Cisco Visual Networking Index (VNI)

Global IP Traffic Forecast 2009–2014

With North America Highlights

© 2010 Cisco Systems, Inc. All rights reserved. Cisco Confidential

Cisco Visual Networking Index (VNI)

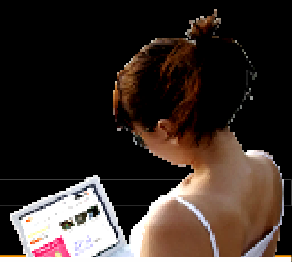
Expanding the scope of Cisco's IP Thought Leadership

The Cisco VNI Global Forecast methodology relies upon various independent analyst forecasts as well as fixed and mobile data usage surveys.

Global Forecast Data

Global Usage Trends

Region/country data modeling with consumer/business usage trends.

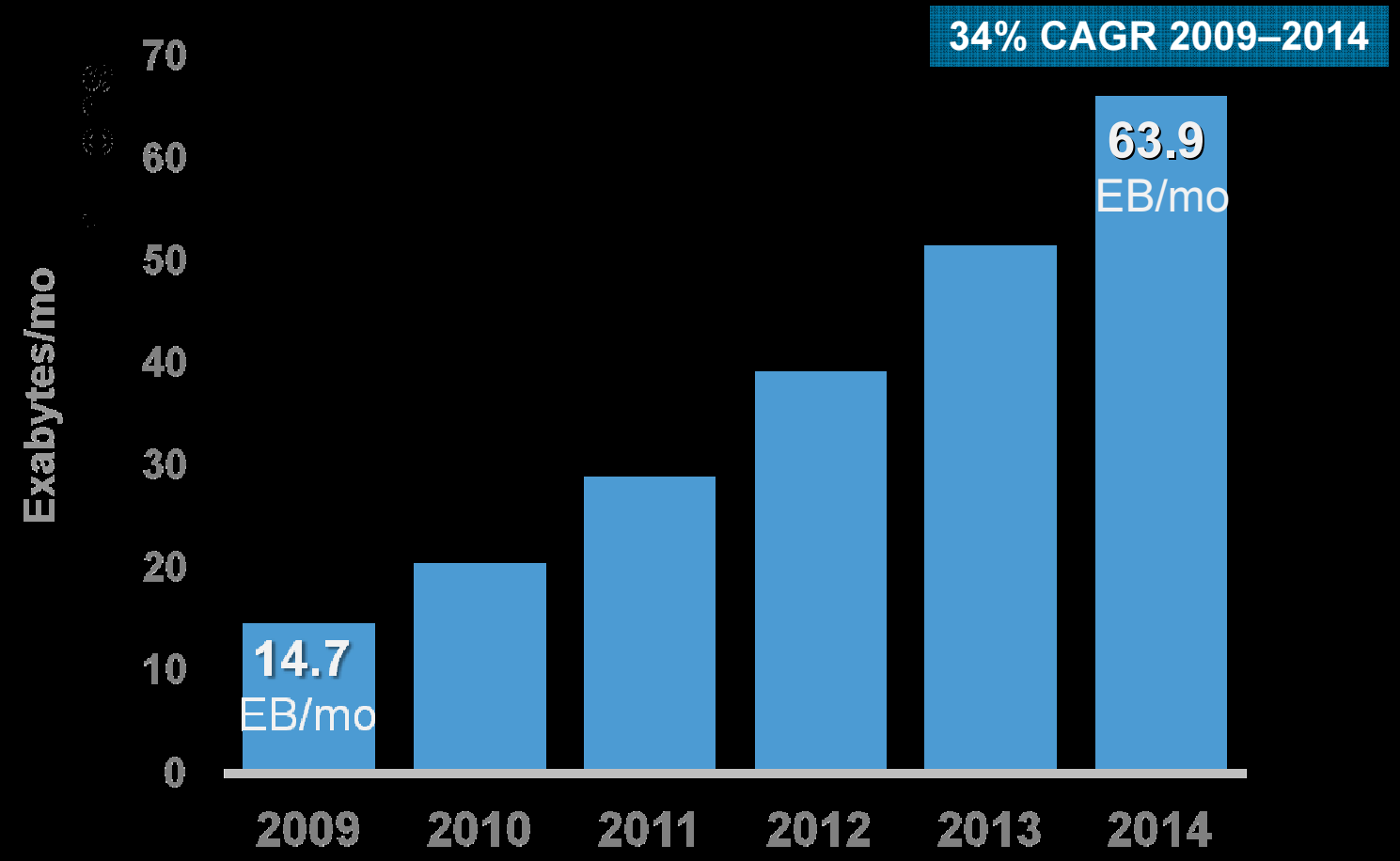


Source: Cisco Visual Networking Index (VNI) Global Forecast, 2009–2014

Global IP Traffic Growth

IP traffic will increase 4.3 fold from 2009–2014

In 2014, global IP traffic will reach 3/4 of a zettabyte

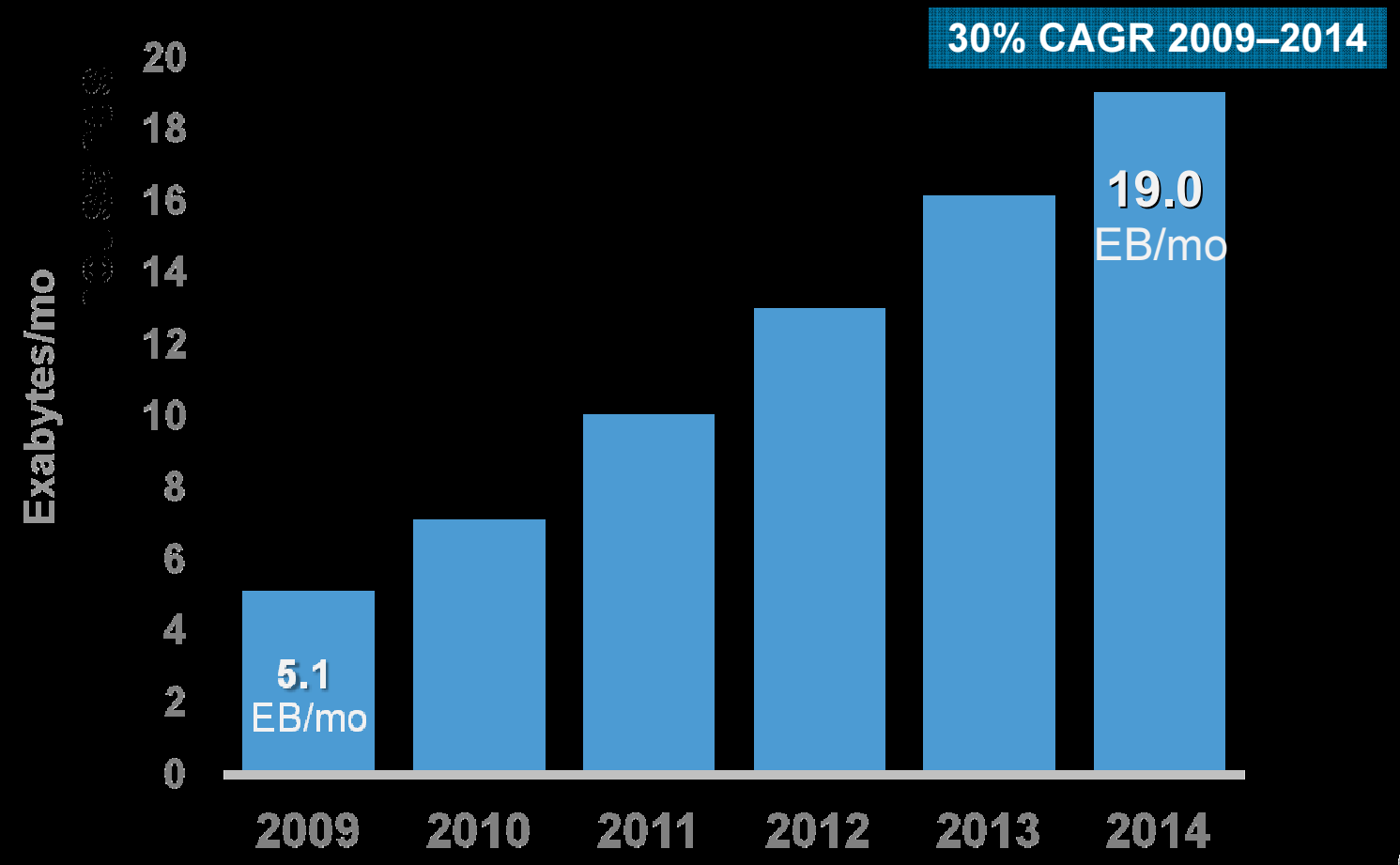


Source: Cisco Visual Networking Index (VNI) Global Forecast, 2009–2014

© 2010 Cisco Systems, Inc. All rights reserved.

