Connected Life
Transforming Service Providers into Experience Providers

Cisco Internet Business Solutions Group (IBSG)
August 2007

Agenda

1. Connected Life: an emerging market with immense potential
2. Service provider situation
3. Capitalizing on the opportunity
4. Execution priorities

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Connected Life: Emerging Market with Immense Potential

Consumers Have Made Themselves Addressable

From 1975 to 2005, the amount spent by U.S. households on consumer electronics increased from $84 to $1,200 annually

	2000 Households (105 million)	**2006** Households (112 million)
Broadband	6.2 million	56 million
Mobility (with mobile phones)	57 million	88 million
Home Networks	5 million	29 million
Devices (portable and connectable)	▪ Laptops: 12 million ▪ Digital cameras: 10 million ▪ MP3 players: 1.8 million	▪ Laptops: 40 million ▪ Digital cameras: 65 million ▪ MP3 players: 32 million

Sources: Forrester, 2006; Consumer Electronics Association, 2006; Cisco IBSG, 2007

New Technologies Are Also Changing Consumer Behavior

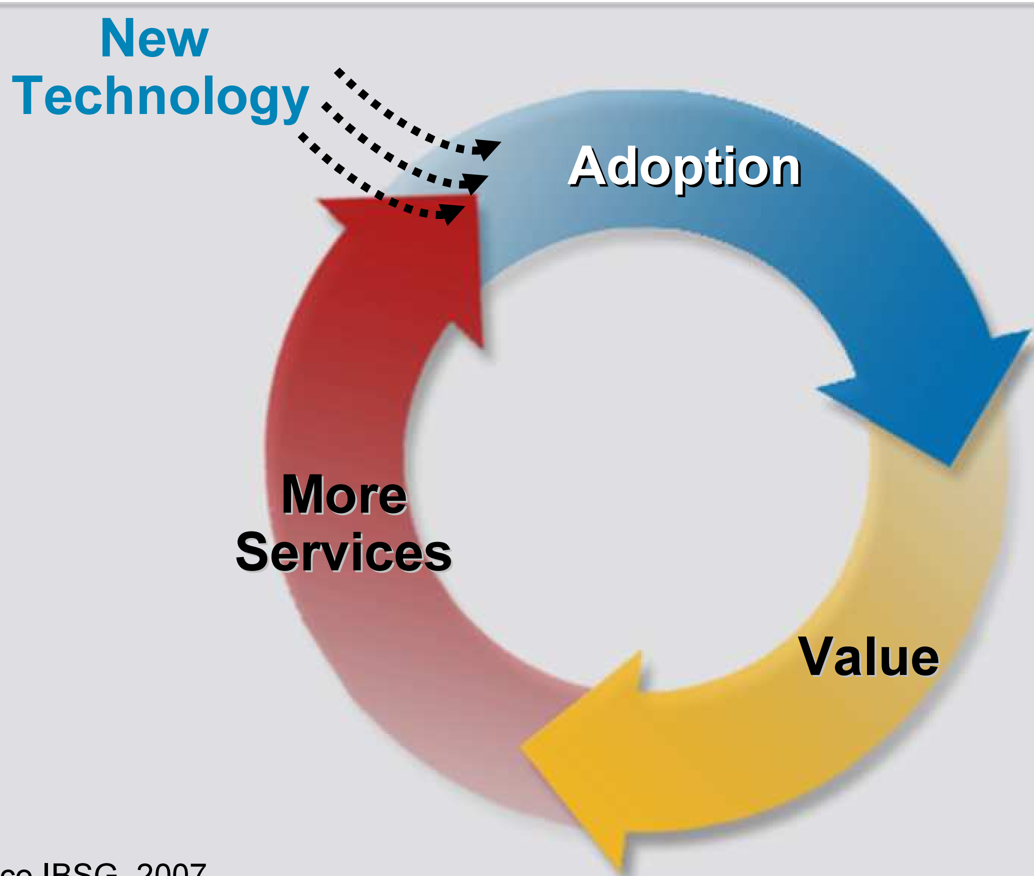
	Changing Behavior Patterns	New Needs
Broadband Access	▪ 55% of workers conduct some business at home ▪ Broadband customers use Internet more than TV (16 hrs./wk. versus 15 hrs./wk.)	**Connectivity:** Consumers are hooked **Portability:** Consumers will not be tethered **Control:** Consumers are creating their own personalized experiences
Mobile Voice	▪ Mobile phone use increased from <300 min./mo. in 2000 to >830 min./mo. in 2006	
DVR	▪ Between 2002 and 2005, real-time TV viewing as a percentage of all viewing decreased from 94% to <60%	
Portable Audio	▪ 19% of broadband users carry music with them at all times	

Note: data is U.S.-based

Sources: Cisco IBSG, Connected Life Survey, 2006; Merrill Lynch, 2007

The Consumer Technology Demand Cycle

Market Acceleration and Expansion Driven by New Technology and Changes in Consumer Behavior



Source: Cisco IBSG, 2007

The Emergence of “Connected Life”

Convergence Creates New Experiences for Consumers Anytime, Anywhere, on Any Device

