



Web-based Video

A New Frontier for Telco Service Providers

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Internet Business Solutions Group
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Executive Summary

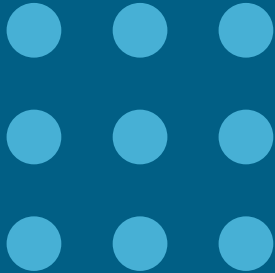
- The web is replacing TV as the primary source for information and entertainment
- Web video (especially user-created videos) is a key reason for this trend
- To continue video growth, web service providers must address three key areas: (1) bandwidth, (2) viewing experience, and (3) mobility
- Collaboration with web service providers is required to address these challenges
- Web-enablement services can generate up to \$1B in cumulative revenue over five years

Source: Cisco IBSG, 2008

Agenda

1. Web video trends
2. New challenges for web service providers
3. Working with web service providers to address challenges
4. A \$1B market opportunity
5. Services lead to profitability from video
6. Next steps

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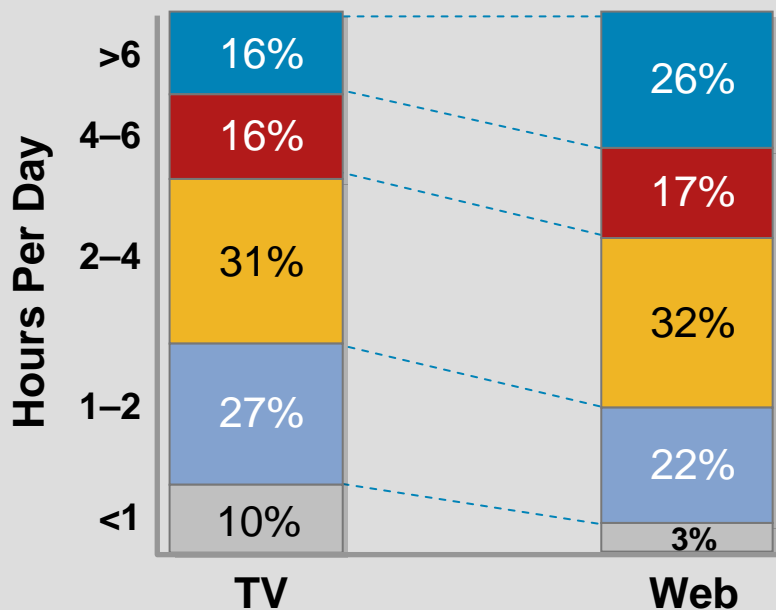


Web Video Trends

People in United States, Japan Spend More Time on Web than Watching TV

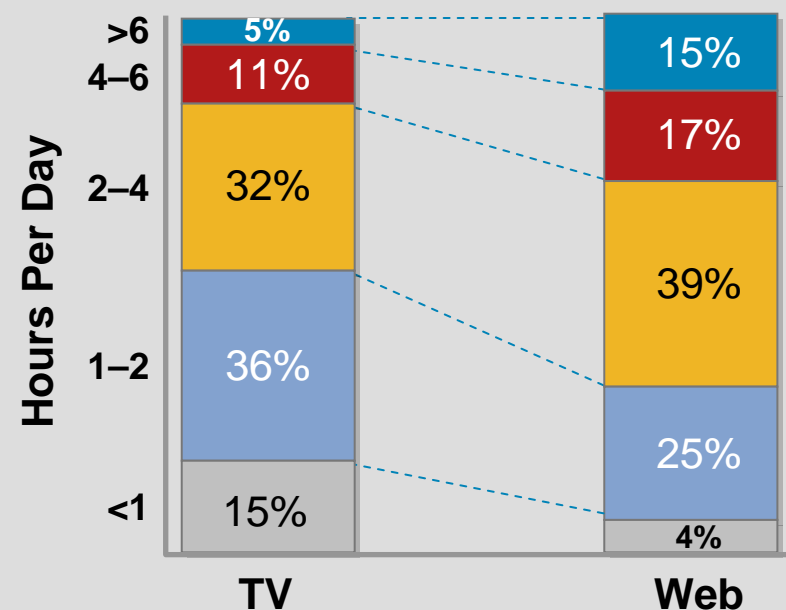
Daily TV Viewing versus Web Usage

United States



Average: 3.3 Hours → **4.0 Hours**
21% Difference

Japan



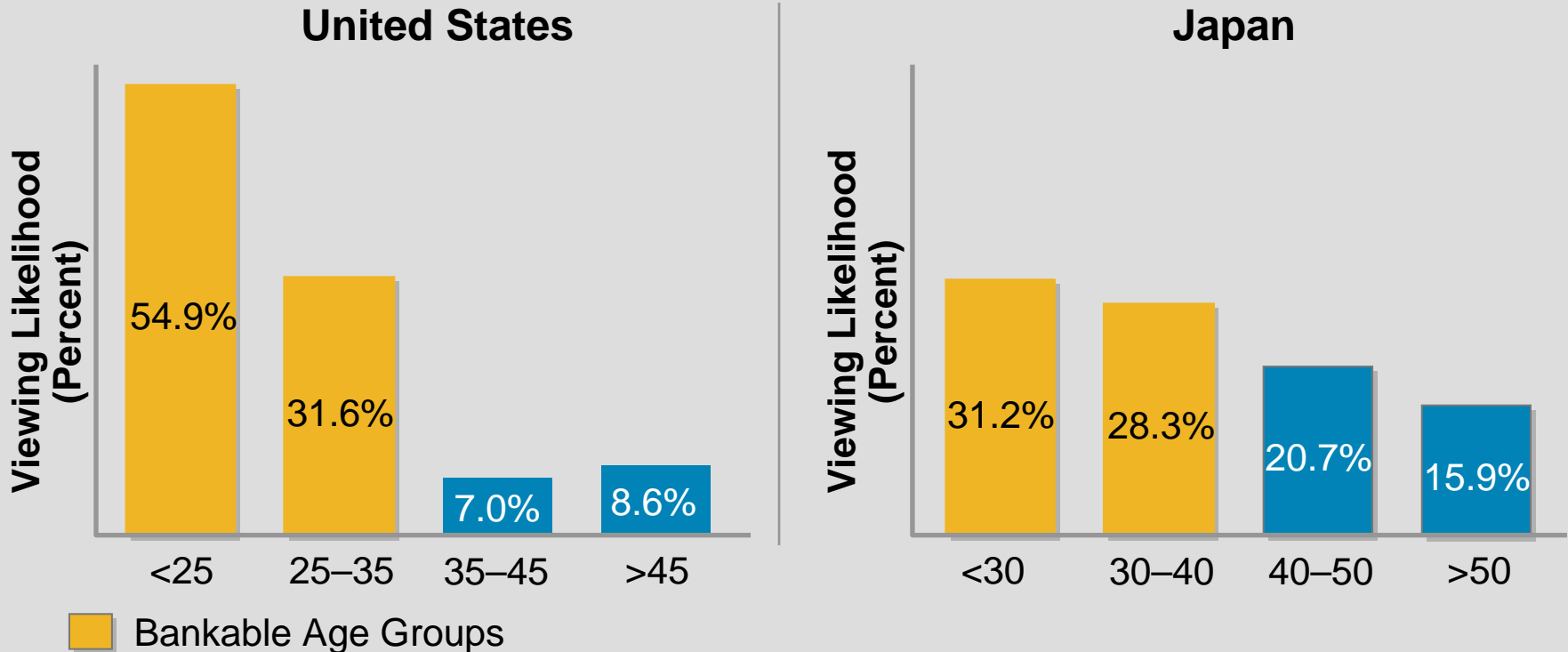
Average: 2.5 Hours → **3.5 Hours**
40% Difference

