

Communications Services Tax Working Group

August 21, 2012 Meeting Materials

Addendum #1

- **Materials added to Agenda Item #6 – Developments in Technology**

The Changing Face of Communications



Safe Harbor Statement

Cautionary Language Concerning Forward-Looking Statements

Information set forth in this presentation contains financial estimates and other forward-looking statements that are subject to risks and uncertainties, and actual results might differ materially. A discussion of factors that may affect future results is contained in AT&T's filings with the Securities and Exchange Commission. AT&T disclaims any obligation to update and revise statements contained in this presentation based on new information or otherwise.



1

The Changing Face of the Internet

2

The Internet as a Value Added Platform

3

The Power of Convergence

1

The Changing Face of the Internet

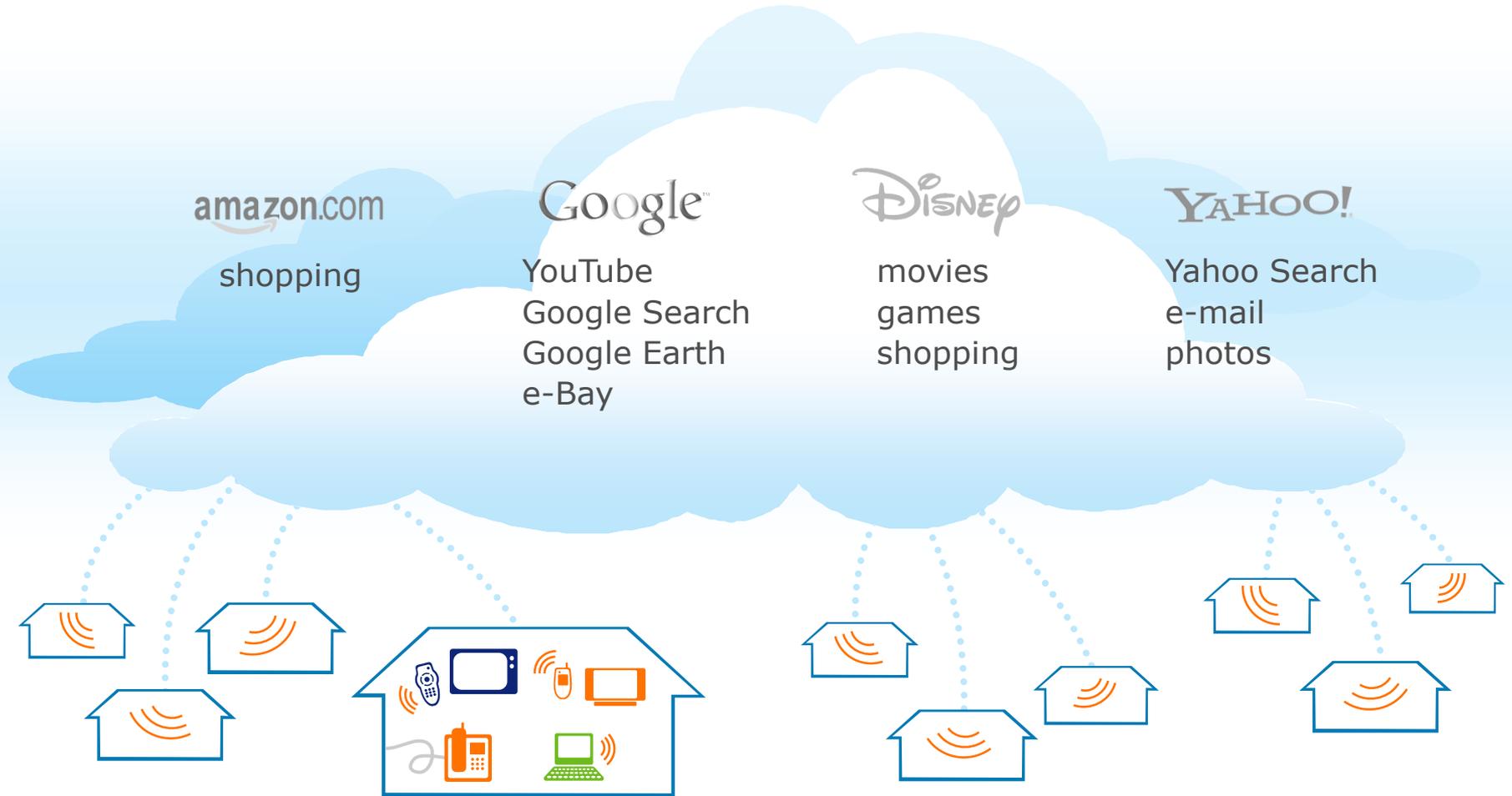
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The Power of Convergence

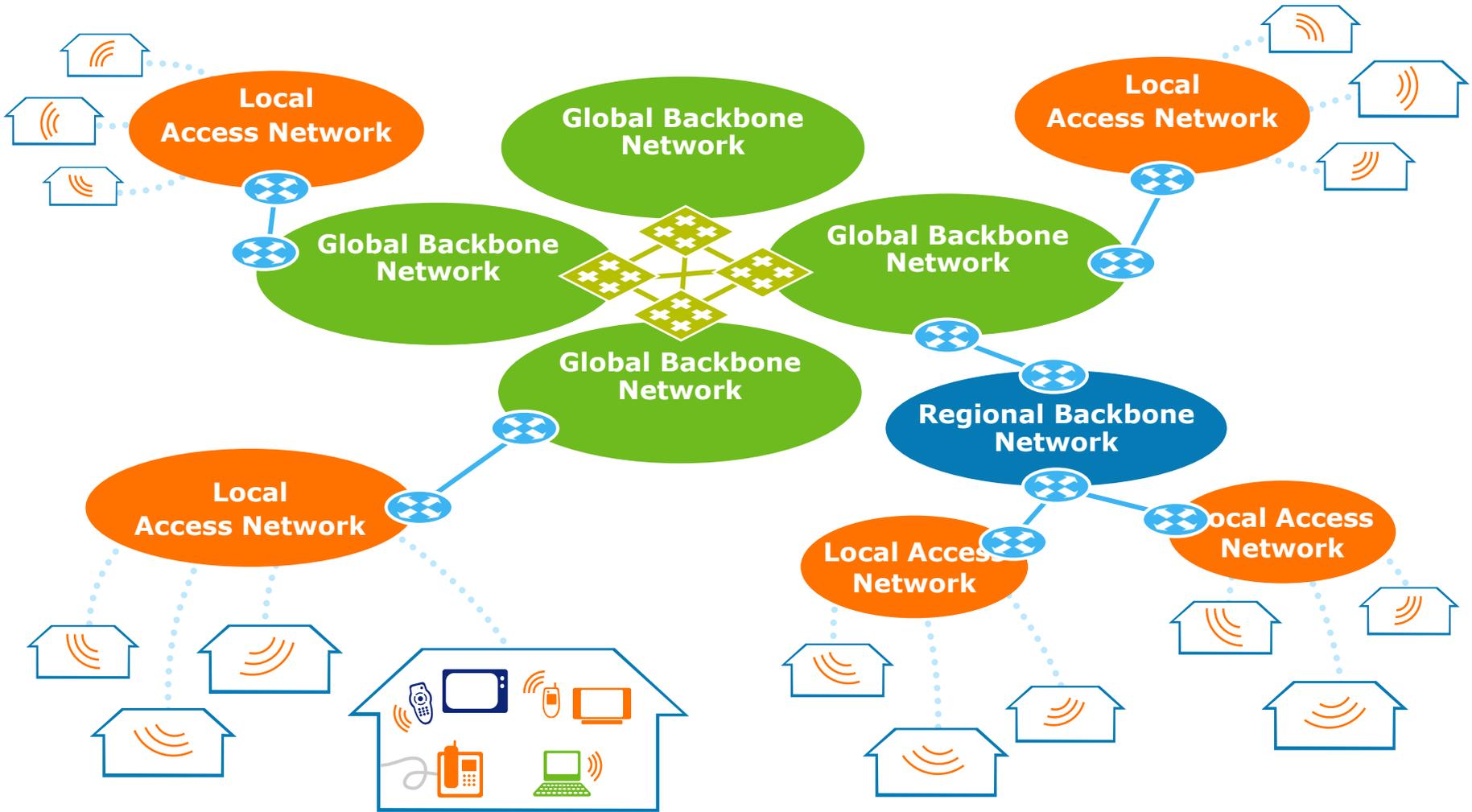
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The Internet as a Value Added Platform

How Consumers "See" the Internet

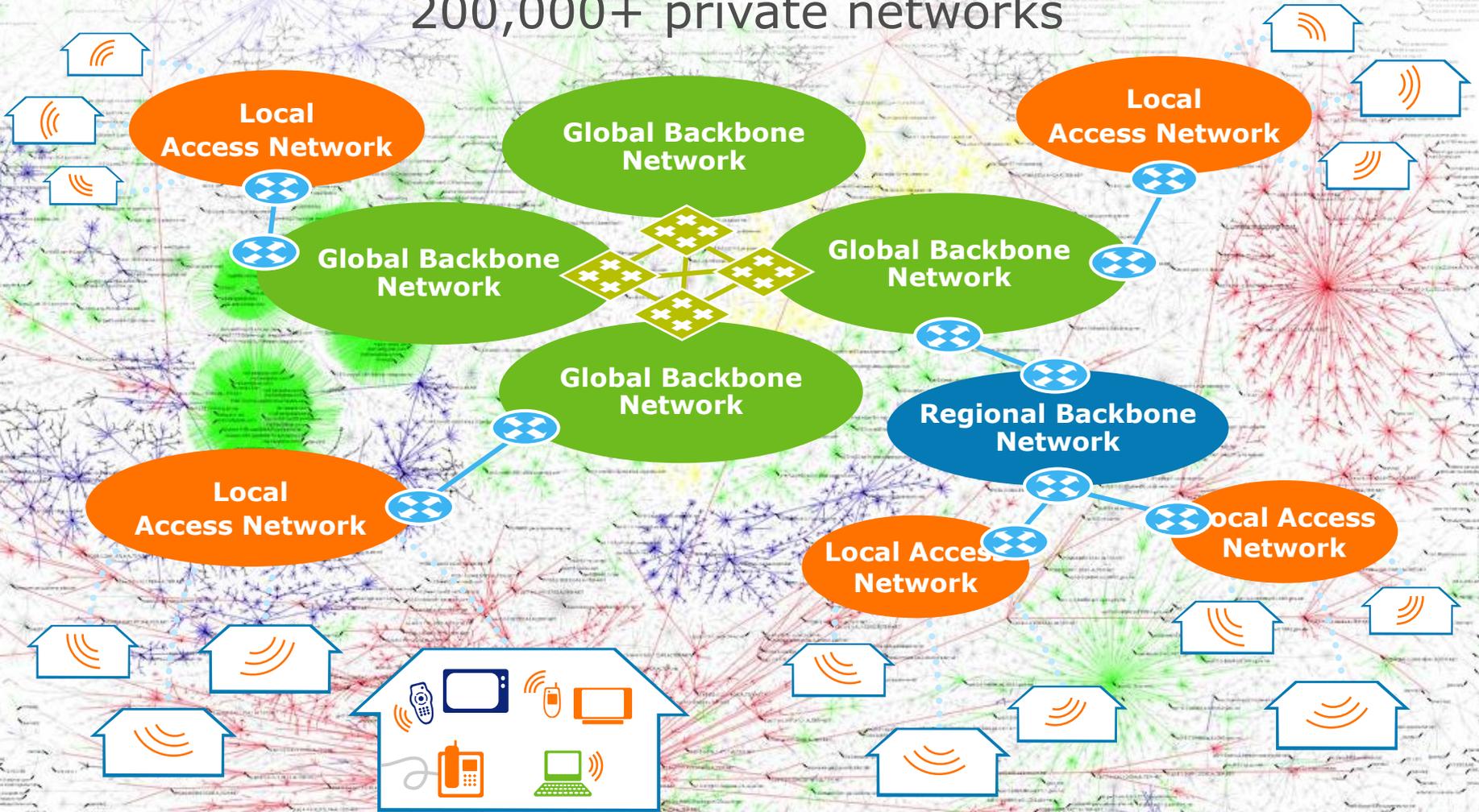


How the Internet Really Works



How the Internet Really Works

200,000+ private networks



Source: Lumeta

AT&T's IP Network is one of the 200,000+ Networks that Comprises the Internet

AT&T's Network by the Numbers.

- 9.81** Percentage of data transmitted across AT&T's network on an average business day. It is the equivalent of moving the entire contents of the Library of Congress every 19.84 minutes.
- 1** AT&T ranks among America's most innovative companies in the United States.
- 12.9 Million** AT&T's residential customers in the U.S.
- 540,000** AT&T's network routers that handle a lot of data and speed.
- \$6 Billion** Annual revenue from our core U.S. long-haul network design and implementation.
- 36** AT&T's network data centers around the world.
- 301,760** AT&T's employees worldwide.
- 97%** Percentage of the world's energy received by AT&T's network.
- 99.9998%** AT&T's network reliability.
- 49,000** Number of AT&T's business-to-business (B2B) providers in the U.S.
- 166** Number of United States cities where AT&T offers 3G wireless high-speed Internet access.
- 3 Million** AT&T's wireless business data subscribers.
- 160%** Increase in number of wireless data services provided by AT&T over the period from 2004 and 2006.
- 7** Nobel Prizes awarded for innovations developed at the AT&T Bell Labs.
- 2** Average number of new patent applications AT&T files every day.



World Internet by the Numbers.

- More than 320,000** Autonomous Systems (ASes) that form the Internet's routing fabric.
- 48 Million** Hosts on the Internet in 2006.
- 1.133 Billion** Internet users in 2006.
- 6.4 Million** New Internet users joining every month.
- 1.6 Billion** Email users in 2006.
- 40 Million** New 2MB files every year.
- 35,000** Web pages it takes to read the Internet's data structure after a year's maintenance (100 nodes).
- 100 Million** Twitter status updates every day.
- 161** Countries of non-electronic mail (no e-mail).
- 12 Million** Hosts of new files uploaded in 2006.
- 15 Million** Hosts of new files to be distributed worldwide in 2006.
- \$72.5 Billion** Annual spending in segments of network infrastructure in the United States in 2006.