Anyone

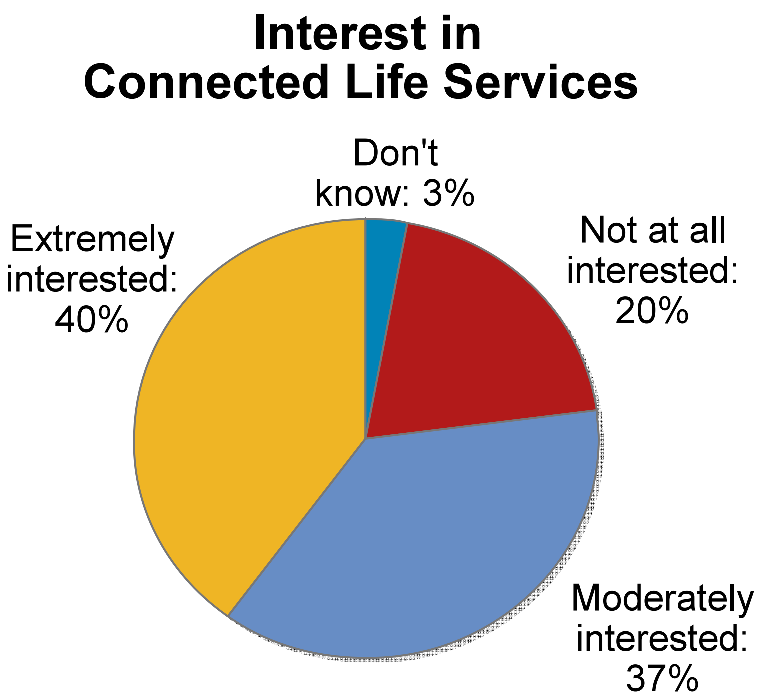
Anywhere

Any Device

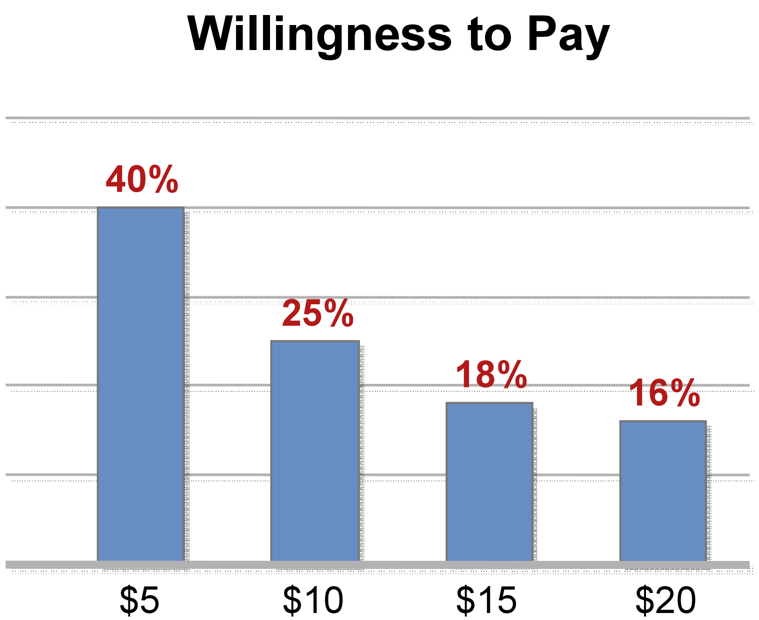
Any Content or Application

Source: Cisco IBSG, 2007

Cisco IBSG Research Shows Consumers Understand and Value Connected Life



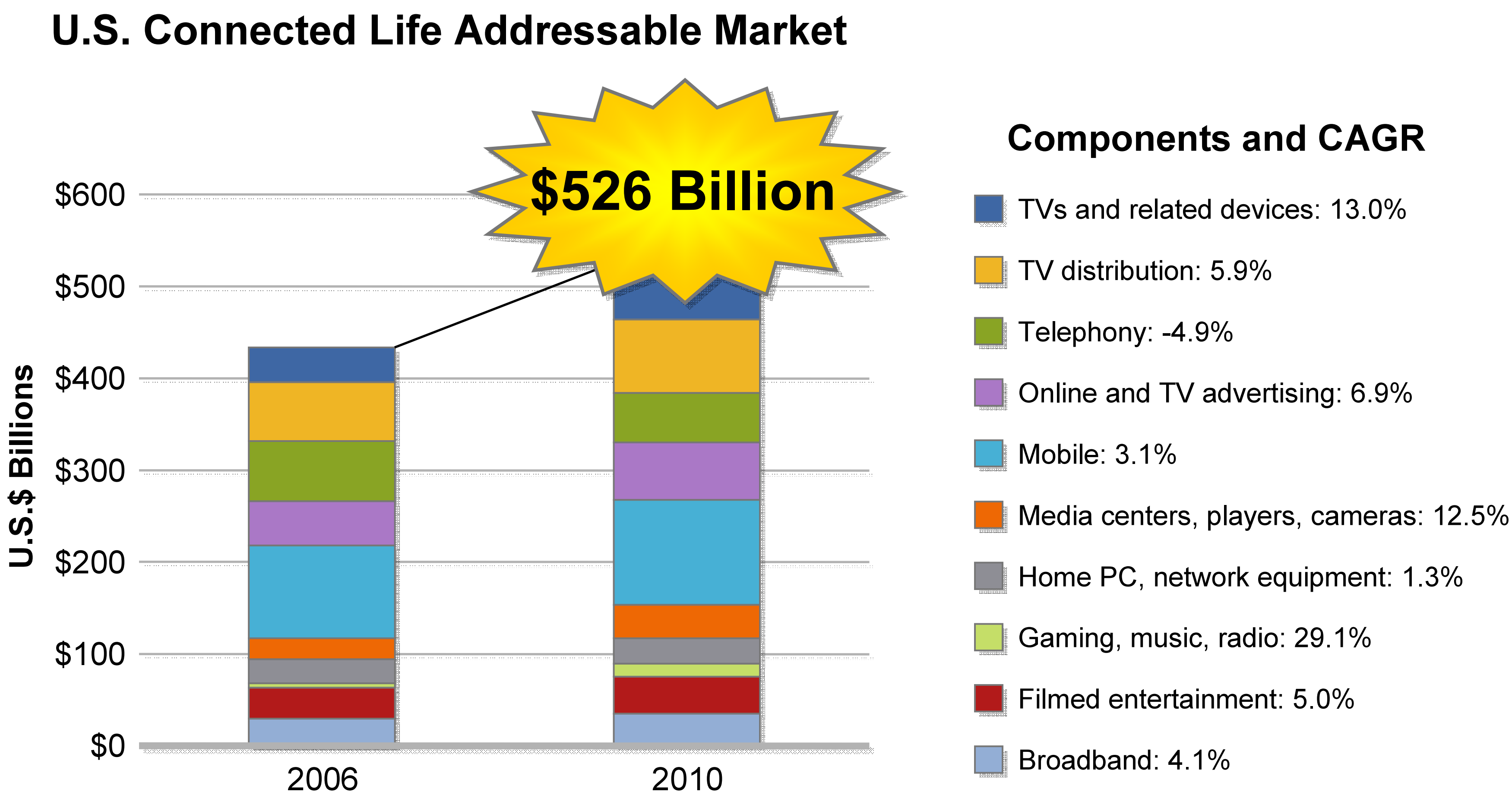
77% addressable opportunity among broadband users



On average, consumers expect to pay $13 per month for added Connected Life services

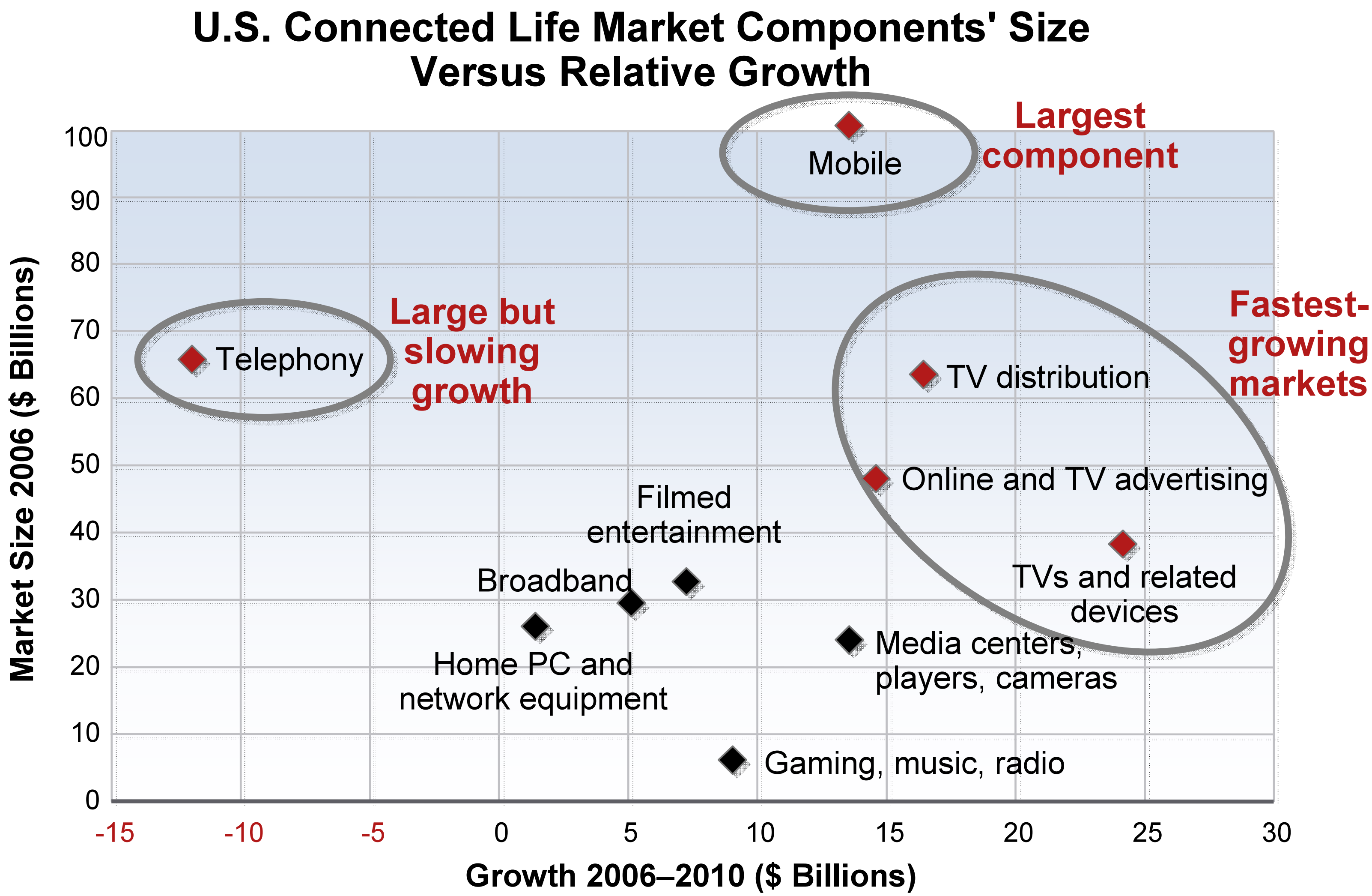
Note: Among U.S. broadband users
Source: Cisco IBSG, Connected Life Survey, 2006