Sources: IBM Consumer Digital Media Online Survey, 2007; Cisco IBSG, 2008

The Web Is Increasingly Viewed as Source of “Infotainment”

One-third of “Bankable” Age Groups View Web as Viable Substitute for TV

Likelihood of Viewing Web Video as TV Alternative



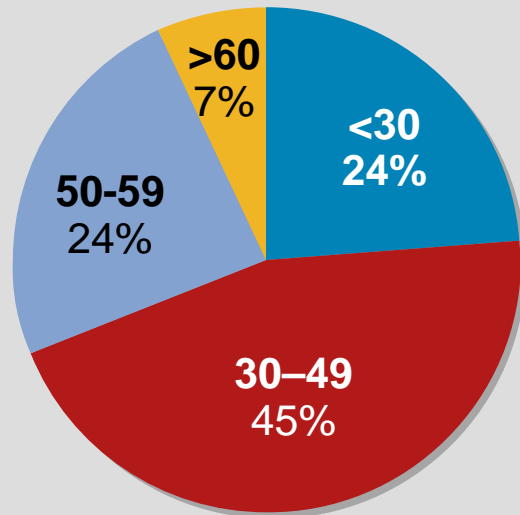
Sources: In-Stat, Dentsu, 2007; Cisco IBSG, 2008

Web Use Is Driven by People Under 40

China Will Rival U.S. by 2010

Internet User Demographics

United States

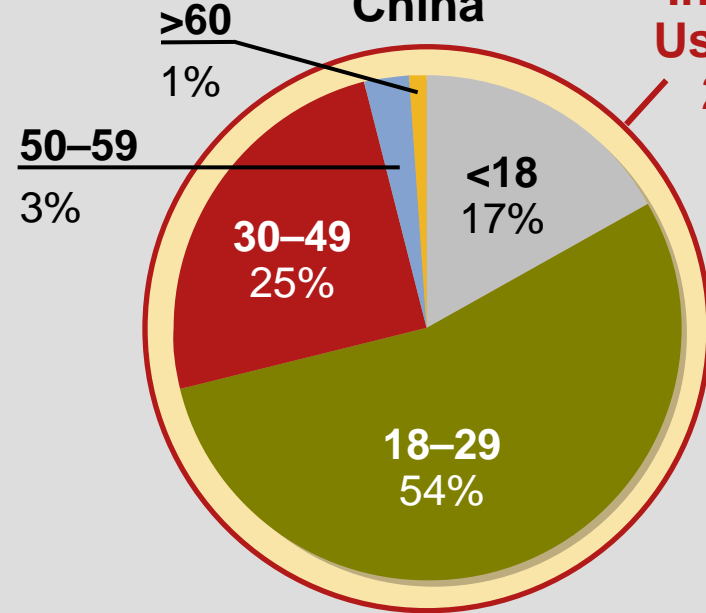


Internet Users: 211M

Penetration (% Pop.): 70%

2007 Market Revenue: US\$50B+

China



Internet Users: 137M

Penetration (% Pop.): 10%

2007 Market Revenue: US\$4B

Sources: CNNIC, 2007; iResearch, 2007; Lit Search, 2007; Pew Study, 2007

Web Video Is Fastest-growing Internet Ad Medium

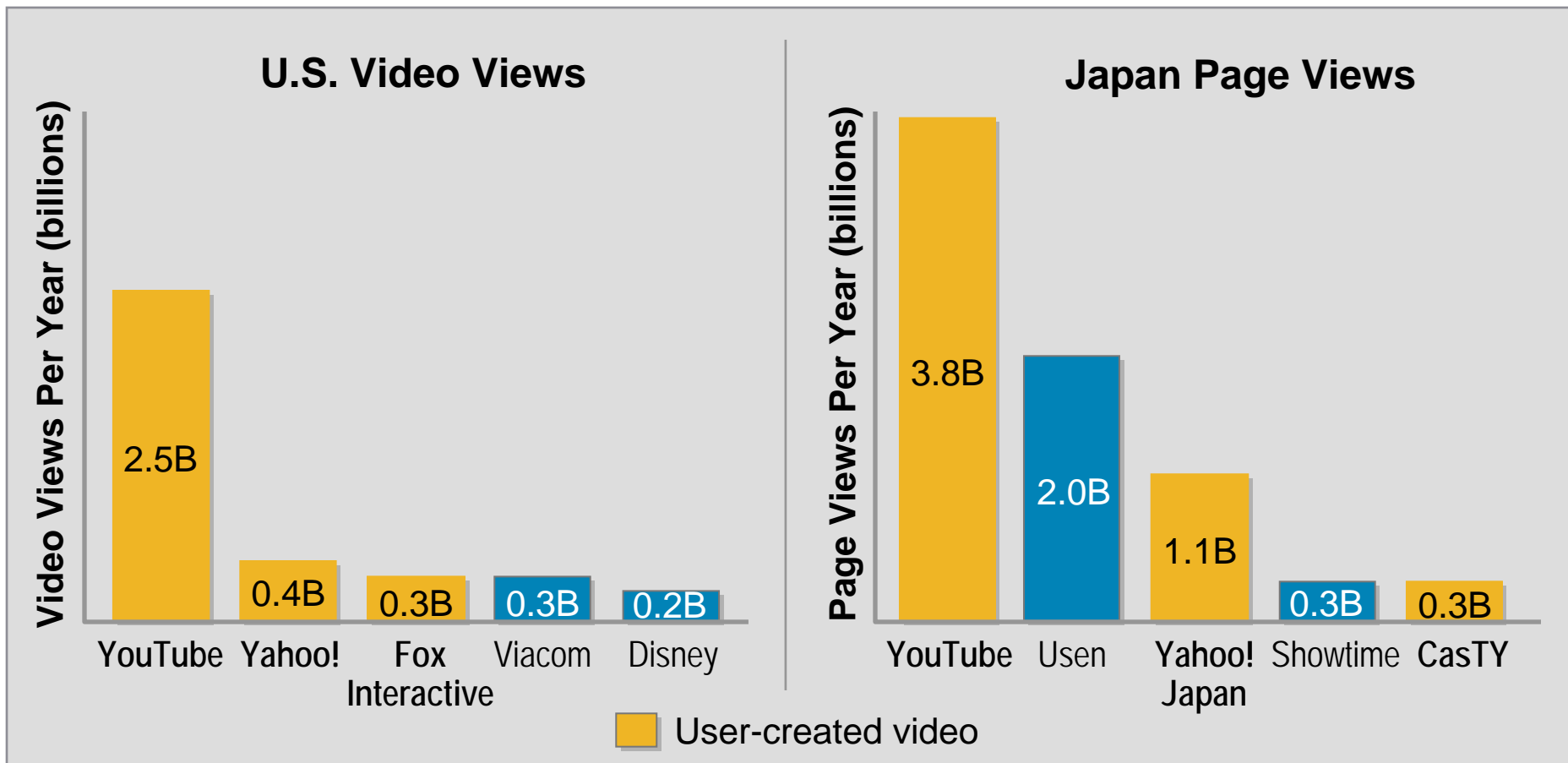
Web Service Provider Revenues Driven by Advertising U.S. Internet Ad Revenues by Format