North America IP Traffic Growth

IP traffic will increase 3.7 fold from 2009–2014



Source: Cisco Visual Networking Index (VNI) Global Forecast, 2009–2014

© 2010 Cisco Systems, Inc. All rights reserved.

North America will generate the most IP traffic by 2014
19 exabytes/month by 2014, 30% CAGR, 3.7X growth

Source: Cisco Visual Networking Index (VNI) Global Forecast, 2009-2014

© 2010 Cisco Systems, Inc. All rights reserved.

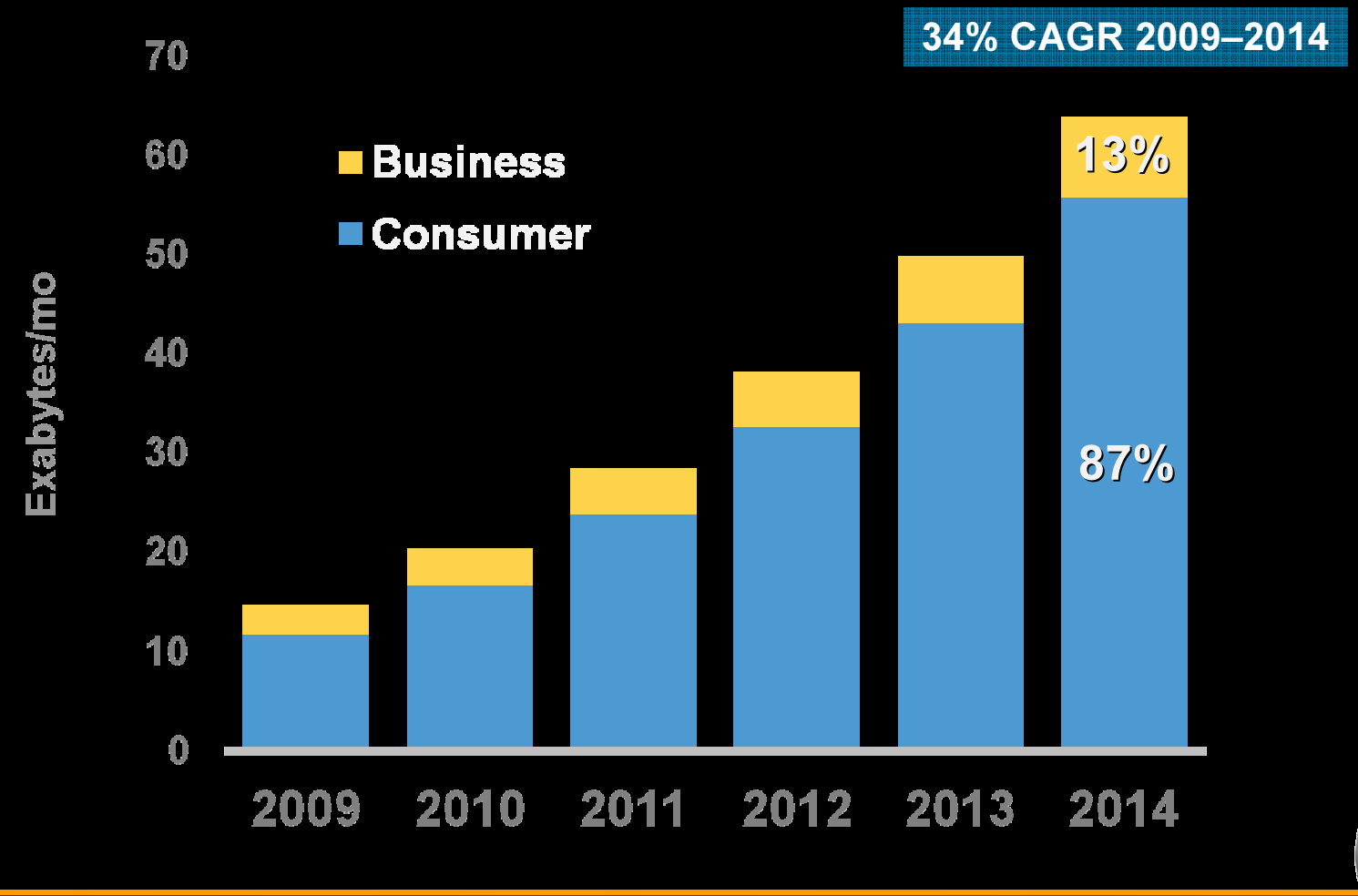
Latin America will be the fastest growing traffic region 3.5 exabytes/month by 2014, 51% CAGR, 7.9X growth

Source: Cisco Visual Networking Index (VNI) Global Forecast, 2009–2014

© 2010 Cisco Systems, Inc. All rights reserved.

Global IP Traffic Growth

Consumer IP traffic outpaces business IP traffic (traffic volume and growth rate)

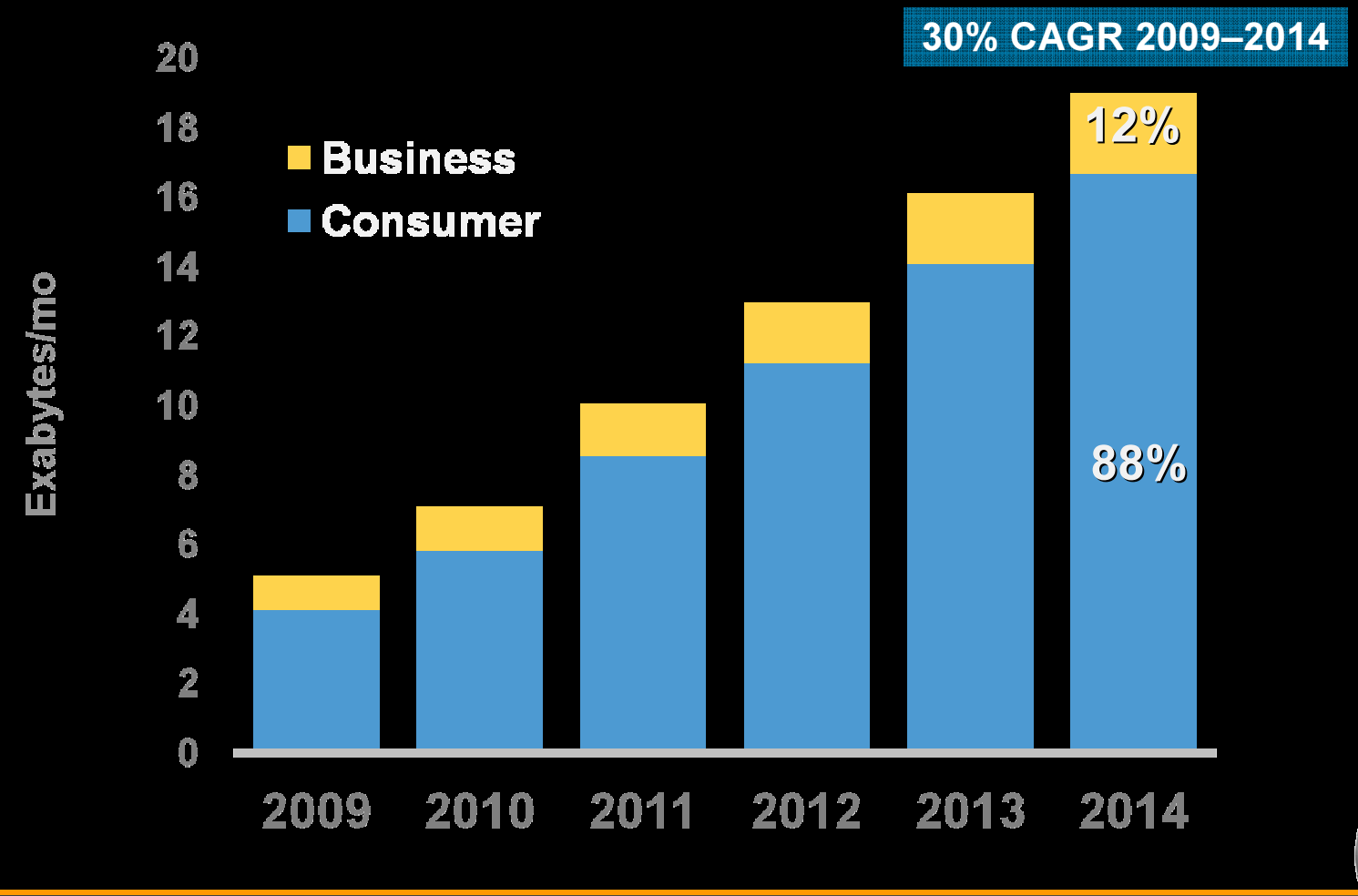


Source: Cisco Visual Networking Index (VNI) Global Forecast, 2009–2014

© 2010 Cisco Systems, Inc. All rights reserved.