Translates into an Immense Market



Sources: PWC; Ovum; ABI; Cisco IBSG, 2007

Value Is Migrating Among Services



Sources: PWC; Ovum; ABI; Cisco IBSG, 2007

Consumer Offerings Are Evolving Along Three Waves

Wave 1

Single-Device Solutions

Take pictures

Listen to music

Play video games

Wave 2

Point Solutions

Take pictures; print online

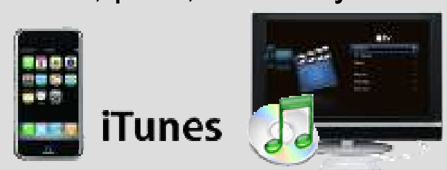
Listen, purchase, manage online

Play, purchase, play online

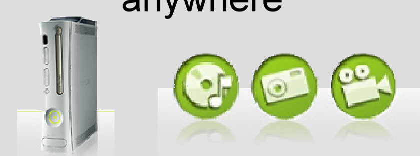
Wave 3

Connected Experience

Take, print, view anywhere



Use music, e-mail, Web, phone anywhere



Play, purchase, play online, movies, manage content

Location and Device Ubiquity

Content and Application Solution Breadth

Source: Cisco IBSG, 2007

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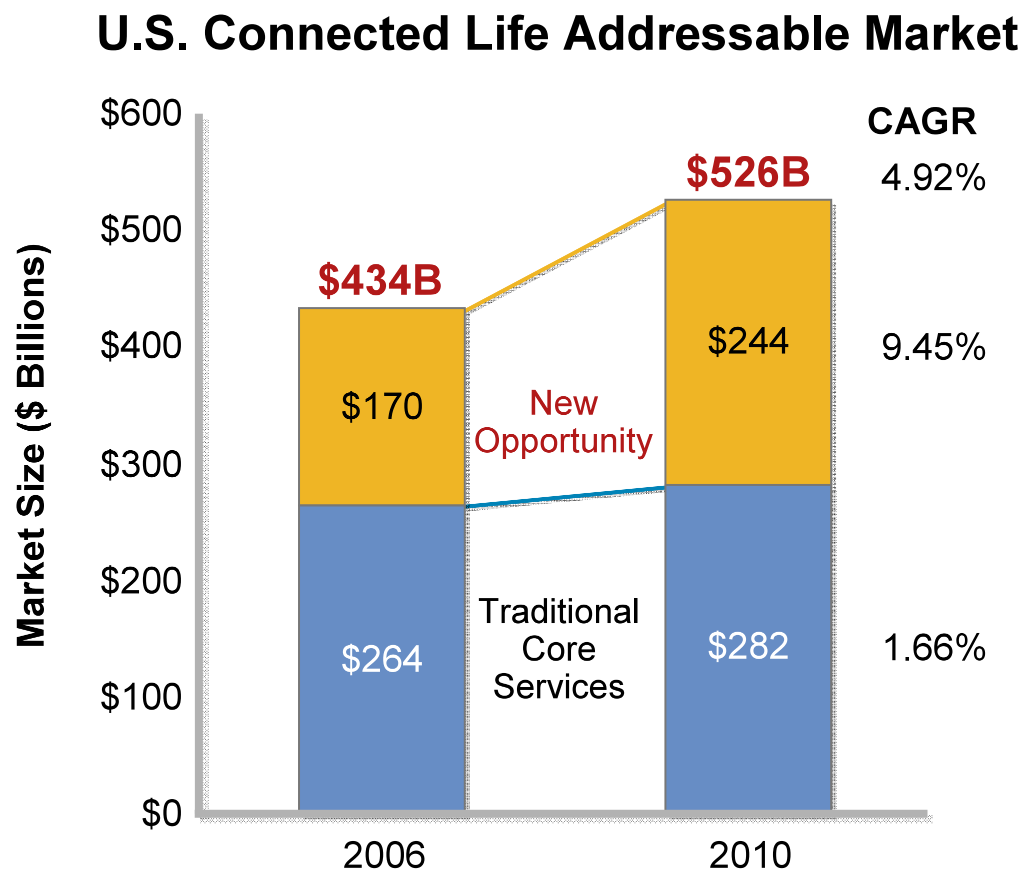
Service Provider Situation

Despite Strong Market, Value Is Migrating Away from Traditional Core Services

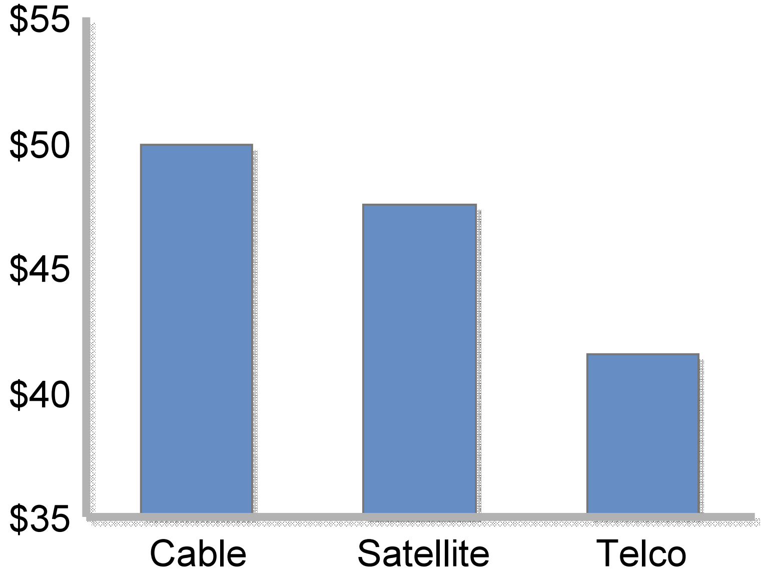
Service Providers Must Pursue New Opportunities or Risk Losing Their Dominance



Source: Cisco IBSG, 2007

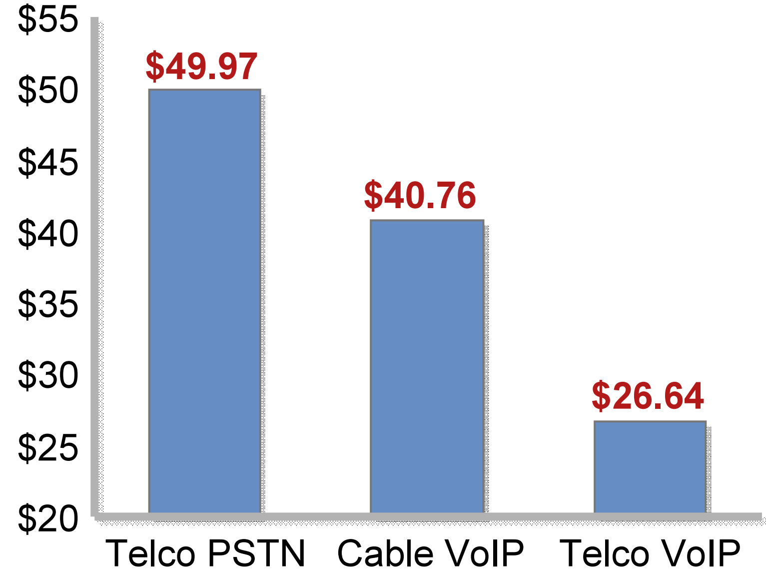
Price Erosion Is Under Way

Video Services Average Pricing (Monthly)



