Service Delivery and Consumer Cloud (Global Comparison)

A Connected Life Market Watch Perspective

Cisco Internet Business Solutions Group

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Agenda

- Methodology and Respondent Demographics
- Key Findings and Implications
- Topics
  1. Technology Usage
  2. Buying Behavior
  3. Pricing
  4. Service Provider Wi-Fi
  5. Consumer Cloud and Connected Life
  6. How To Expand Customer Potential

Methodology and Respondent Demographics

Connected Life Market Watch

Service Delivery and Consumer Cloud

Approach

Connected Life Market Watch (CLMW) Program

- Cisco IBSG's recurring primary research program
- Monitors changing consumer behavior to identify key market transitions
- Topics include mobile (2009), video (2008, 2010)
- 2011 focus: Service Delivery & Cloud Experiences

Methodology

- Broadband consumers
- 20-minute online survey, representative sample (500-1,000 respondents/country); where needed, sample was weighted to match population
- Multiple segmentations (demographic, tech affinity)
- Studies were fielded from April to December 2011

Scope 2011

Canada

France

Germany

Italy

United Kingdom

United States

Source: Cisco IBSG Connected Life Market Watch, 2011

3,900 Respondents Are Representative of the Overall Broadband Population

	Global	United States	Canada	United Kingdom	Germany	France	Italy
Gender: male/female	51% / 49%	50% / 50%	49% / 51%	54% / 46%	57% / 43%	48% / 52%	48% / 52%
Average household income	€46,000	$61,800	$62,700	€37,000	€39,000	€34,000	€36,000
Have children in the home	32%	32%	30%	34%	27%	38%	46%
Employed	57%	54%	55%	60%	65%	63%	64%

Broadband consumers tend to have higher income, more children, and a higher level of employment than the average population

Source: Cisco IBSG Connected Life Market Watch, 2011

Base: 3,900 broadband consumers

Key Findings

Key Findings: Service Delivery & Cloud

Topics	Emerging Findings
Technology Use	• The **smartphone** is becoming the **primary consumer device** and drives behavior such as use of mobile video
Buyer Behavior	• **Broadband** is the **anchor service** for all, while mobile data is less significant • **SPs lead as the preferred provider of innovative solutions** such as Internet-to-TV for a significant share of consumers
Wi-Fi	• 80% of **mobile Internet is not mobile, but nomadic** across fixed locations • **Users are "Wi-Fi ready"** and limit their use of expensive cellular data in favor of Wi-Fi networks • Users wait for Wi-Fi coverage and are ready to accept compromises on quality and immediacy
End-User Pricing	• **Consumers do not want to move away from flat rates** • There is no "one size fits all" mitigation strategy (peak/off-peak, service-based pricing, transparency) to make tiered pricing more acceptable
Consumer Cloud & Connected Life	• **Cloud enhancements** can **accelerate** Connected Life **service adoption** for consumers (varying by country) • Cloud enhancements that make services easy to get generate the highest interest • Strong potential for online data protection
Expanding Potential	• Many customers are still undecided (29% "in play"), and are a prime target for SPs • SPs score with reliability, ease of use & setup, troubleshooting

Source: Cisco IBSG Connected Life Market Watch, 2011

1 Technology Use

Technology Use: Key Takeaways

- In some countries, mobile is surpassing traditional landline
- Smartphones are becoming the primary portable device for most consumers
- Mobile video is still a “snacking” experience
- A significant minority of smartphone users watch video, but we are facing the tablet era: tablets already surpass e-books
- Consumers are adopting both physical and online data protection practices, and some of them fully trust the cloud

Source: Cisco IBSG Connected Life Market Watch, 2011

Respondent Segmentation Based on Technology Profile

Sample of 3,900 Broadband Consumers Well Represents All Technology Segments

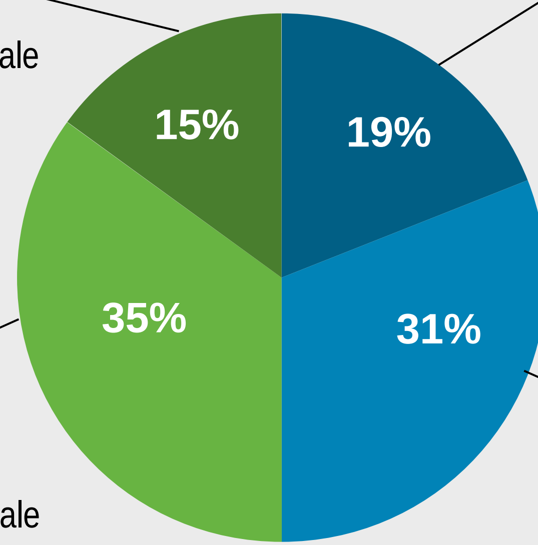
Average Across Base

Age:	42
Male/Female:	51% / 49%
Income:	€46K
Employed:	59%

Consumer Segmentation Based on Technology Profile

Laggard
50 years old (avg.)
47% male / 53% female
€36K HH income
44% employed

Early Adopter
36 years old (avg.)
58% male / 42% female
€55K HH income
75% employed



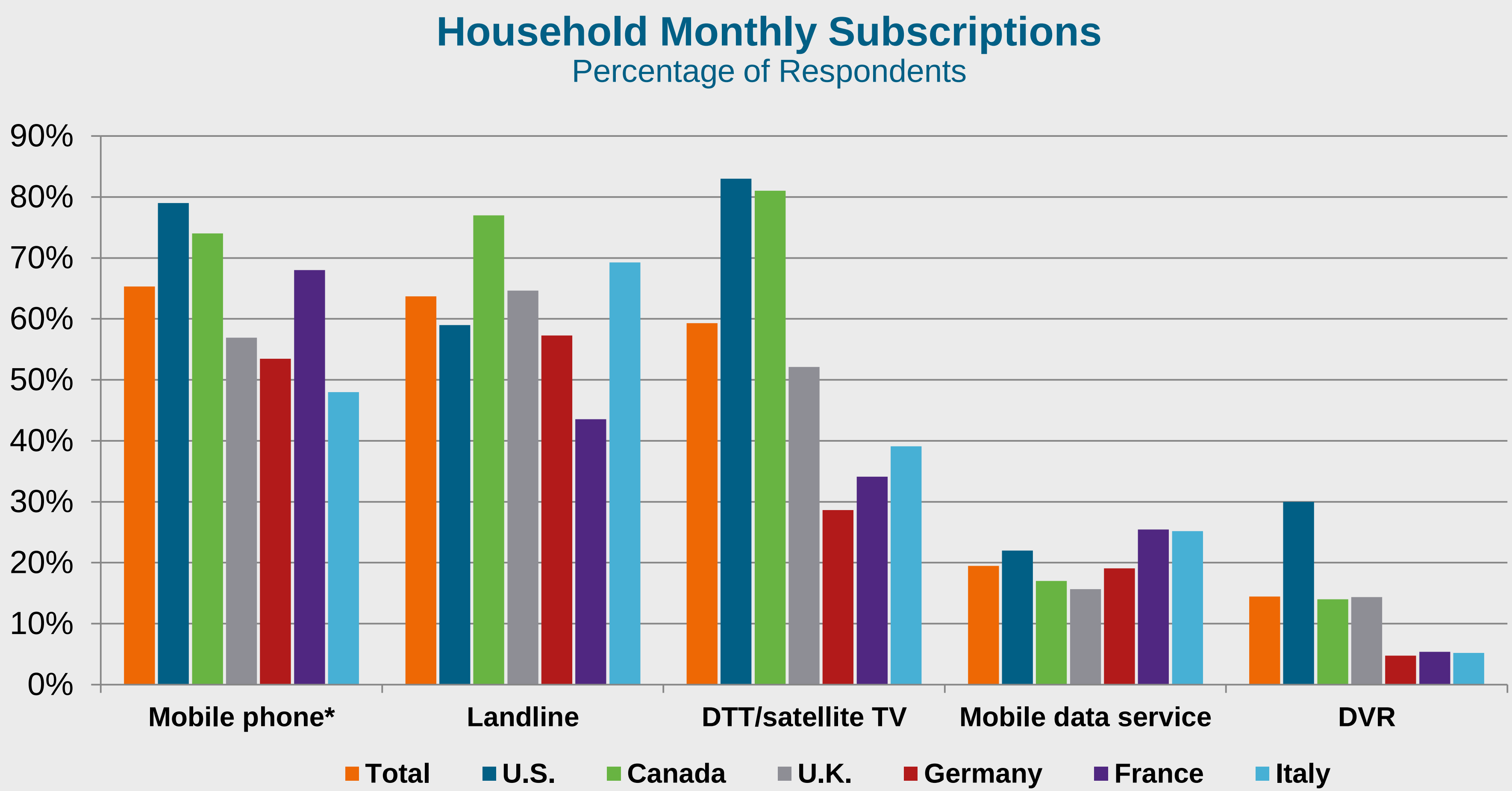
Late Majority
45 years old (avg.)
47% male / 53% female
€42K HH income
54% employed

Early Majority
39 years old (avg.)
53% male / 47% female
€48K HH income
61% employed

Source: Cisco IBSG Connected Life Market Watch, 2011

Base: 3,900 broadband consumers

In Some Countries, Mobile Is Surpassing Traditional Landline

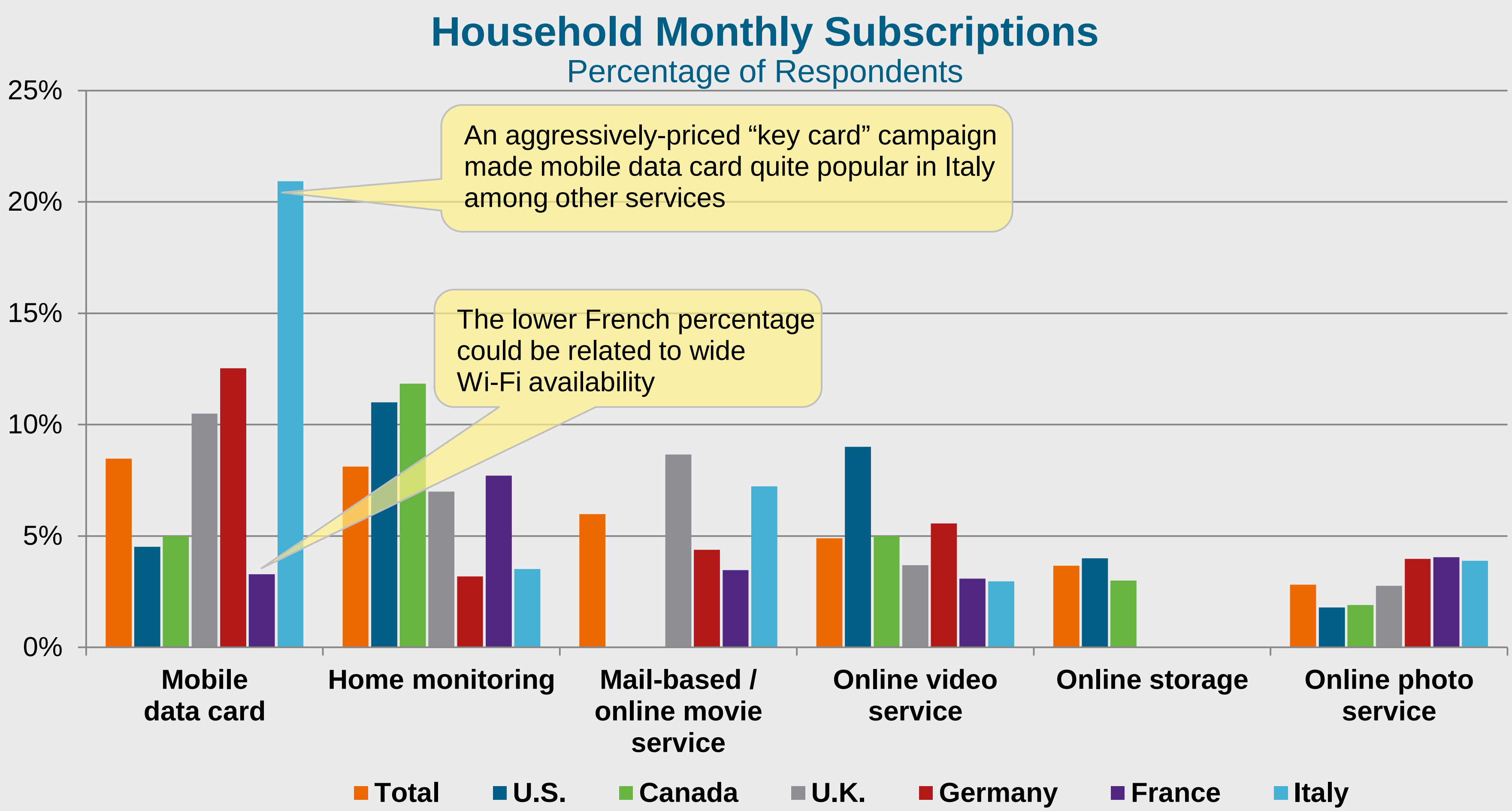


* Large prepaid mobile customer base not included

Source: Cisco IBSG Connected Life Market Watch, 2011

Base: 3,900 broadband consumers

Adoption of Many Services Has Not Yet Hit the Mass Market

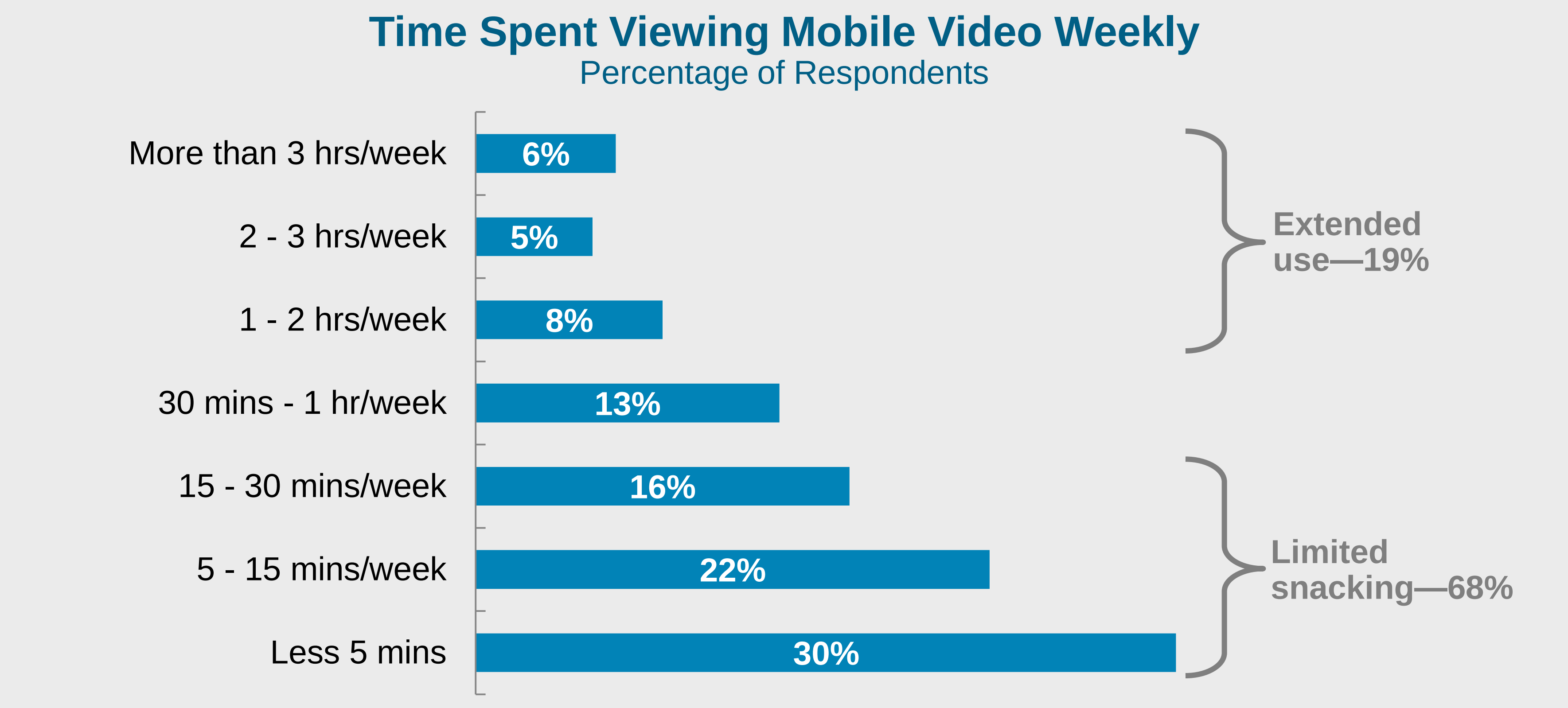


Blanks indicate that the technology was not included in a particular country’s survey