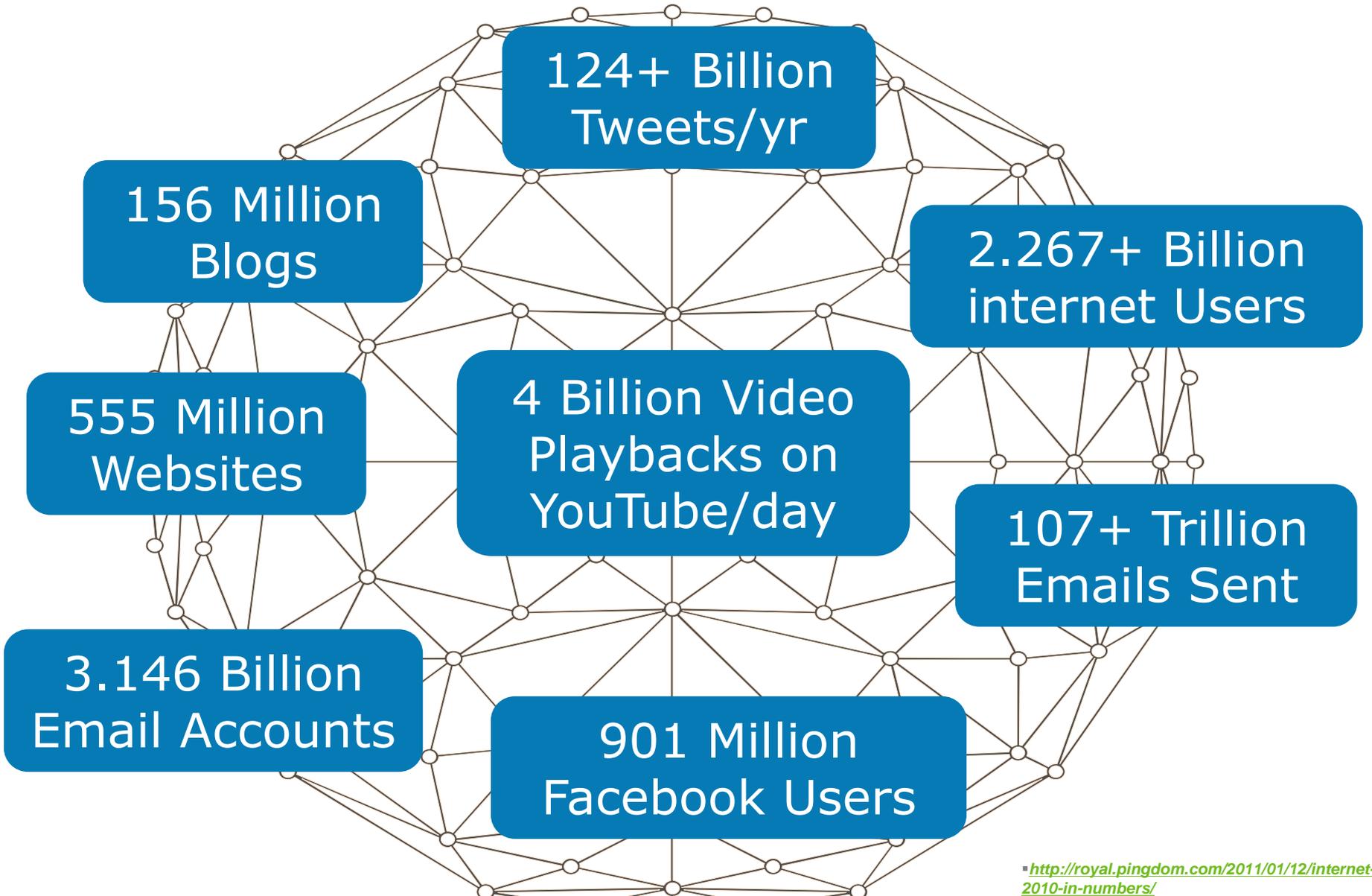


Where are We Today?

	2007	2010	2012	% increase
Electronic data generated this year (exabytes)	38	180	309	713%
Internet users (billions)	1	1.8	2.26	126%
YouTube daily downloads (millions)	100	2,000	4,000	3900%
Active Facebook Users (millions)	50	400	800	1500%
Tweets per Day (thousands)	5	50,000	250,000	50,000%

Source: Facebook.com, HubSpot.com, blog.twitter.com

The Online World Stats for 2012



<http://royal.pingdom.com/2011/01/12/internet-2010-in-numbers/>
<http://www.itu.int/ITU-D/ict/material/FactsFigures2010.pdf>

“Cutting the Cord” Wireless Substitution

As of 2010 nearly 30% of all U.S. households disconnected their landlines-- up from 25% the year before.

(Averaging 1% increase per quarter)

Households without landlines

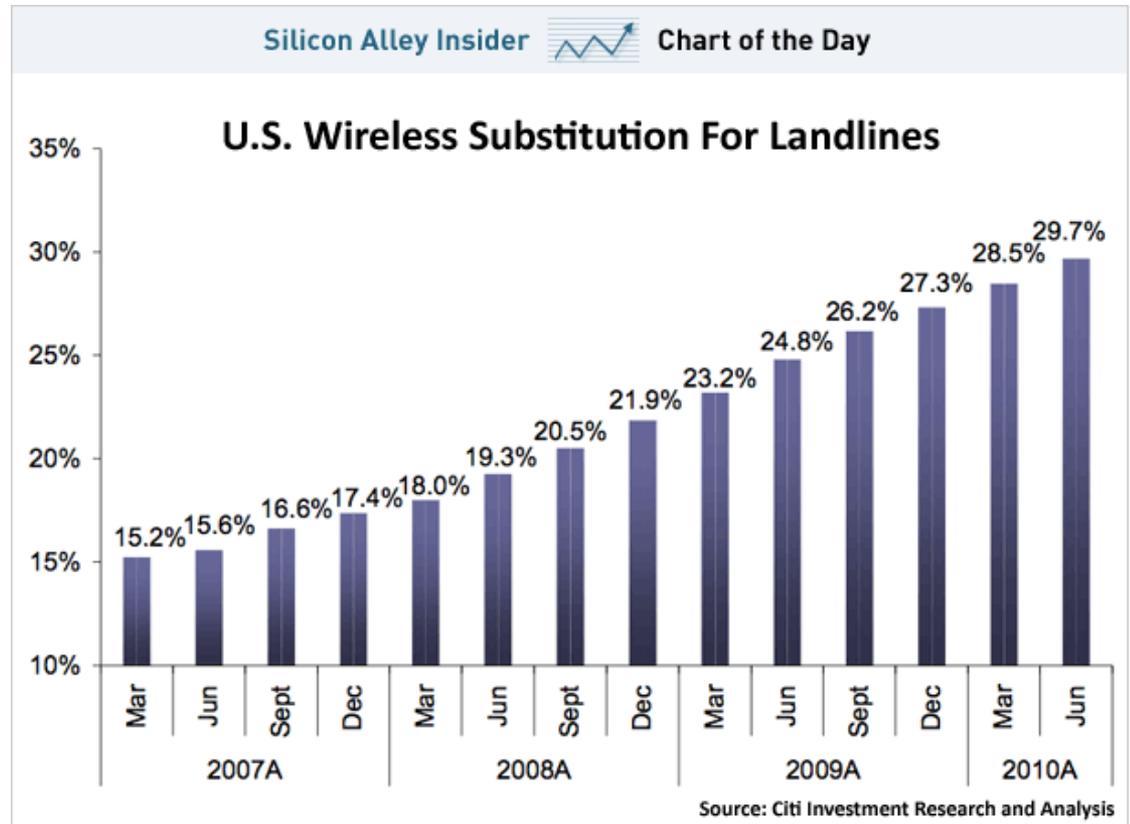
Percentage of U.S. adults and children living in homes that use cell phones as their primary home phone, July 2009-June 2010.

Florida:

27.3% (age 18 & older)

34.2% (under 18)

Source: National Center for Health Statistics



Worldwide Mobile Subscribers: 6 Billion 4Q2011

IN 2010:

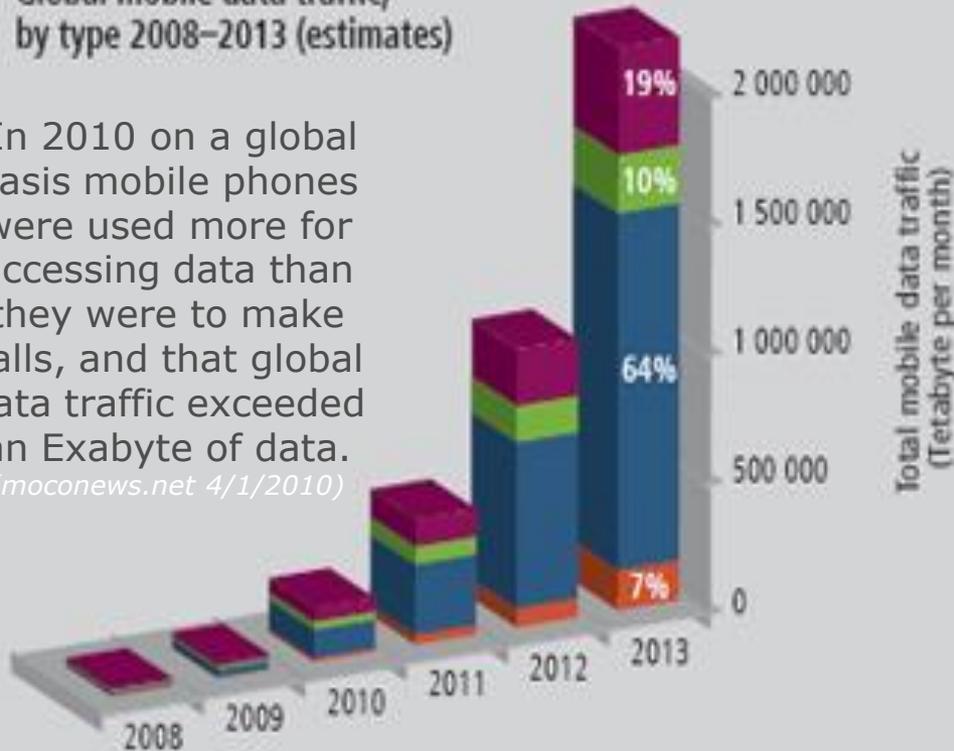
- Strategy Analysts predicted 5.8 billion by 2013
- 286 million mobile phones in US



Mobile Traffic Estimates: Video in High Demand

Global mobile data traffic, by type 2008–2013 (estimates)

In 2010 on a global basis mobile phones were used more for accessing data than they were to make calls, and that global data traffic exceeded an Exabyte of data. *(moconews.net 4/1/2010)*

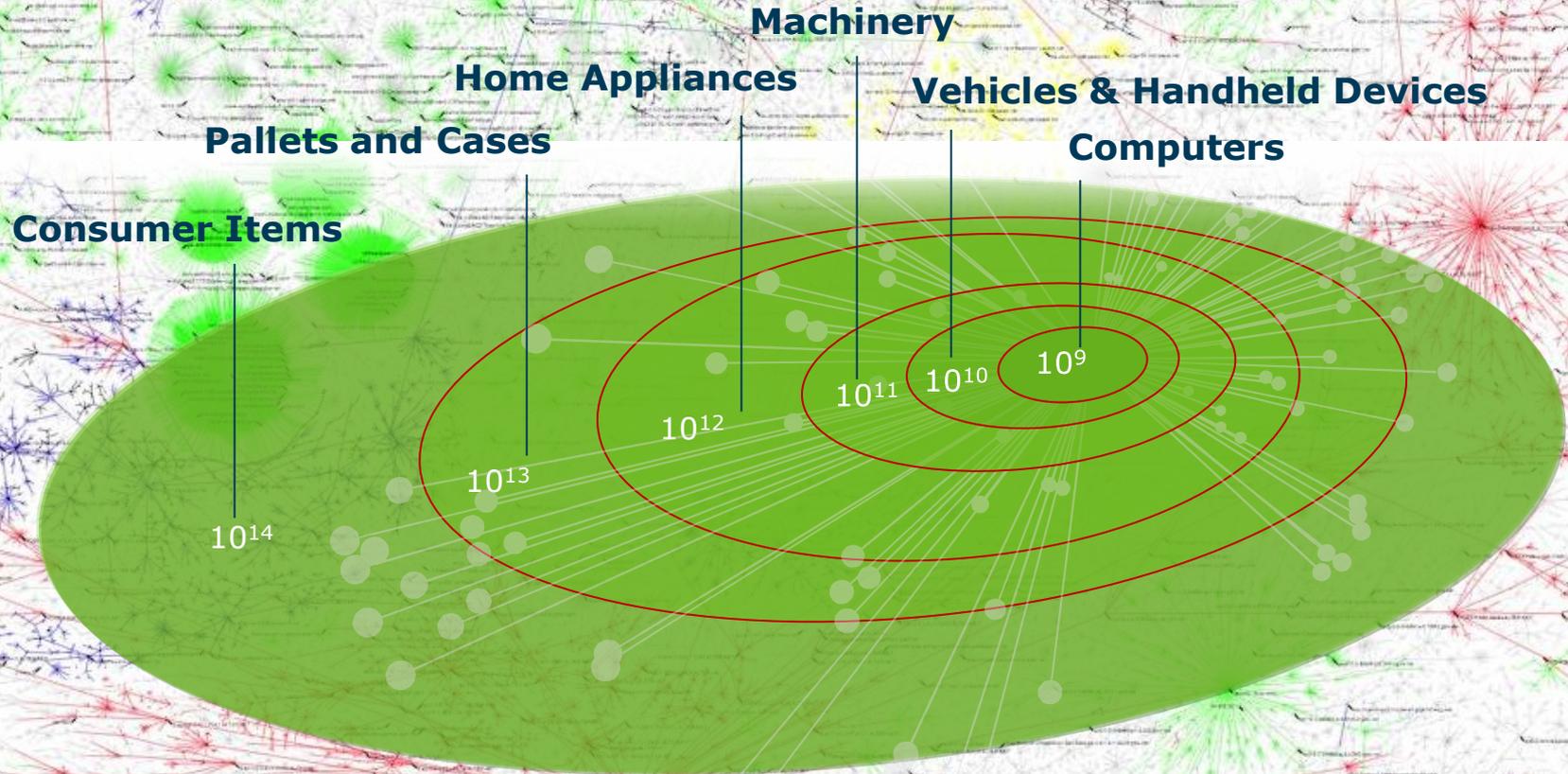


	2008–2013 (estimates) CAGR*
Total	131%
Data	112%
P2P	101%
Video	154%
Voice	112%

*CAGR: Compound annual growth rate

Source: Cisco, graph at: www.itu.int/net/itunews/issues/2010/06/35.aspx

The "Internet of Things": Machine to Machine (M2M)



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The Power of Convergence

What the Internet Does

Provides a value-added platform to deliver content & services at lower cost to consumers

Distributed Data

Distributed Text

Distributed Content:
www

Distributed Voice

Distributed Video



What the Internet Does

Provides a value-added platform to deliver content & services at lower cost to consumers