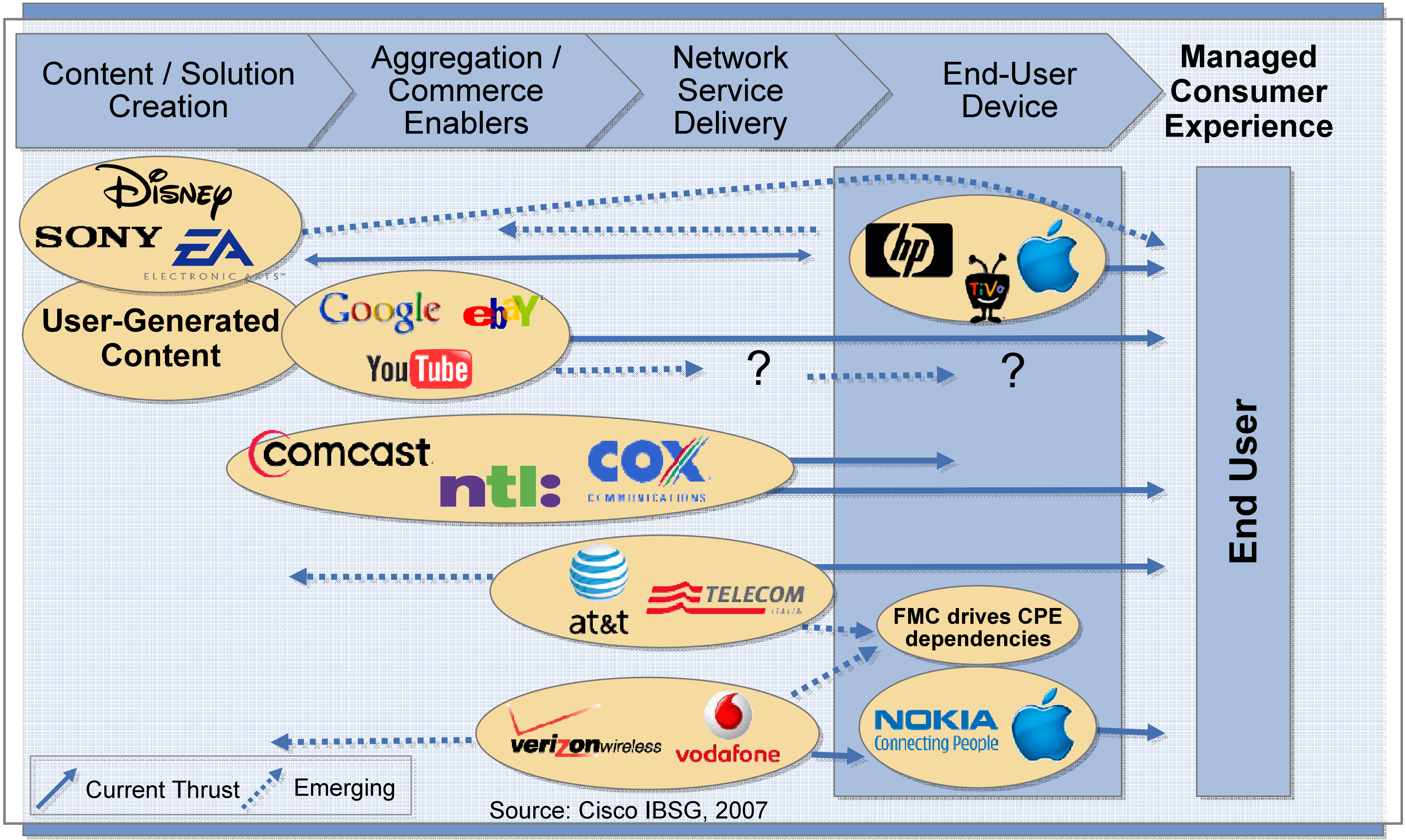
	Cable	Satellite	Telco
Avg. Price:	**$49.92**	**$47.49**	**$41.49**
Channels:	**100**	**138**	**150**

Unlimited Local and Long-Distance Phone Services Average Pricing (Monthly)



Sources: Bear Stearns, 2006; company Websites, 2007; Cisco IBSG, 2007

Competition Is Intensifying

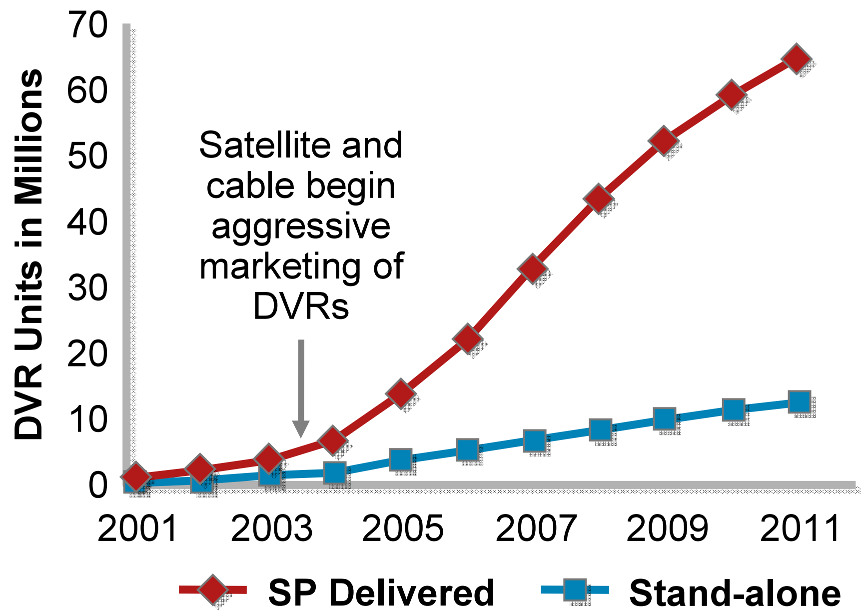


A Precedent for Service Providers: Accelerating the Market to Waves 2 and 3

Service Provider DVR Solution Versus Stand-alone DVR Adoption

- Wave 1: TiVo created market in 1999
- Wave 2: Cable and satellite providers accelerated market with simple DVR service

  DVRs to reach 65M households; 55% penetration in 2011
- Wave 3: DVRs being integrated in home networks and driving triple-, quad-play services



Source: Forrester, 2006; Cisco IBSG, 2007

Service Providers Must Take Advantage of Current Customer Perceptions…

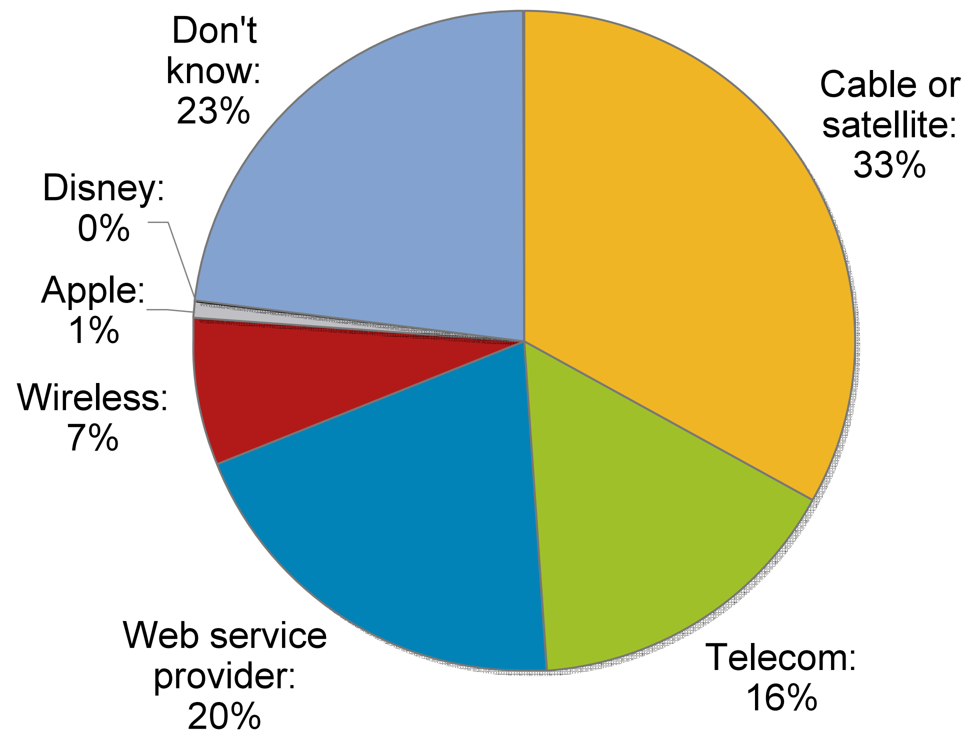
The Door Is Open and Service Providers Must Act