Source: Cisco IBSG Connected Life Market Watch, 2011

Base: 3,900 broadband consumers

Mobile Video Is Still a "Snacking" Experience

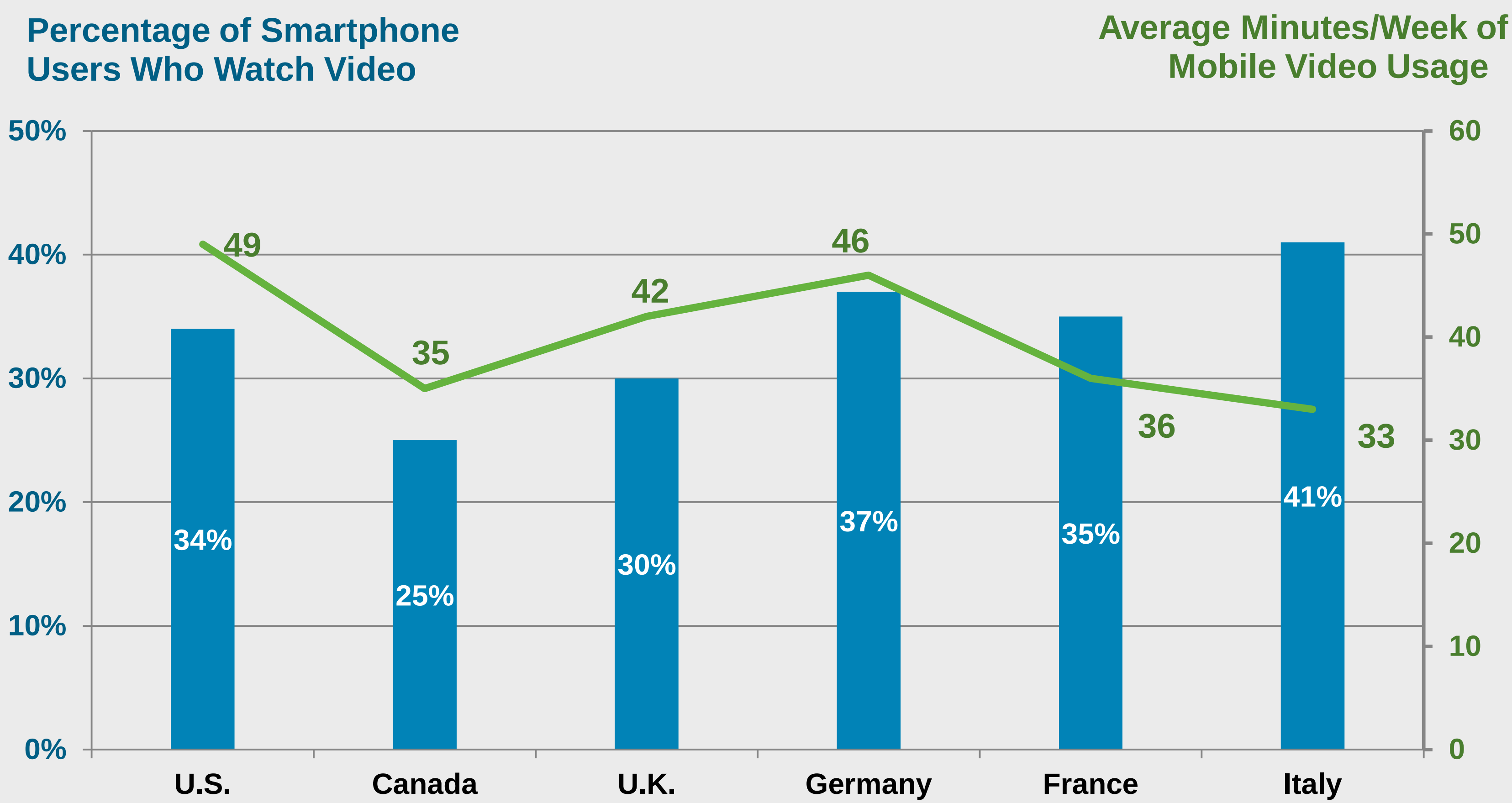


- Rough average is about 42 minutes / week among mobile video users
- Only 19% of mobile video users watch more than 1 hour / week on their mobile phones and 68% of broadband consumers never use mobile phone to watch videos

Source: Cisco IBSG Connected Life Market Watch, 2011

Base: Global mobile video users; n=1,157

A Significant Minority of Smartphone Users Watch Video

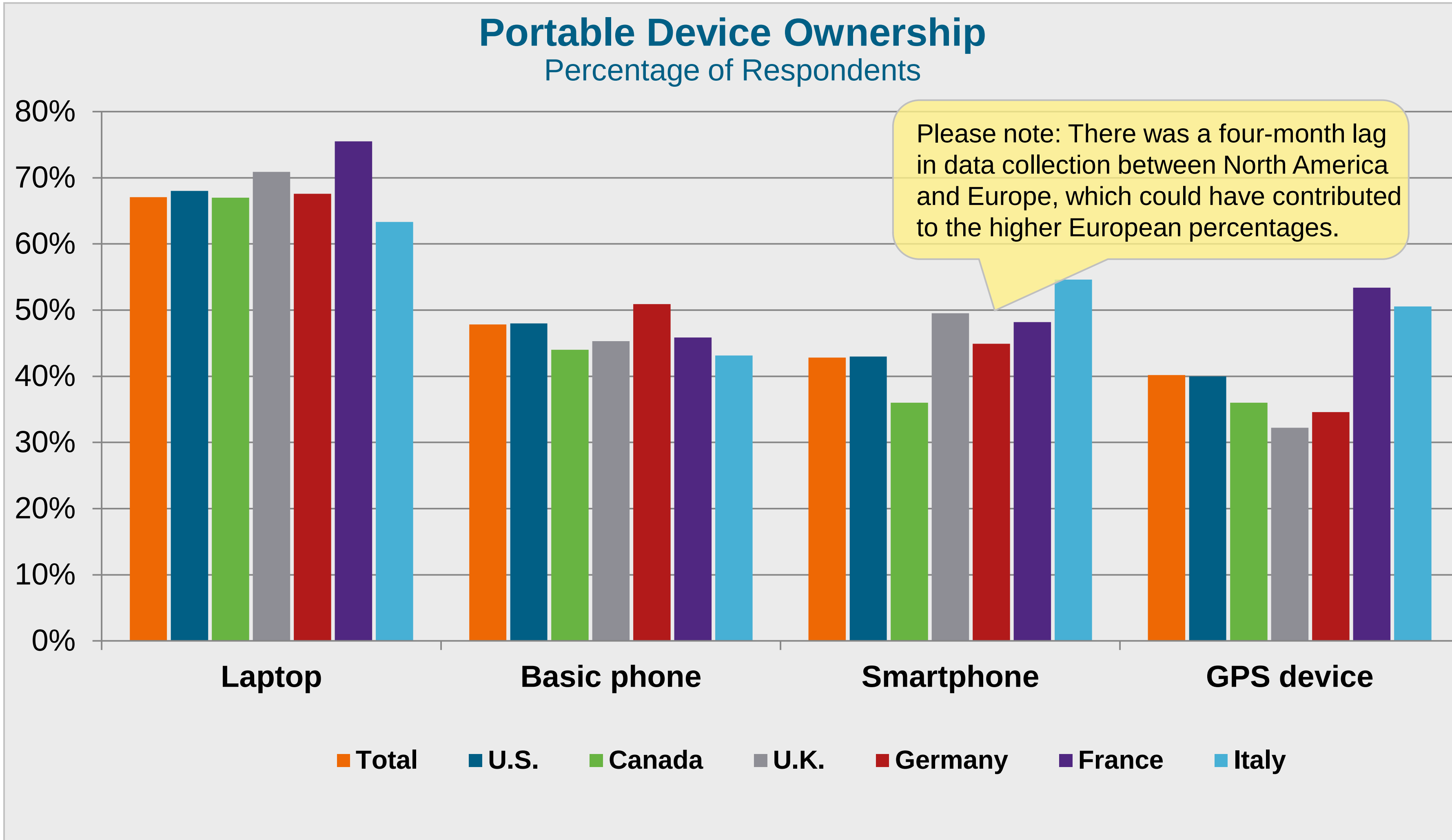


Approximate global average is about 5 to 7 minutes per day

Source: Cisco IBSG Connected Life Market Watch, 2011

Base: Global mobile video users; n=1,157

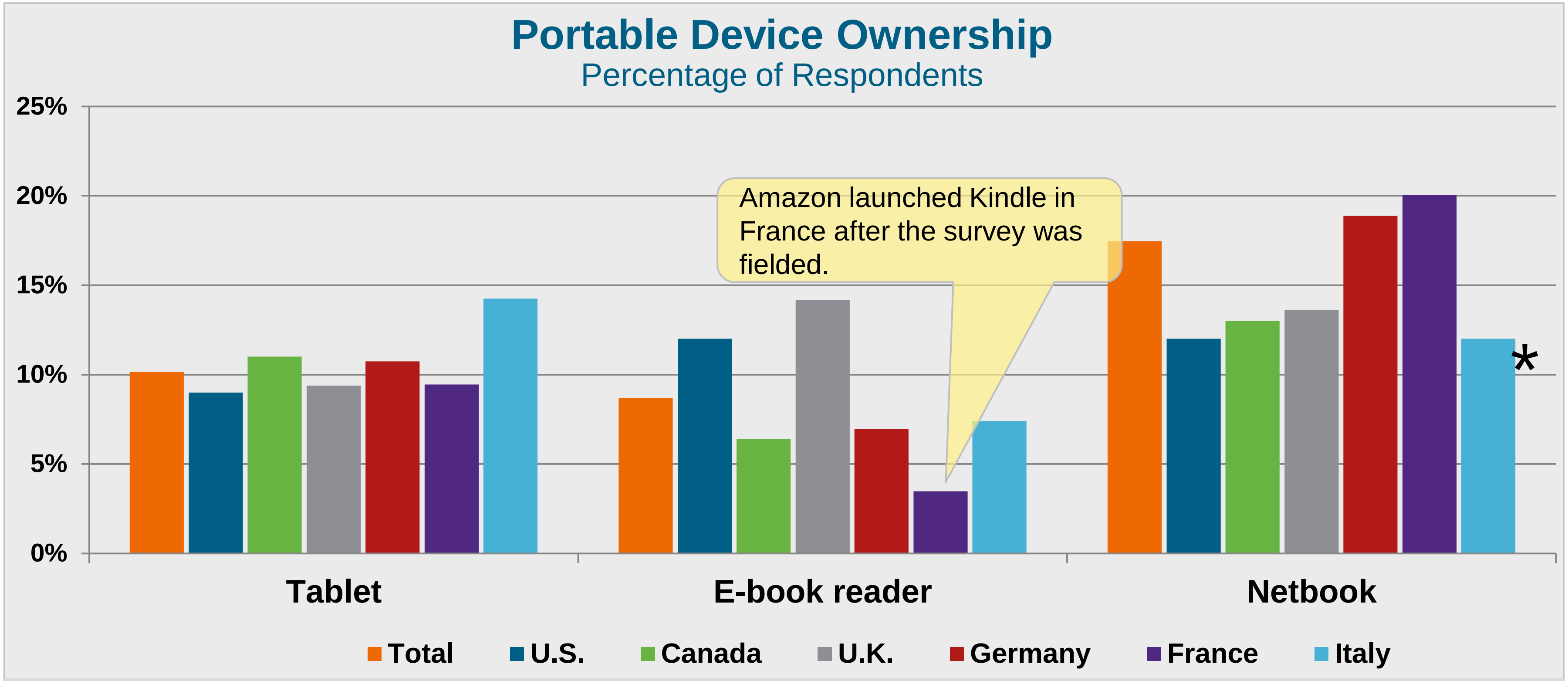
Smartphone Is Becoming the Primary Portable Device for Most Consumers



Source: Cisco IBSG Connected Life Market Watch, 2011

Base: 3,900 broadband consumers

The Tablet Era: Tablets Already Surpass E-Books



Tablets have the potential to transform video consumption and to change the industry at large because great amounts of mobile data traffic push the limits of traditional networks, and consumers are ready for Wi-Fi alternatives

* Netbook data for Italy is from secondary sources because we suspect a questionnaire misinterpretation.

Source: Cisco IBSG Connected Life Market Watch, 2011

Base: 3,900 broadband consumers

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Consumer Buying Behavior

Buying Behavior: Key Takeaways

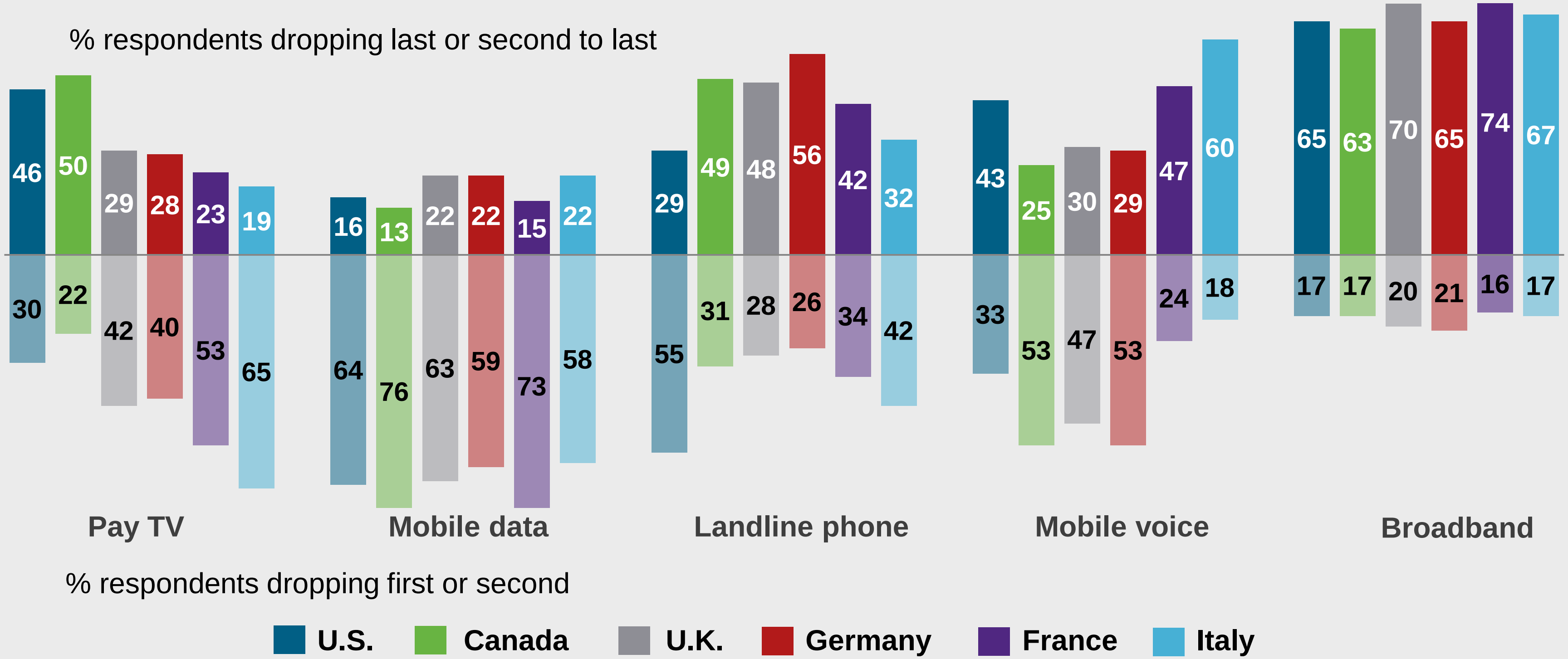
- Broadband has become the anchor service; consumers in all countries protect it
  – Mobile data is the first service consumers in all countries would cut
  – VoIP, mobile replacement, and TV-over-Internet challenge landlines and pay TV—with different impact in different countries
- Consumers everywhere have similar priorities when it comes to important factors for where to buy
  – Cost and reliability are the most important factors across the board
  – Ease of use and troubleshooting have less priority
- There is no clear preferred provider for Internet-to-TV solutions, but SPs have clear lead in most important decision criteria in all countries
  – SPs can benefit by emphasizing their strength in key factors when marketing Internet-to-TV solutions

Source: Cisco IBSG Connected Life Market Watch, 2011

Broadband Is the Anchor Service, While Mobile Data Is Expendable

Consumer Spending Priorities

Which Services Would You Cut First If You Had To Reduce Expenses?