Distributed Data

Distributed Text

- E-mail
- Instant messaging
- Text messaging
- E-collaboration/
e-work
- Blogs

Distributed Content: WWW



Distributed Voice



Distributed Video



What the Internet Does

Provides a value-added platform to deliver content & services at lower cost to consumers

Distributed Data

Distributed Text

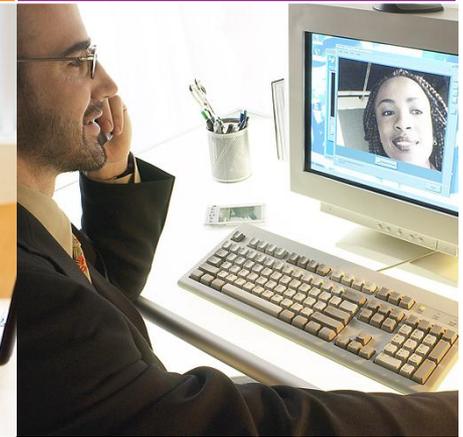
Distributed Content:
WWW

Distributed Voice

Distributed Video



- Music
- Software distribution
- Retail sales
- Public information
- Games
- Books
- Publishing



What the Internet Does

Provides a value-added platform to deliver content & services at lower cost to consumers

Distributed Data

Distributed Text

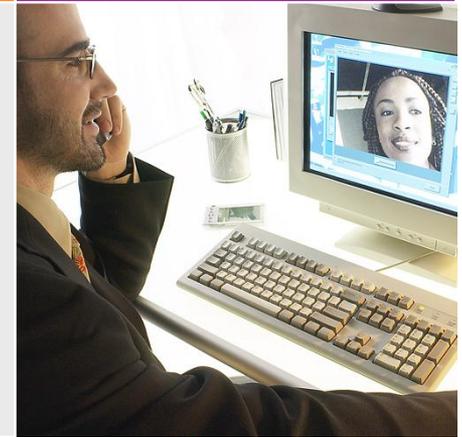
Distributed Content:
WWW

Distributed Voice

Distributed Video



- VoIP phone calling
- Chat
- Audio conferencing
- Answering services
- Record and send



What the Internet Does

Provides a value-added platform to deliver content & services at lower cost to consumers

Distributed Data

Distributed Text

Distributed Content:
WWW

Distributed Voice

Distributed Video



- Distance learning
- Medical consultation
- Remote monitoring for security & medical
- Video conferencing
- Video distribution

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The Power of Convergence

Five Major Technology Discontinuities Are Enabling Convergence



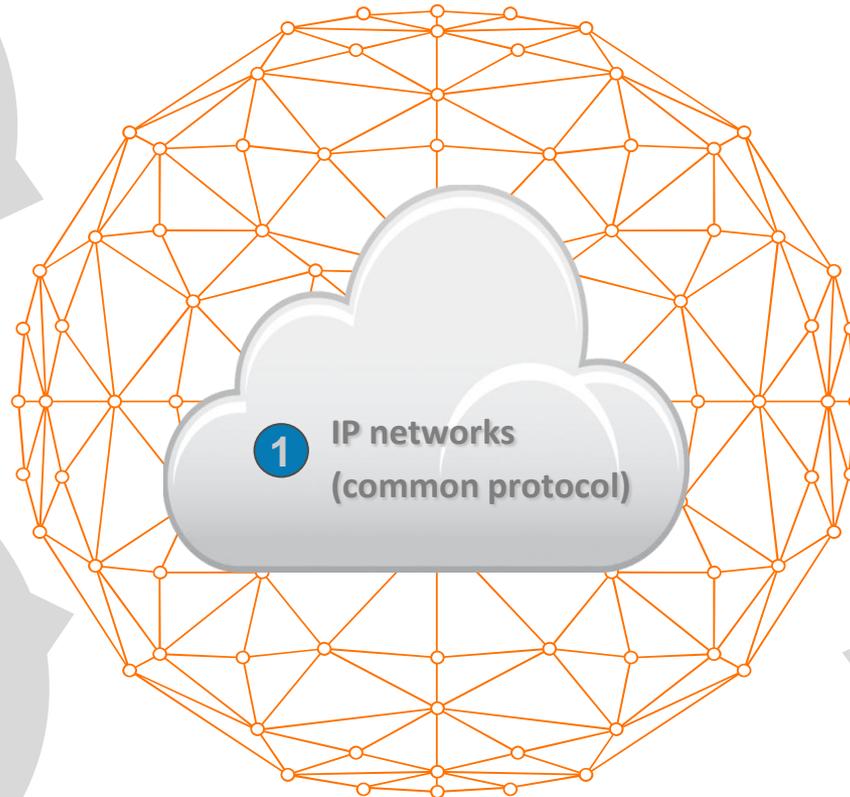
2 Broadband Everywhere



3 Ubiquitous Wireless

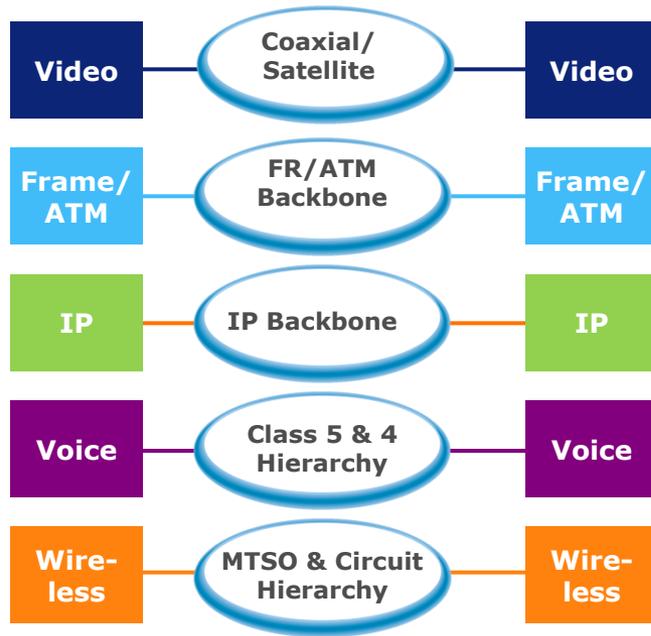


5 Delayed and Open Network and IT platforms



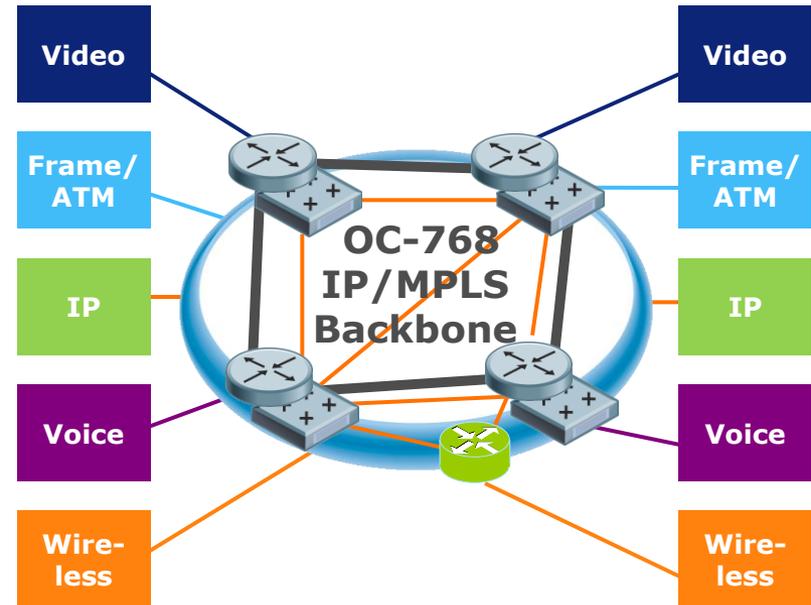
4 Multi-access Interactive devices

Network Convergence



The Past

Multiple backbones for each access technology or service



Today

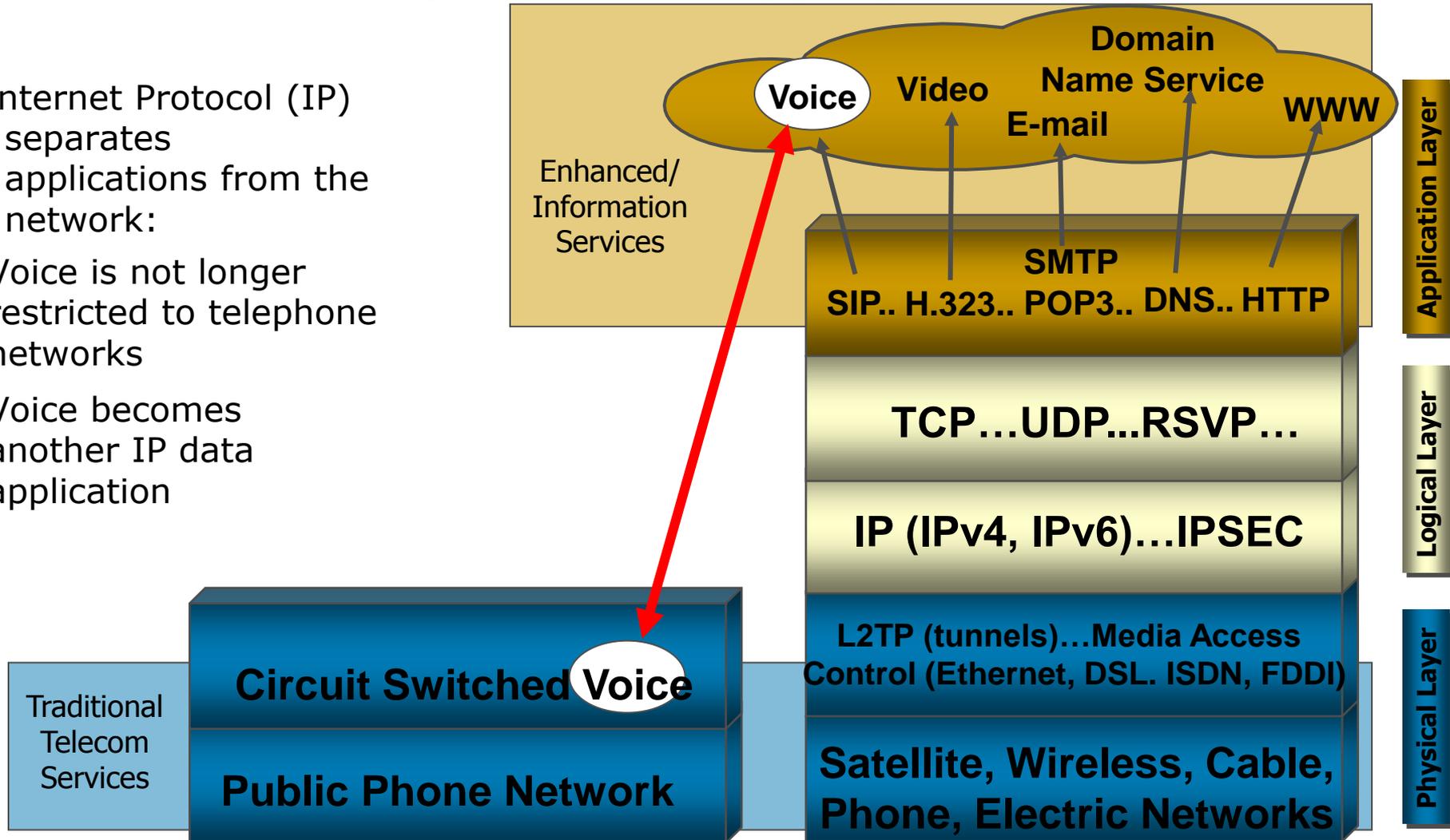
Multiple access technologies & services on one IP-based backbone

Voice Becomes Another Data Application On an IP Network

IP/Internet Applications

Internet Protocol (IP) separates applications from the network:

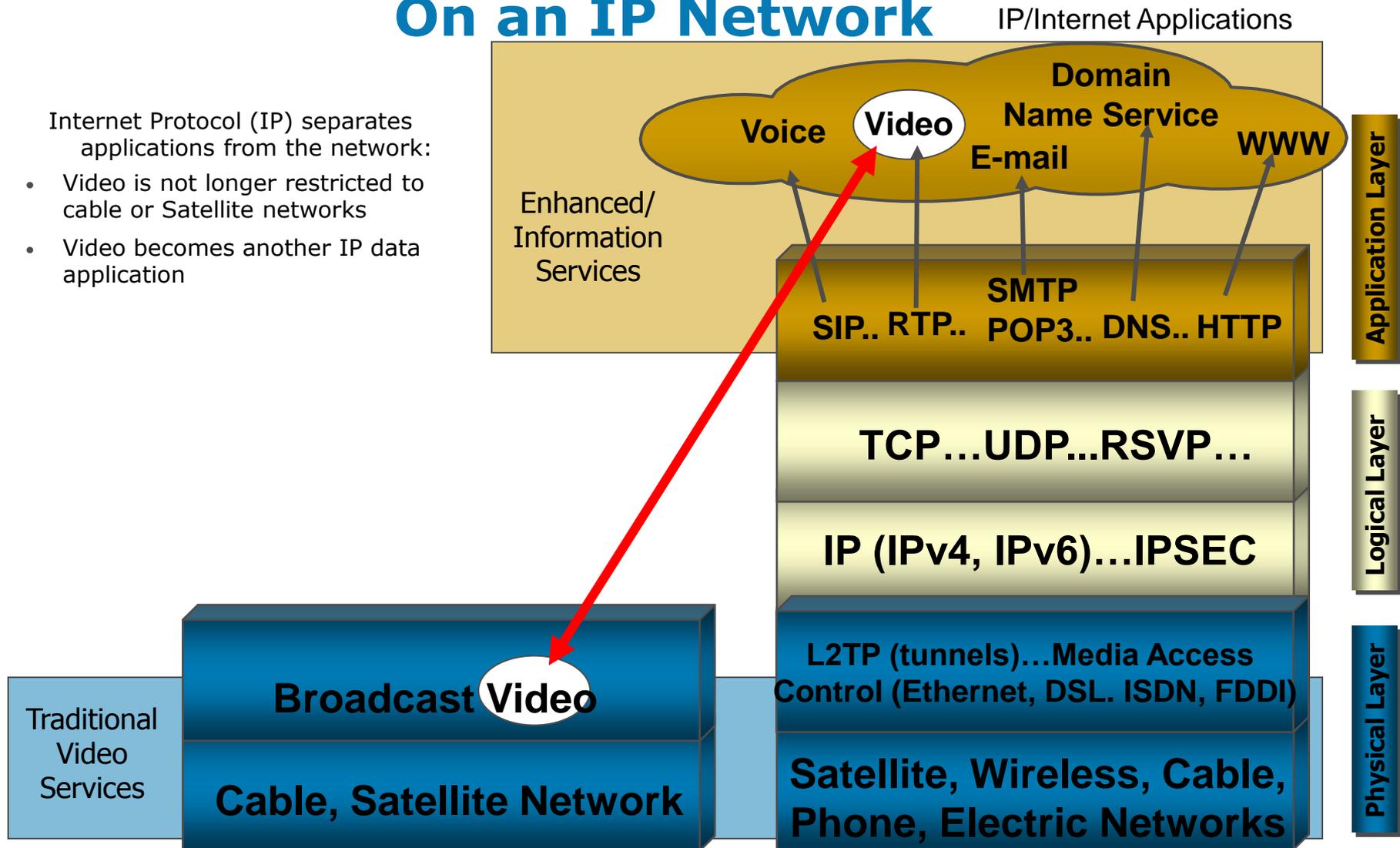
- Voice is not longer restricted to telephone networks
- Voice becomes another IP data application