Ad Format	Total Revenue (%)		Total Revenue (US\$M)		Growth (%)
	2006	2007	2006	2007	
Video	7%	10%	1,323	2,120	60%
Email	2%	2%	378	424	12%
Search	40%	41%	7,560	8,692	15%
Classifieds	18%	16%	3,402	3,392	-0.3%
Sponsorship	3%	3%	567	636	12%
Display Ads	22%	21%	4,158	4,452	7%
Lead Generation	8%	7%	1,512	1,484	-2%
Totals	100%	100%	18,900	21,200	

Source: "Internet Advertising Bureau Revenue Report," PricewaterhouseCoopers, 2008

User-created Video Is Rapidly Emerging Trend

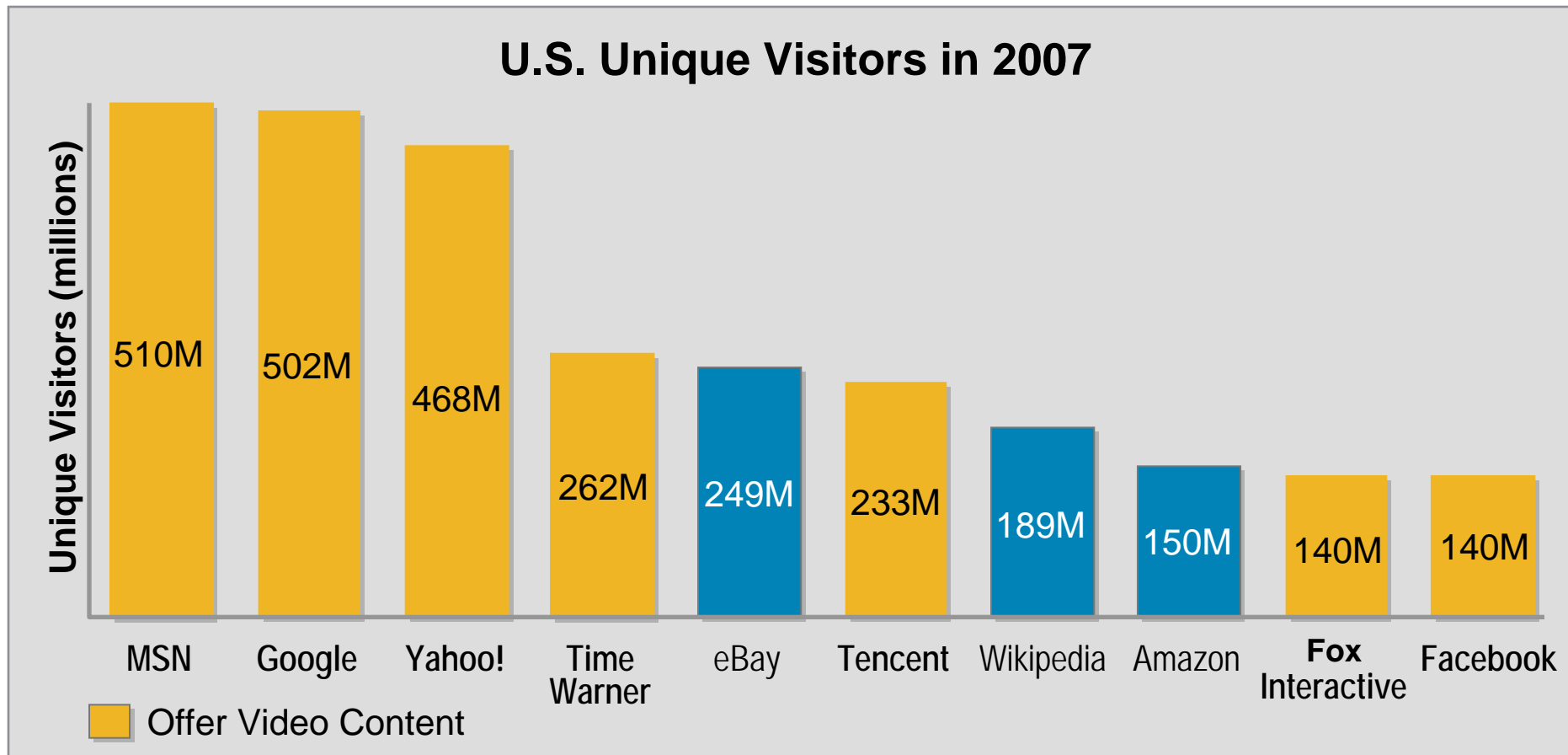
YouTube Leads in U.S. and Japan for Video Views



Sources: ComScore, 2007; NetRatings Japan, 2007; company news releases, 2006; Factiva, 2007