- Consumer uncertainty reflects market immaturity

    More than 1 in 5 respondents (23%) don't know their preferred provider

- Cable MSOs' strong lead driven by video presence and multi-product bundling
- Mobile providers' lack of presence in the home and minimal multi-product experience have contributed to low consumer mindshare

Preferred Provider of Connected Life Solutions



Base: U.S. Broadband Adopters

Source: Cisco IBSG, Connected Life Customer Survey, 2006

…and Existing Capabilities

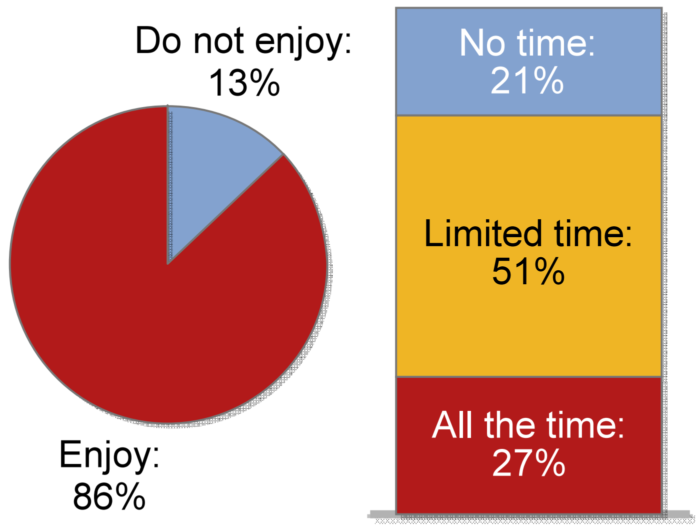
Service Provider Core Strengths

- Established brands and credibility
- Incumbent multi-service relationship
- Network intelligence and capabilities
- Scalable infrastructure and operations
- Customer relationship management precedent
- Financial resources and depth

Source: Cisco IBSG, 2007

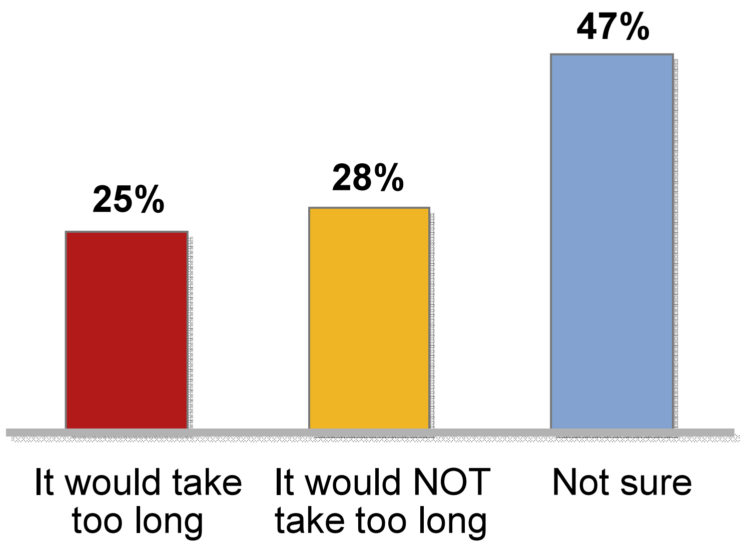
Consumers Are Deterred by Complexity

Technology Interest Versus Time Investment



For many consumers, the scarcest resource is time, not money

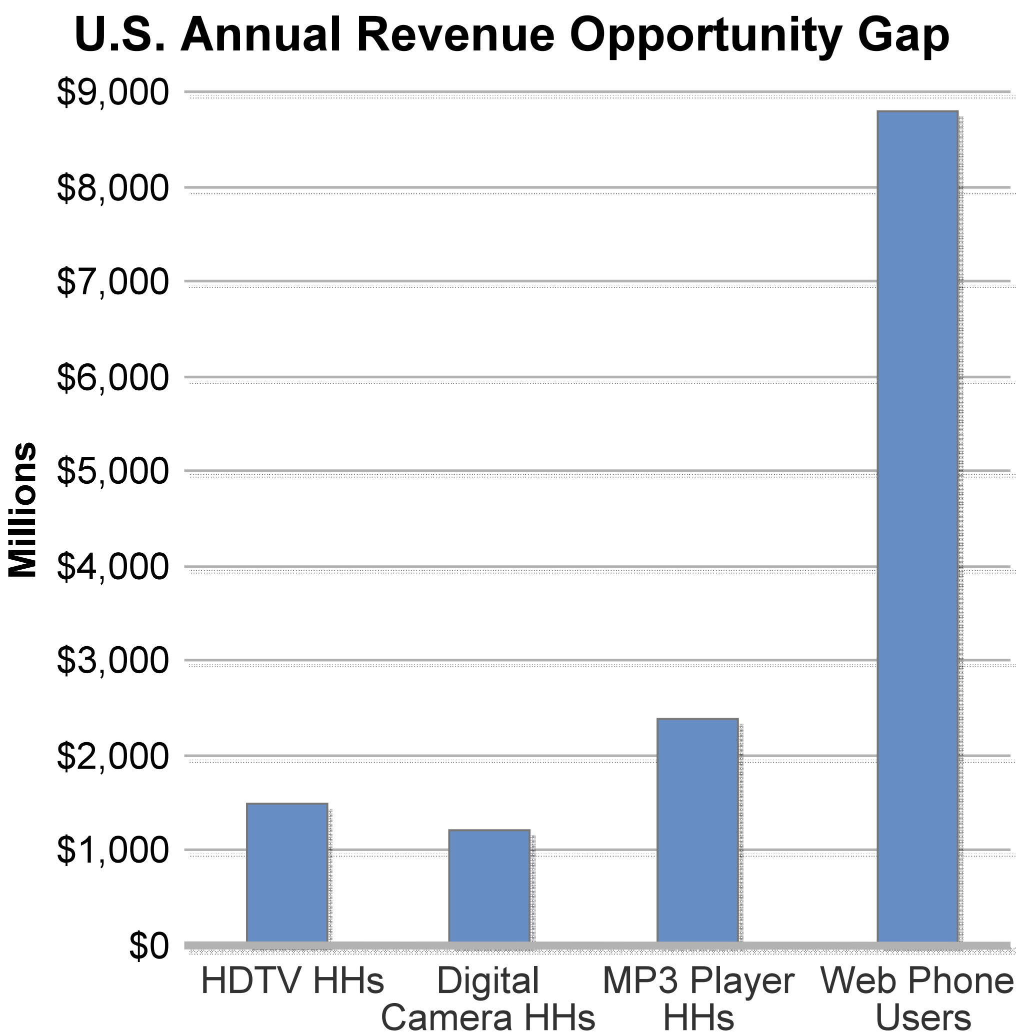
Perceptions of Time Required to Set Up Connected Life



Consumer technology uncertainty can also deter adoption

Source: Cisco IBSG, Connected Life Survey, 2006
Note: Base is U.S. broadband users