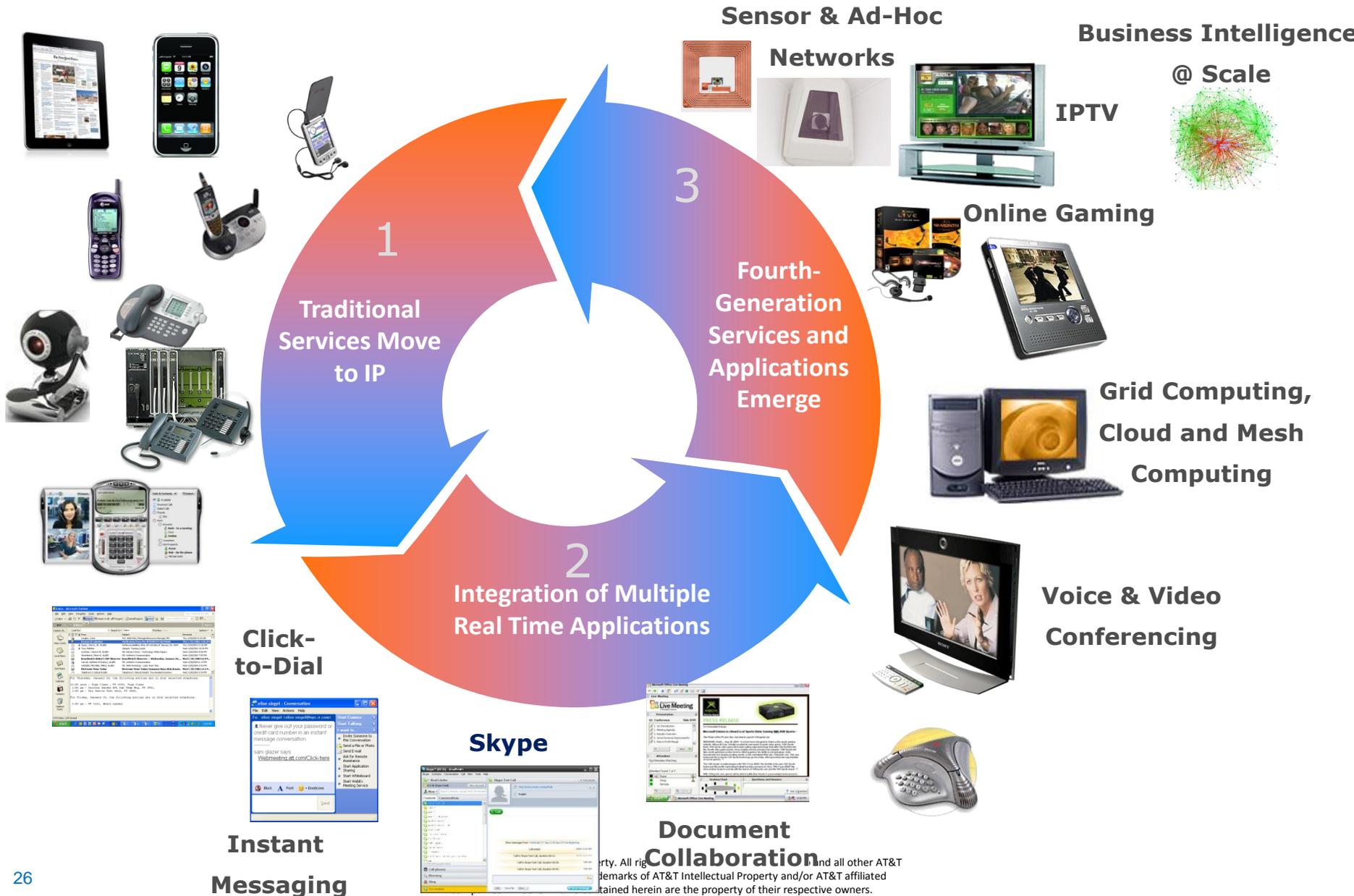
Video Becomes Another Data Application On an IP Network

Internet Protocol (IP) separates applications from the network:

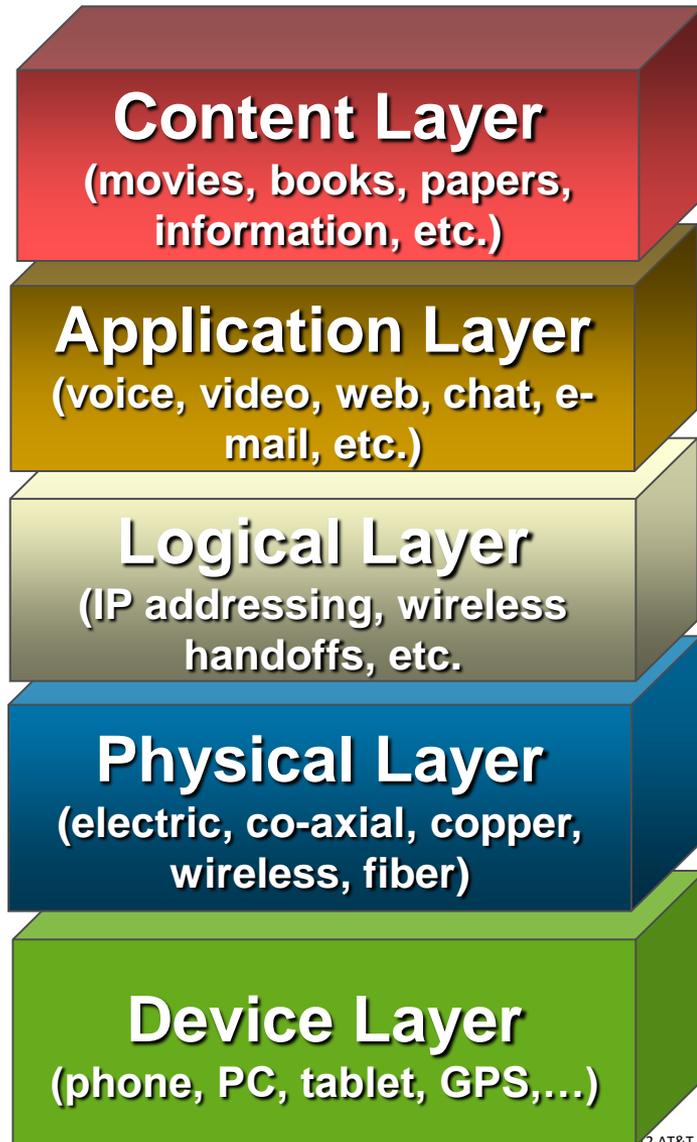
- Video is not longer restricted to cable or Satellite networks
- Video becomes another IP data application



Application/Service Convergence



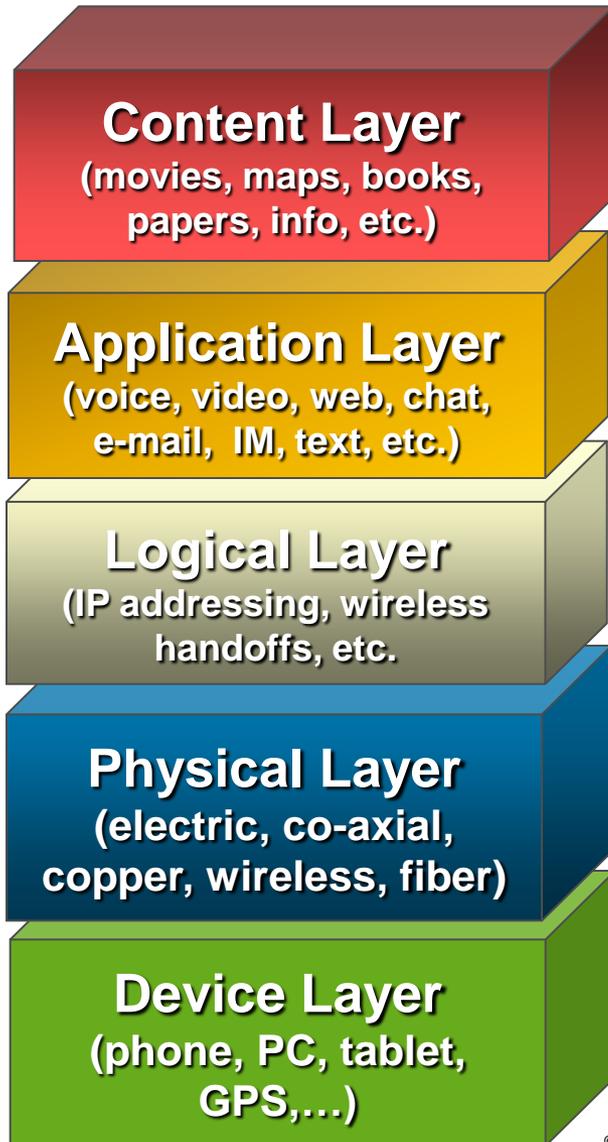
Delayed Network and IT Platform Enabled by Internet Protocol



IP operates in layers that allow applications to be separated from the infrastructure

- Enables multiple players to enter the market at different layers and compete, stimulating innovation
- The type of the network (electric, co-axial, copper, wireless, fiber) no longer dictates the application or services

Players can enter the Market at Different Levels to Compete, Stimulating Innovation

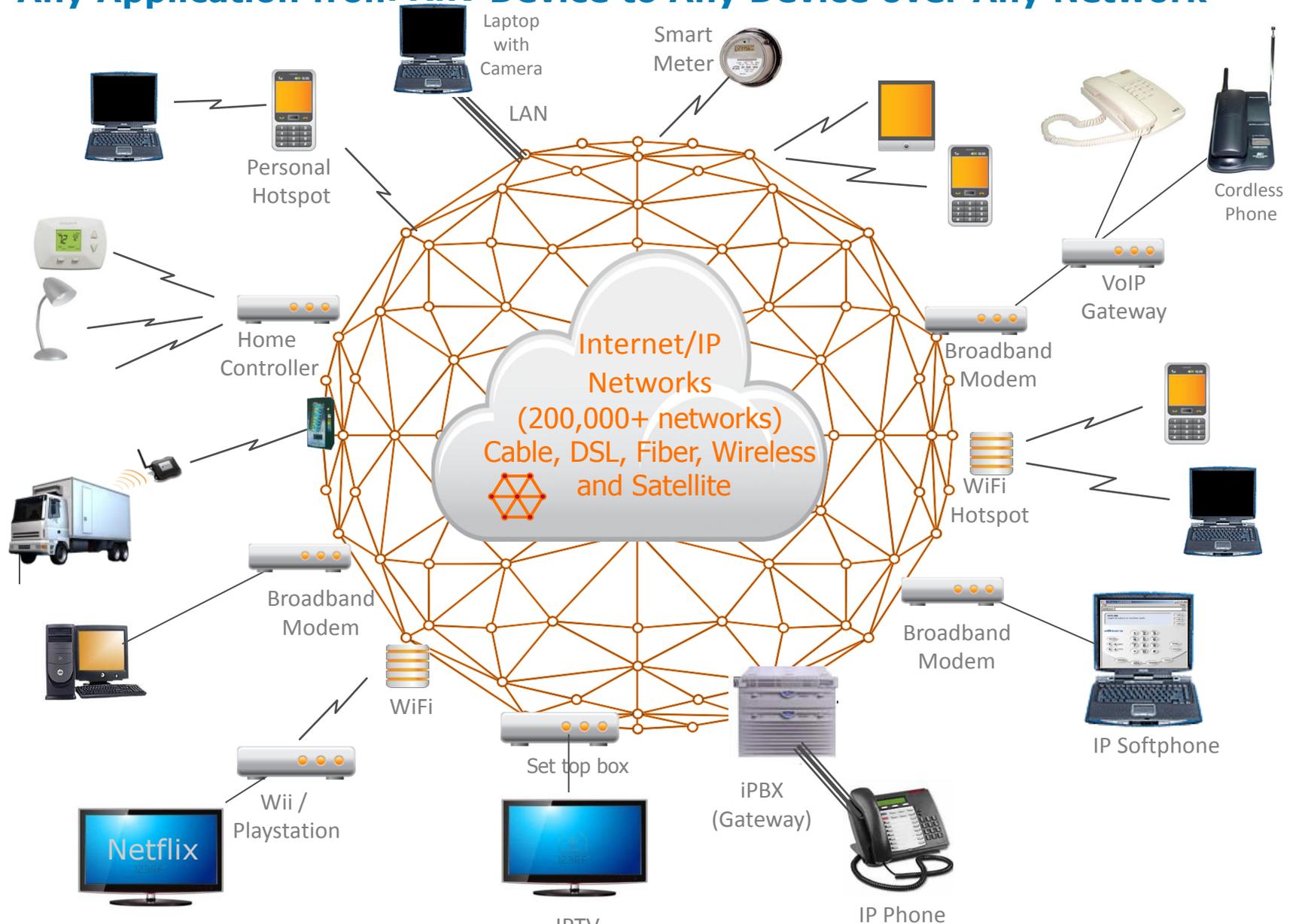


AT&T U-verse IPTV	Ooma VoIP	Garmin GPS	Amazon Kindle	Skype Video calling	Apple iPad
AT&T / content owners	Ooma/ Phone Number Administration	Garmin / map, TMC traffic providers	Amazon / content owners		Apple / content owners
AT&T/ Partners	Ooma	Garmin	Amazon	Skype	Apple/ 100,000s application providers
AT&T/ Partners	Cable & DSL	Satellite & FM radio	Amazon / Global 3G providers	Cable & DSL, Wireless	Apple / AT&T 3G or broadband wifi
AT&T	Cable & DSL	Satellite & FM radio	Amazon / Global 3G providers	Cable & DSL, Wireless	Apple / Global 3G providers or wifi
AT&T / Set top box mfg	Ooma/ VoIP box mfg	Garmin GPS	Kindle, PC, MAC, iPhone, Blackberry, iPad, Android	PCs, MAC, camera, cell phone mfrs	Apple iPad