North America IP Traffic Growth

Consumer IP traffic outpaces business IP traffic (traffic volume and growth rate)



Source: Cisco Visual Networking Index (VNI) Global Forecast, 2009–2014

© 2010 Cisco Systems, Inc. All rights reserved.

Evolving Dynamics of Hyperconnectivity

Person-to-person, person-to-machine, machine-to-machine

Active Multitasking

Adds 6.5 hours/day

Passive Networking

Adds *another* 6.5 hours/day

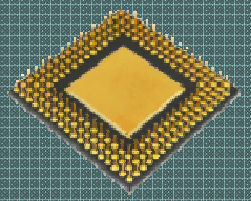
Multi-Screen Surface Area

12 billion square feet by 2014 (source: Cisco)

Proliferation of Devices

12 billion devices by 2014 (source: Cisco)

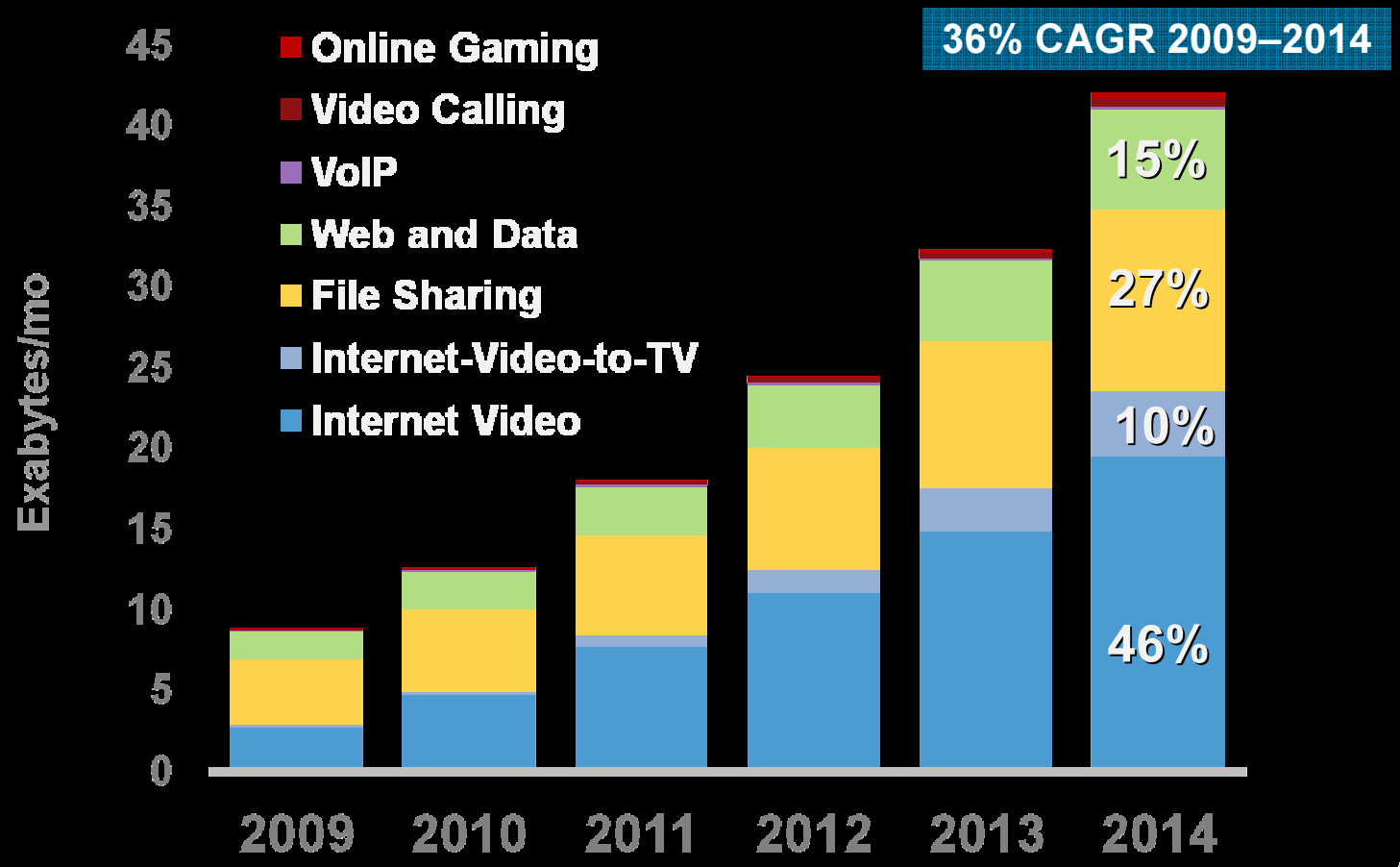
High Performance Computing



700 million multi-core shipments by 2014 (source: iSuppli)

Source: Cisco Visual Networking Index (VNI) Global Forecast, 2009–2014

Global Consumer Internet Traffic Growth
Video replaces P2P as top traffic type in 2010



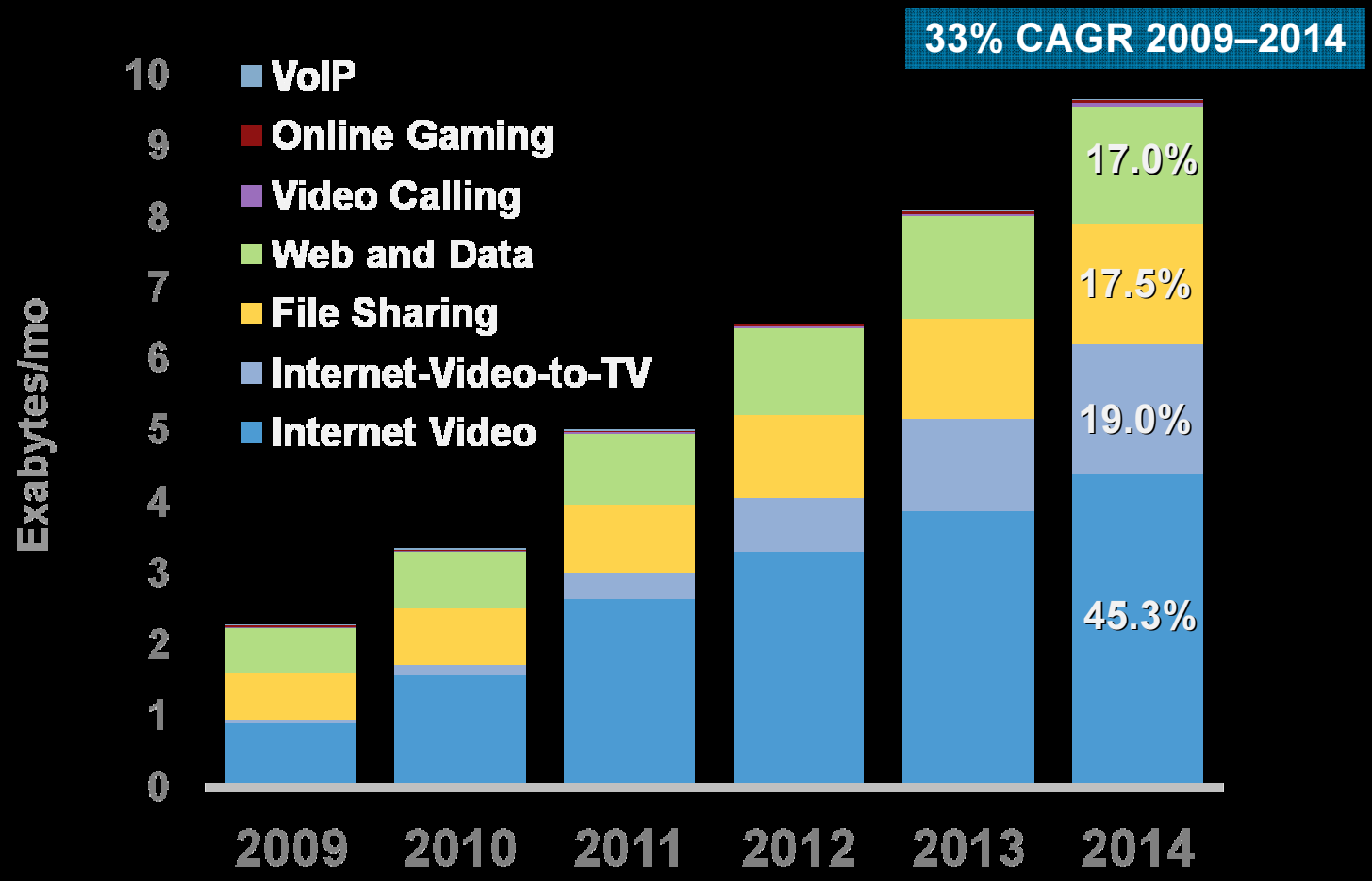
** VoIP, Online Gaming, and Video Calling contribute 1% or less in 2014.*