Lost Opportunities Driven by Complexity

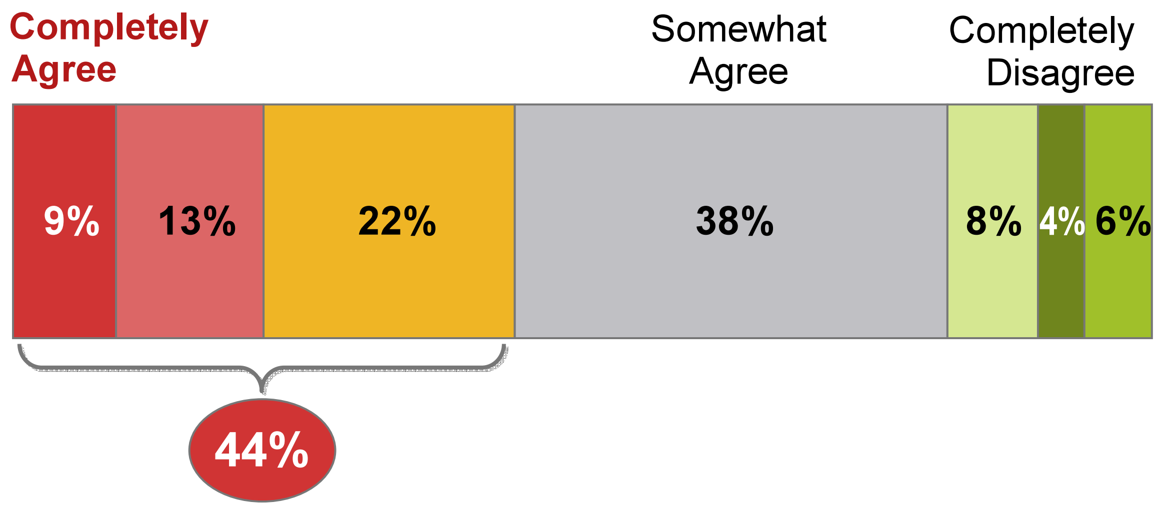


Sources: Forrester; InStat; Ovum; Cisco IBSG, 2007

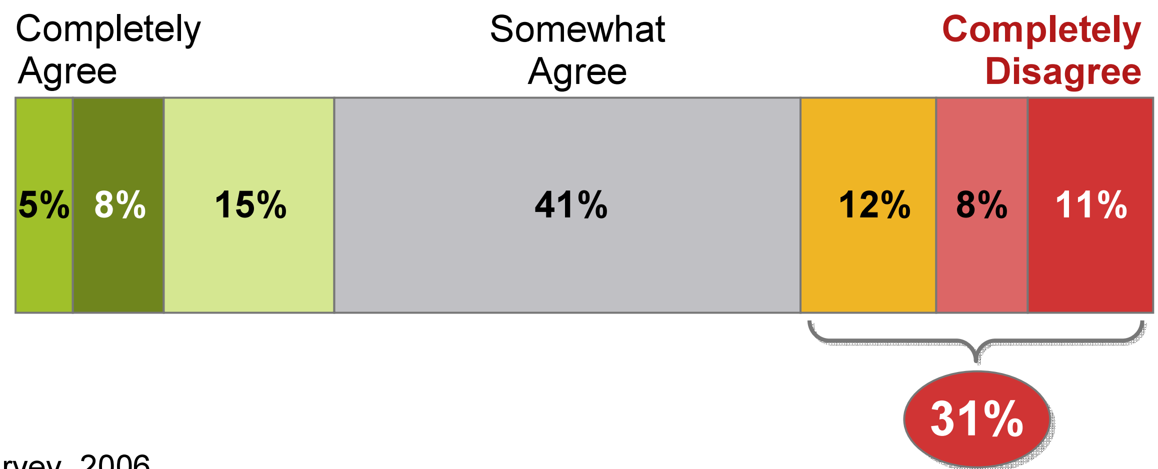
- Solution complexity limits adoption of services
  - Over 50% of U.S. HDTV households have no HD programming
- Home network adoption limited due to complexity
  - Over 70% do not feel they could install a home network themselves

Security Also Presents a Barrier that Must Be Managed Effectively

A Connected Life service would make my household vulnerable to security intrusions



Storing all our household digital media content in a central location would make that information more secure



Source: Cisco IBSG, Connected Life Survey, 2006
Note: Base is U.S. broadband users

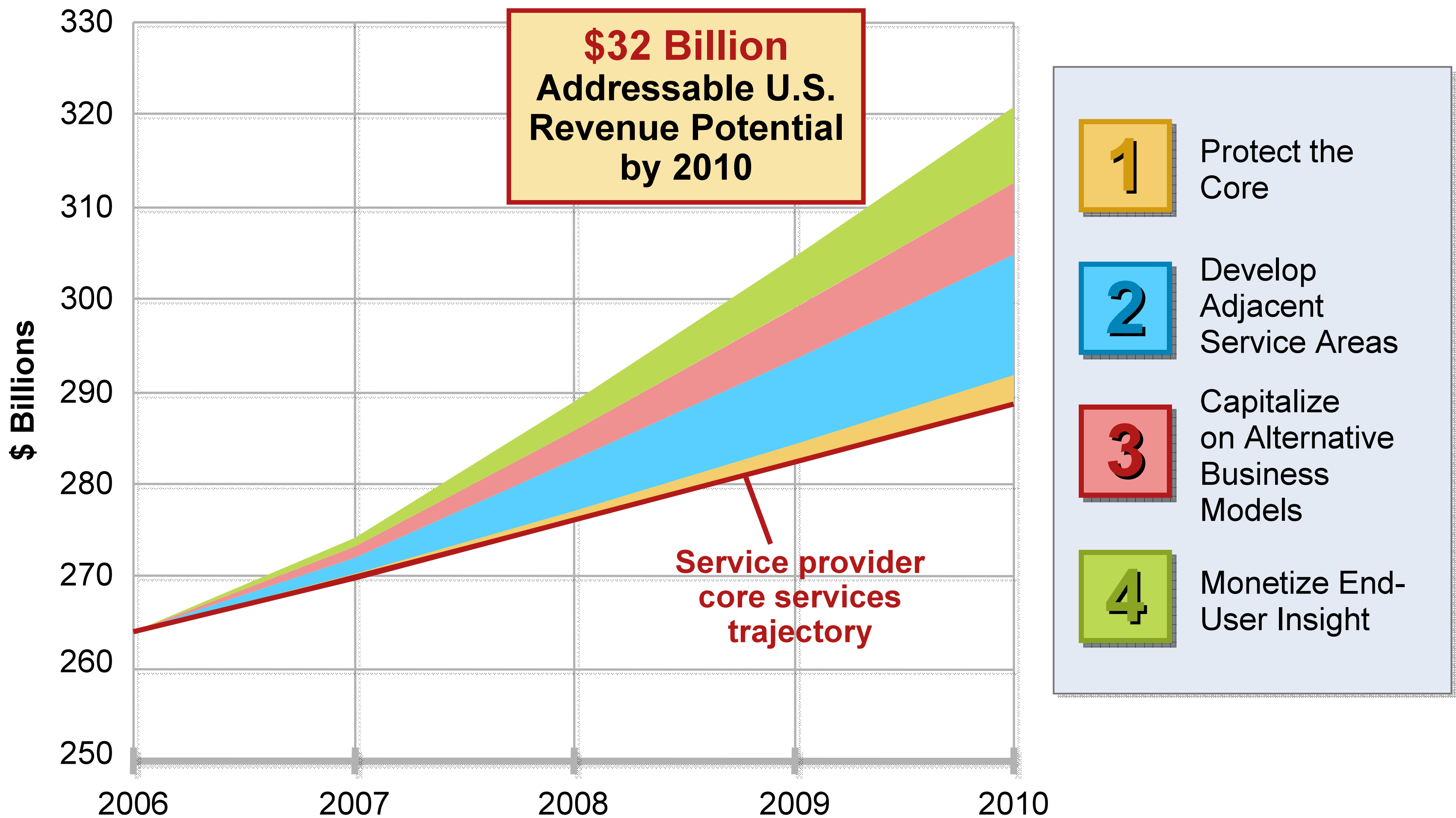
3 Capitalizing on the Opportunity

A Platform for Growth: Four Key Levers

	For Service Providers
1 Protect the Core	New converged services integrated with / across multiple core services to provide resilience against decoupling
2 Develop Adjacent Service Areas	Home platform enables expansion beyond core services and addresses new end-user needs to create value through simplicity, interoperability, and risk avoidance
3 Capitalize on Alternative Business Models	▪ Embed capabilities in cross-industry business models ▪ Enable market expansion, cost optimization, and technology acceleration
4 Monetize End-User Insight	▪ Gain user behavior and context information for solutions ▪ Drive personalization rather than household orientation and new advertising models