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Realization of the Vision:

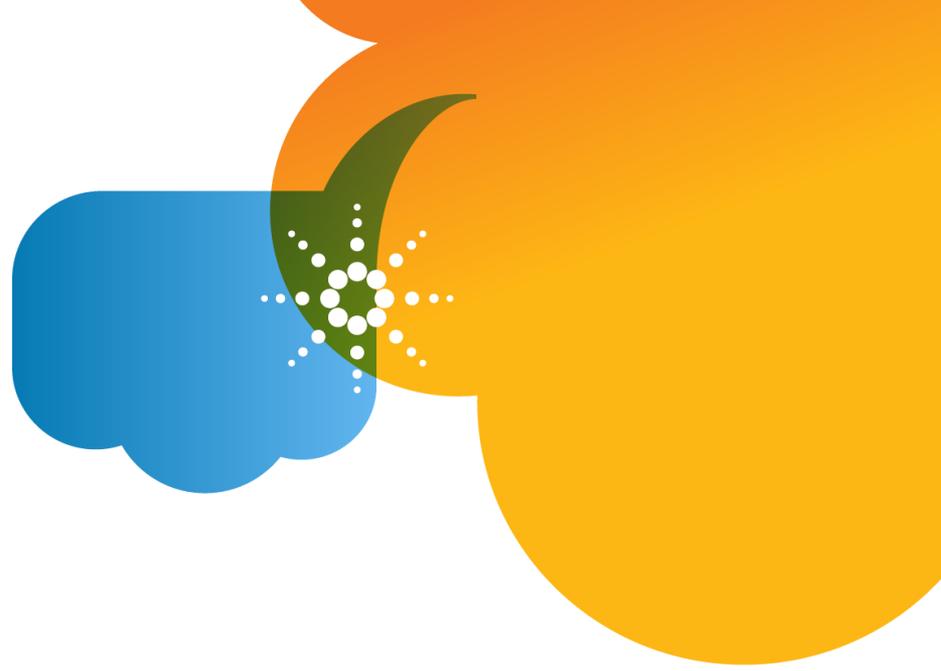
Any Application from Any Device to Any Device over Any Network