Largest Web Companies Showcasing User Video

Seven of Top 10 Sites Feature User-created Video

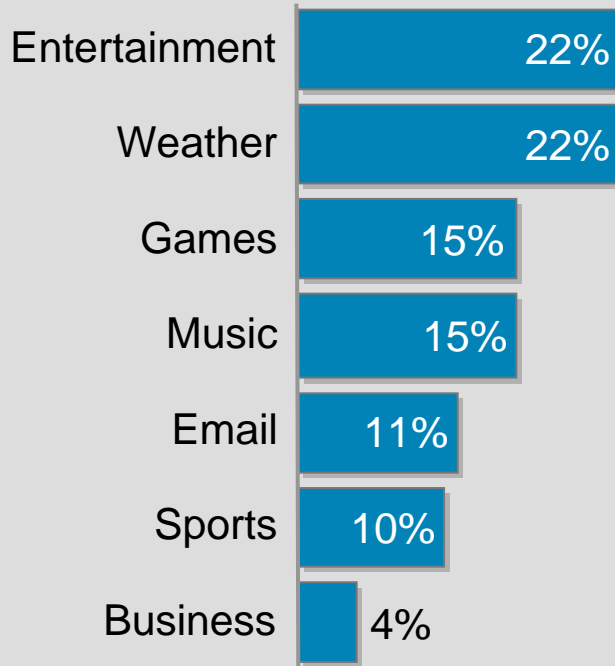


Sources: ComScore, 2007; company annual reports, 2007

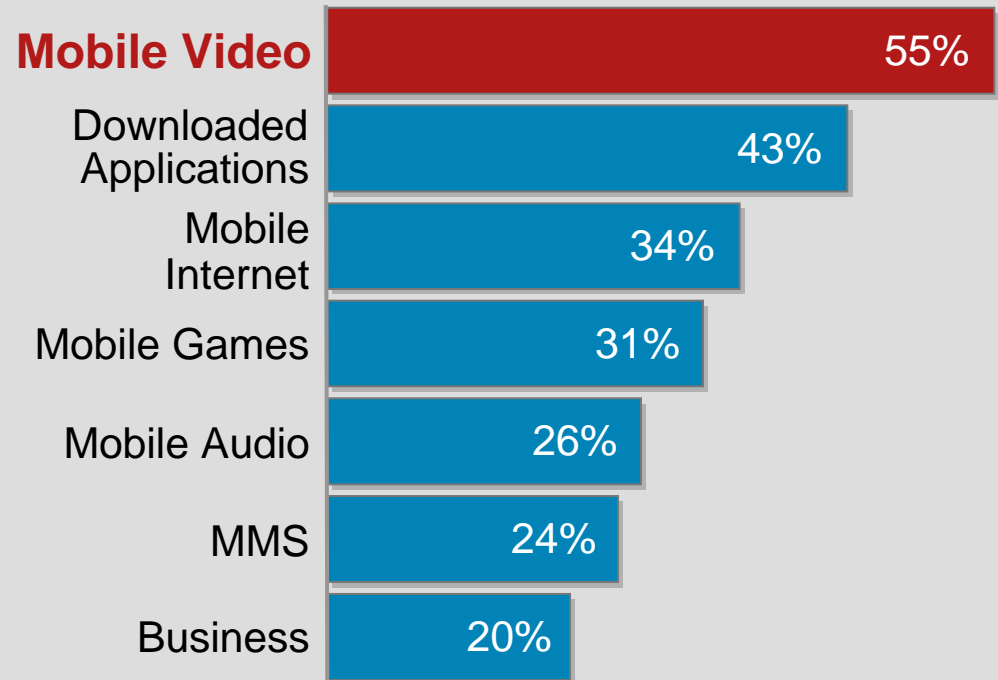
Mobile Is Next Source of High Growth

Mobile Access Boosts Audience Reach; Mobile Video Most Effective Ad Medium

Audience Lift from Mobile Traffic



30-day Ad Recall Rates by Mobile Content



Sources: Nielsen, 2008; Telephia, 2007; Cisco IBSG, 2008

Major Video Companies Are Expanding Globally by “Going Mobile”

U.S.-based YouTube



- **Started user-created content phenomenon**; acquired by Google in 2006 for \$1.65B
- More than **200M video downloads per day**; 200,000 videos in library
- Revenue from portal ads / content provider partnerships
- Videos on LG and Samsung mobile phones; Apple TV and iPhone
- **Sharing ad revenue** and building **royalty management system**

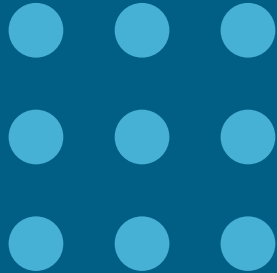
China-based Tudou



- **“Chinese YouTube”** launched in April 2005
- **40M users** (50% share of China video traffic); **1.2B video downloads per month** (growing 10–20% per year)
- Launched **ad-infusion service**
- Mobile webcast partnership with Shanghai Dragon Corporation
- Advertisers: Sony, Nike, Adidas, Ford, Lenovo, Motorola, Pepsi, Samsung
- Content partnerships: CCTV, SMG, Beijing TV, Hunan TV, Southeast TV

Source: Cisco IBSG, 2008

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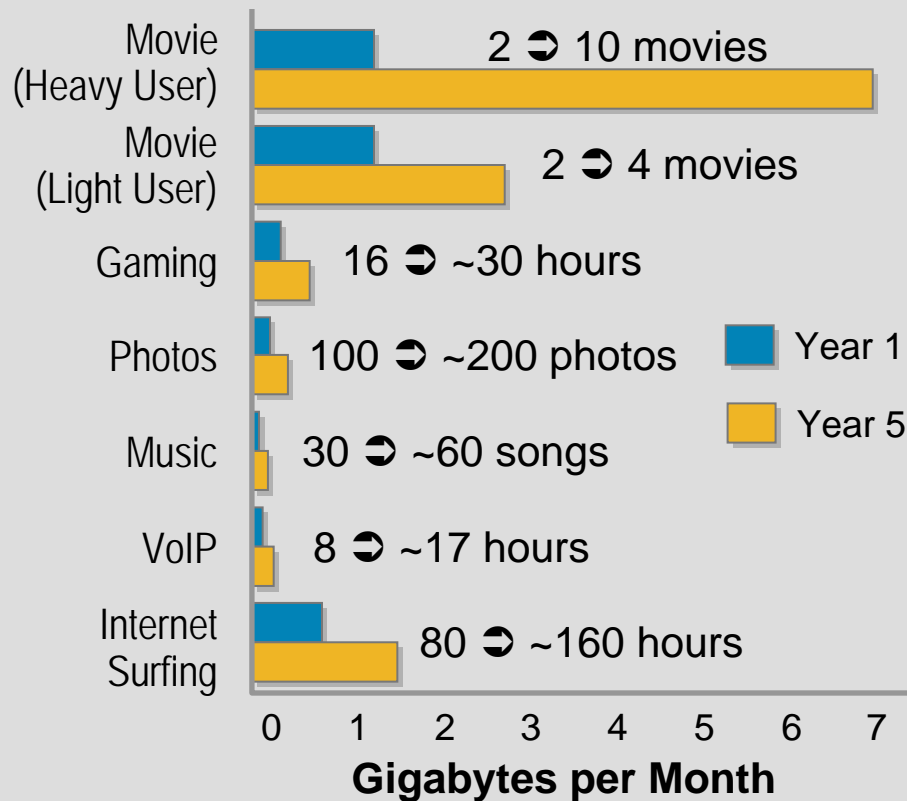