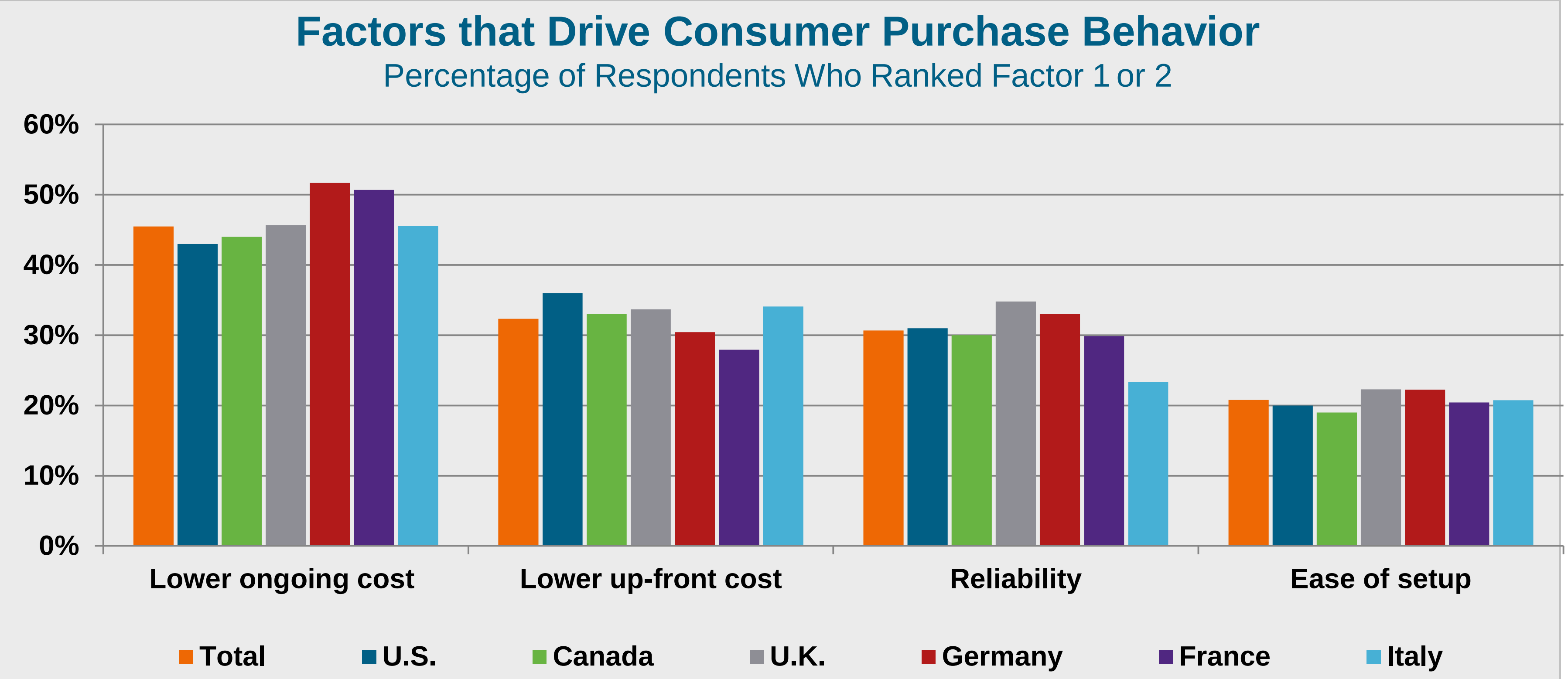


- **North American respondents less willing to drop pay TV than Europeans**
- **VoIP solutions, mobile replacement, and TV-over-Internet challenge landlines and pay TV**
- **In countries where landline is stronger, use of mobile voice is lower**

Source: Cisco IBSG Connected Life Market Watch, 2011

Base: 3,900 broadband consumers

Cost And Reliability Are the Most Important Factors in Where To Buy

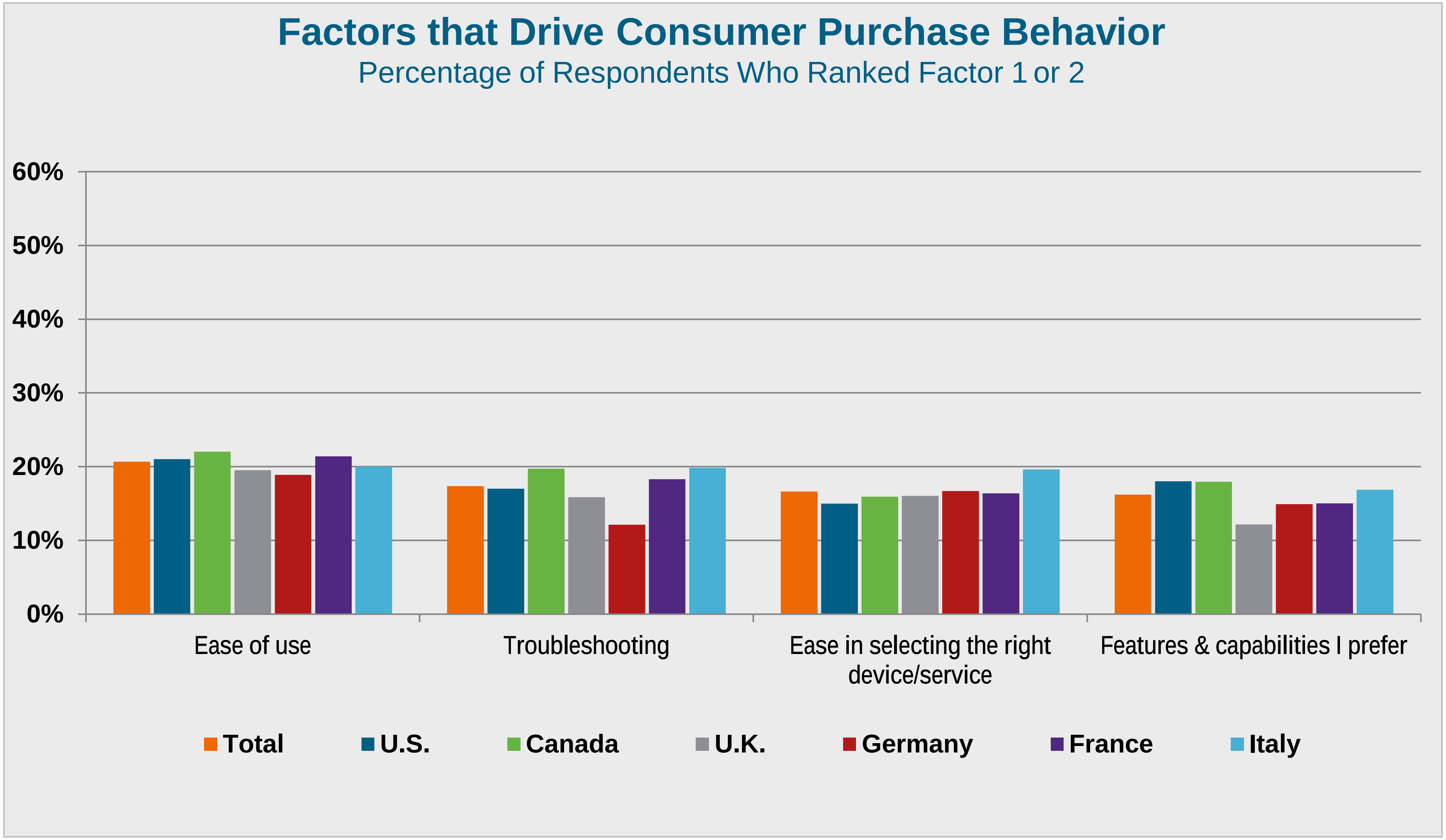


- Cost and reliability are rated similarly across countries
- Reliability is more important to U.K. consumers
- Lower ongoing cost is most important in Germany and France

Source: Cisco IBSG Connected Life Market Watch, 2011

Base: 3,900 broadband consumers

Factors Such As Troubleshooting and Ease of Selection Have Lower Priority



Source: Cisco IBSG Connected Life Market Watch, 2011

Base: 3,900 broadband consumers

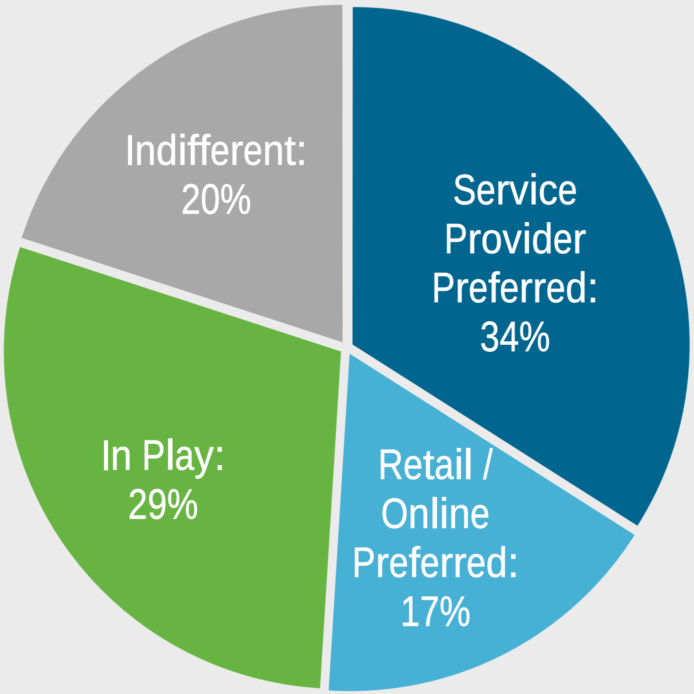
No Clear Preferred Provider for Internet-to-TV Solutions

For 8 different factors in the purchase process—from up-front cost to ease of use—consumers were asked which channel option best met their needs:

- **Strong SP:** These consumers believe SP provides a better experience in ALL factors
- **Strong Retail/Online:** These consumers believe retail/online provides a better experience in ALL factors
- **In Play:** These consumers' channel preference shifts from factor to factor; SP prevails in 4 areas, Retail in 2, and the remaining areas are quite balanced
- **Indifferent**: These consumers selected "don't know" for all 8 factors, likely due to lack of interest in Internet-to-TV solutions

Consumers' Preferred Channel Experience

Percentage of Respondents



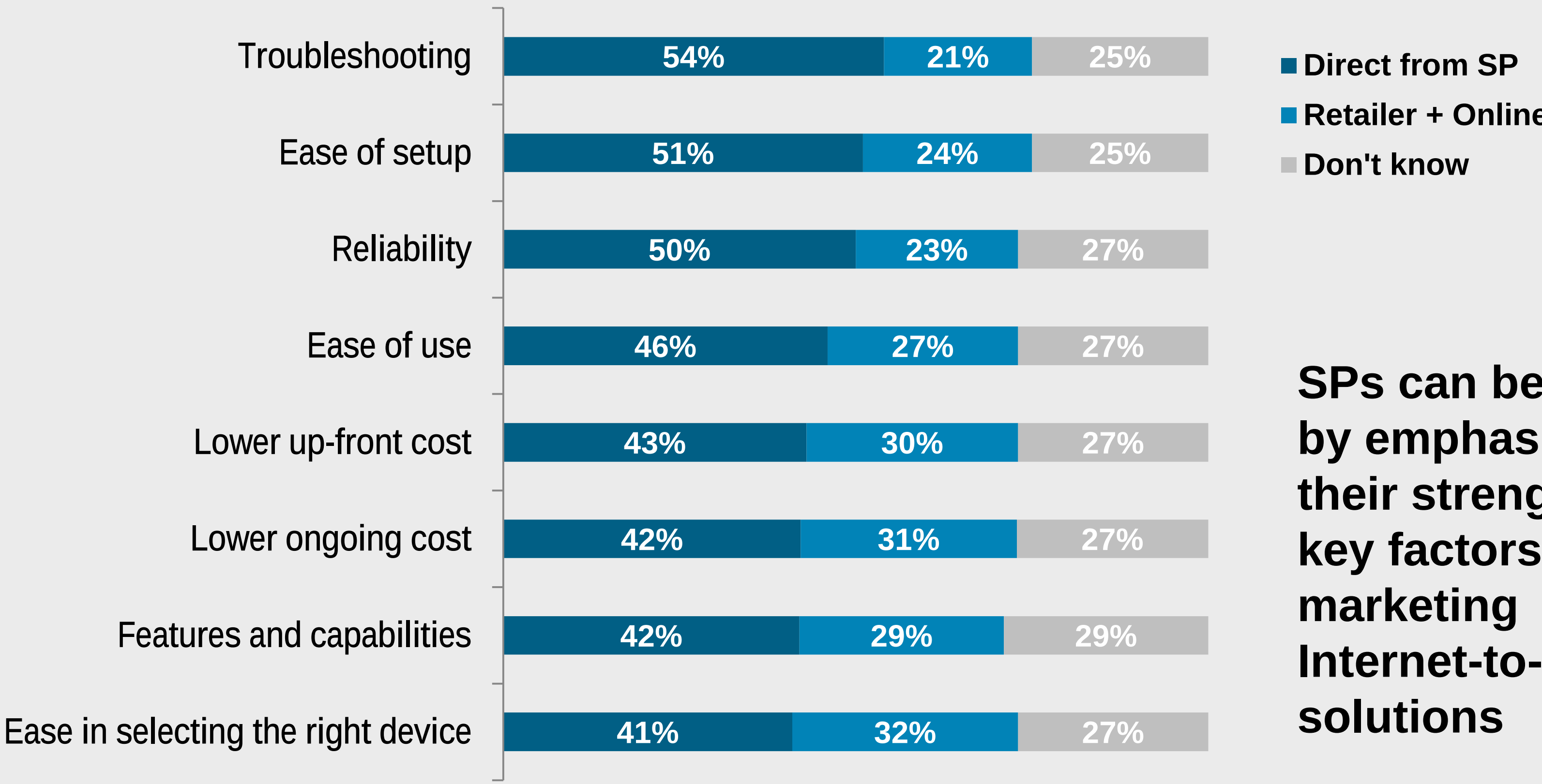
Source: Cisco IBSG Connected Life Market Watch, 2011