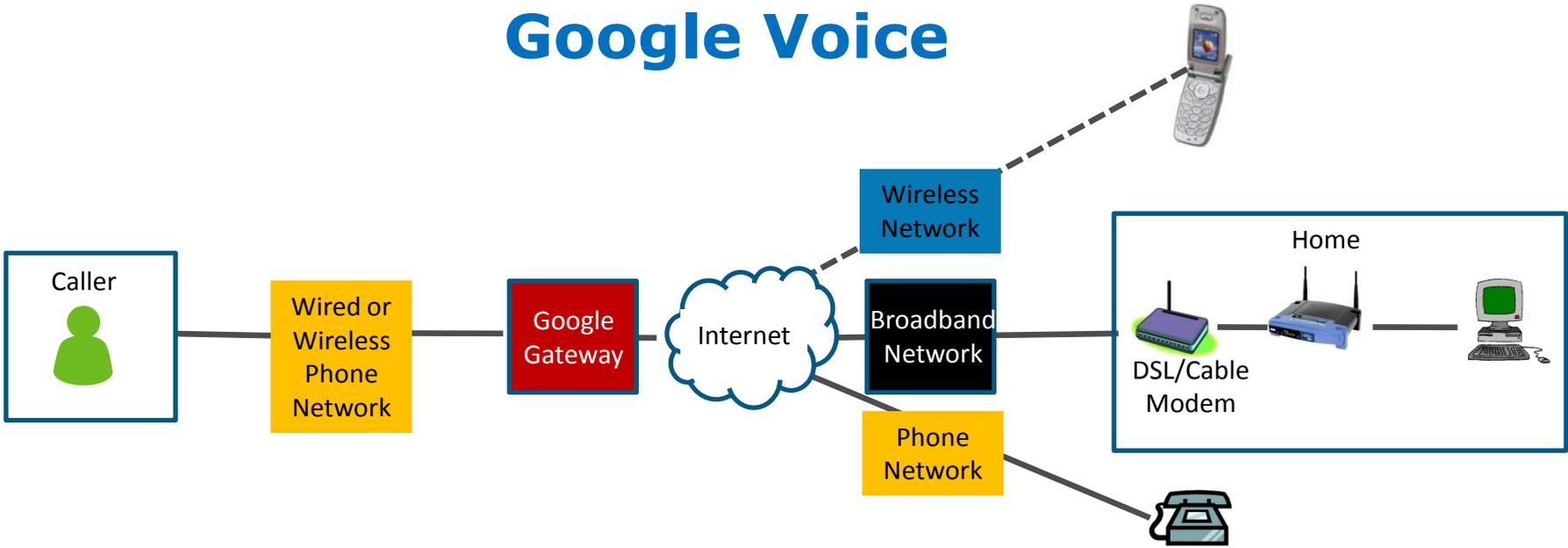


Service Comparison Discussions

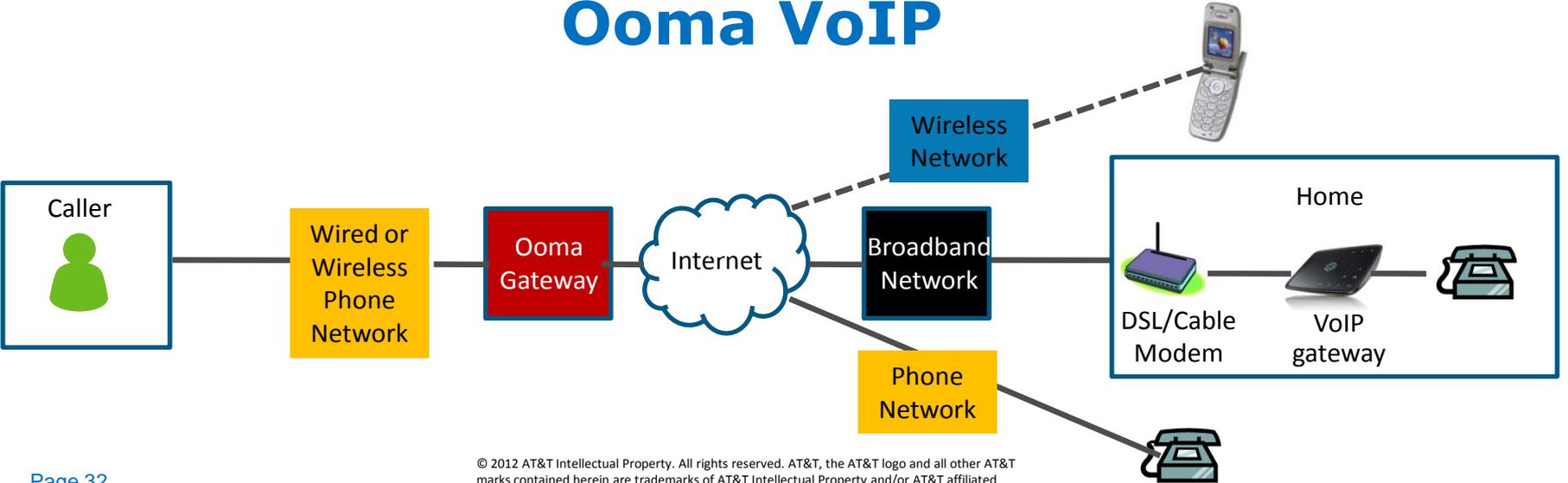
Voice over IP



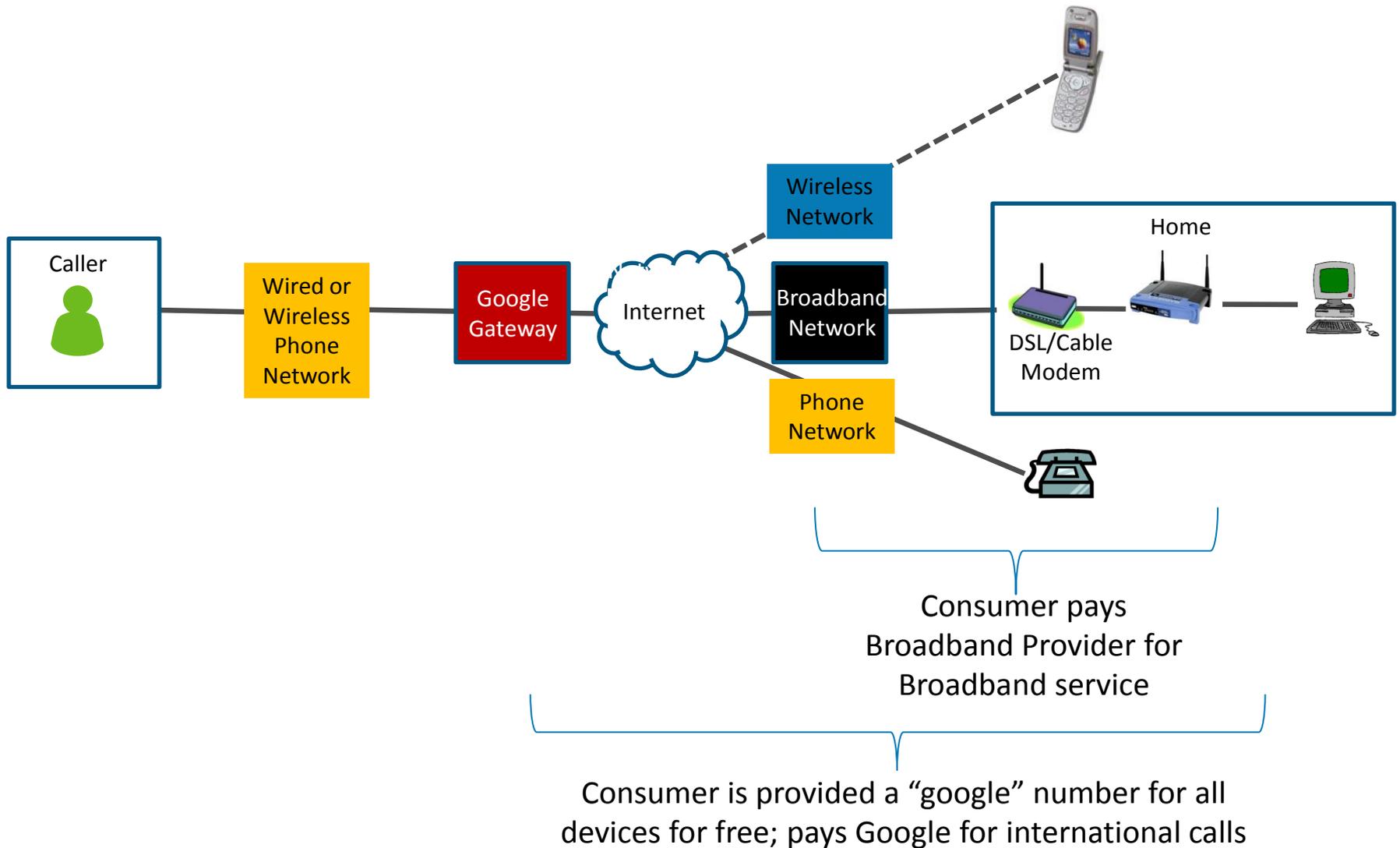
Google Voice



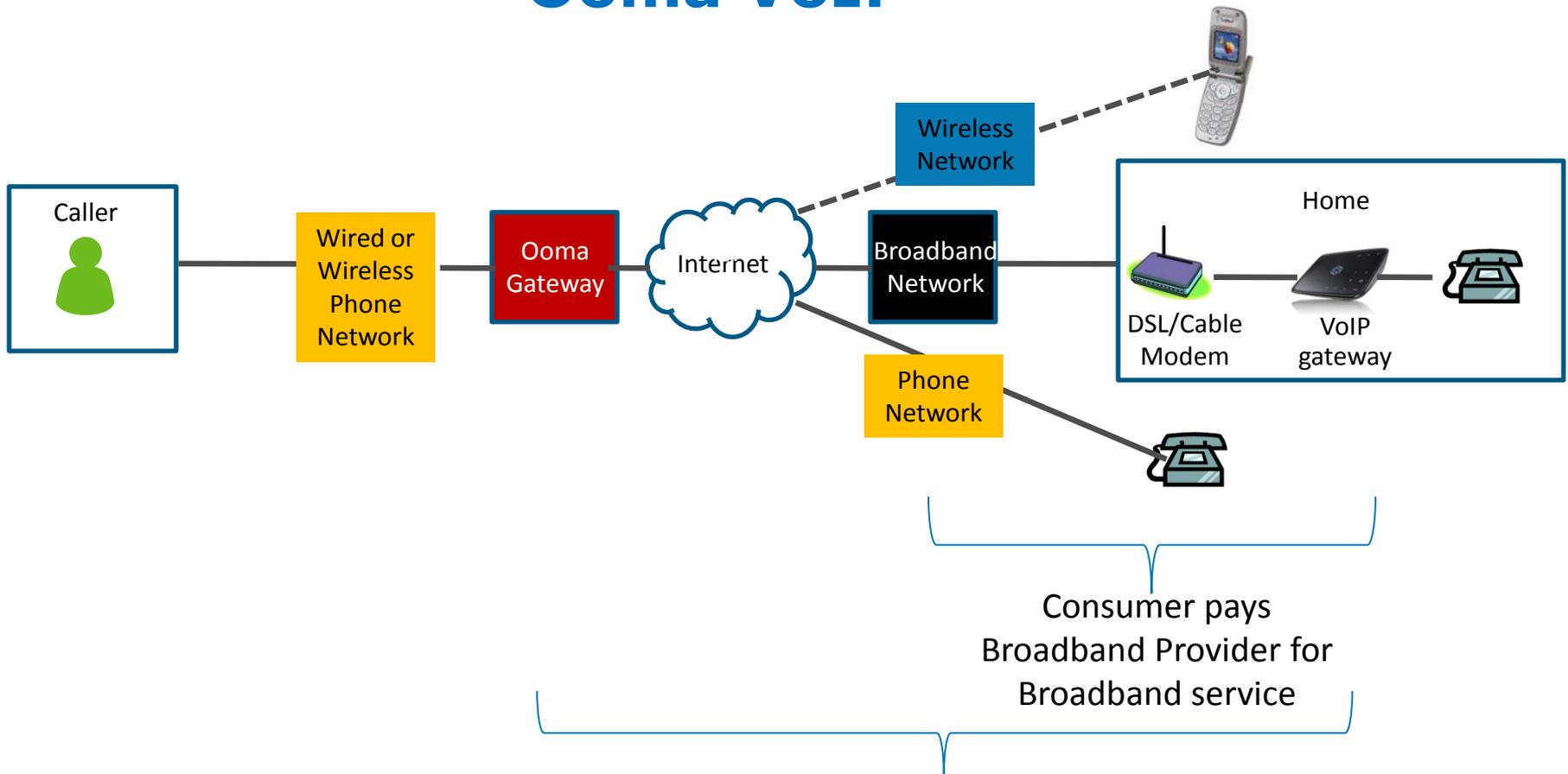
Ooma VoIP



Google Voice



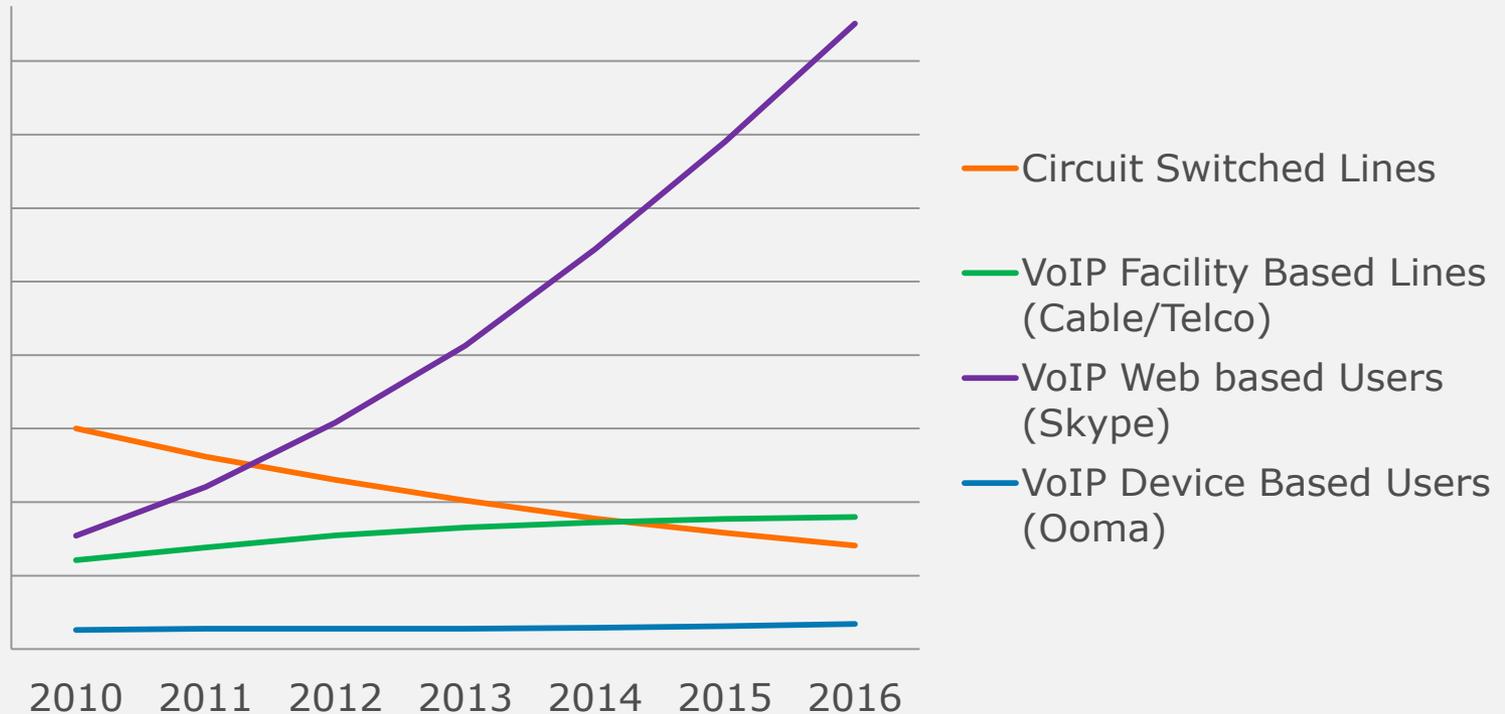
Ooma VoIP



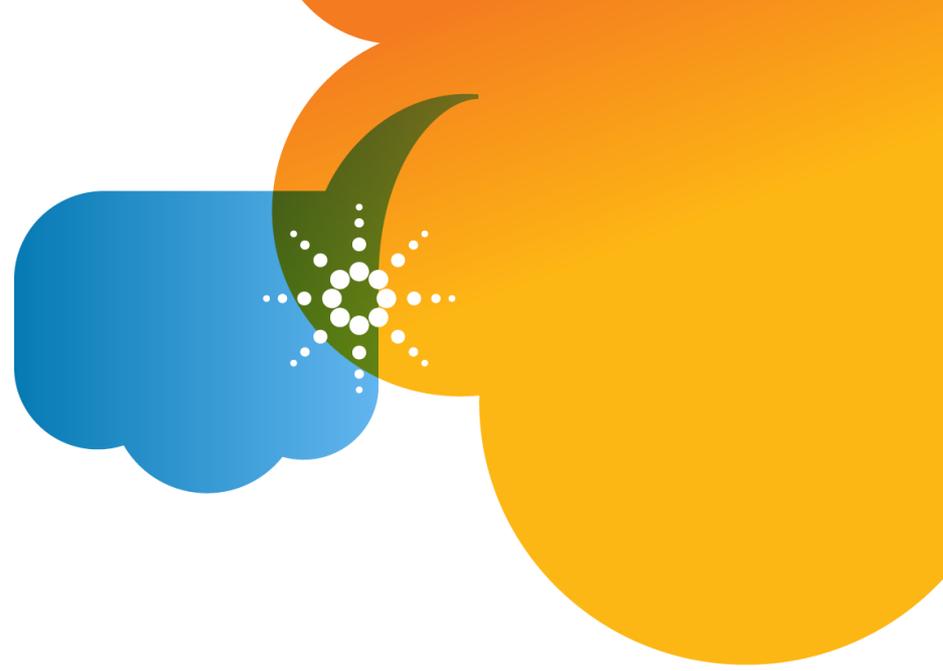
Consumer pays Ooma for (a) device with unlimited US local and LD calling, (b) optional monthly subscription fee for advanced phone features (c) optional rate plan for international calling

U.S. Voice Communications Trend

U.S. Service Provider Voice Lines / Active Users

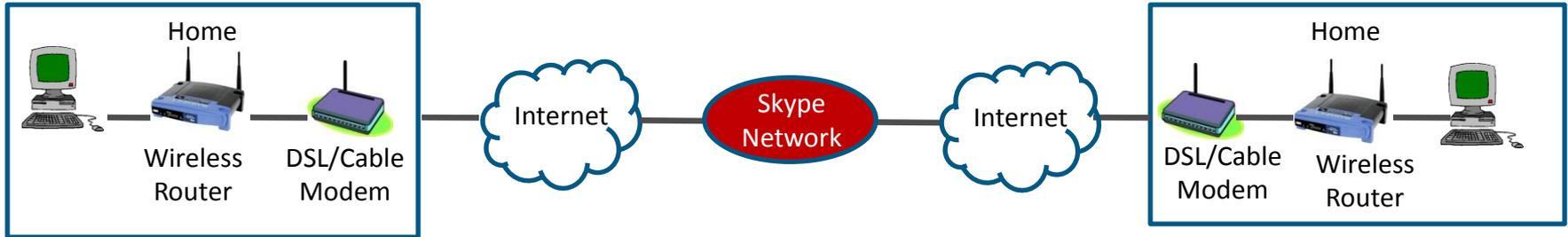


Source: IDC U.S. Voice Communications 2012 – 2016 Forecast © 2012 IDC

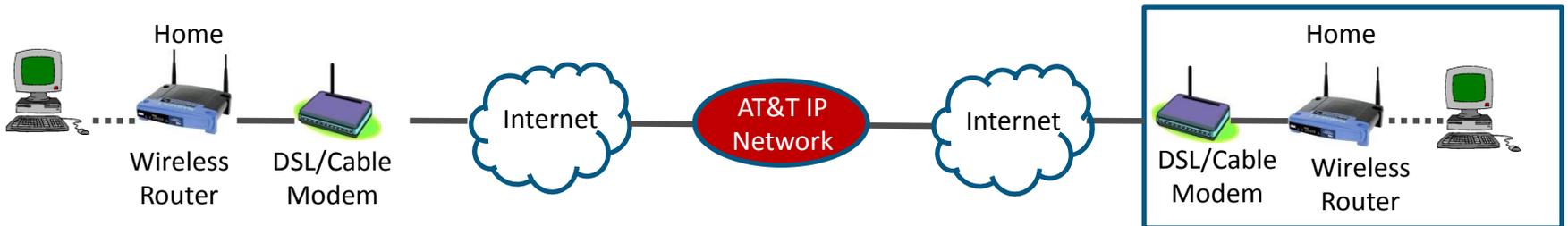


Video Calling / Conferencing using IP

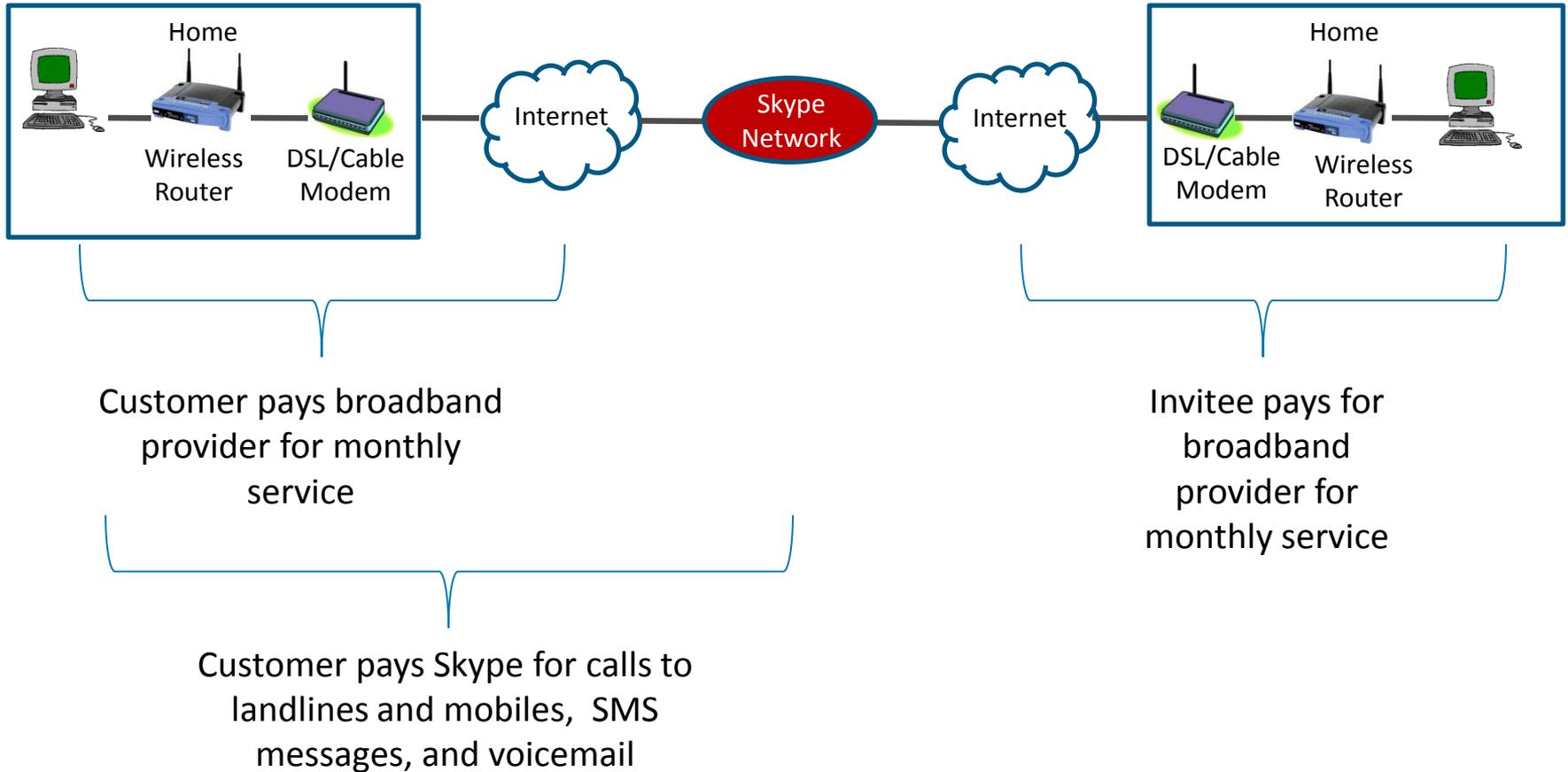
Skype



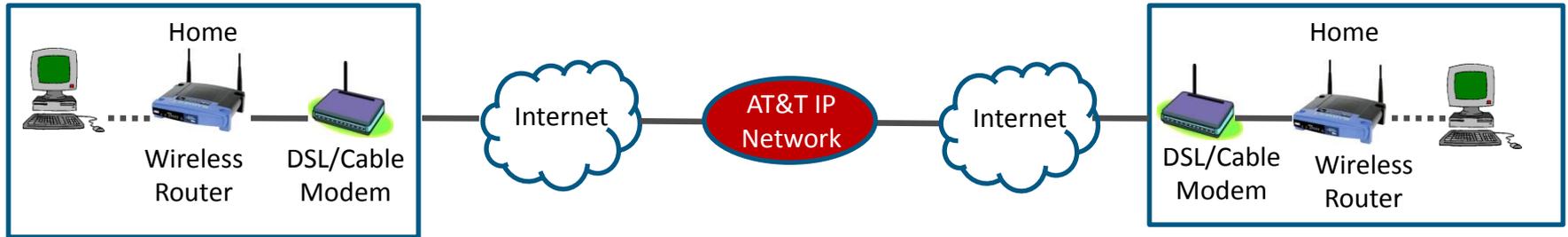
AT&T Connect



Skype



AT&T Connect



Teleworker pays
broadband provider for
monthly service

Invitee pays for
broadband
provider for
monthly service

Teleworker's company pays AT&T a
monthly invoice based on contracted
rates; have the option to have audio
portion via phone

Skype Statistics

Total number of Skype users as of Jan. 2012	31 million
Average time spent on a Skype conversation	27 minutes
Number of time that active Skype users spend on Skype per month	100 minutes
Total percentage of small businesses that use Skype as primary communication service	35%
Number Skype enabled television sets	50 million
Number of iphone Skype downloads in 2010	7 million
Number of people who have ever used Skype	560 million
Total percentage of Skype calls that are video to video	40%
Average spent yearly by a paying Skype user	\$96
Skype revenue in 2010	\$406.2 million
Number of monthly log-ins to Skype	124 million
Number of monthly paying Skype users	8.1 million
Amount of money spent by Microsoft to acquire Skype	\$8.5 billion