Source: Cisco Visual Networking Index (VNI) Global Forecast, 2009–2014

© 2010 Cisco Systems, Inc. All rights reserved.

North America Consumer Internet Traffic Growth

Video replaces P2P as top traffic type in 2010

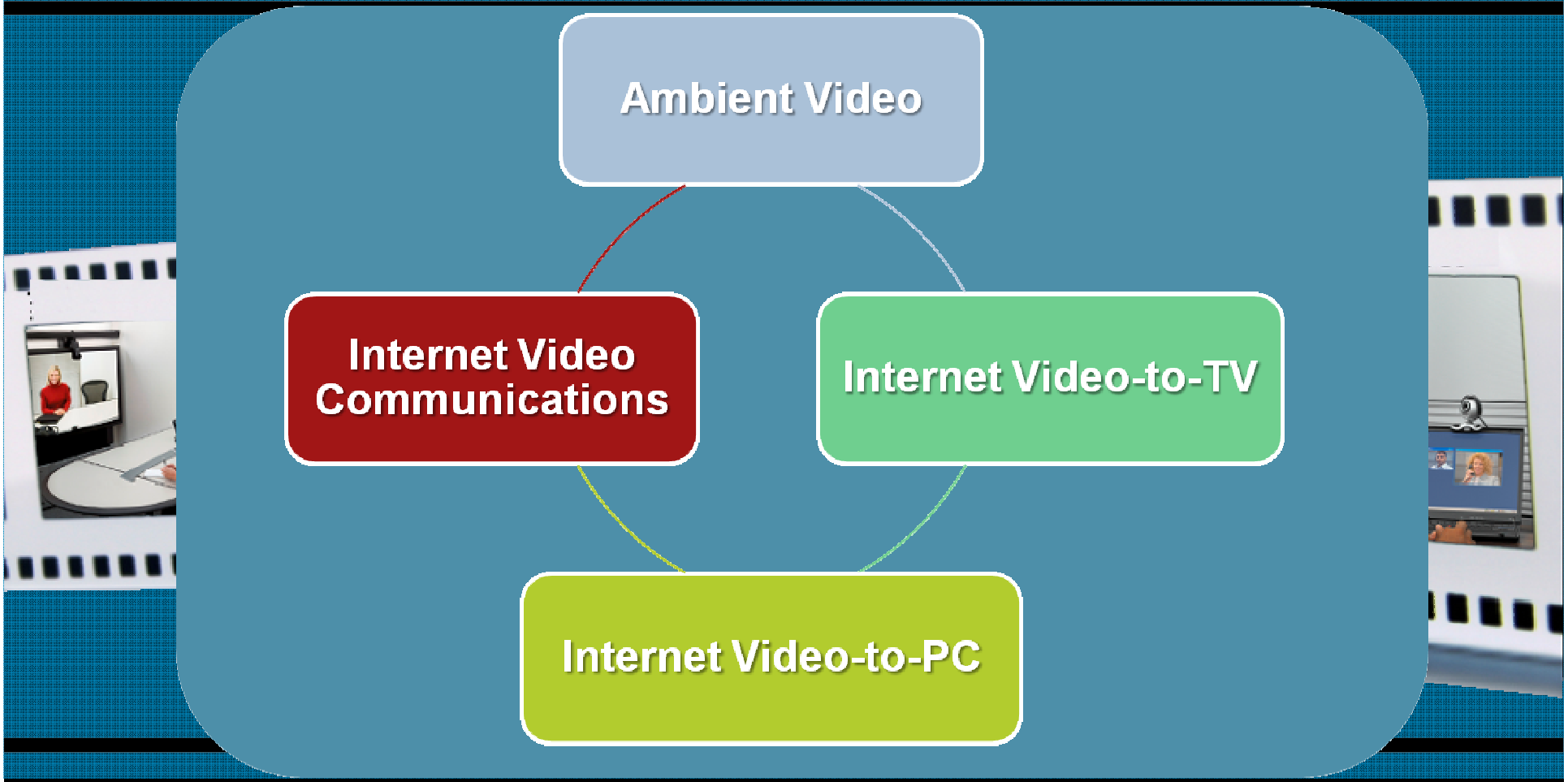


** VoIP, Online Gaming, and Video Calling contribute 2% or less in 2014.*

Source: Cisco Visual Networking Index (VNI) Global Forecast, 2009–2014

© 2010 Cisco Systems, Inc. All rights reserved.

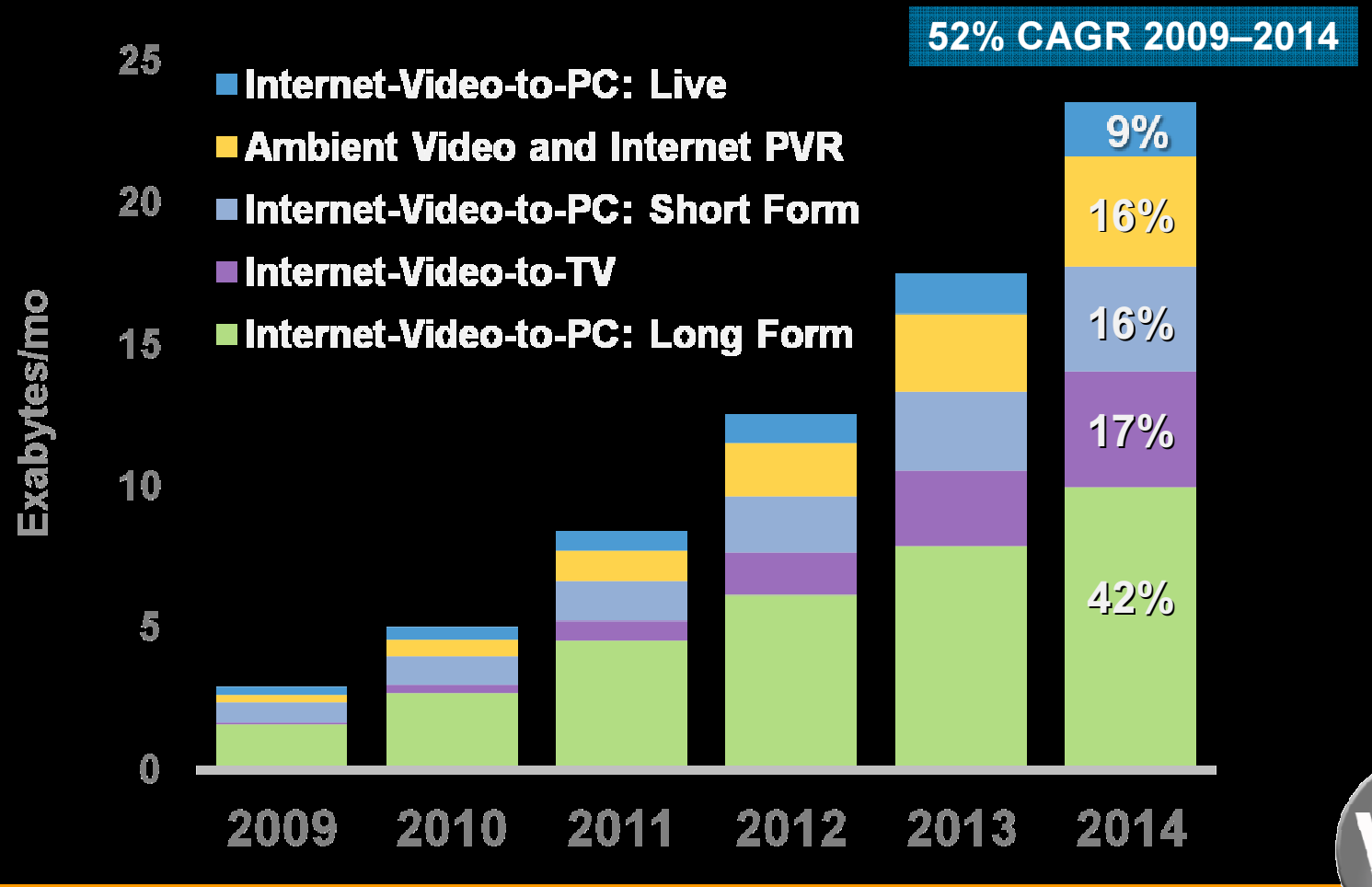
How Does the Cisco VNI Forecast Define Video?