Base: 3,900 broadband consumers

SPs Have Clear Lead in Most Important Decision Criteria

Consumer Channel Preferred Provider for Internet-to-TV Solution

Individual Factors in Order of Importance

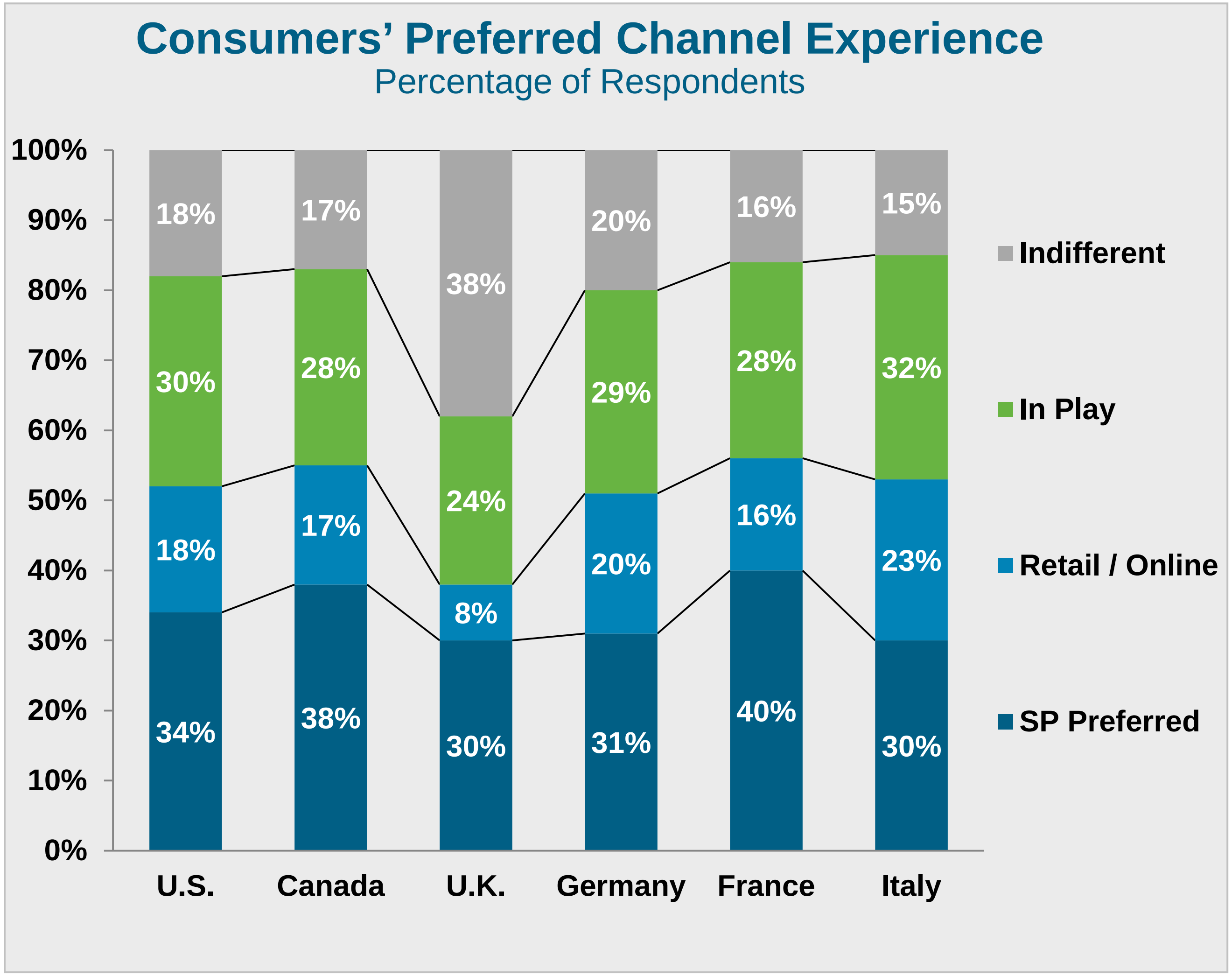


SPs can benefit by emphasizing their strength in key factors when marketing Internet-to-TV solutions

Source: Cisco IBSG Connected Life Market Watch, 2011

Base: 3,900 broadband consumers

There Are Interesting Differences Among Countries for Internet-to-TV Solutions



- Countries show high preference toward *SPs*
- SP leads Retail + Online in all countries
- "In Play" segment has important role overall
- Italy has highest number of "In Play" consumers
- Large portion is Indifferent, especially in U.K.

Source: Cisco IBSG Connected Life Market Watch, 2011

Base: 3,900 broadband consumers

3 Pricing

Pricing: Key Takeaways

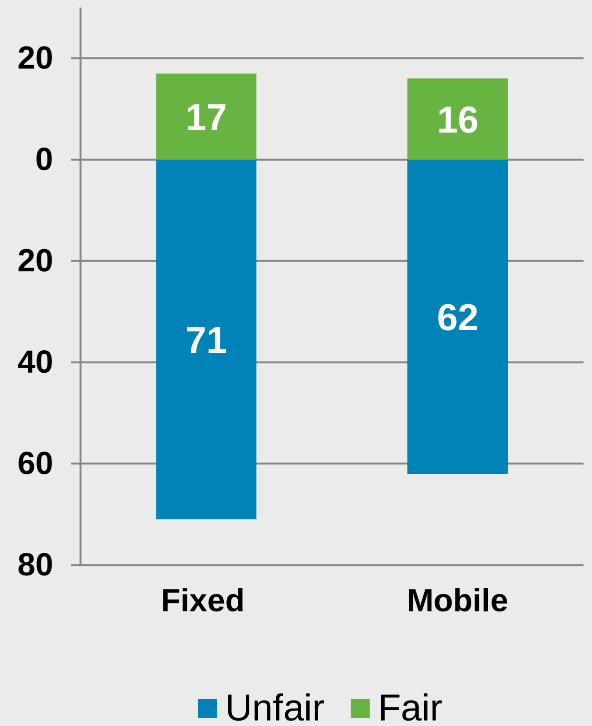
- Consumers prefer flat-rate plans; SP strategies to drive tiered pricing are underwhelming
- EU broadband consumers feel it is unfair to pay for broadband services based on use
- There is less resistance to usage-based pricing for mobile broadband in all surveyed geographies

Source: Cisco IBSG Connected Life Market Watch, 2011

Consumers Prefer Flat Rates and Are Not Impressed by SP Conciliation Strategies

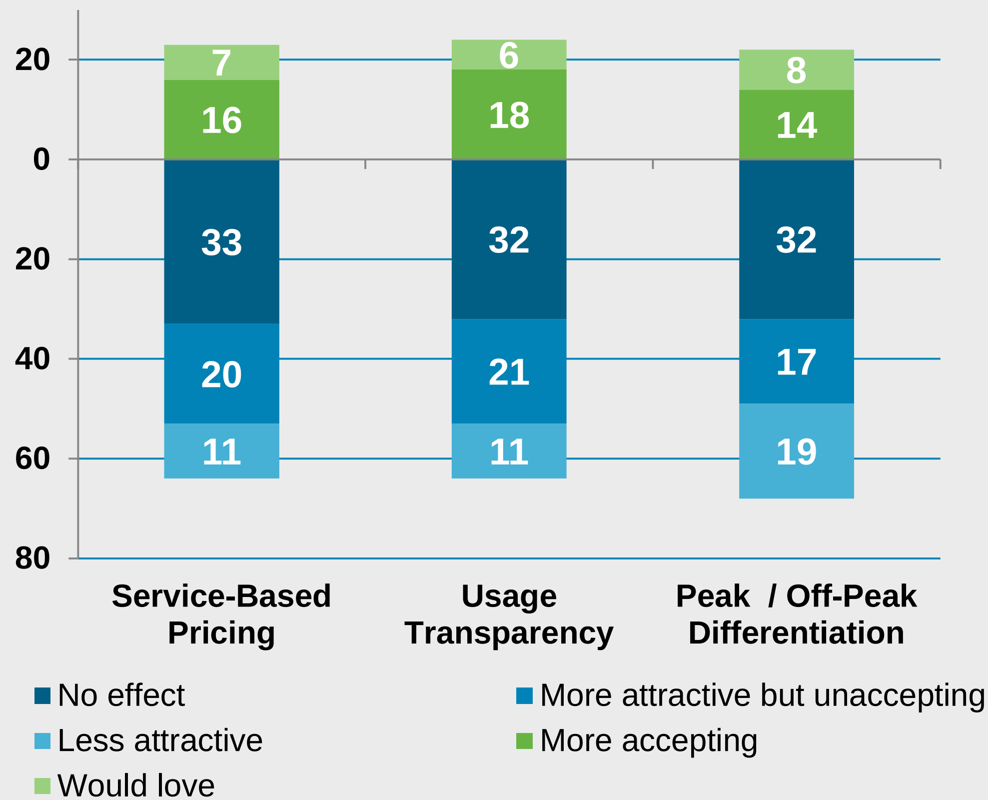
Consumers' Reaction to Tiered Pricing

Percentage of Respondents



Impact of Conciliation Strategies

Percentage of Respondents

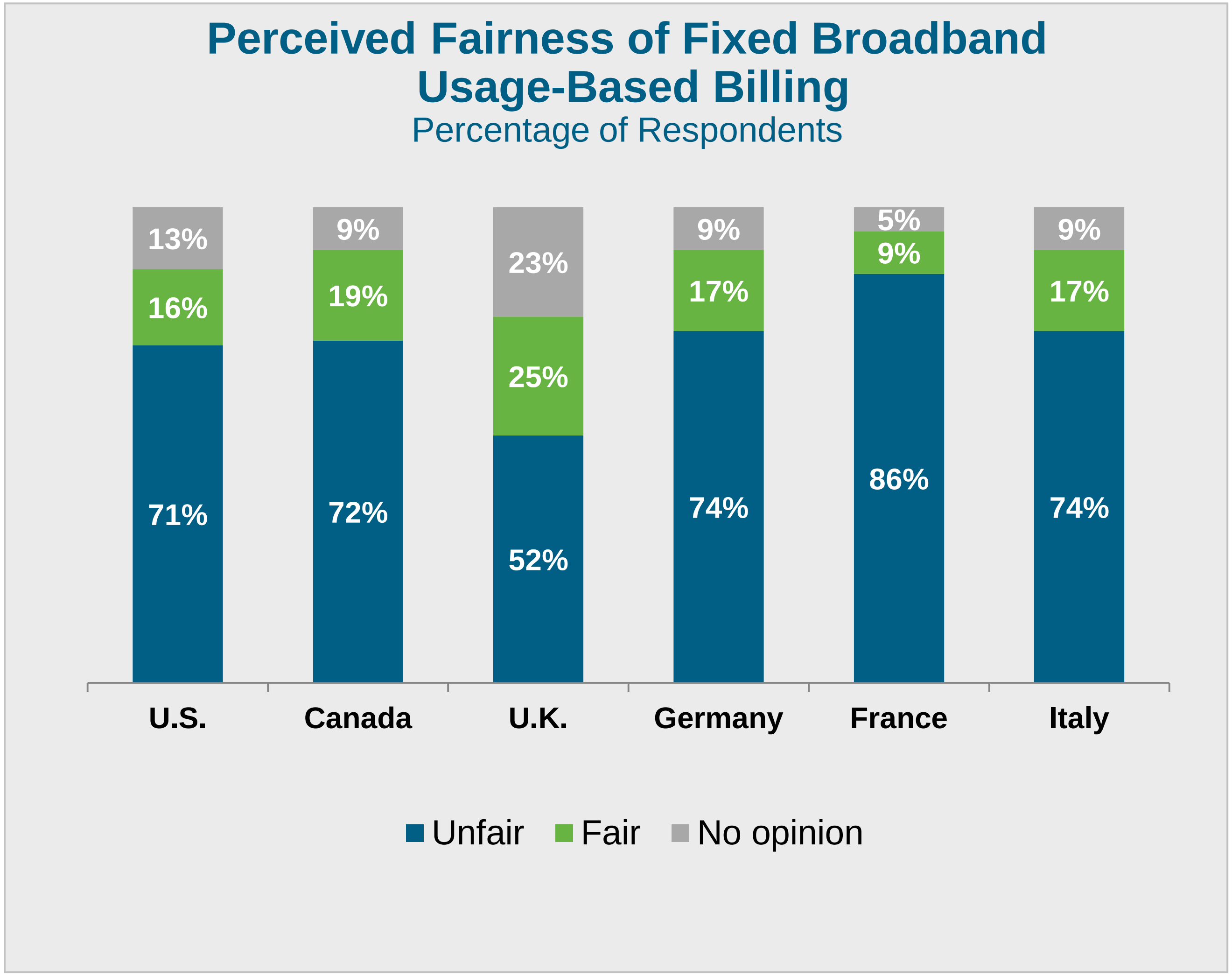


Consumers with no opinion have been excluded from the sample

Source: Cisco IBSG Connected Life Market Watch, 2011

Base: 2,105 broadband consumers

Consumers Feel It Is Unfair To Pay for Fixed Broadband Based on Use



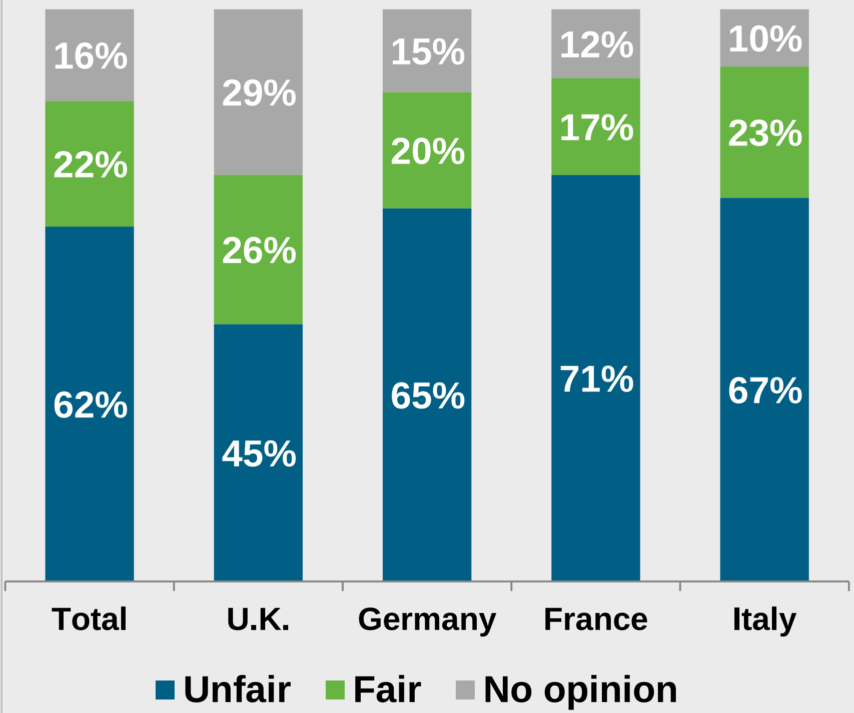
- U.K. consumers are most receptive to tiered billing for fixed broadband
- U.K. has had usage-based fixed broadband billing for many years, hence the greater receptivity

Source: Cisco IBSG Connected Life Market Watch, 2011

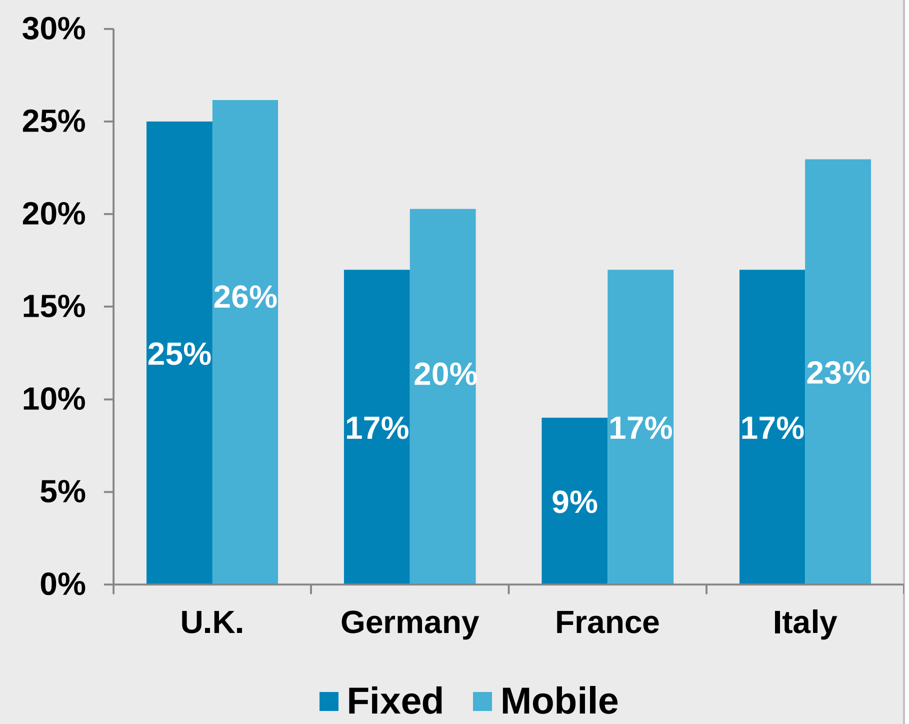
Base: 2,105 broadband consumers

There Is Less Resistance to Tiered Pricing for Mobile Broadband

Perceived Fairness of Mobile Tiered Pricing
Percentage of Respondents



Perceived Fairness of Fixed vs. Mobile Tiered Pricing
Percentage of Respondents



United Kingdom has had usage-based billing for fixed broadband for many years, hence the greater receptivity