Source: <http://statisticbrain.com/skype-statistics/>

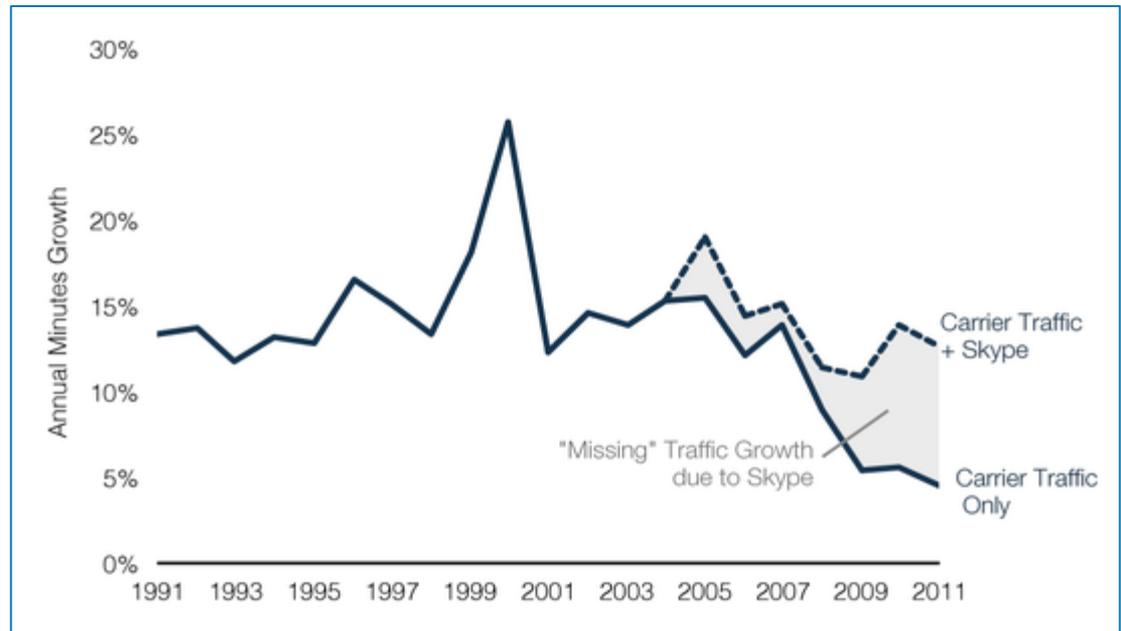
Date Verified: 3.28.2012

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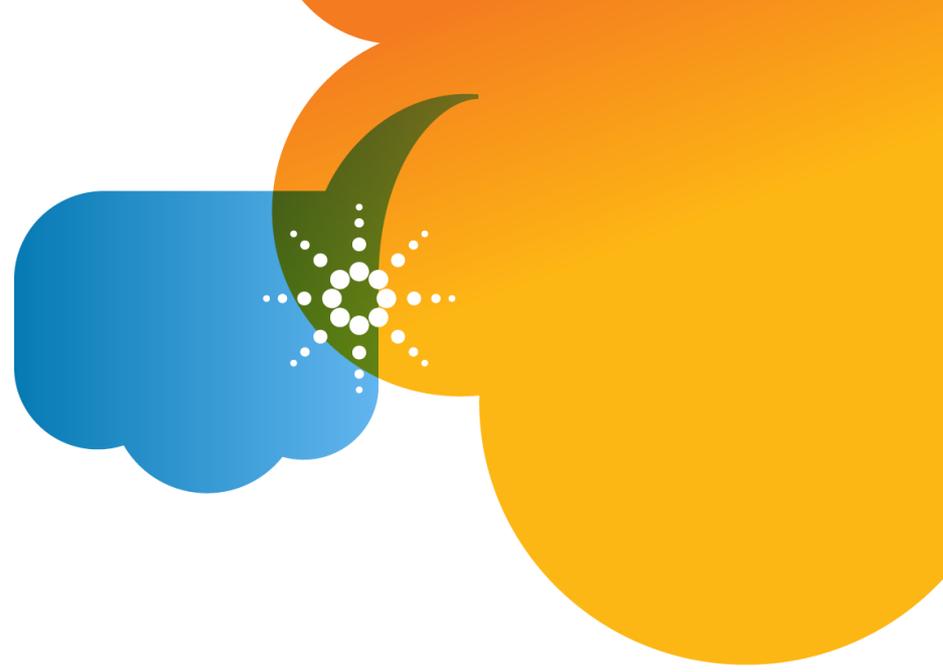
Skype

TeleGeography estimates that cross-border Skype-to-Skype calls (including video calls) grew 48 percent in 2011, **to 145 billion minutes.**

TeleGeography estimates that Skype added 47 billion minutes of international traffic in 2011—more than twice as much as all the telephone companies in the world, combined.

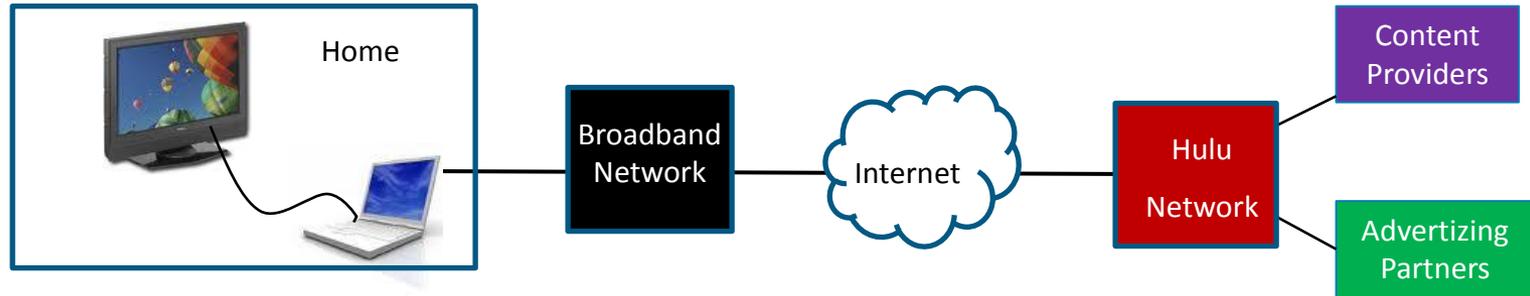


Source: http://www.telegeography.com/mail/tg_press_2011.html

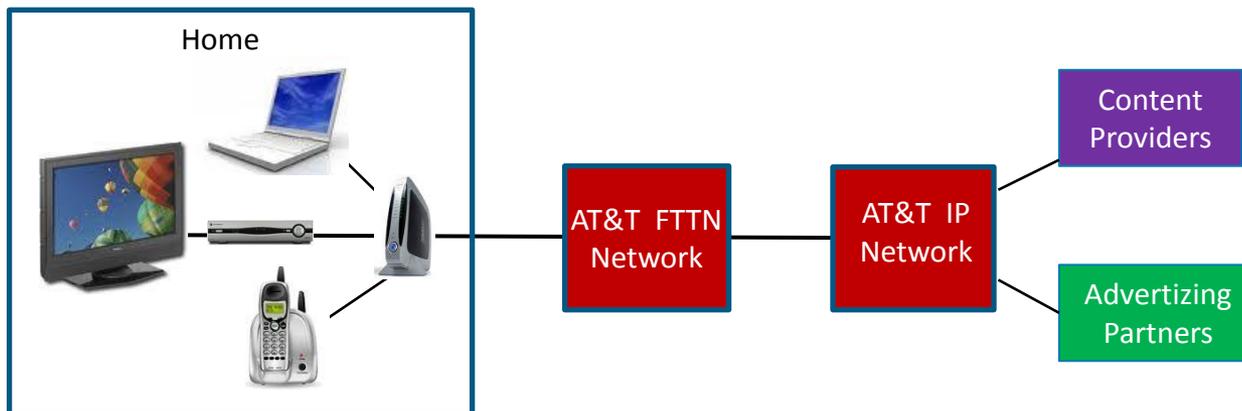


IP Television

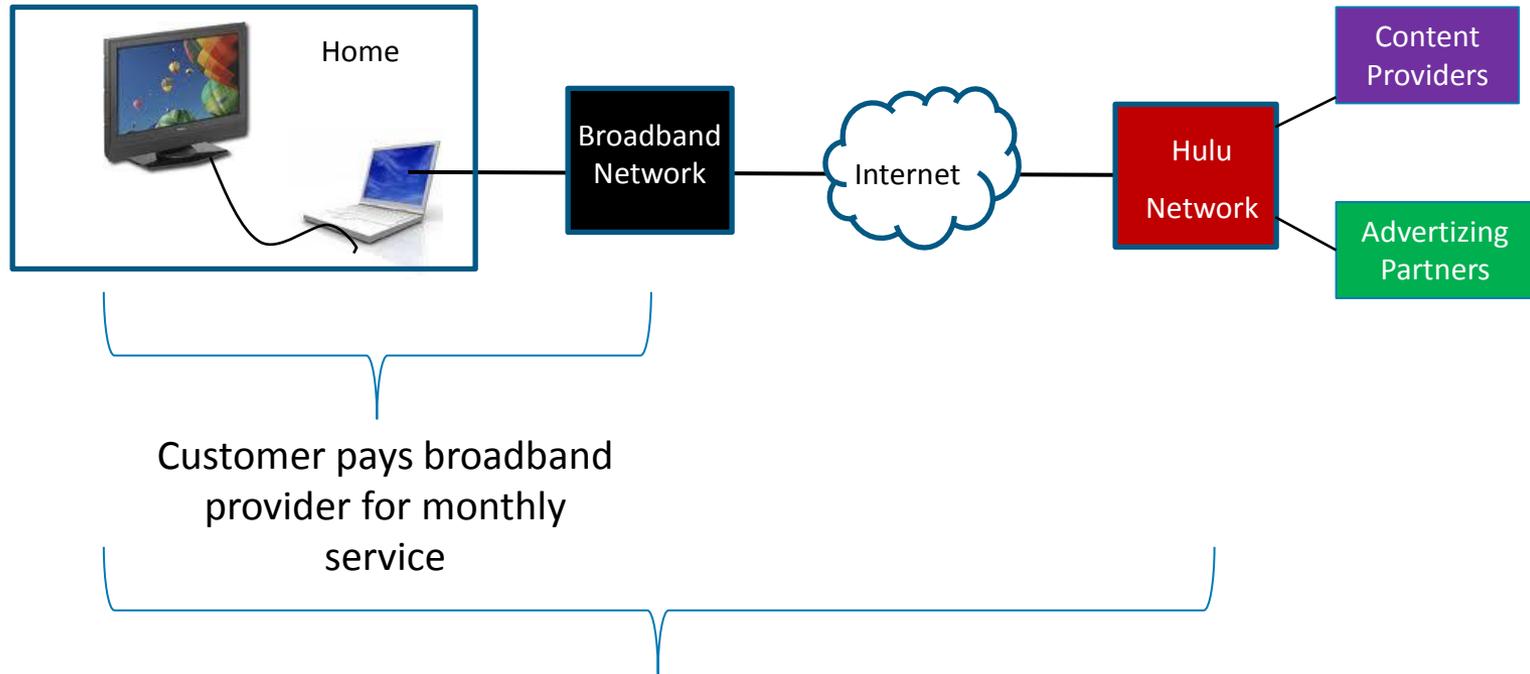
Hulu IP Video



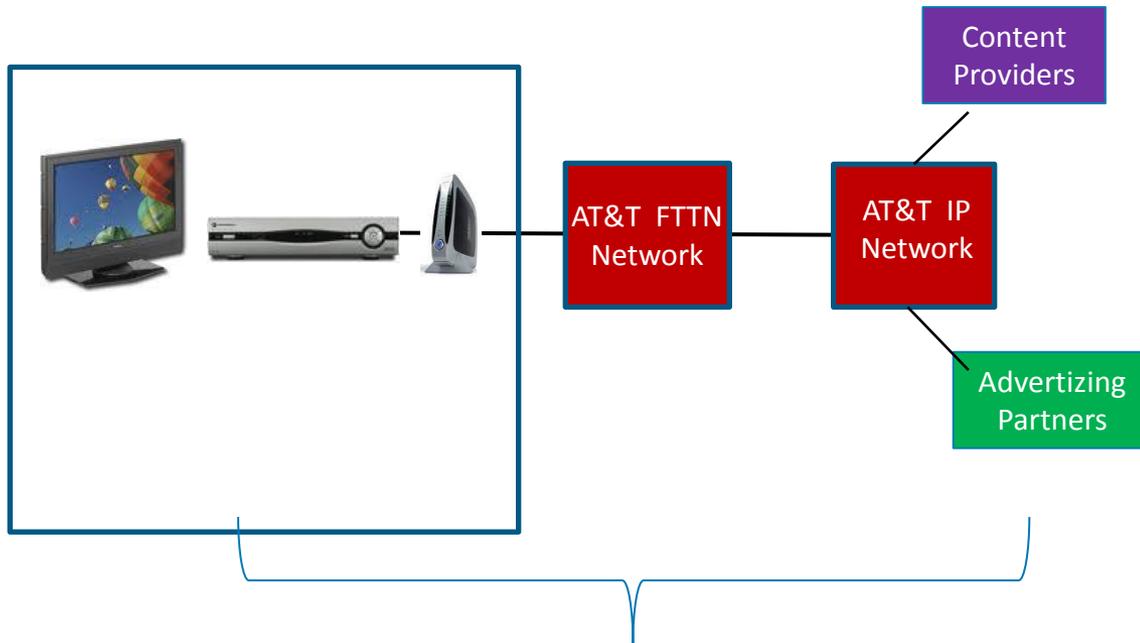
AT&T U-verse IPTV



Hulu IP Video



AT&T U-verse IPTV



Customer pays AT&T for monthly TV & broadband;
VoIP phone optional

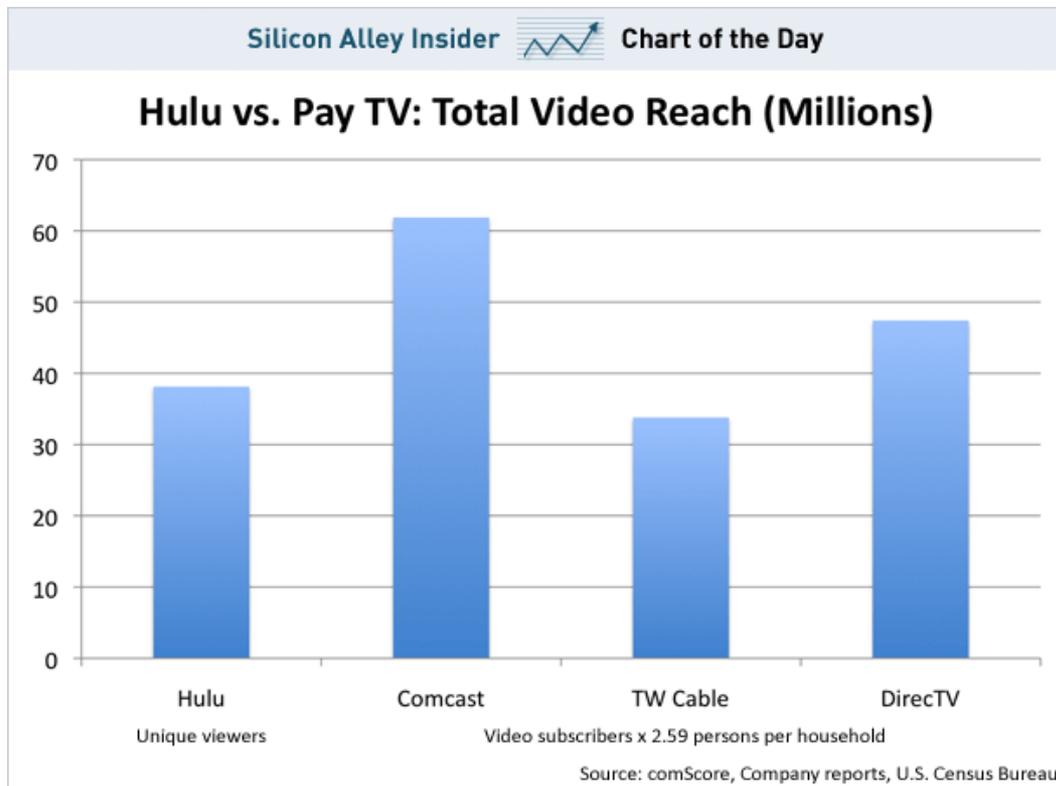
In August of 2009, Hulu had More Viewers than Time Warner Cable

Pascal-Emmanuel Gobry
October 06, 2011

Hulu Plus is very successful, writes Hulu CEO Jason Kilar. It has now 1 million paying subscribers, and Kilar believes it will soon bring in half of Hulu's revenue.