Source: Cisco Visual Networking Index (VNI) Global Forecast, 2009–2014

Consumer Internet Video Composition

Video traffic increasingly driven by live video and TV

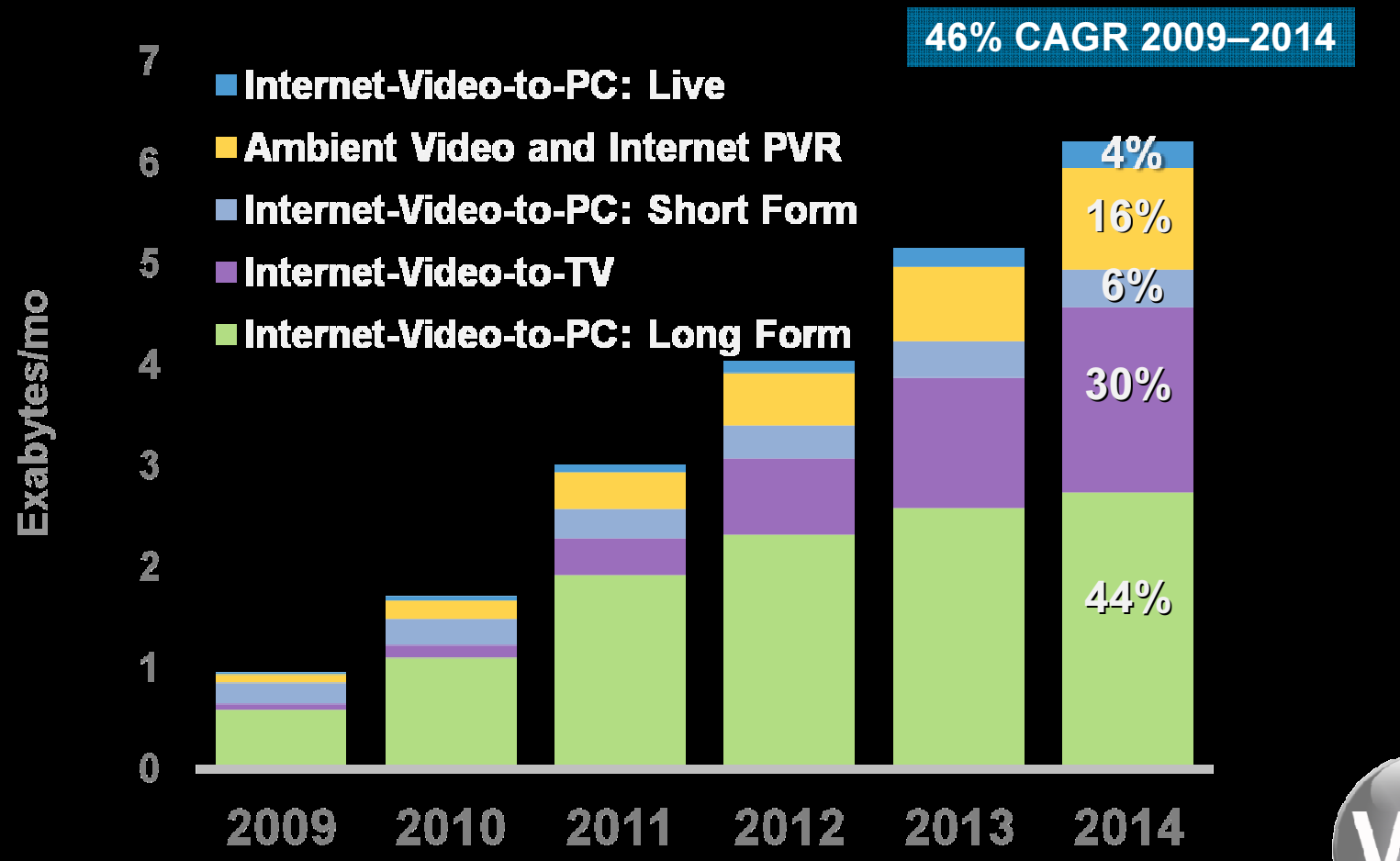


Source: Cisco Visual Networking Index (VNI) Global Forecast, 2009–2014

© 2010 Cisco Systems, Inc. All rights reserved.

North America Internet Video Composition

Video traffic increasingly driven by Internet-Video-to-TV



Source: Cisco Visual Networking Index (VNI) Global Forecast, 2009–2014

© 2010 Cisco Systems, Inc. All rights reserved.

High Growth Video Sites in the U.S.
Long-Form Content Has the Highest Growth

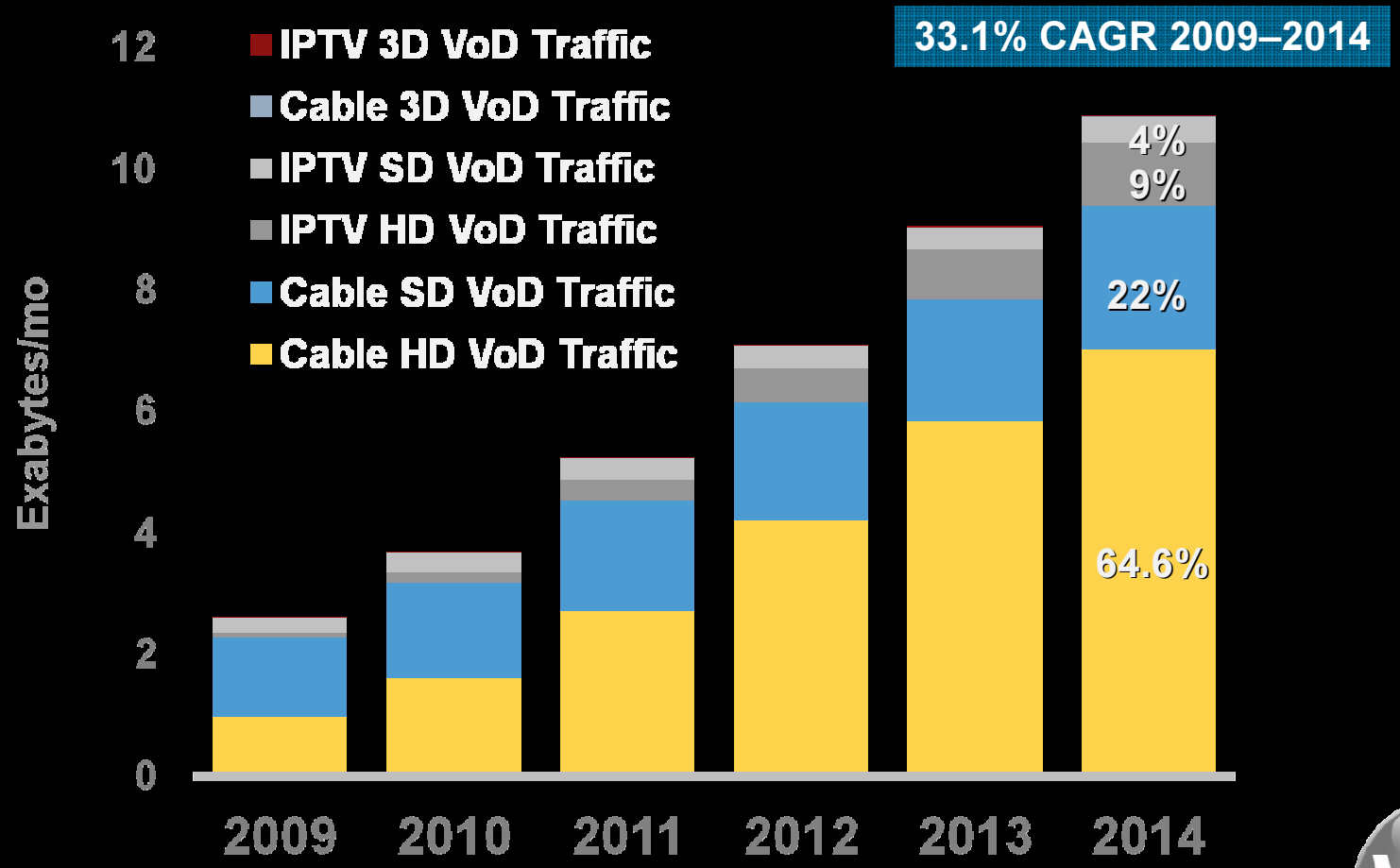
(millions of video streaming minutes per month)	2009	2010	% change
Netflix.com	76	5,984	7,918%
ABC Family	32	745	2,333%
Wisevid.com	11	221	1,923%
Ustream.tv	6	85	1,415%
Sony Online	14	138	968%
Tudou Sites	35	339	952%
Facebook.com	74	623	839%
CollegeHumor Media	19	156	814%
Apple Inc.	33	180	541%
PBS	28	134	479%
Blip.tv	29	137	475%
ESPN	69	221	318%
Dailymotion.com	150	469	313%
NBC Universal	159	484	304%
Viacom Digital	447	1,345	300%
Hulu	2,192	5,727	261%
Google/YouTube	14,822	33,484	226%
Megavideo.com	1,882	4,197	223%