Source: Cisco IBSG Connected Life Market Watch, 2011

Base: 2,105 broadband consumers

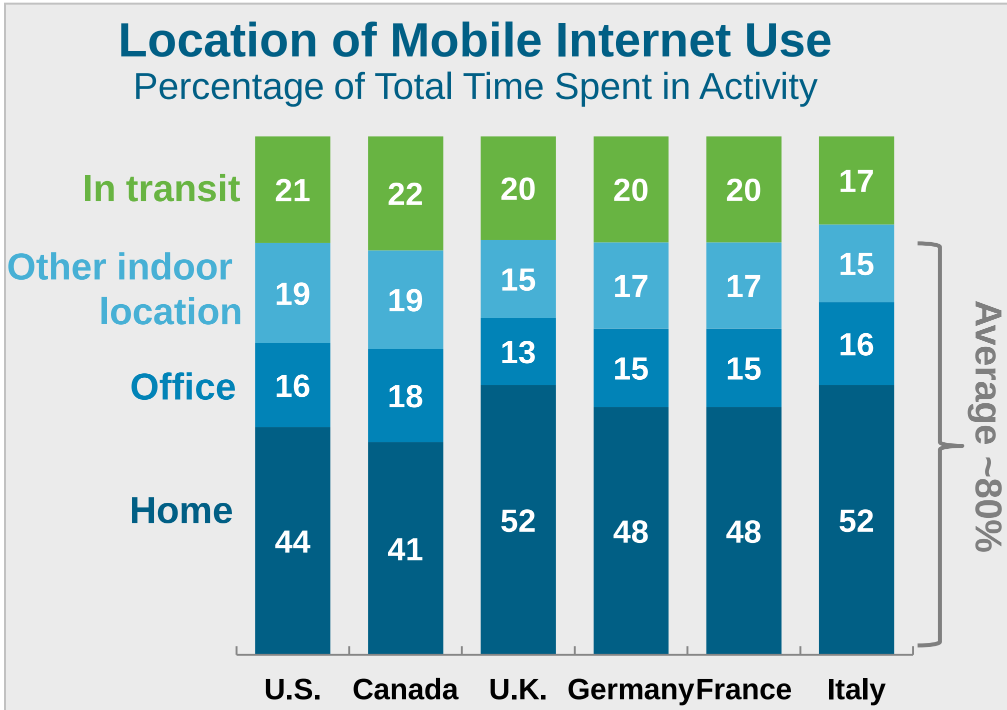
4 Service Provider Wi-Fi

Service Provider Wi-Fi: Key Takeaways

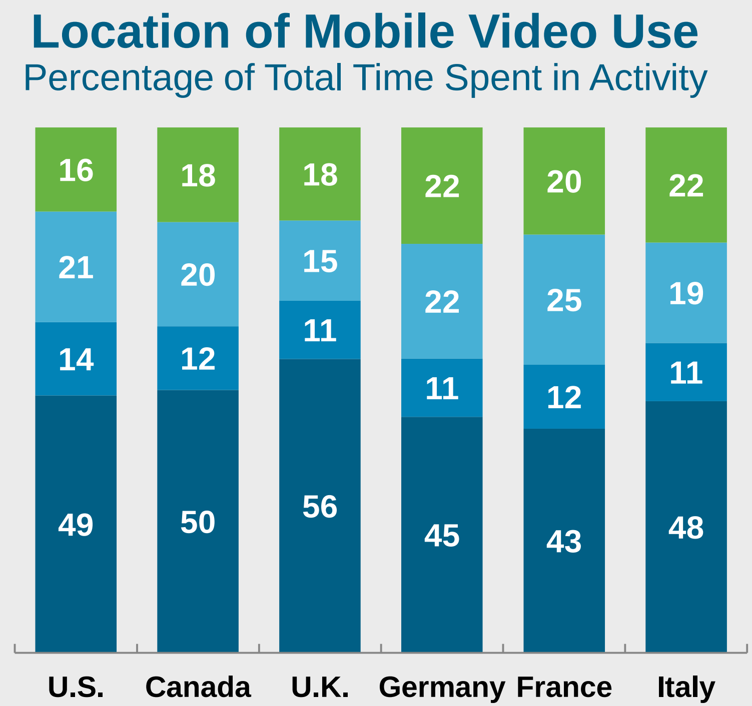
- Most mobile Internet and mobile video activity takes place in fixed locations
  - About 80% of mobile Internet use (via mobile device) is not mobile
  - Innovative services such as Wi-Fi offload and small cells solutions can fit consumer requirements for increased data speeds, increased coverage, and quality at reasonable prices
- Wi-Fi adoption is spreading through all market segments
- Heavy data users will likely start limiting their use of expensive cellular data packages with tiered pricing models in favor of Wi-Fi networks
- Economics of traditional mobile data delivery models can break down in favor of strong economic case for Wi-Fi / small cells offload, where integrated operators could be in a better position than “mobile only”

Source: Cisco IBSG Connected Life Market Watch, 2011

Most Mobile Internet and Mobile Video Activity Takes Place in Fixed Locations



Base: Respondents accessing mobile Internet; n=3,641



Base: Respondents accessing mobile video; n=1,157

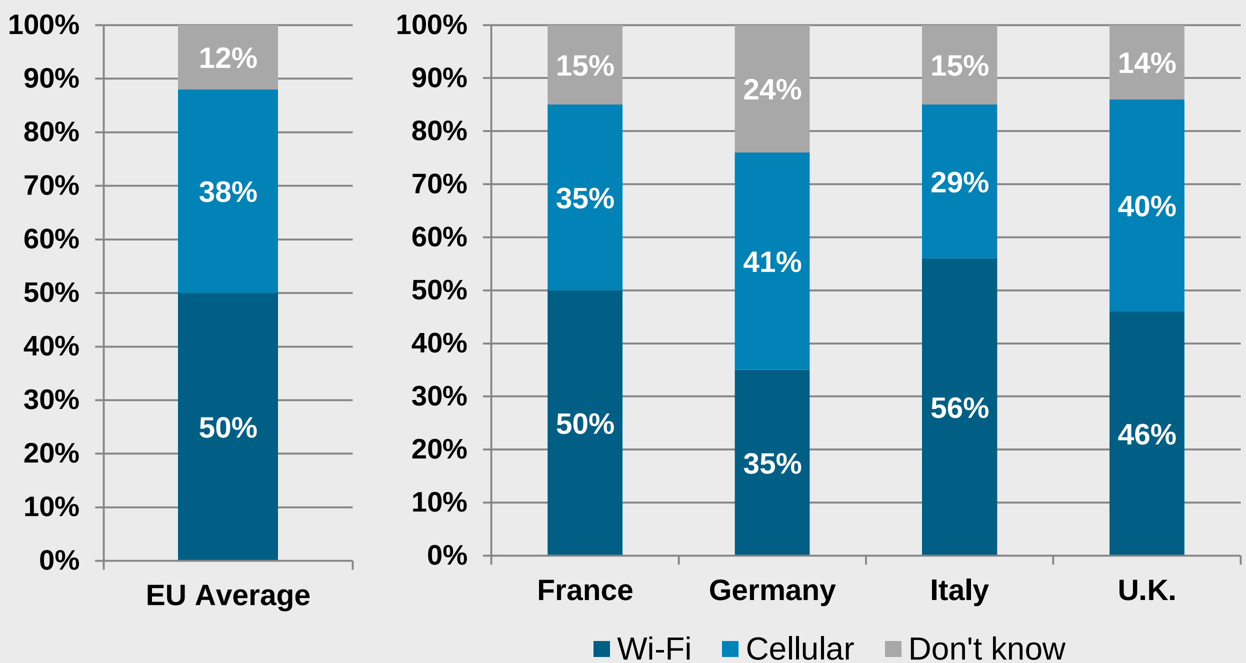
- About 80% of mobile Internet use (via mobile device) is **not mobile**
- Innovative services such as Wi-Fi offload and small cells solutions (femto / pico) can fit consumers' requirements for increased data speeds, increased coverage, and quality at reasonable prices

Source: Cisco IBSG Connected Life Market Watch, 2011

Wi-Fi Adoption Is Spreading Through All Market Segments

EU Average Wireless Web Browsing
% of Total Time Spent

Late Majority Wireless Web Browsing
Percentage of Total Time Spent



Base: Respondents using smartphone; n= 1,043

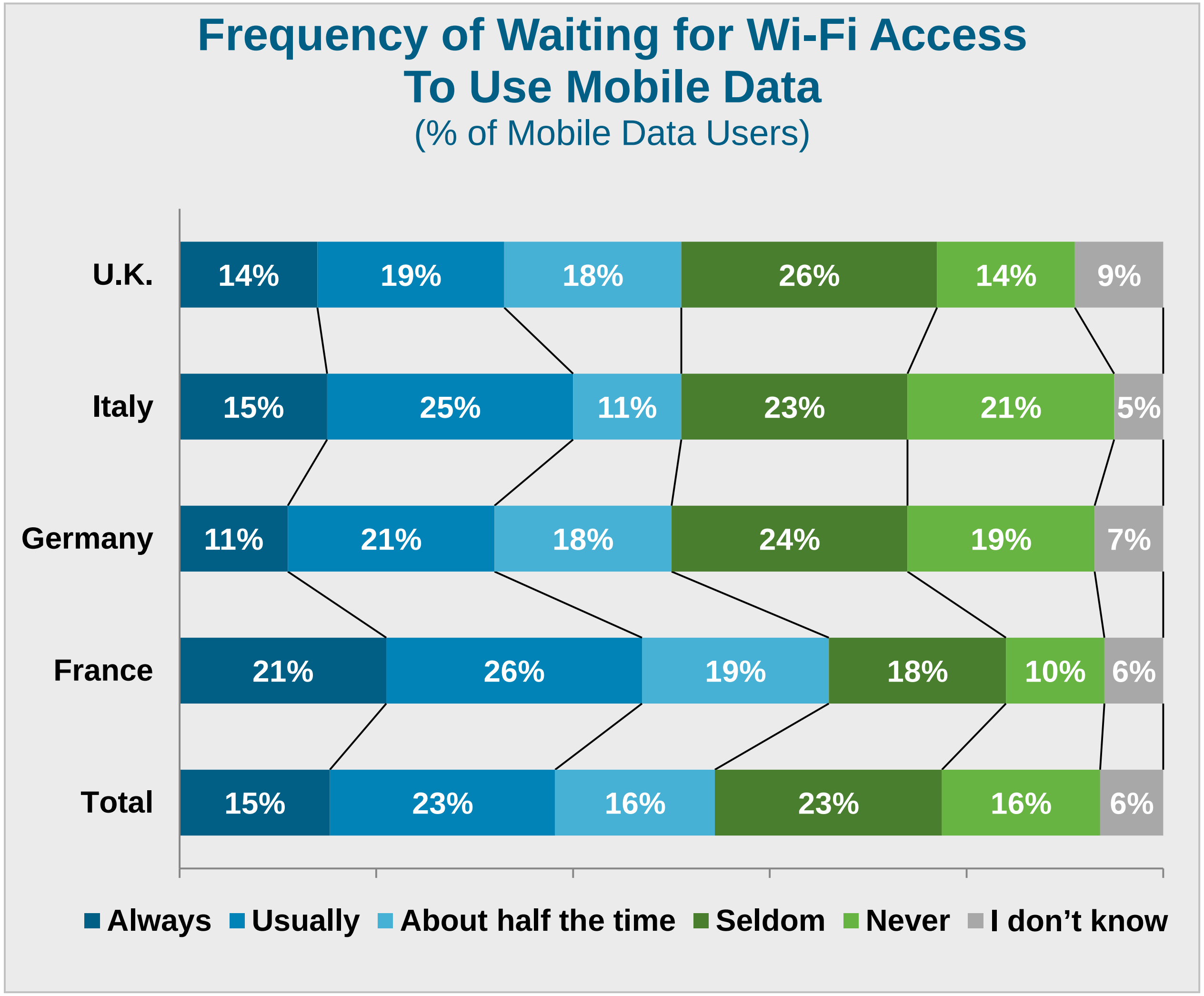
Base: Respondents using smartphone; n= 260

Late Majority behavior is an indicator of where the technology is in the adoption lifecycle.

Source: Cisco IBSG Connected Life Market Watch, 2011

- Majority of respondents said they use Wi-Fi more than their cellular network for browsing on their smartphones
- This behavior is extending beyond the Early Adopter and Early Majority segments to include the Late Majority broadband consumer segment

Smartphone Users Plan Their Access to Data-Heavy Programs via Wi-Fi



- Heavy data users start limiting their use of expensive cellular data packages with tiered pricing models in favor of offloading traffic onto Wi-Fi networks that provide unlimited access
- Economics of traditional mobile data delivery models can break down in favor of strong economic case for Wi-Fi / small cells offload where integrated operators could be in a better position than "mobile only"

Source: Cisco IBSG Connected Life Market Watch, 2011

Base: Respondents using smartphone; n= 1,010

5

Consumer Cloud and Connected Life

Consumer Cloud and Connected Life: Key Takeaways

- Cloud enhancements have a varying ability to accelerate Connected Life service adoption
- In the United States, Canada, France and Italy, cloud features can accelerate adoption, while in Germany and the United Kingdom, consumers are wary of cloud
- Even one cloud enhancement can make consumers more likely to buy a Connected Life service
  - In the U.S., Canada, France, and Italy, about 70% of people are more likely to buy a Connected Life service if it has even one cloud enhancement
  - In Germany and the U.K., fewer consumers are looking for a broad cloud experience
- The attitude toward each category of cloud services is similar; only “social behavior” services are significantly less appealing
- Listening to music emerges as the primary Connected Life activity

Source: Cisco IBSG Connected Life Market Watch, 2011

Cloud Impact on Consumers' Buying Behavior Using Kano Methodology

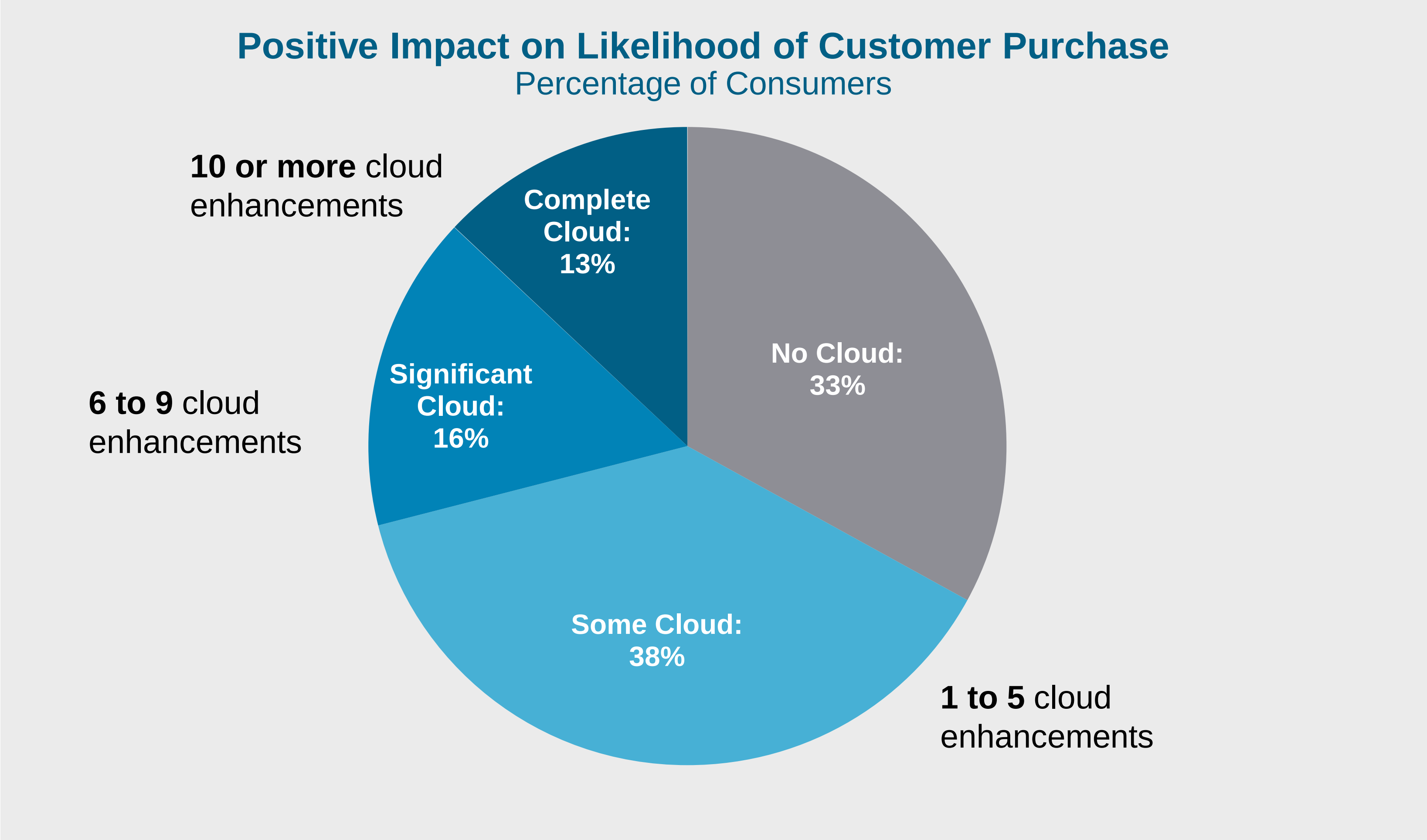
How Each Cloud Enhancement Influences Consumers' Assessment of a Connected Life Service