New Challenges for Web Service Providers

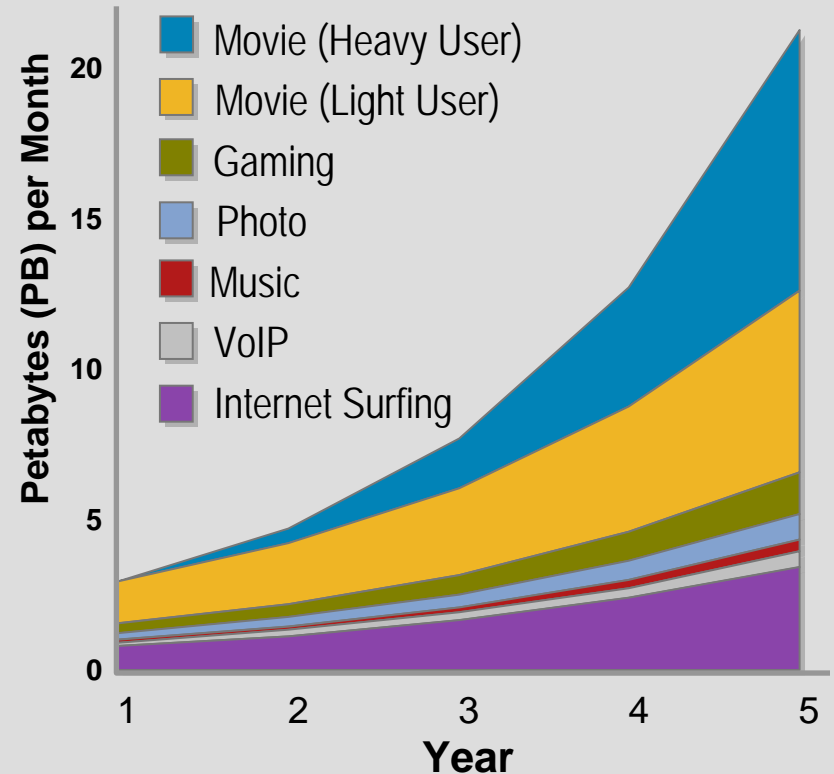
Web Video Will Consume Huge Amounts of Bandwidth over Next Five Years

Rich Media Driving Growth of Internet Traffic

**Internet Application Capacity
(Usage per household per month)**



**Internet Traffic Projection
(1M broadband household network)**

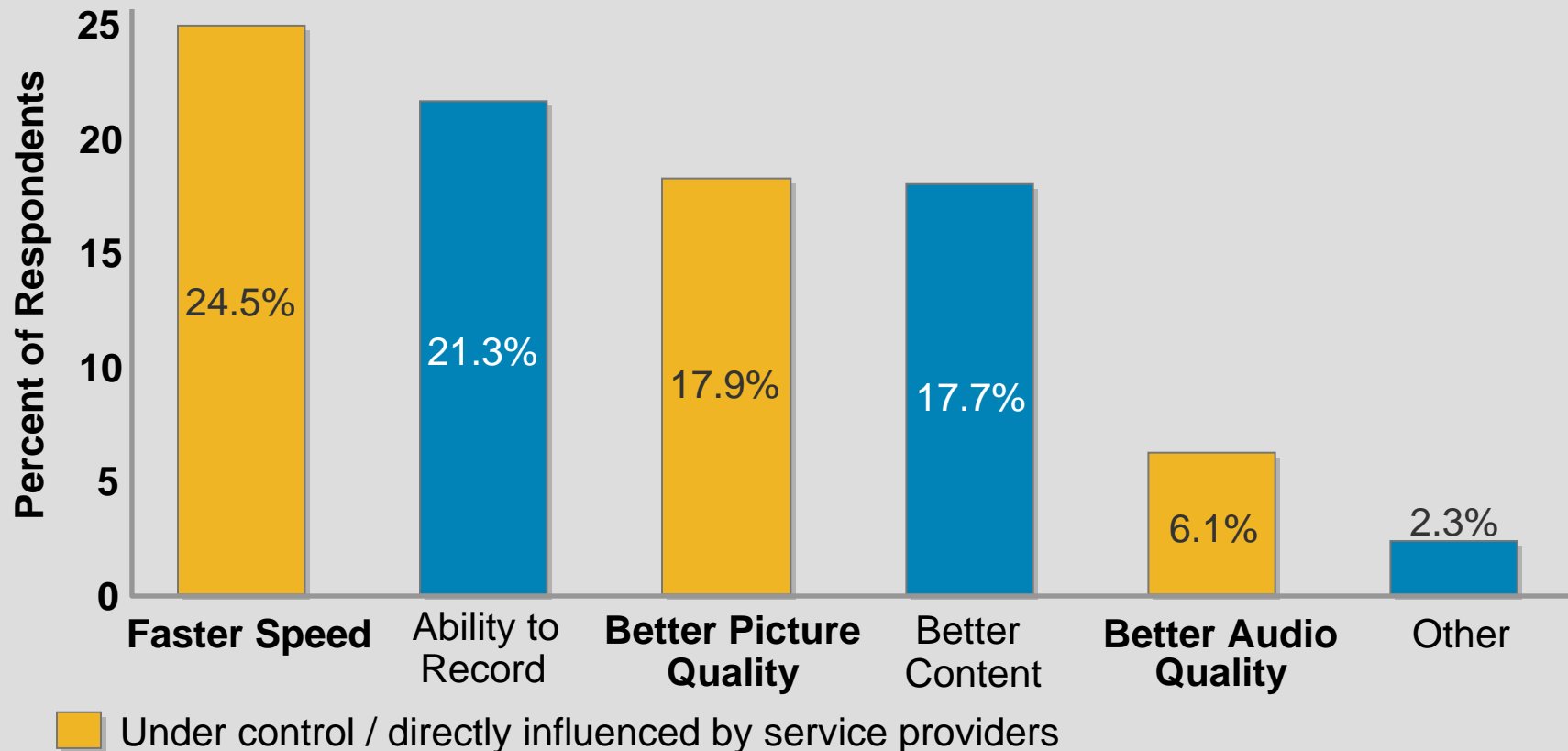


Source: Cisco IBSG, 2008

Consumers Are Dissatisfied with Web Video Experience

Faster Connections, User Features, and Quality Top List

How Web Video Experience Can Be Improved (Japan)



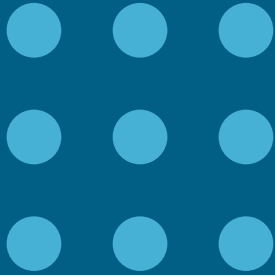
Source: Goo Research, 2007

Web Service Providers Are Responding to User Needs

	Market Trends	Technical Implications
High-bandwidth Demand	<ul style="list-style-type: none">▪ New forms of web video emerging▪ 4x bandwidth requirement expected in 5 years	<ul style="list-style-type: none">▪ Traffic characteristics of new video applications are different▪ Solutions with efficient bandwidth and overhead are required
Superior Viewing Experience	<ul style="list-style-type: none">▪ In 5 years, up to 5x more web video viewed vs. today▪ Up to 25% of users not satisfied with connection / picture quality	<ul style="list-style-type: none">▪ Bandwidth policy and / or admission control scheme must be in place
Availability on Multiple Platforms	<ul style="list-style-type: none">▪ Users demanding video-viewing flexibility (mobile, PC, IPTV)▪ Web companies reciprocating; porting video to other platforms	<ul style="list-style-type: none">▪ Converged fixed and mobile network solution required to achieve access independence and application interoperability

Source: Cisco IBSG, 2008

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Working with Web Service Providers to Address Challenges