Source: Cisco IBSG, 2007

Levers Unlock the Potential



Source: Cisco IBSG, 2007

France Telecom Comes Back with Home Gateway Multi-Play Strategy

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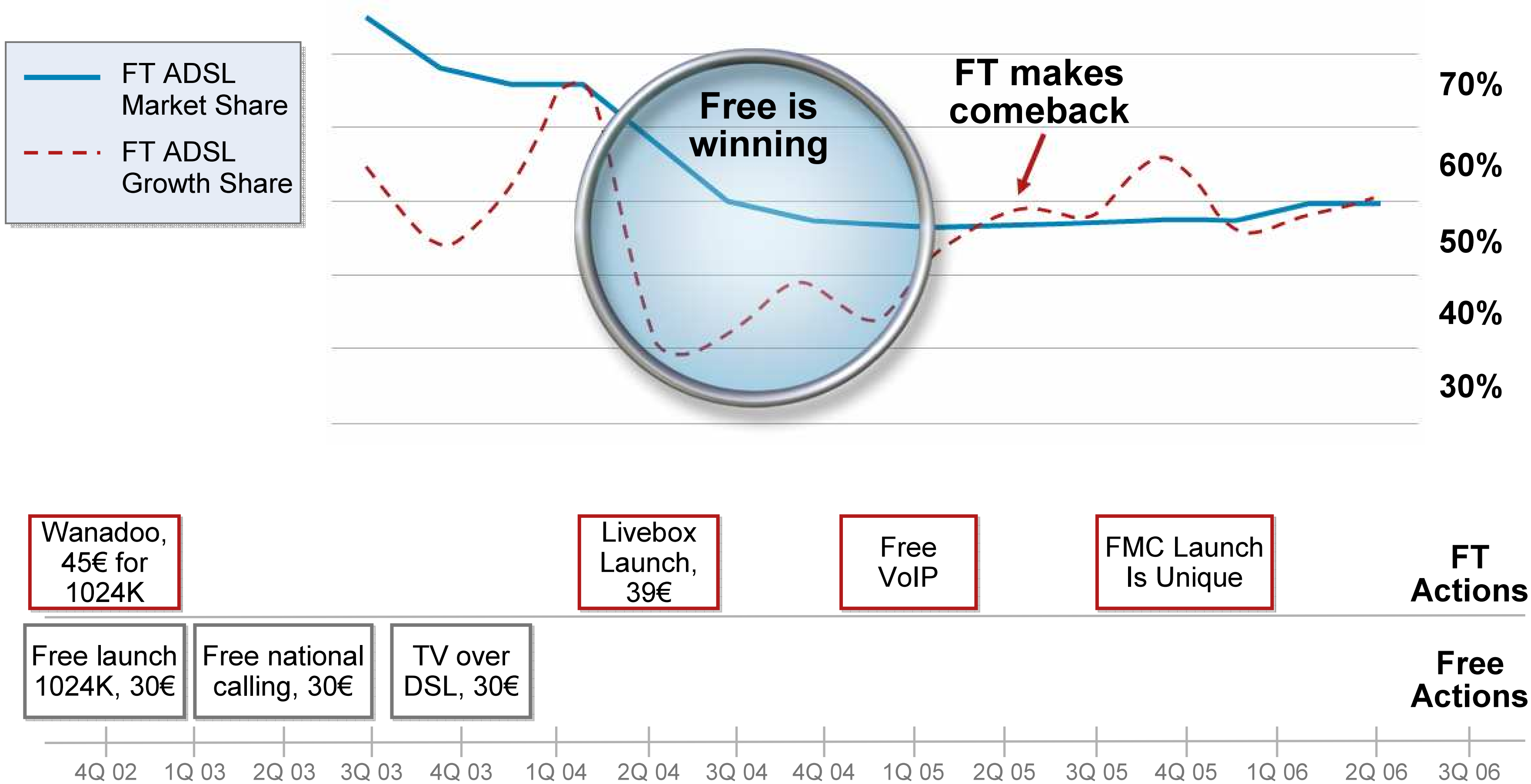
French Competitive ADSL Market



Timeline of Events

Source: France Telecom, 2006; Cisco IBSG, 2007

Develop Adjacent Services: Gain Control over Home Platform

2

- Home platform enables expansion beyond traditional core services
- Adjacent service areas extend into new user needs
- Service provider creates value through simplicity and interoperability
- These Wave 3 services are characterized by having a high degree of mobility, connectivity, and control

Home Services Platform

Note: services are examples only and not a complete list
Source: Cisco IBSG, 2007

New Service Opportunities Forming Around Needs-Based Clusters

2

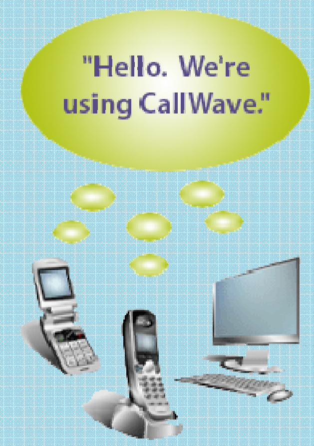
AT&T Home Monitoring Service

- Starter package: $199
- Pan-and-tilt IP camera
- Wireless door / window sensor
- Wireless gateway
- Monthly recurring charge: $9.95

BT Fusion Fixed Mobile Convergence

- Home voice over Wi-Fi
- Seamless handover
- Partnership with Vodafone
- Many public hotspots
- Can monetize in-home / building mobile traffic

CallWave Point Solution



- Active screening; in-call transfer
- Connects cell VMX with e-mail
- Single-mode converged 650,000 subscriptions
- Wave 2 solution
- Premium package: $9.95 per month

Source: Cisco IBSG, 2007

Connected Life Isn't Just for "Media Junkies"

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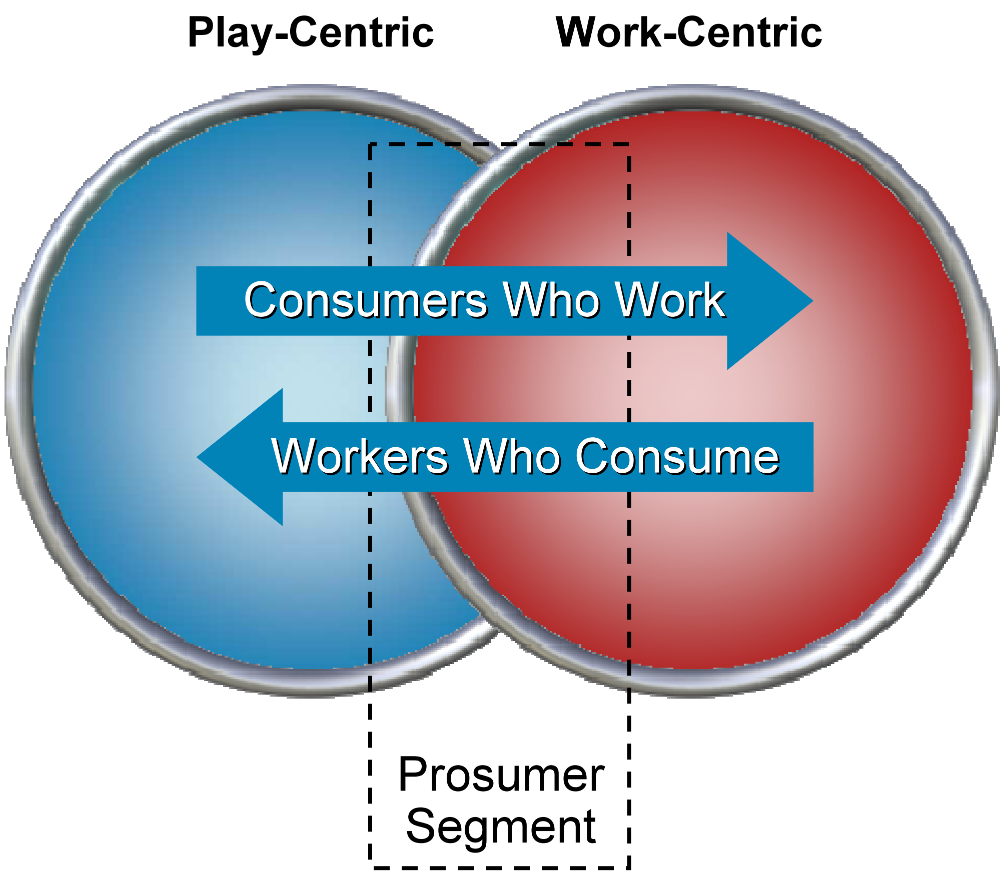
"Prosumers" Are an Important Early Target Market