Source: comScore VideoMetrix, 2010

© 2010 Cisco Systems, Inc. All rights reserved.

Global Consumer VoD Mix

VoD traffic driven by growth of HD



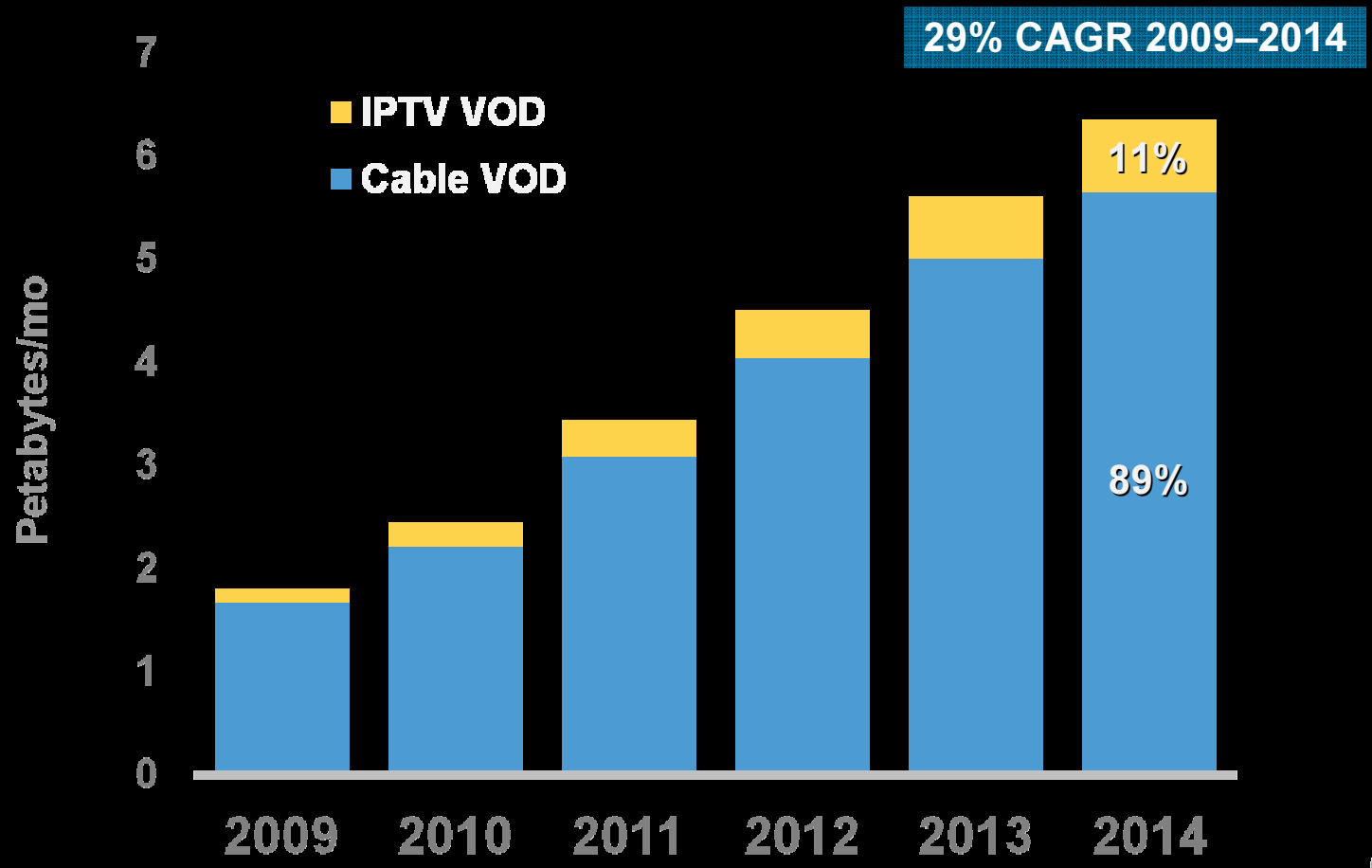
** IPTV 3D VoD and Cable 3D VoD contribute less than 1% in 2014.*

Source: Cisco Visual Networking Index (VNI) Global Forecast, 2009–2014

© 2010 Cisco Systems, Inc. All rights reserved.

North America Consumer VoD Mix

VoD traffic driven by growth of HD



Source: Cisco Visual Networking Index (VNI) Global Forecast, 2009–2014

© 2010 Cisco Systems, Inc. All rights reserved.