Collaboration with OTT Service Providers Is Required to Address Challenges

AT&T Accelerates OTT Web Delivery



What

- Content / delivery management using caching servers at key network locations

Why

- Video traffic growing rapidly; large-scale video delivery challenging for web players
- Service providers have unique capabilities to provide accelerated video delivery
- **A win-win scenario:** caching less expensive for service providers than increasing core bandwidth; increased revenue from higher quality of service

BT Encourages Web Service Co-development



What

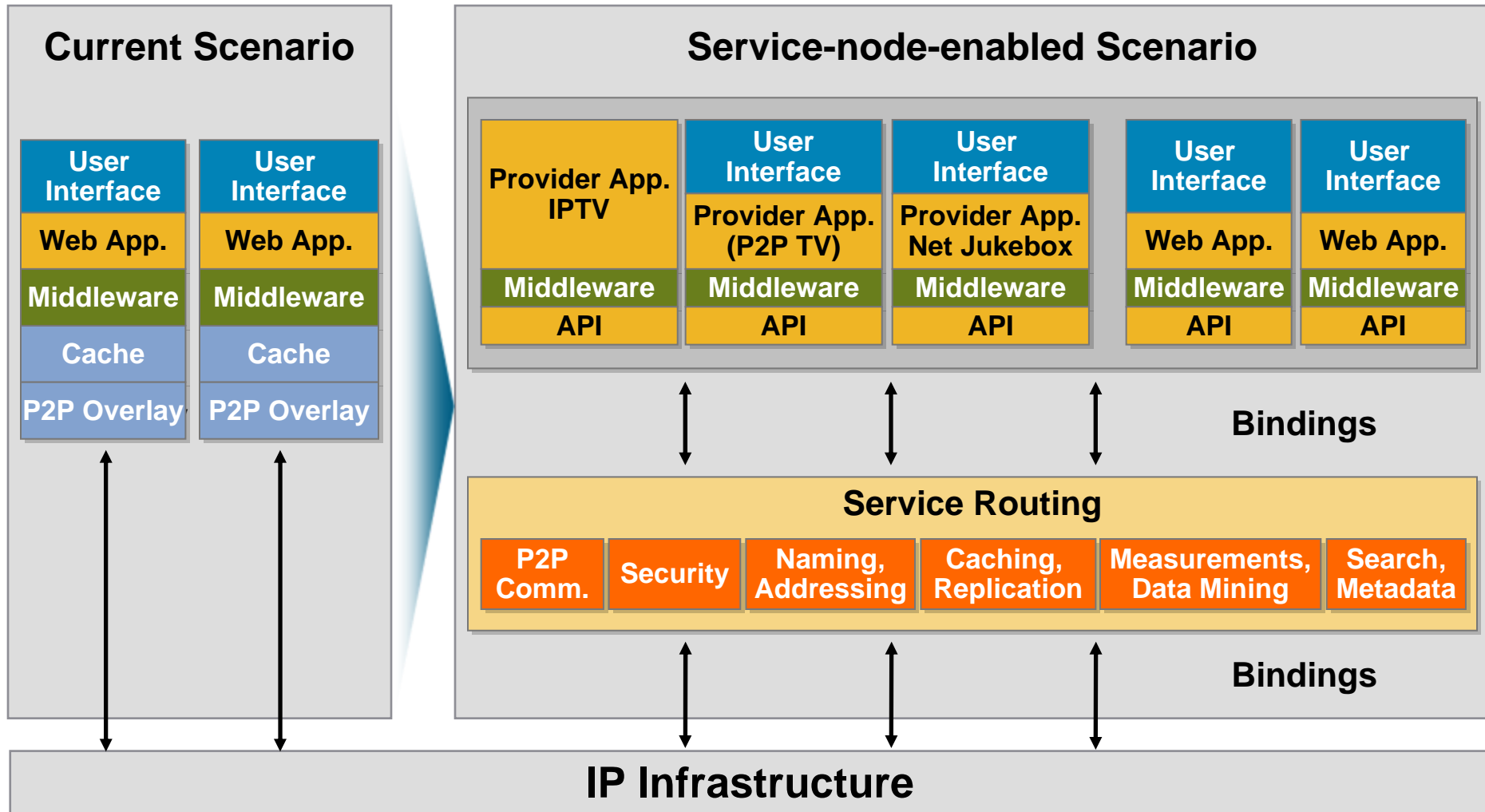
- Gives OTT web application developers high-level, web service interface to network

Why

- Service providers need additional applications to recoup investments in next-generation networks
- Developers with no telco expertise can create applications for BT's 21C network
- 2,500 developers registered; revenue-sharing program implemented

