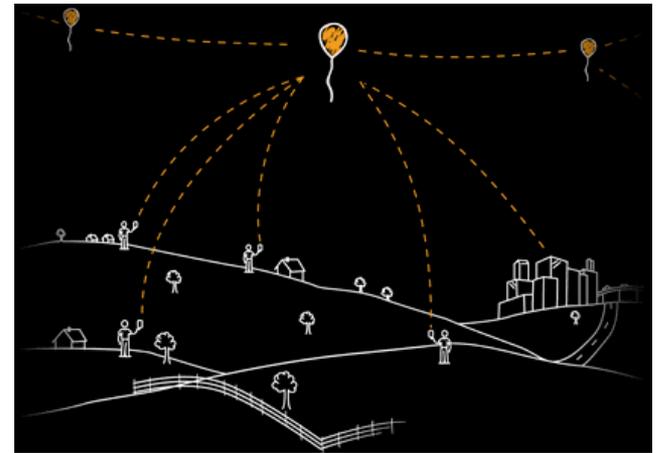
Keep everything, share anything

Enjoy one terabyte of cloud storage. With Google Drive, you can back up and access your files anywhere: at home, at the office, or on the go. No matter what happens to your computer or smartphone, your files are safe in the cloud.

Connect over powerful Wi-Fi

You'll experience the fastest speeds with a wired connection, but you can also get online wirelessly using the Network+ Box. That's our gigabit router designed to the latest standards (802.11a/b/g/n/ac).

Google Balloon



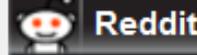
Facebook Internet via Satellite

Facebook to beam free high-speed internet via satellite to remote regions in Africa

Written by: GizBot Bureau

Published: Tuesday, October 6, 2015, 13:32 [IST]

Share this on your social network:



Comments

Social networking site Facebook has announced a partnership with French satellite operator Eutelsat Communications to provide free high-speed internet to get more Africans online by next year.

T h a n k Y o u