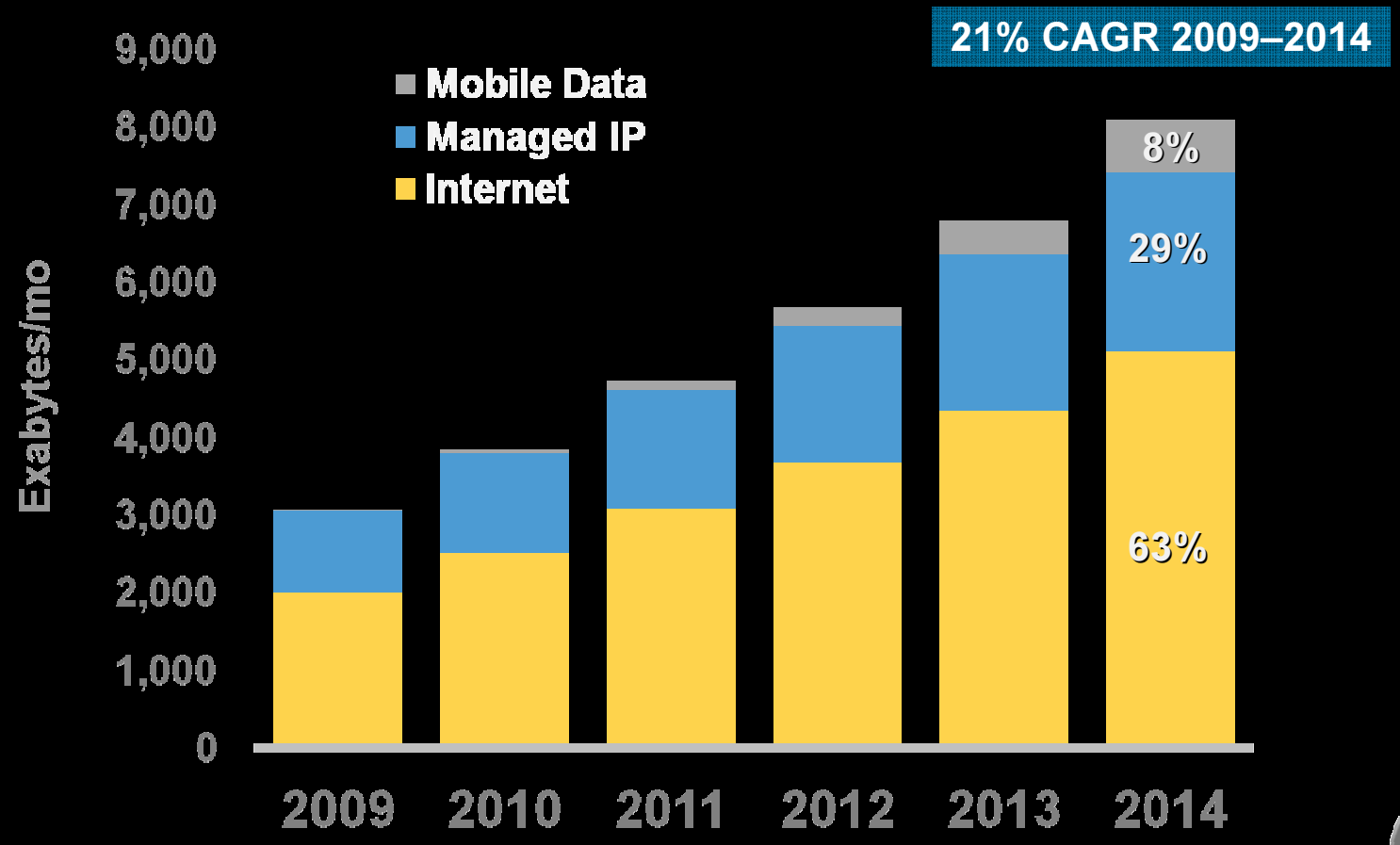
If all video minutes were 3D in 2014, the video forecast would be 3X higher (from 38 EB to 111 EB per month).

Source: Cisco Visual Networking Index (VNI) Global Forecast, 2009–2014

© 2010 Cisco Systems, Inc. All rights reserved.

Global Business IP Traffic

Business IP to grow at a CAGR of 21%



Source: Cisco Visual Networking Index (VNI) Global Forecast, 2009–2014

© 2010 Cisco Systems, Inc. All rights reserved.

Web-based video conferencing is the fastest growing business sub-category; reaching 180-fold by 2014.

Source: Cisco Visual Networking Index (VNI) Global Forecast, 2009–2014

© 2010 Cisco Systems, Inc. All rights reserved.

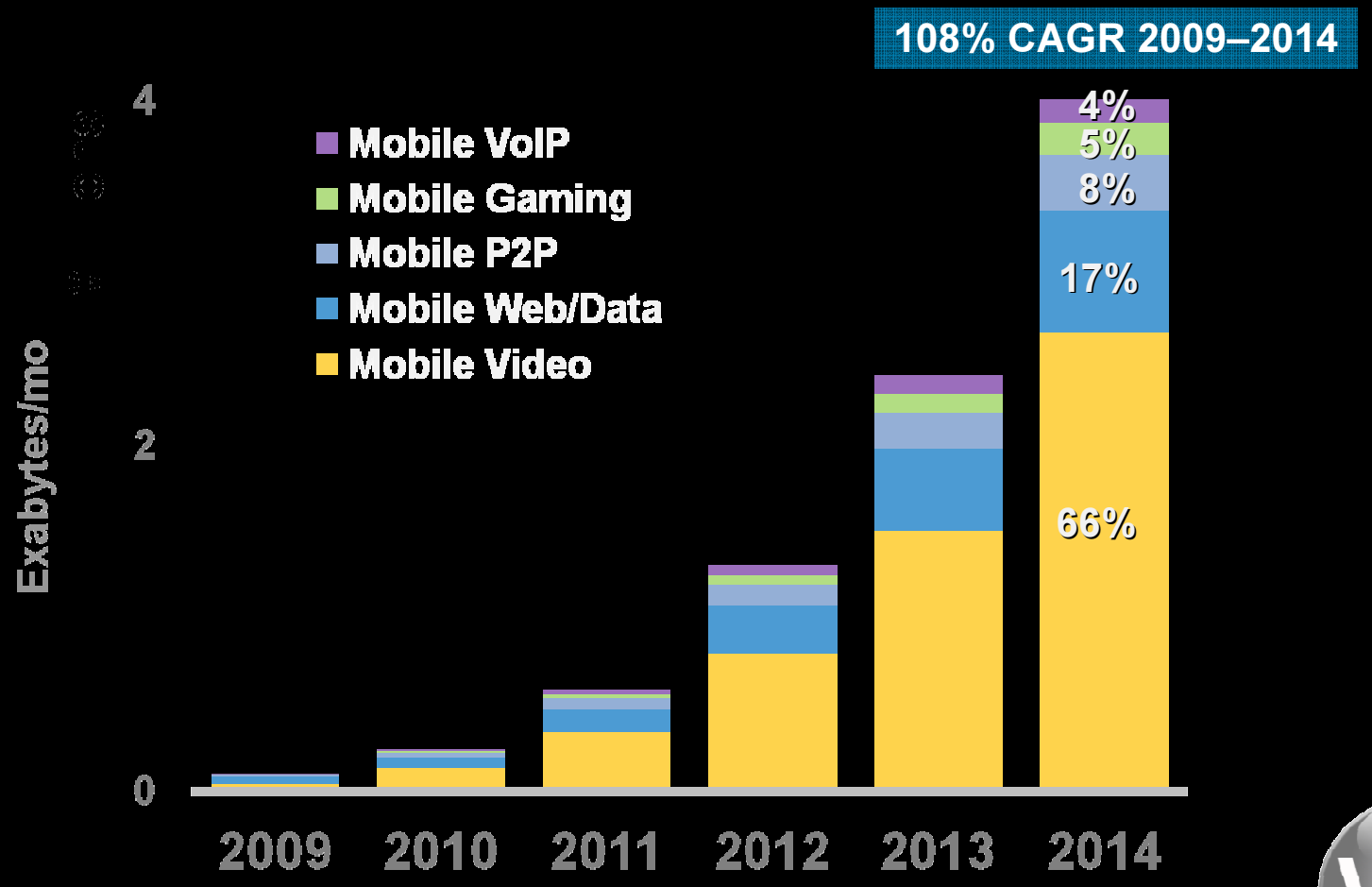
North America web-based video conferencing is the fastest growing business sub-category; reaching 93-fold growth by 2014.

Source: Cisco Visual Networking Index (VNI) Global Forecast, 2009–2014

© 2010 Cisco Systems, Inc. All rights reserved.