Apple, Hulu Reach Collaborative Agreement July 31, 2012

(NASDAQ:AAPL) Apple and Hulu reached an agreement without much fanfare Tuesday, as Hulu began its Hulu Plus streaming service on Apple TV boxes. Hulu joins several other third-party providers – like the NBA, NHL and MLB.TV, among others – to offer its streaming service to Apple TV users.

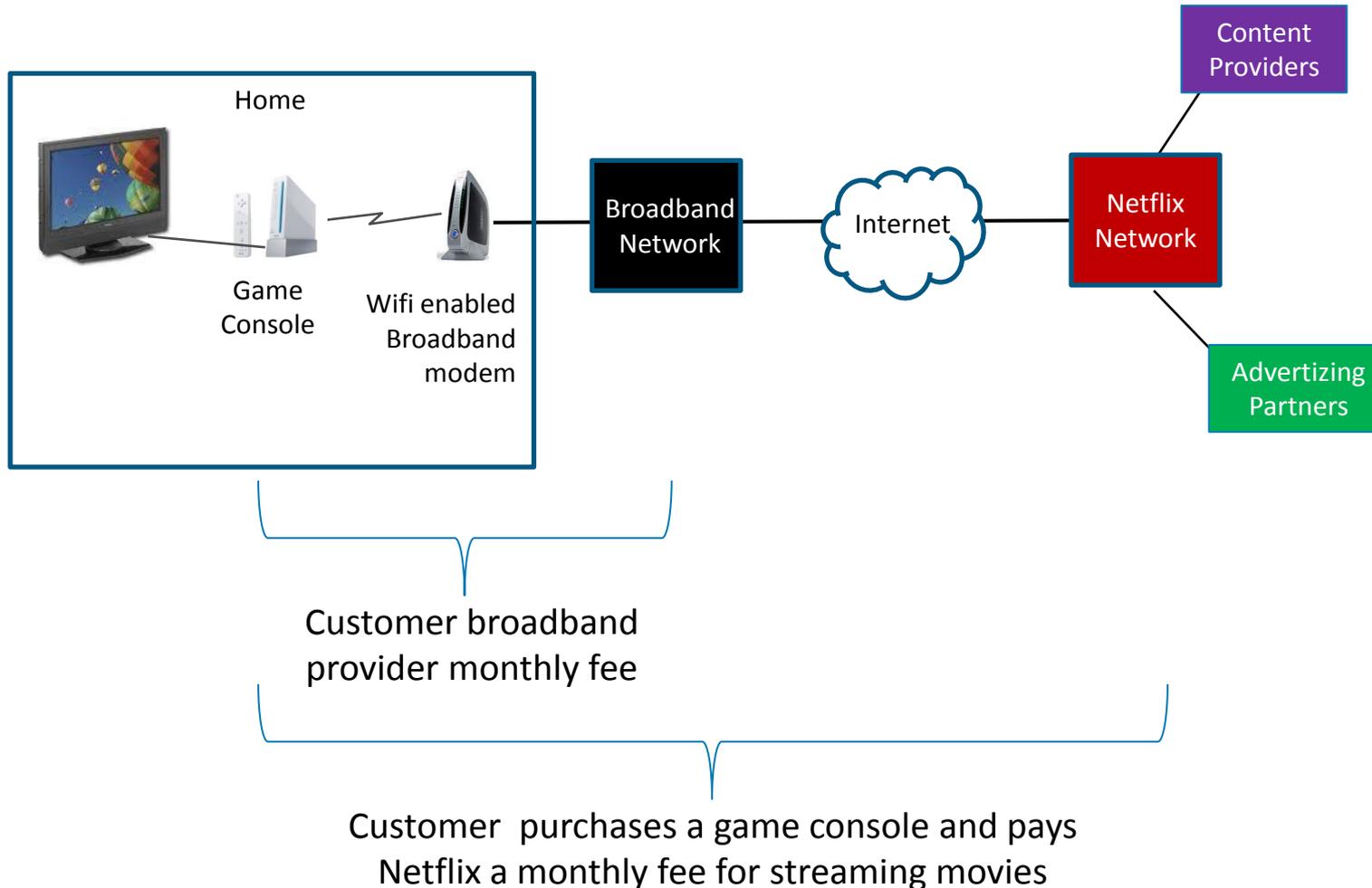


Source: http://articles.businessinsider.com/2009-08-28/tech/30029893_1_hulu-video-platform-time-warner-cable

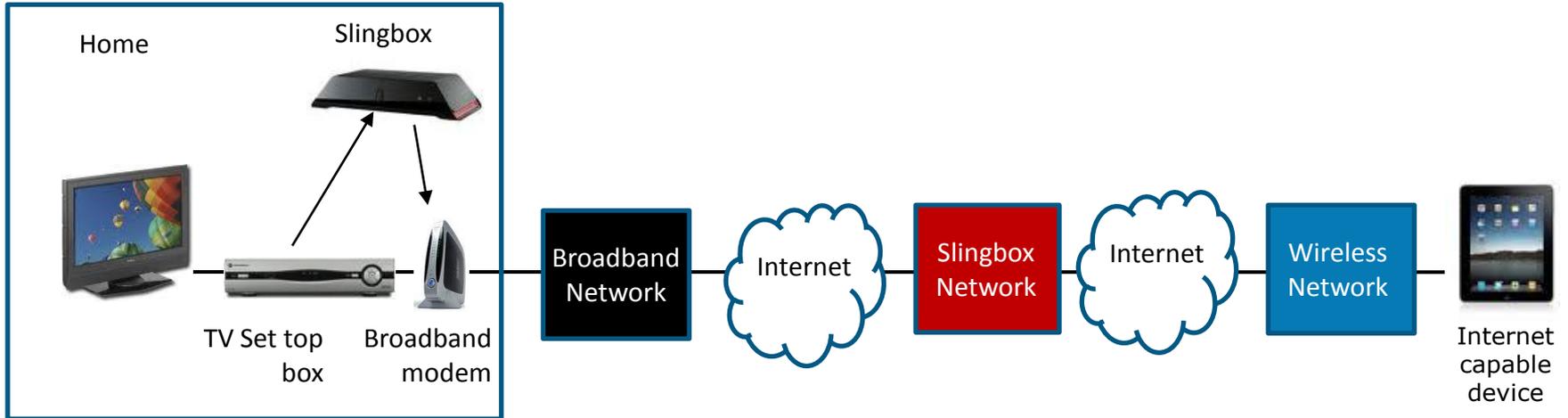
Netflix ended 1Q12 with 22.7 M domestic streaming subscribers and about 3 M international users.
AT&T ended the same quarter with 4 million U-verse TV subscribers.
Verizon reported that it counted 4.4 million FiOS TV subscribers.

Source: various analyst reports

Netflix "TV" via a Game Console



Mobile TV via Slingbox

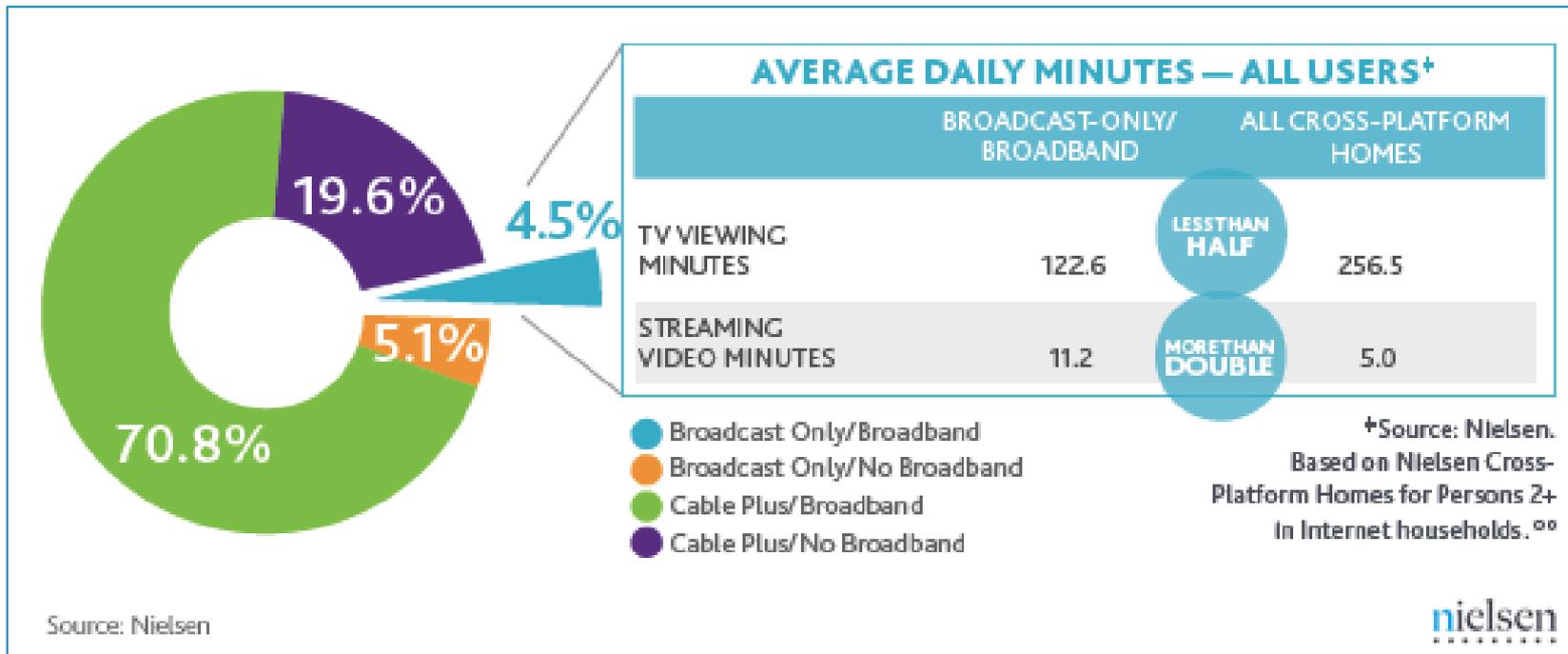


Customer pays TV and broadband provider(s) monthly fee

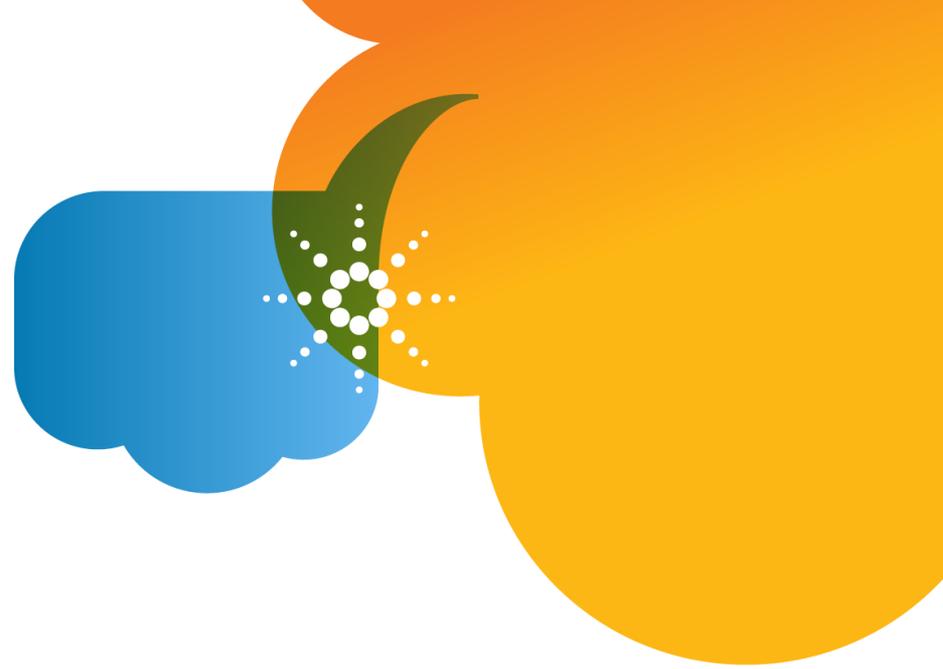
Customer purchases Slingbox and Internet capable device. Customer may pay wireless provider a monthly fee.

Cutting the TV Cord – A Growing Trend

“Though less than 5 percent of TV households, homes with broadband Internet and free, broadcast TV are on the rise—growing 22.8 percent over last year. These households are also found to exhibit interesting video behaviors: they stream video twice as much as the general population and watch half as much TV.”



Source: http://blog.nielsen.com/nielsenwire/online_mobile/report-how-americans-are-spending-their-media-time-and-money/



Rethink Possible[®]