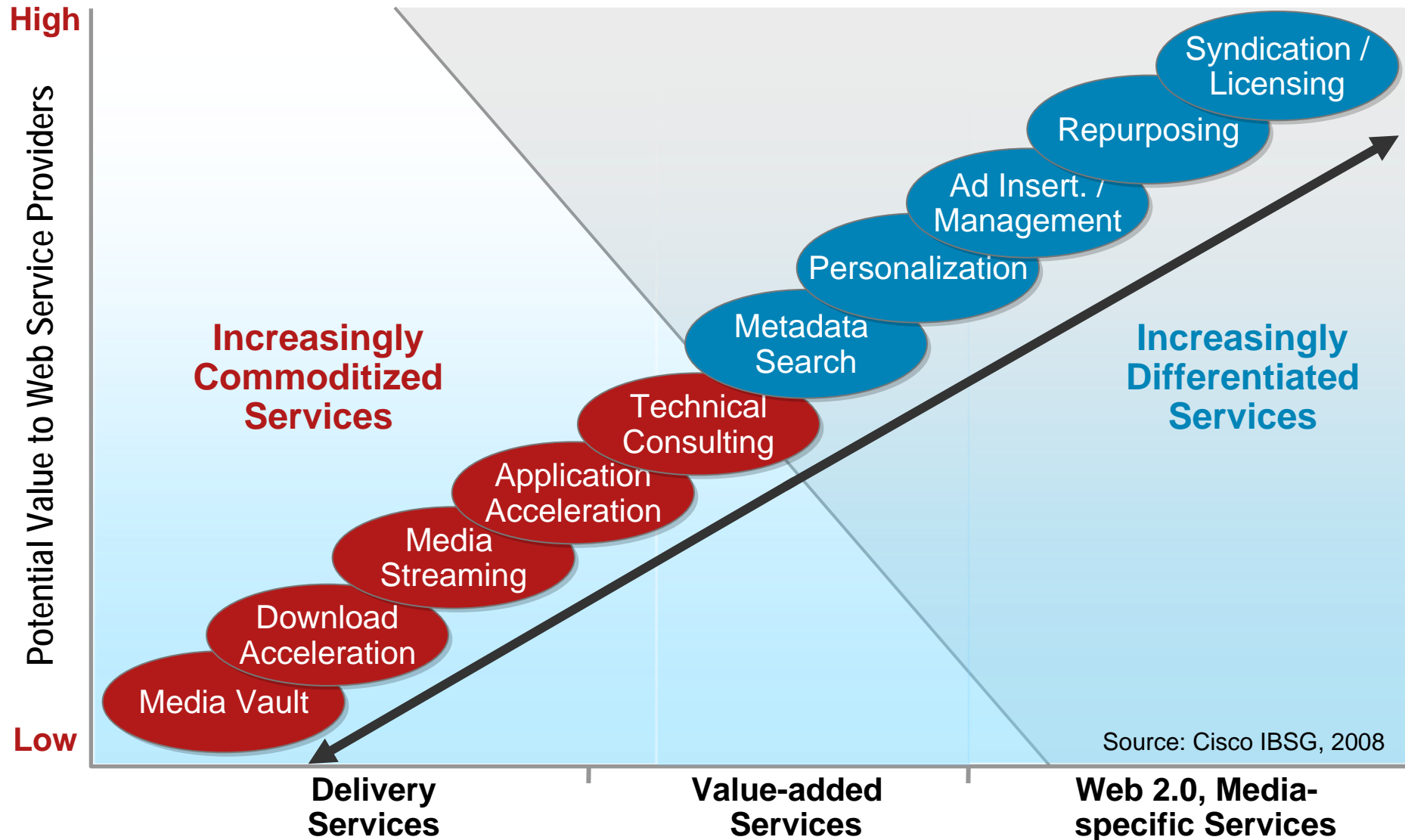
Source: Cisco IBSG, 2008

Service Node Is Key to Efficient Web Video Delivery

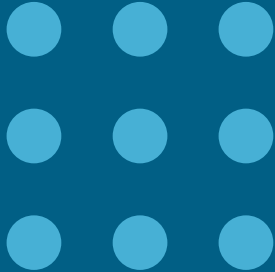


Source: Cisco IBSG, 2008

Deliver Services with Highest Value to Web Service Providers



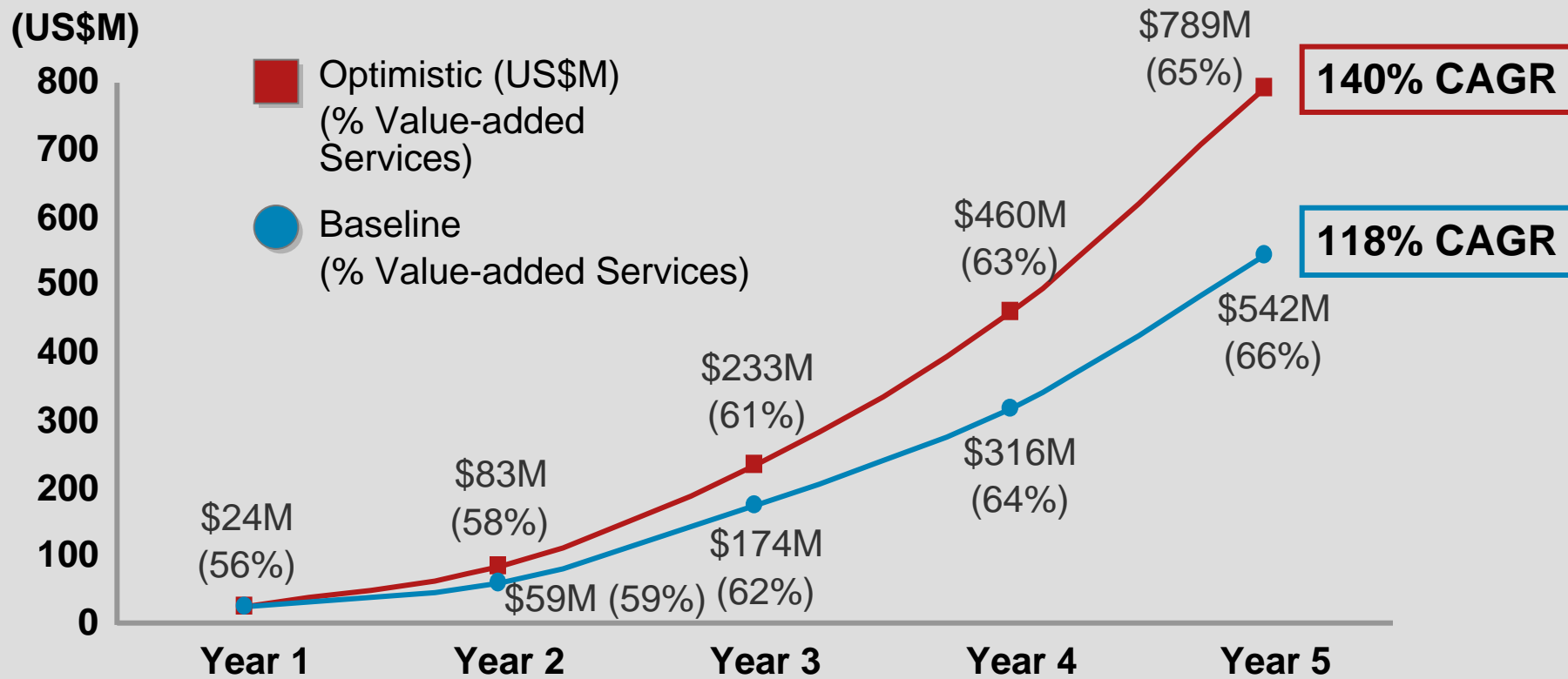
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**A \$1 Billion
Market Opportunity**

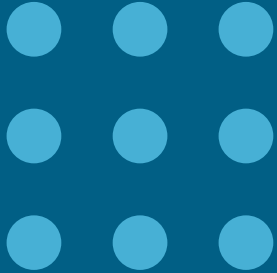
Web Enablement Services Can Increase Revenues by \$1B to \$1.5B over Five Years

Five-year Web-enablement Service Revenue (US\$M)