Consumer Attitude Toward a Particular Cloud Enhancement	Critical	Differentiating	Mandatory	Neutral	Negative
	Consumers are happy when it's present and dissatisfied when it's not	Consumers don't expect it to be included, but thrilled when it is	Consumers expect it to be there. Not thrilled when it is, but very displeased when it is not.	Consumers are indifferent to its presence	Consumers are displeased when this enhancement is present
Enhancement included with your service?	Positive	Positive	Neutral	Neutral	Negative
Enhancement NOT included with your service?	Negative	Neutral	Negative	Neutral	Neutral

Sources: ASQ, 2005; Cisco IBSG, 2012

Overall, 29% of Consumers Are Looking for a Broad Cloud Experience

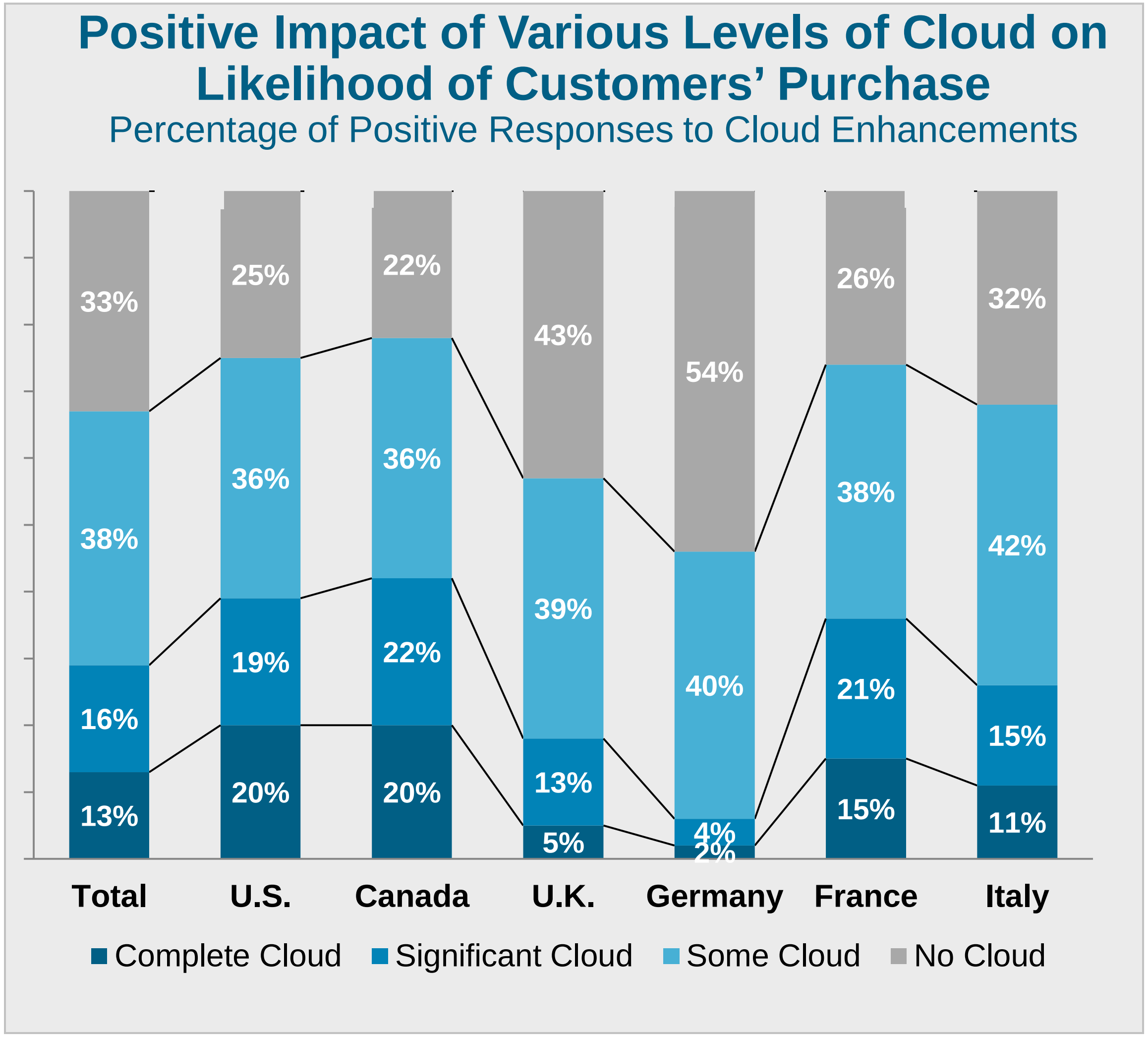
More Are Looking for Single / Few Enhancements



Source: Cisco IBSG, based on Kano methodology, 2012

Base: 3,900 broadband consumers

Cloud Impact on Connected Life Service Adoption Varies Widely by Country



- In U.S., Canada, France, and Italy, cloud tends to accelerate adoption, while in Germany and U.K., consumers are more wary of cloud
- Even one cloud enhancement can make consumers more likely to buy a Connected Life service
  - In U.S., Canada, France, and Italy, about 70% of people are more likely to buy Connected Life services if they have even one cloud enhancement
  - In Germany and U.K., fewer consumers are looking for a broad cloud experience; more are looking for single / few enhancements

Source: Cisco IBSG, based on Kano methodology, 2011

Base: 3,900 broadband consumers

Cloud Offers Consumers an Enhanced Connected Life Experience

Cloud-Enabled Enhancements Can Be Applied Horizontally Across Connected Life Services

Connected Life

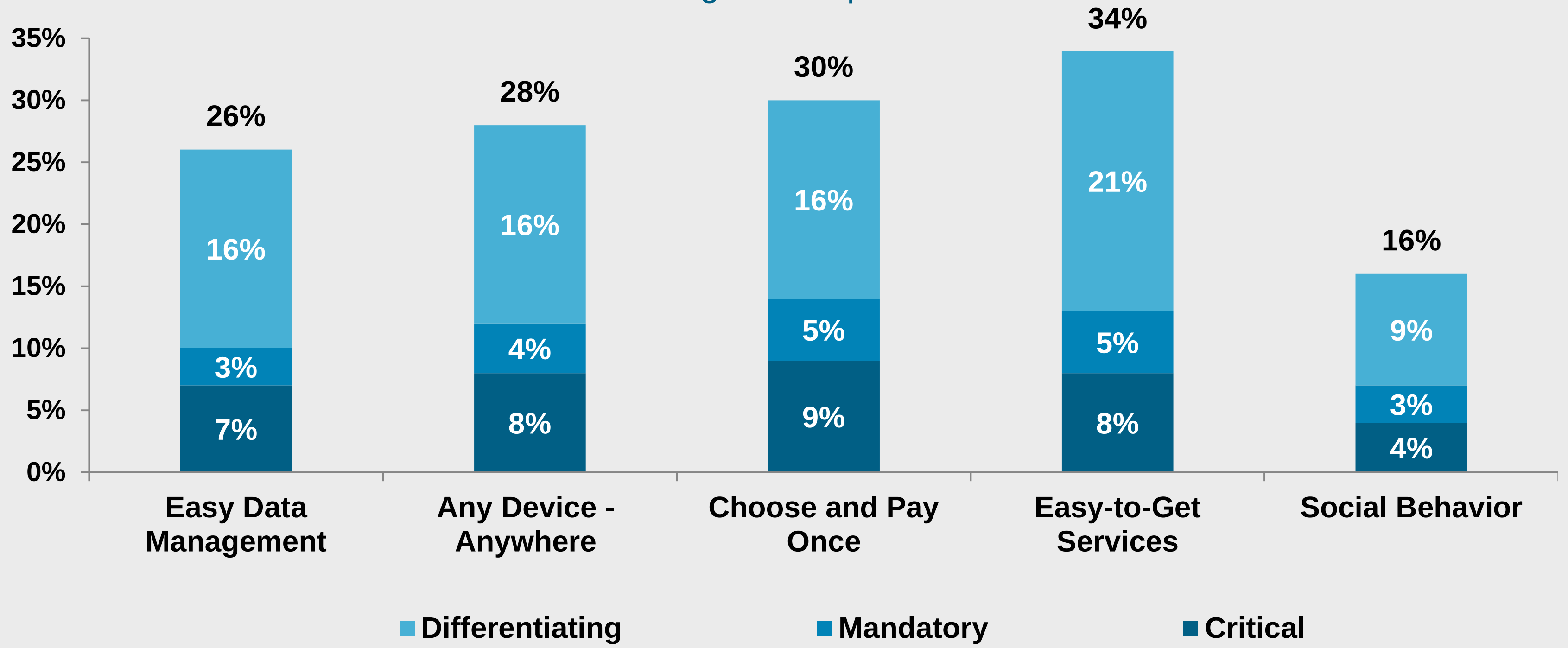
Cloud Enhancements	Answer Consumer Needs
▪ Unified Data Management ▪ Automatic Backup ▪ Automatic Data Sync	Make my data management easy
▪ Any Device / Location ▪ Immediate Access ▪ Seamless Switching	Let me access and move my stuff easily across my devices, from anywhere
▪ One-Time Payment ▪ Single-Menu Access ▪ Intelligent Personalization	Let me choose what I want across all services, but pay only once
▪ Add New Capabilities Automatically ▪ Remote Monitor / Automatic Fix	Make it easy for me to get Connected Life services
▪ Advanced Sharing ▪ See Peer Recommendations ▪ Companion Device	Help me match my online social behavior to my real-life social behavior

Source: Cisco IBSG Connected Life Market Watch, 2011

Enhancements that Make Services Easy To Get Are Most Attractive

Impact of Cloud Enhancement, Grouped by Analogous Consumer Needs

Percentage of Respondents



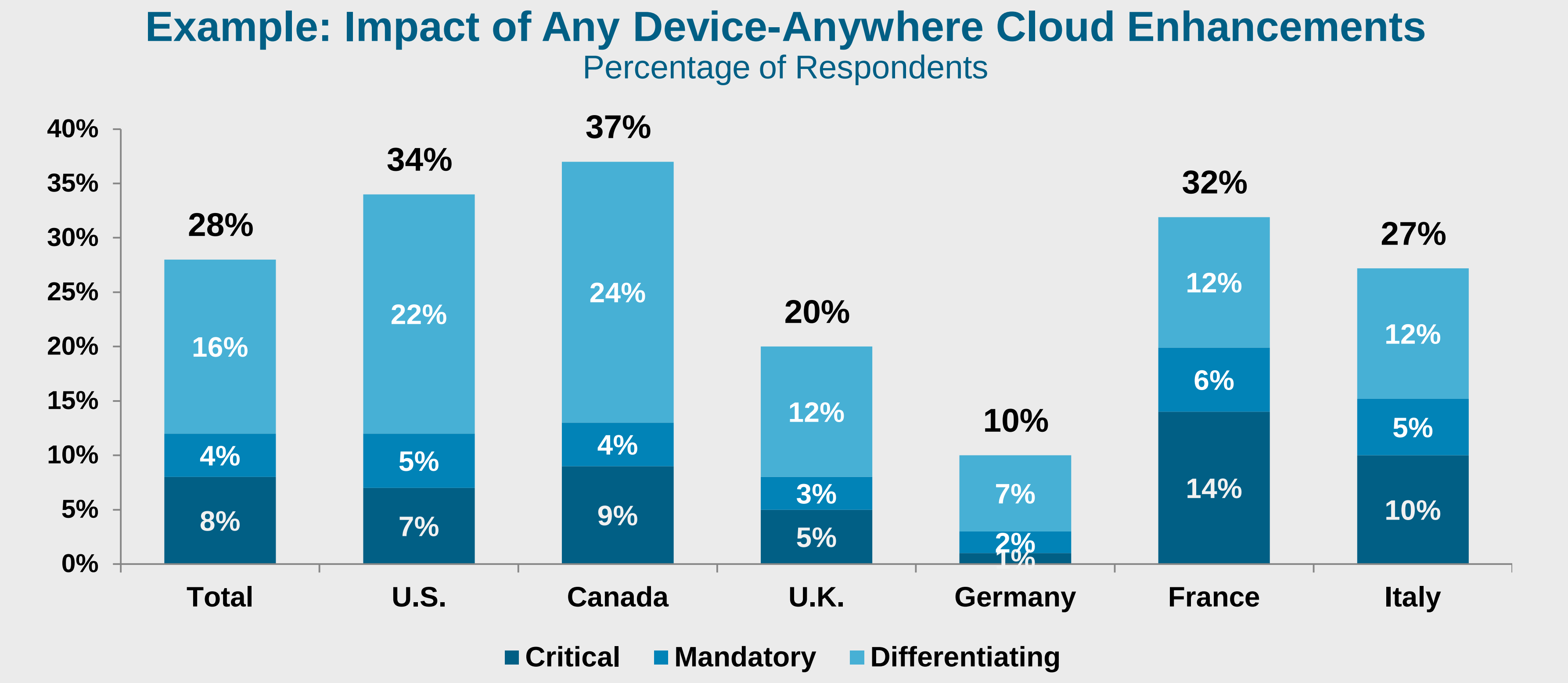
Only concepts presented globally are included in the analysis

- Single Payment and Any Device-Anywhere are 2nd and 3rd most attractive enhancements
- Only Social Behavior services were significantly less appealing than others
- Receptivity was highest in Canada and France across all service categories

Source: Cisco IBSG Connected Life Market Watch, 2011

Base: 3,900 broadband consumers

Receptivity to Cloud Enhancements Has Similar Trends for All Services

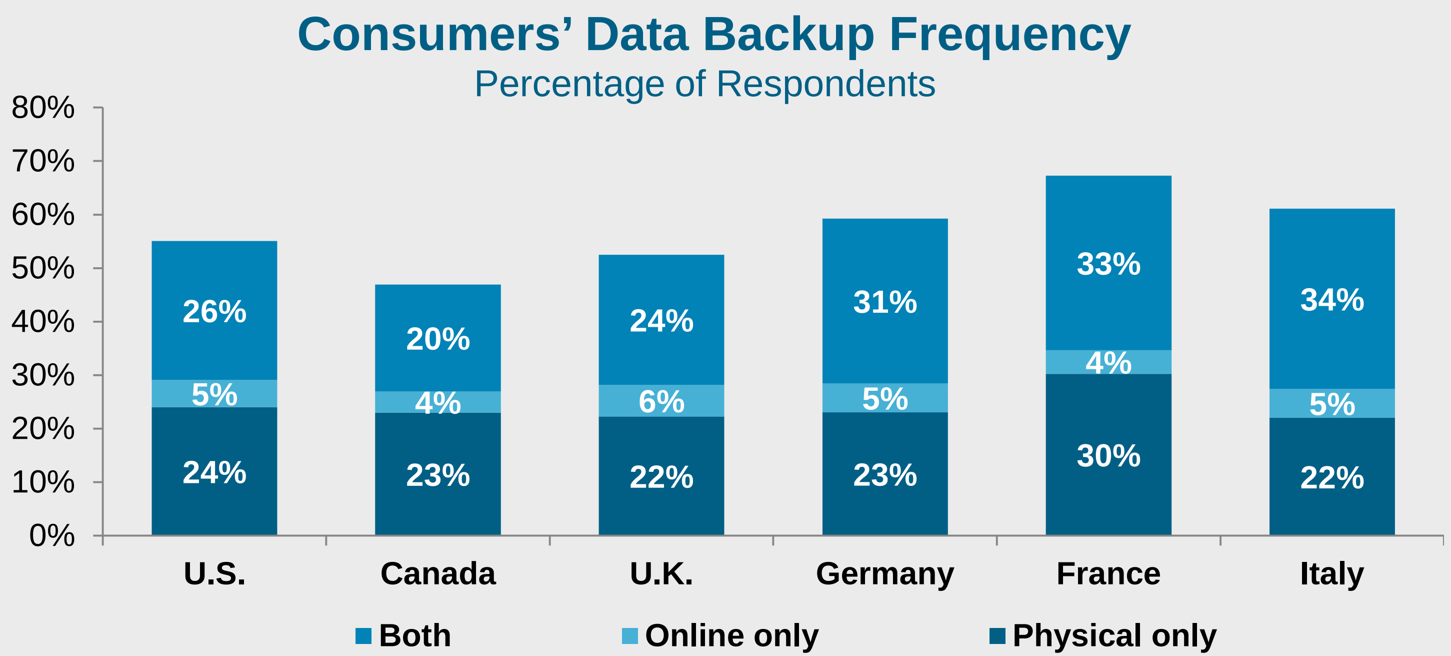


- This graph is related to Immediate Access, Any Device, and Seamless Switching cloud enhancements grouped under Any Device-Anywhere consumer needs: highest in Canada and the U.S., and lowest in Germany
- We noticed **similar trends for all cloud enhancements** grouped in five consumer needs