- **Characteristics**
  - Shared devices
  - Spending power
  - Behavior
  - Importance
- **Service Provider Implications**
  - Need for new services
  - Develop billing flexibility
  - Rethink marketing focus

Source: Cisco IBSG, 2007

Interest Will Come from Select Industries

3

Service Providers Bring Value; New Models Develop

Energy	Enel	▪ Shifting electricity demand using time-of-day smart metering; 27M homes connected; \$2.1B investment with 4-year payback	Cost Optimization
Health	PARTNERS Medicare	▪ Working with Cardiocom to study benefits of home applications; 48% drop in hospitalization; ROI of \$4 for every \$1 spent	Cost Optimization
Security	BRINKS HOME SECURITY	▪ Seeking differentiation and growth in competitive market. Reliance on local installers opens opportunity for mobile applications	Market Expansion
CE Retailer	SAMSUNG	▪ Samsung Tower Palace and Seoul, Korea digital home initiatives to connect all devices to Internet; 6,000 homes in 2004	Technology Acceleration

Source: Cisco IBSG, 2007

"Insight Multiplier" from Knowledge of Customer Behavior and Context

4

Insight Multiplier Opportunity Areas

Personalized Services

Create a custom-tailored solution that is configured specifically for / by an individual.
Drives use / ARPU / loyalty

Precision Advertising

Implement context-based marketing initiatives with improved accuracy and results.
Accelerates new revenue

Subscriber Orientation

Develop market size by expanding the number of users per HH that would use and pay for services.
Expands addressable market

Source: Cisco IBSG, 2007

Customer Insight Creates New Value

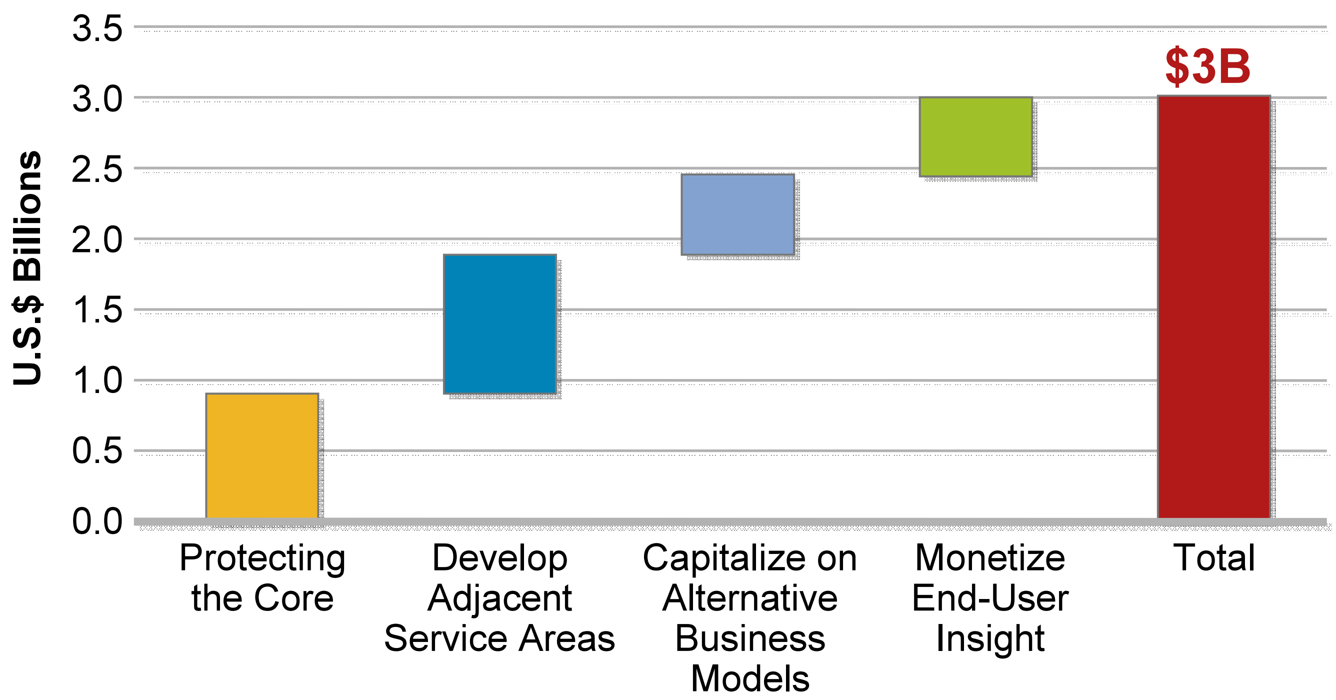
4

Organization	Description	
NETFLIX	▪ Most rentals from recommendations ▪ Measurable benefits in revenue per subscriber, churn, and market attractiveness ▪ **54% premium in customer lifetime value**	Personalized Service
Google	▪ Knowledge-based ads provide key source of revenue on their site; superior targeting engine allows expansion of service to other sites ▪ **33% market share gain between 2004 and 2005**	Precision Advertising
TELECOM ITALIA	▪ Alice Mia enables multiple “individuals” per household ▪ 2.4M HH by Sept. 2005. Launchpad for new services ▪ **Increased household voice spending by 30–35%**	Subscriber Orientation

Source: Cisco IBSG, 2007

These Four Levers Can Drive a Top-Line Increase of 15 Percent, or $3 Billion

A Service Provider with $20B in Revenues Has a $3B Opportunity by 2010



Note: Assumes an integrated service provider with 60 percent market share
Source: Cisco IBSG, 2007

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Execution Priorities

Service Providers Are Well Positioned to Accelerate the Connected Life Market

Market Transition Priorities

Wave 1 to Wave 2	Wave 2 to Wave 3
▪ Build services around high-potential consumer device ▪ Reduce key purchase decision barriers such as up-front cost and technology risk ▪ Mask complexity of installation and setup, operations, and support	▪ Extend Wave 1 and Wave 2 priorities to broader, more ubiquitous solutions ▪ Deliver multi-service platform that enables extension of experiences ▪ Enable extensibility to third-party applications and content

Source: Cisco IBSG, 2007

The Connected Life Platform Imperative

Decisions Shaping the Drive to Wave 3

Network Intelligence

- Extendable to control points, end-user devices
- Scope of devices supported

Control Points

- Control points that must be maintained

Network Convergence

- Feature transparency and convergence priorities
- Third-party interoperability

Third-Party Collaboration

- Scope of collaboration
- Levels of support, DRM

User Behavior and Context Information

- Data capture, privacy, and permissions management
- Internal use versus third-party enablement

Source: Cisco IBSG, 2007

Plan for Moving Forward

Integrated Approach

Opportunity Identification and Assessment	Target Positioning and Go-to-Market Strategy	Gap Analysis and Prioritization	Execution Planning and Pilots
▪ Identify addressable options within four value levers ▪ Assess market opportunity for each option ▪ Assess strategy and capability fit	▪ Identify positioning based on target opportunities, capabilities, and competition ▪ Architect business-model options	▪ Identify process, operational, technical, and organizational capability requirements ▪ Assess requirement gaps	▪ Identify gap closure options ▪ Develop integrated roadmap and detailed execution plan ▪ Target pilots

Source: Cisco IBSG, 2007