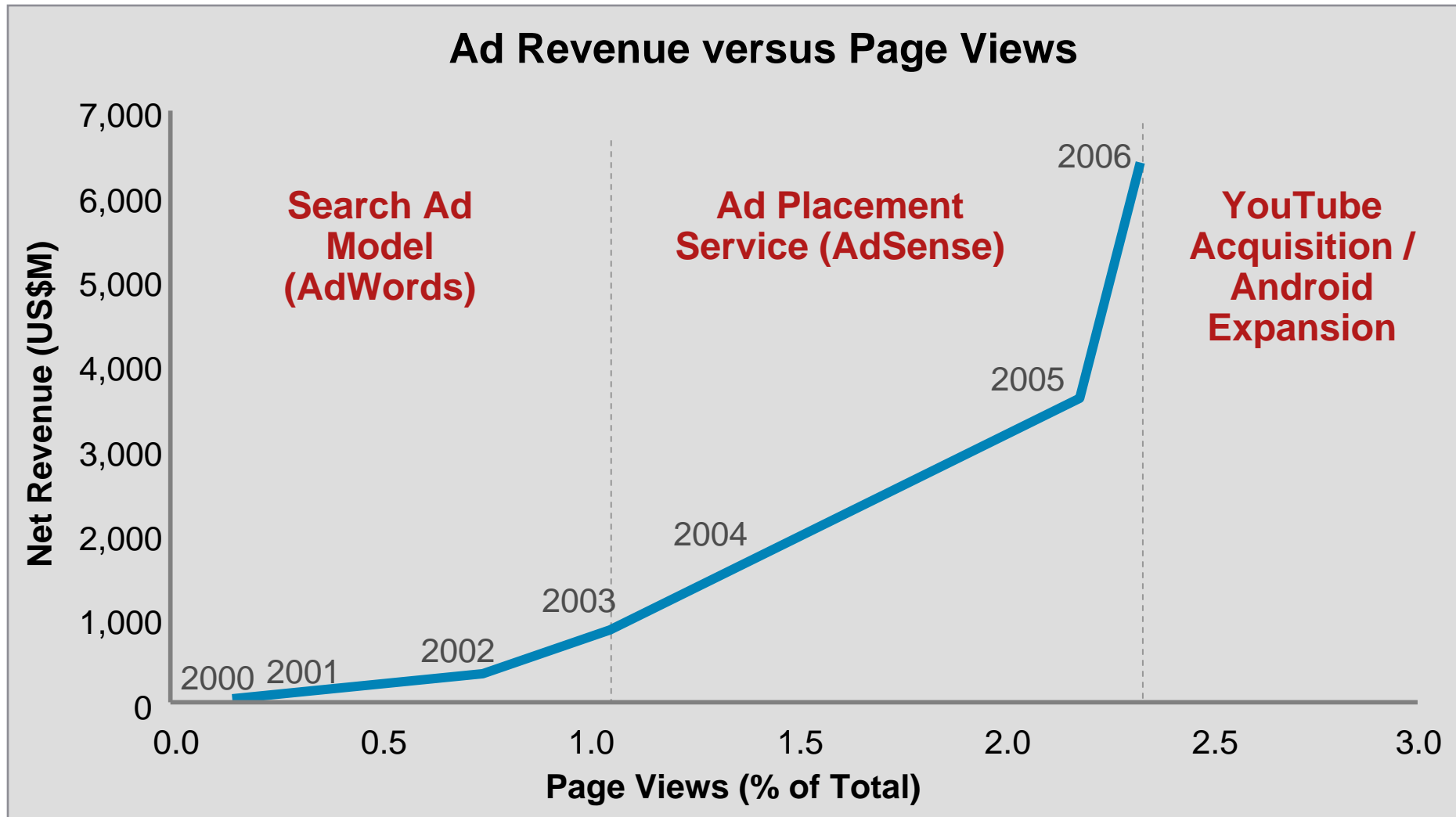
Sources: Morgan Stanley, 2008; Thomas Weisel, 2008; Tudou, 2008; Cisco IBSG, 2008

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**Services Lead to
Profitability from Video**

Combining User Video and Ads for Growth



Sources: Google, 2007; Lehman Brothers, 2007; Alexa, 2007; Cisco IBSG, 2008

Success Built on Video Search, Ad Insertion, and White Labeling



66% of Revenue in 2012 from Video Search

Web Video Aggregator

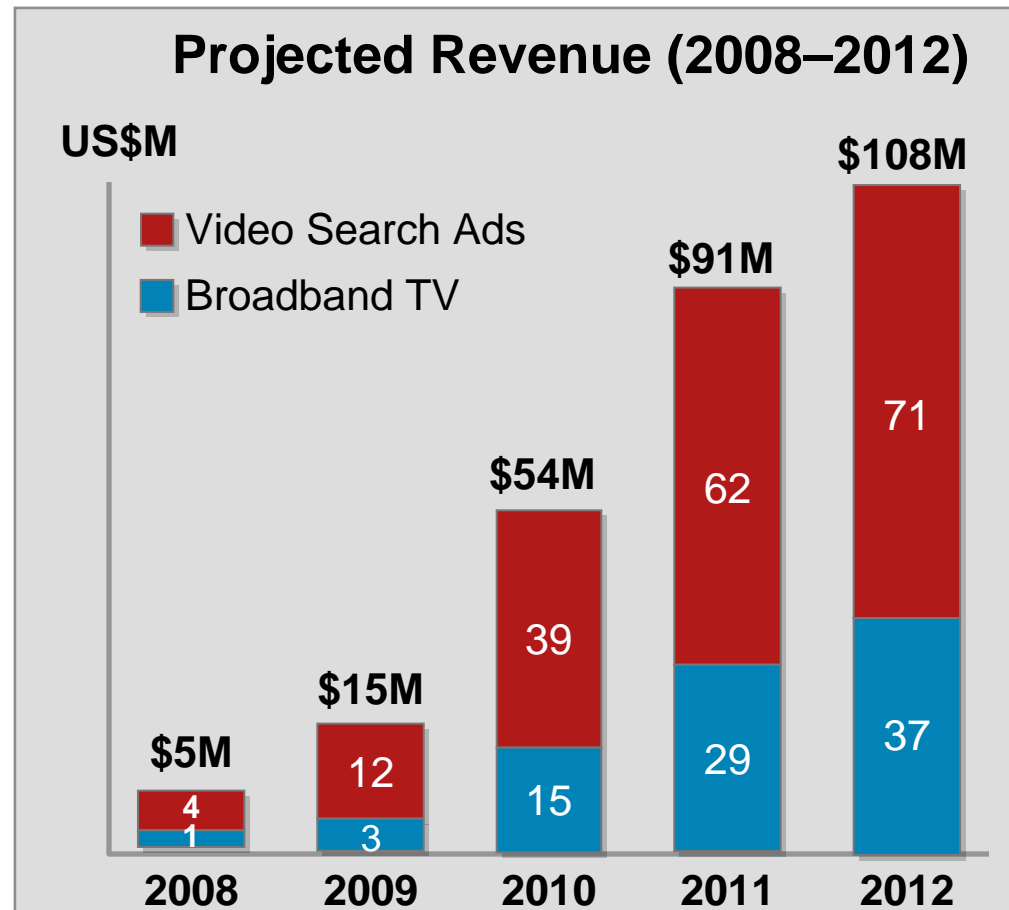
- 18M hours of videos
- 1.5B video searches in 2007

Services

- Video aggregation from media partners with search capability
- Broadband TV channels
- White-label video search

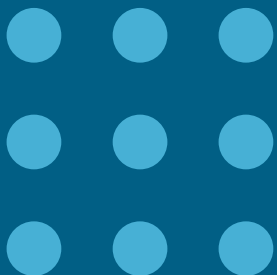
Revenue Model

- Website banner ads
- Video search ads (revenue split evenly with content provider; \$30–\$50 CPM)



Sources: Citigroup, 2008; Cisco IBSG, 2008

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Next Steps

Next Steps for Telco Service Providers

1. Identify areas for collaboration with web service providers that bring mutual benefits—no one has all the answers
2. Develop robust collaboration framework covering strategic, technical, and operational aspects
3. Continue to co-develop solutions with web service providers and use emerging technologies
4. Review collaboration with partner(s) regularly and adapt based on new learnings

Source: Cisco IBSG, 2008