Source: Cisco IBSG Connected Life Market Watch, 2011

Base: 3,900 broadband consumers

“Backup Data Online” Is Among the High-Priority Cloud Services



Base: 1,892 broadband consumers who backup at least once a month

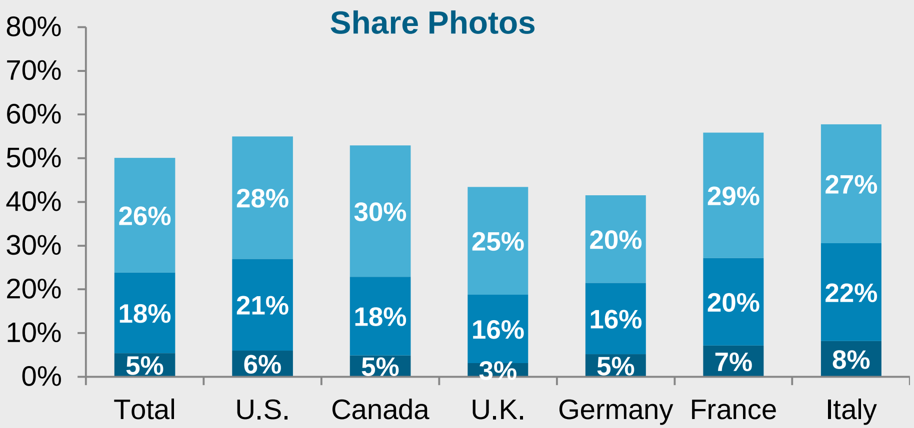
- A significant number of consumers practice both physical and online data protection, and some fully trust the cloud.
- SP opportunities:
  1. Educate users about the importance of regular backup practices
  2. Boost online adoption

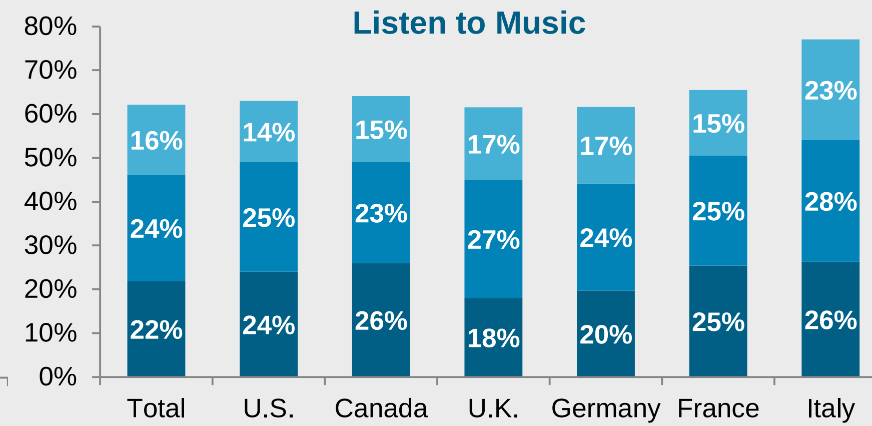
Source: Cisco IBSG Connected Life Market Watch, 2011

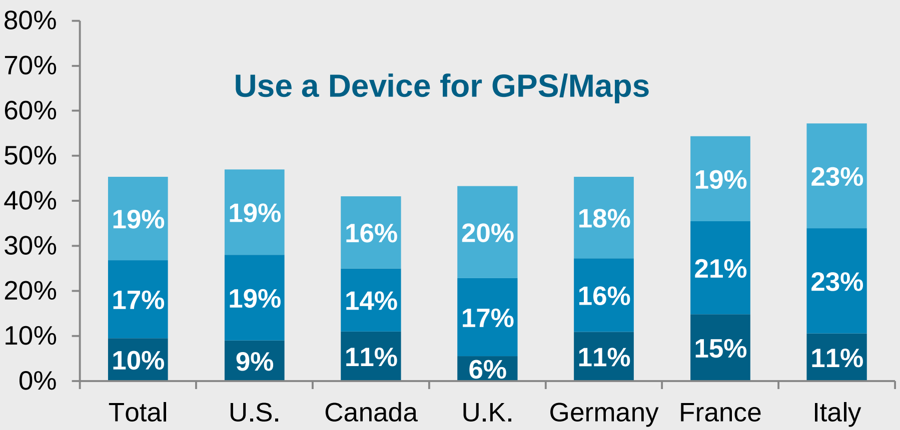
Listening to Music Has Emerged as the Primary Connected Life Activity

Connected Life Activities by Frequency

Percentage of Respondents







■ Once a day ■ Once a week ■ Once a month

We noticed a comparable distribution for each activity among all countries

Source: Cisco IBSG Connected Life Market Watch, 2011

Base: 3,900 broadband consumers

6

How To Expand Customer Potential

How To Expand Customer Potential: Key Takeaways

- Consumers were asked which channel option best met their needs based on the importance of 8 different factors in deciding where to buy an Internet-to-TV device / service
- 29% of broadband consumers are "In Play": their channel preference shifts from factor to factor
- "In Play" respondents in Europe favor SPs for *Reliability, Ease of Use & Setup,* and *Troubleshooting,* but they favor retail on *Ease of Selection* and *Features*
- U.S. and Canadian consumers strongly prefer SP channel
- Age, employment status, income level, and technical attitude affect consumers' preference
- More criteria (marketing initiatives, brand leverage, communication strategies, offer bundling) are required to capture "In Play" consumers

Source: Cisco IBSG Connected Life Market Watch, 2011

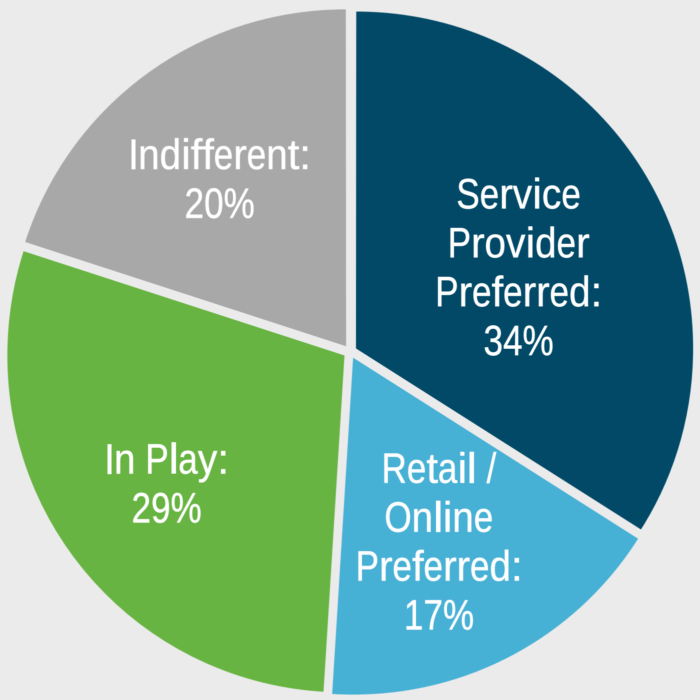
No Clear Preferred Provider for Internet-to-TV Solutions

For 8 different factors in the purchase process—from up-front cost to ease of use—consumers were asked which channel option best met their needs:

- **Strong SP:** These consumers believe SP provides a better experience in ALL factors
- **Strong Retail/Online:** These consumers believe retail/online provides a better experience in ALL factors
- **In Play:** These consumers' channel preference shifts from factor to factor; SP prevails in 4 areas, Retail in 2, and the remaining areas are quite balanced
- **Indifferent**: These consumers selected "don't know" for all 8 factors, likely due to lack of interest in Internet-to-TV solutions