Global Mobile Data Traffic Growth

Mobile data traffic will increase 39 fold from 2009 to 2014

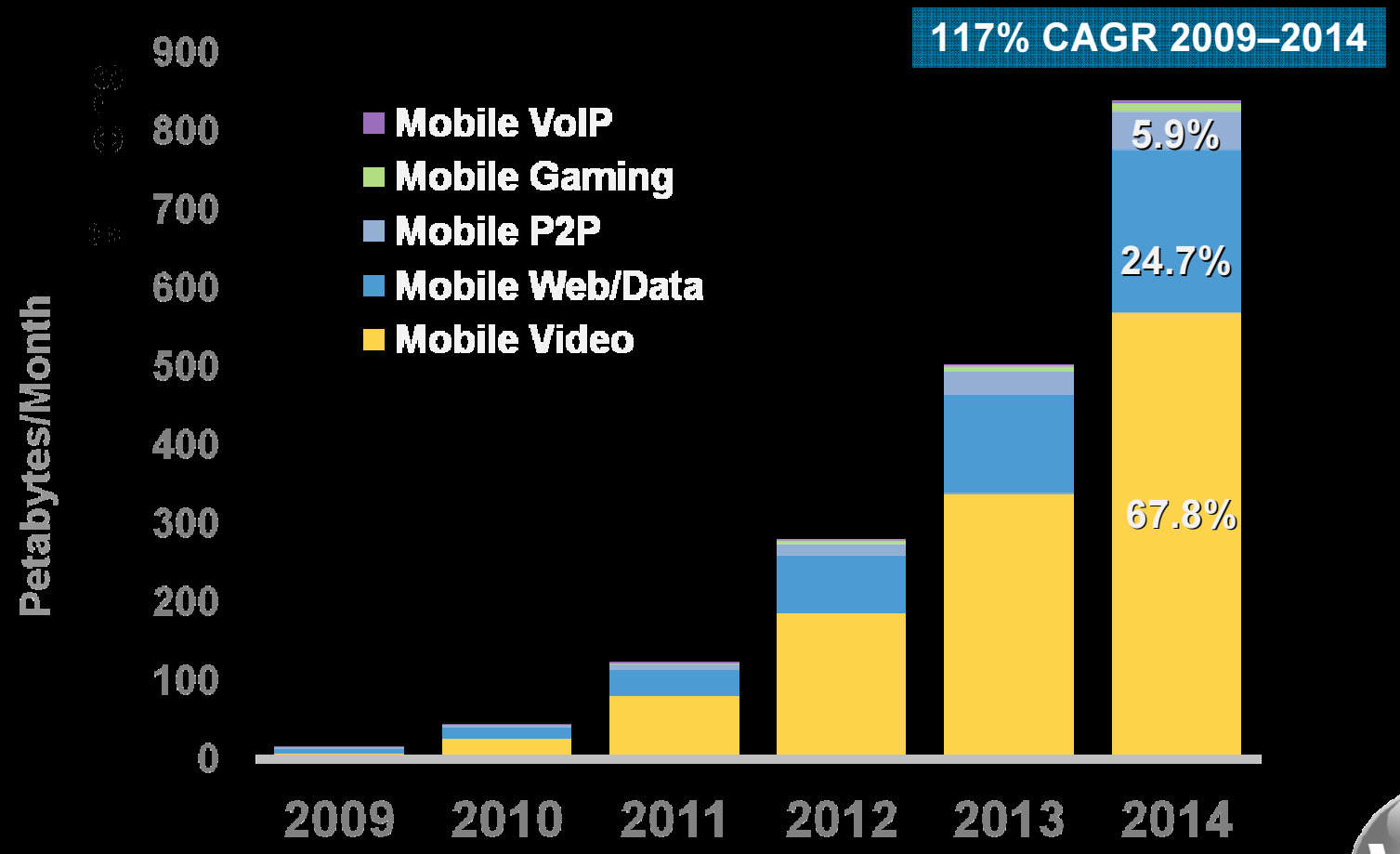


Source: Cisco Visual Networking Index (VNI) Global Forecast, 2009–2014

© 2010 Cisco Systems, Inc. All rights reserved.

North America Mobile Data Traffic Growth

Mobile data traffic will increase 48 fold from 2009 to 2014



** Mobile Gaming and VoIP contribute less than 2% in 2014.*

Source: Cisco Visual Networking Index (VNI) Global Forecast, 2009–2014

© 2010 Cisco Systems, Inc. All rights reserved.

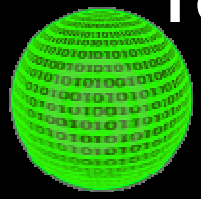
Global mobile data traffic is growing 3.2 times faster than fixed data traffic.

Source: Cisco Visual Networking Index (VNI) Global Forecast, 2009–2014

© 2010 Cisco Systems, Inc. All rights reserved.

Cisco VNI Forecast Update: 2009–2014

Summary / Key Highlights



Total IP Traffic — 63.9 Exabytes per month by 2014

- Annual global IP traffic will reach 3/4 of a zettabyte by 2014

Internet — 47.2 Exabytes per month by 2014

- Internet video will surpass P2P as top traffic type by end of 2010

Managed IP — 13.2 Exabytes per month by 2014

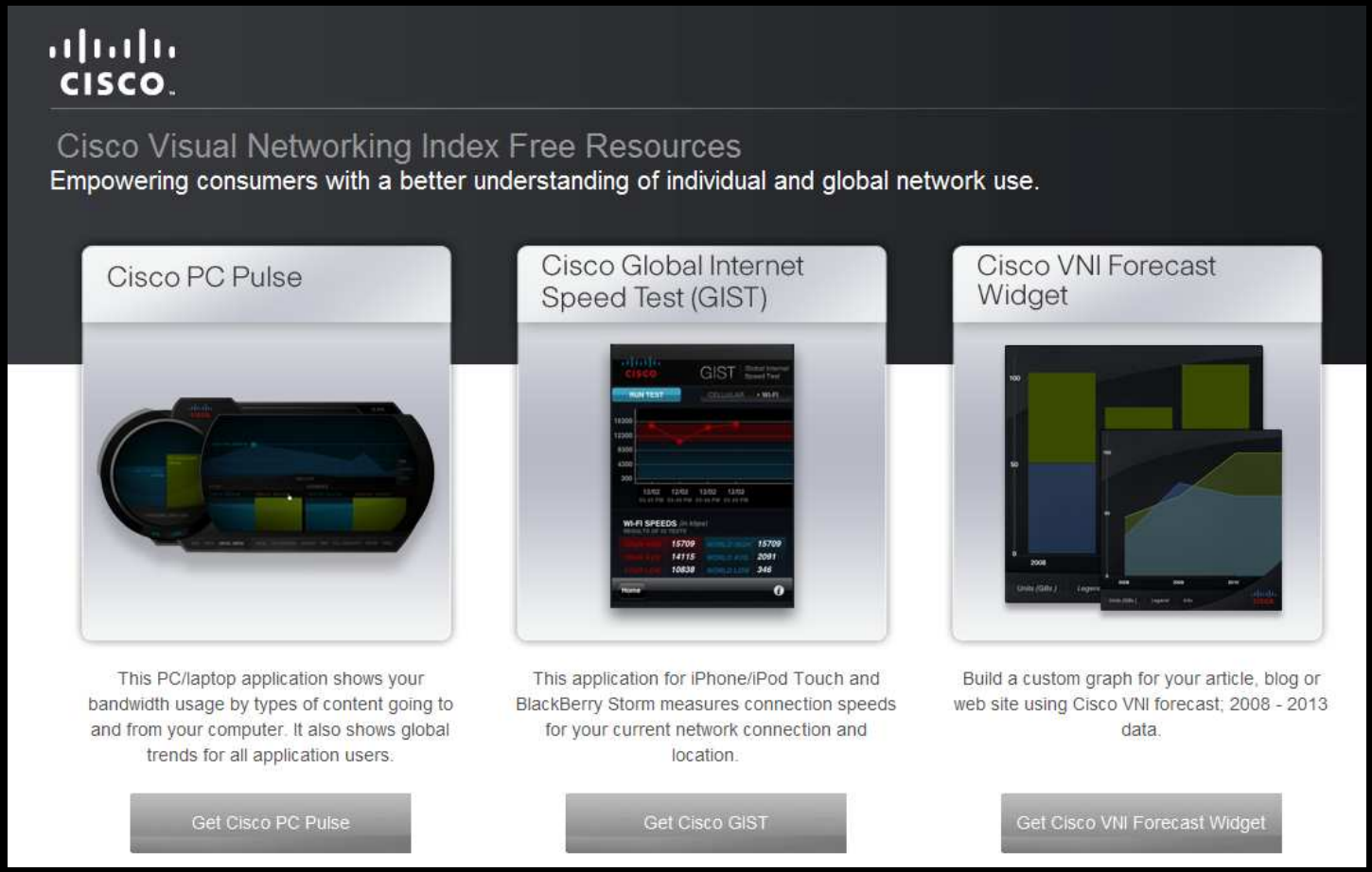
- Web-based video conferencing will grow 180-fold from 2009-2014

Mobile Data — 3.5 Exabytes per month by 2014

- Mobile video will increase 66-fold from 2009 to 2014

Source: Cisco Visual Networking Index (VNI) Global Forecast, 2009–2014

Cisco VNI Free Resources
URL: http://downloads.ciscovnipulse.com



Source: Cisco Visual Networking Index (VNI) Global Forecast, 2009–2014

Public Cisco VNI Web Site

URL: http://www.cisco.com/go/vni

- Press Releases
- White Papers / Research
- Cisco VNI Pulse Apps/Resources

Send Cisco VNI Forecast inquiries to:
traffic-inquiries@cisco.com

Source: Cisco Visual Networking Index (VNI) Global Forecast, 2009–2014

CISCO