Consumers' Preferred Channel Experience

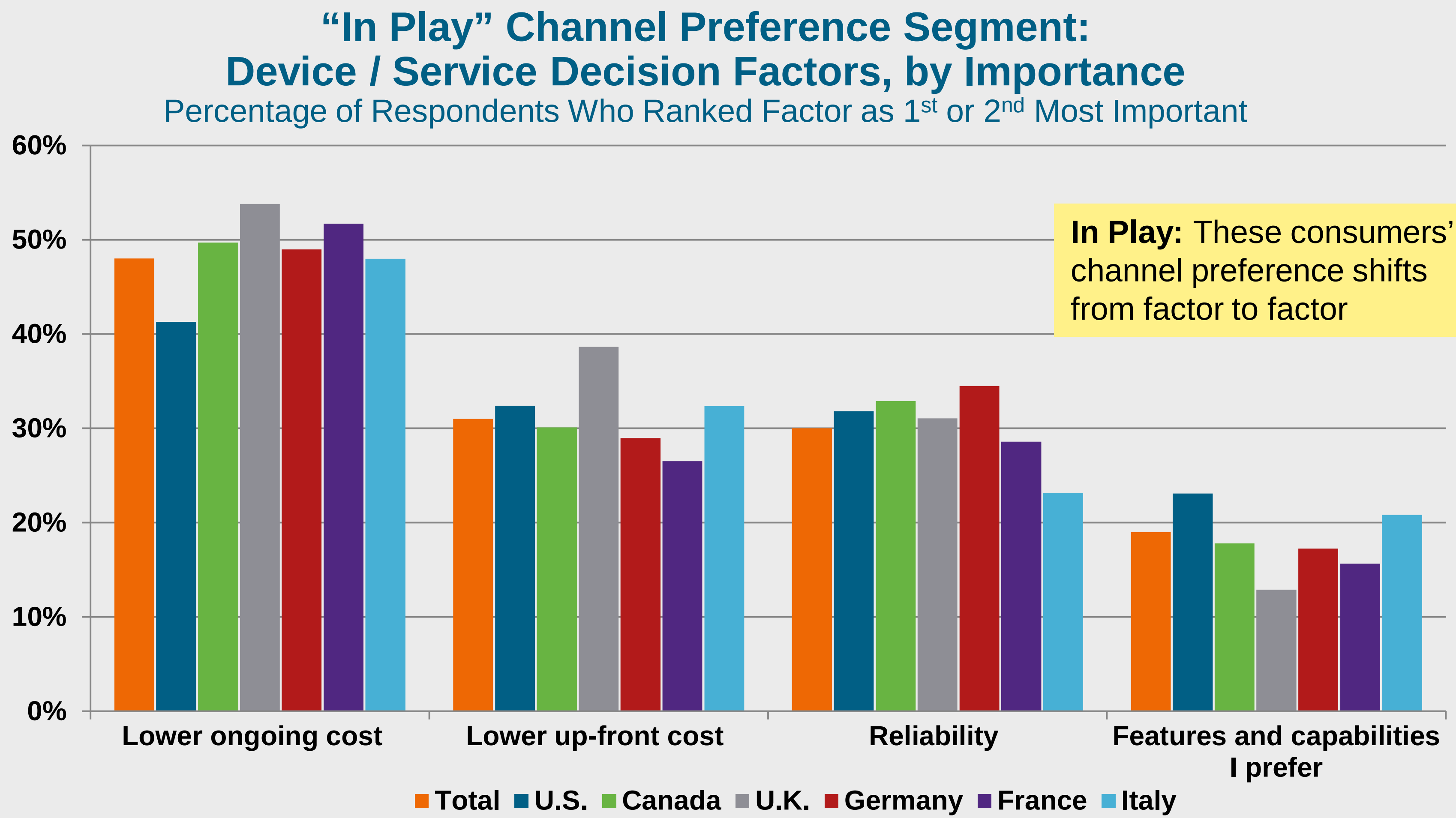
Percentage of Respondents



Source: Cisco IBSG Connected Life Market Watch, 2011

Base: 3,900 broadband consumers

How To Capture the 29% of Consumers Who Are Up for Grabs

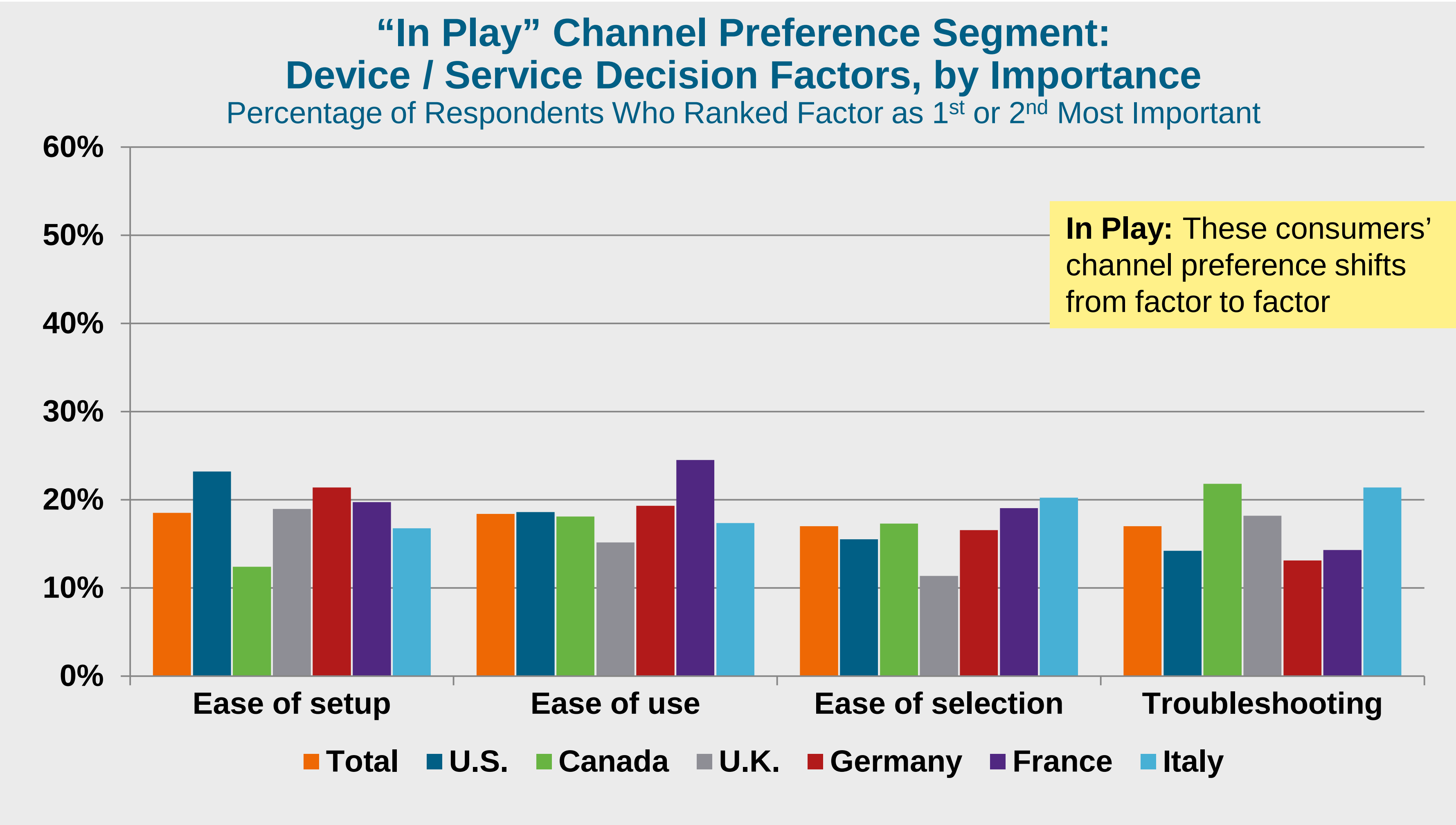


In Play: These consumers' channel preference shifts from factor to factor

Source: Cisco IBSG Connected Life Market Watch, 2011

Base: "In-Play" broadband consumers; n=1,125

Less Important Factors for "In Play" Consumers



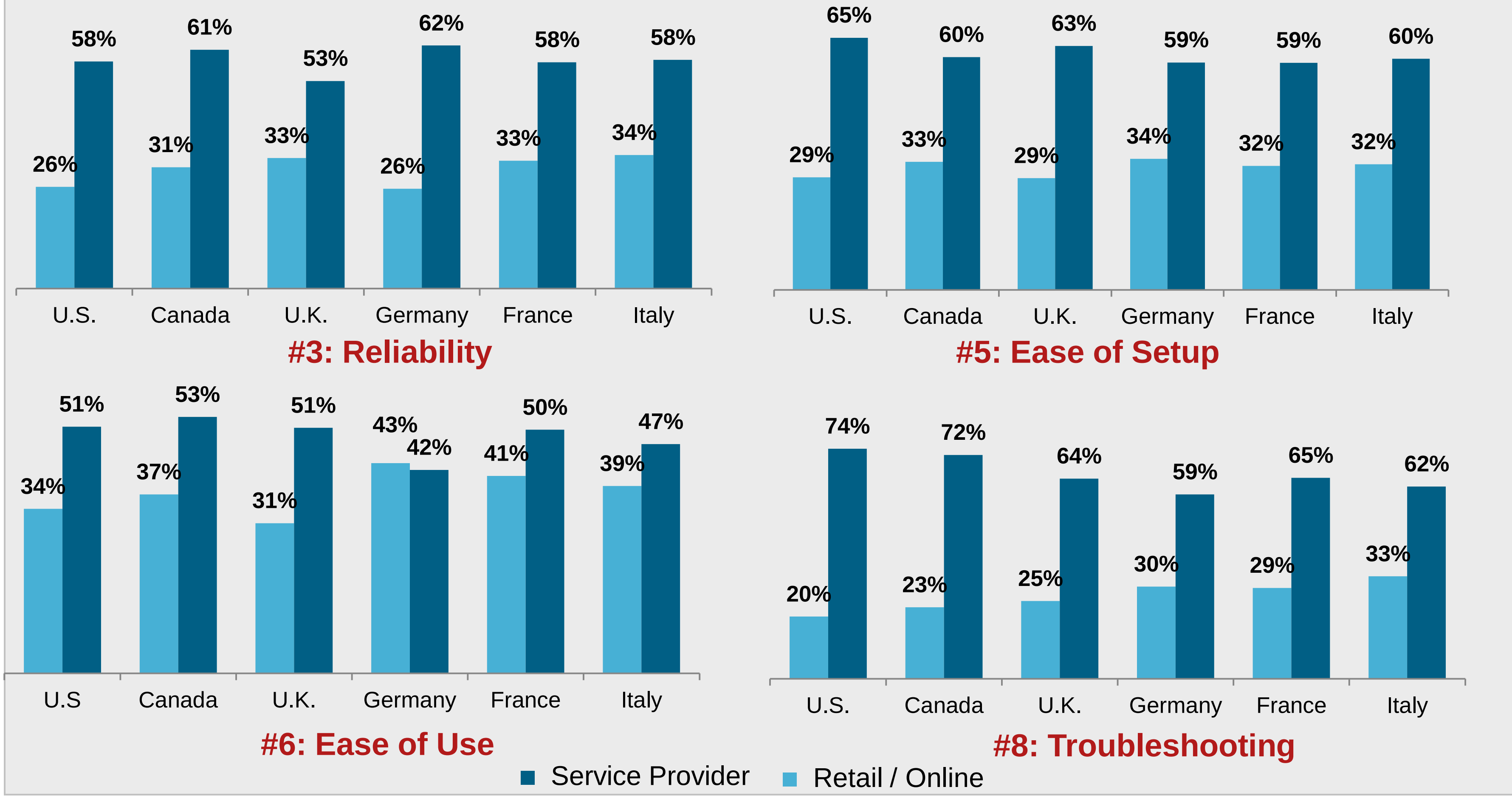
Source: Cisco IBSG Connected Life Market Watch, 2011

Base: "In-Play" broadband consumers; n=1,125

“In Play” Respondents Strongly Favor SPs for Four Preference Factors

Channel Preference of “In Play” Consumers

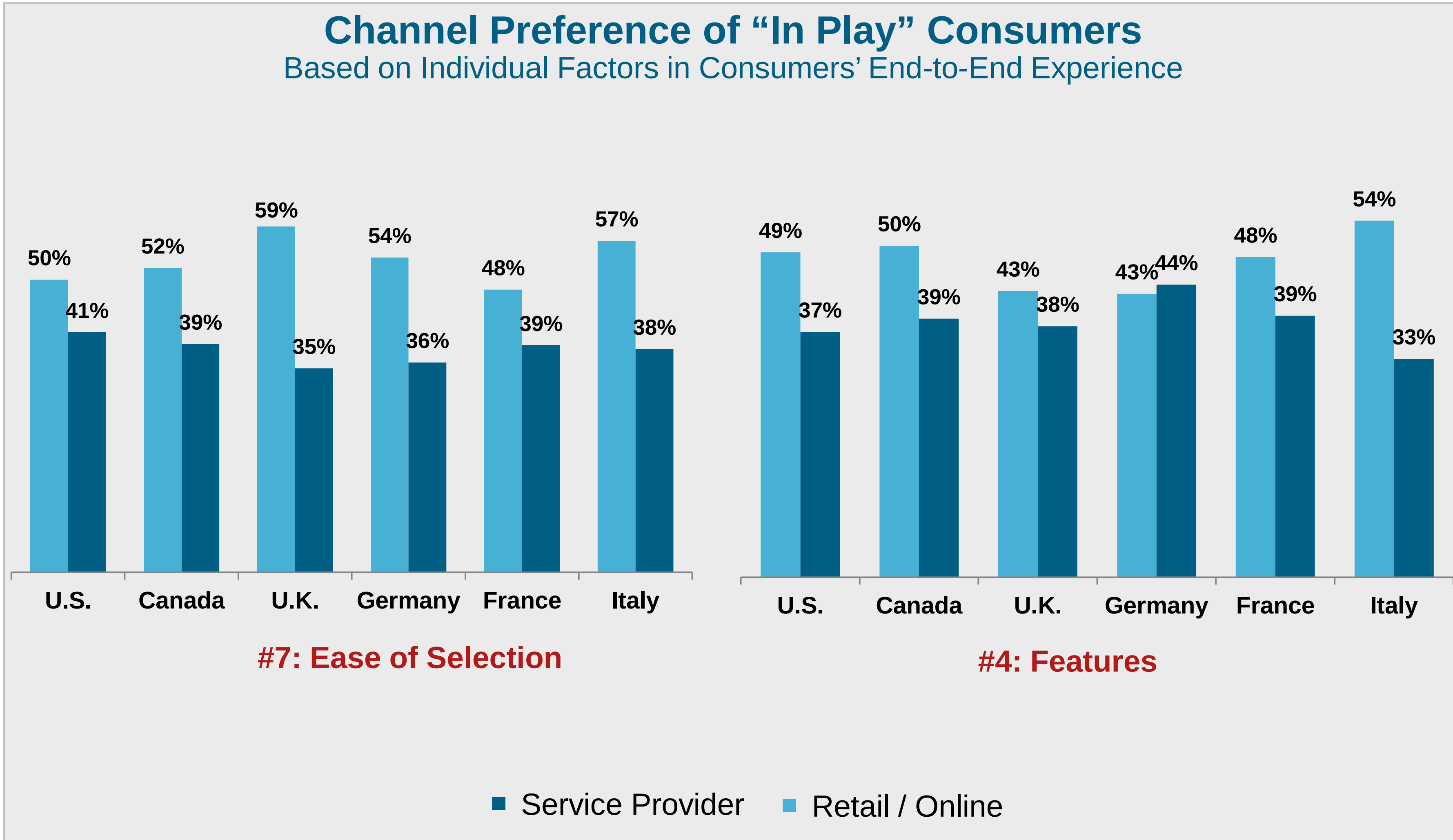
Based on Individual Factors in Consumers’ End-to-End Experience



Source: Cisco IBSG Connected Life Market Watch, 2011

Base: “In Play” broadband consumers; n=1,125

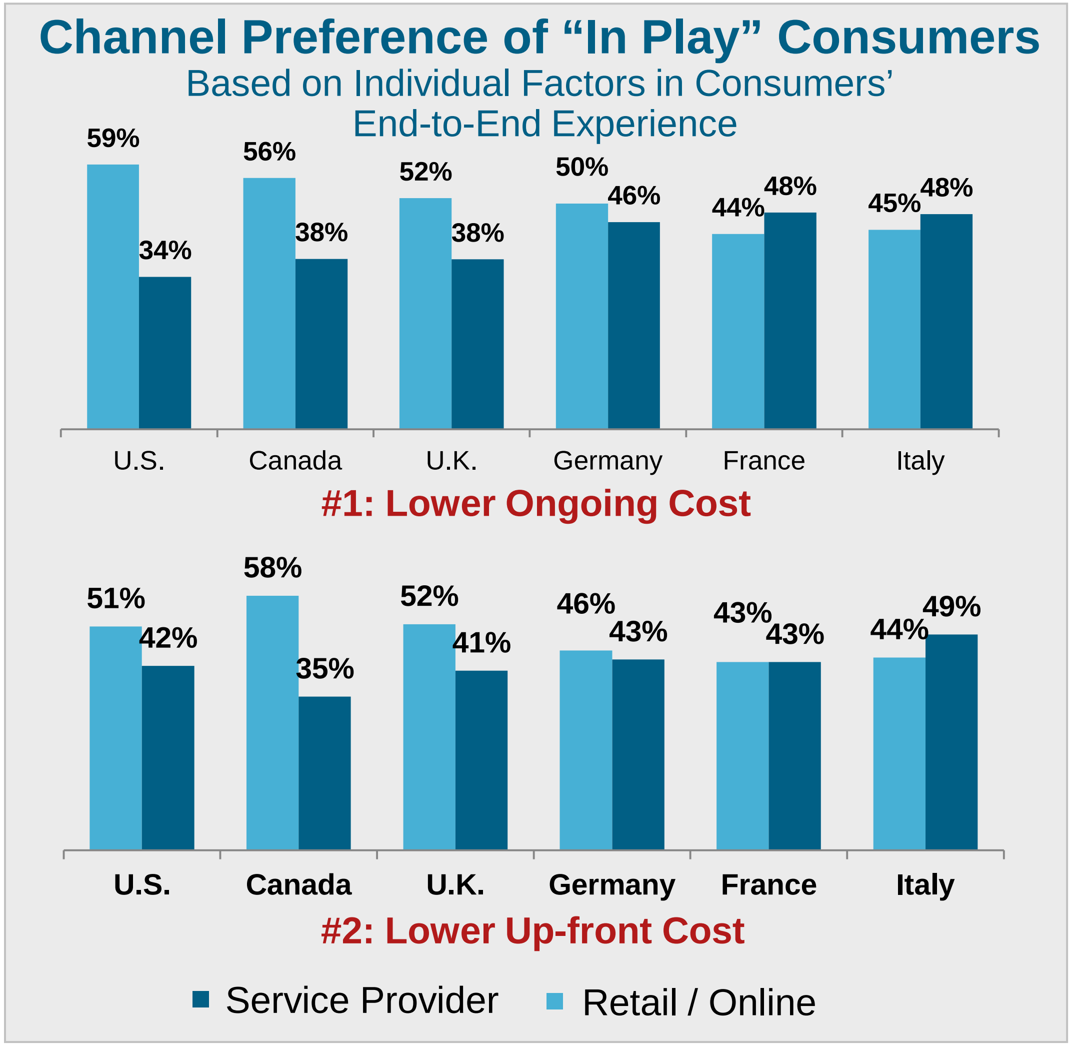
“In Play” Respondents Prefer Retail for Ease of Selection and Features



Source: Cisco IBSG Connected Life Market Watch, 2011

Base: “In Play” broadband consumers; n=1,125

"In Play" Respondents Are Fairly Split Regarding Cost Factors

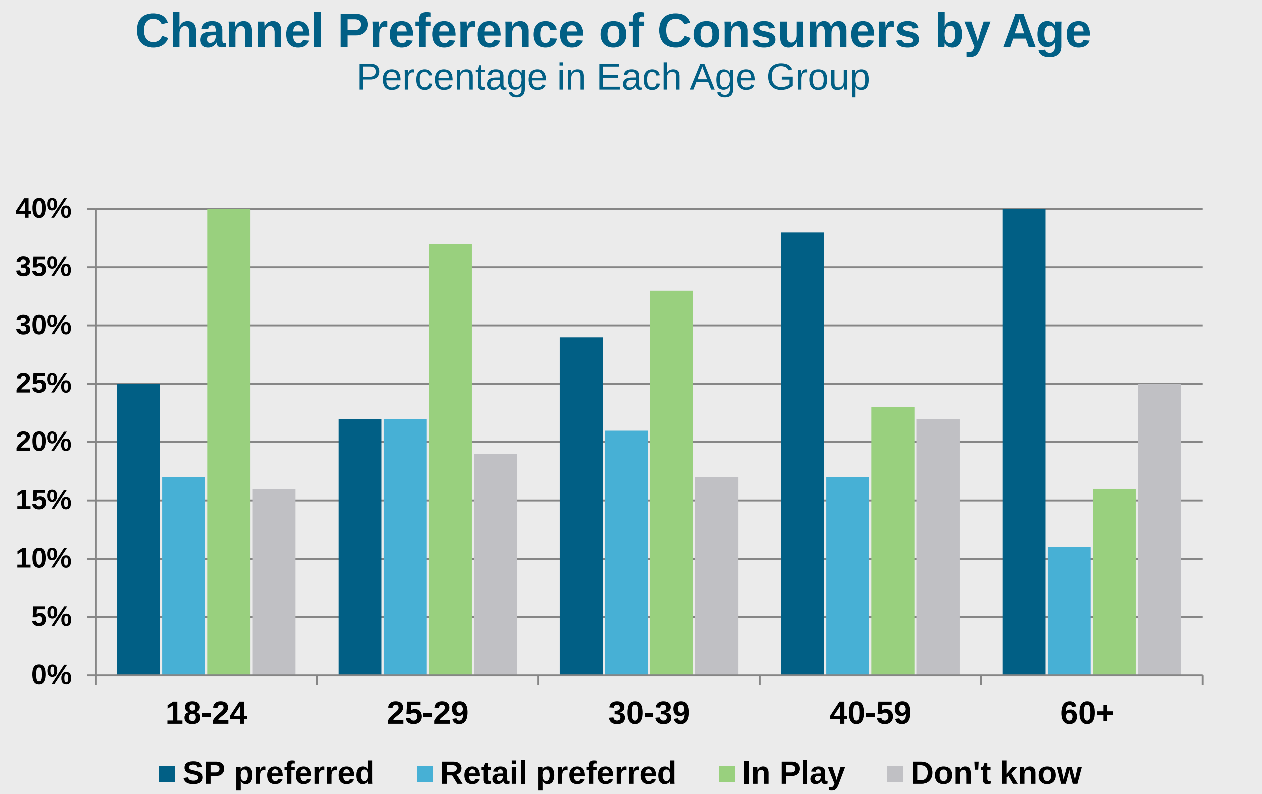


- More criteria (marketing initiatives, brand lever-age, communication strategies, offer bundling) are required to capture "In Play" consumers
- North American consumers are more likely to perceive a cost advantage through the retail / online channel

Source: Cisco IBSG Connected Life Market Watch, 2011

Base: "In-Play" broadband consumers; n=1,125

Preference Shifts from Retail to Service Provider in Older Segments



Opportunity area for SPs: marketing and branding activity in the youth segment

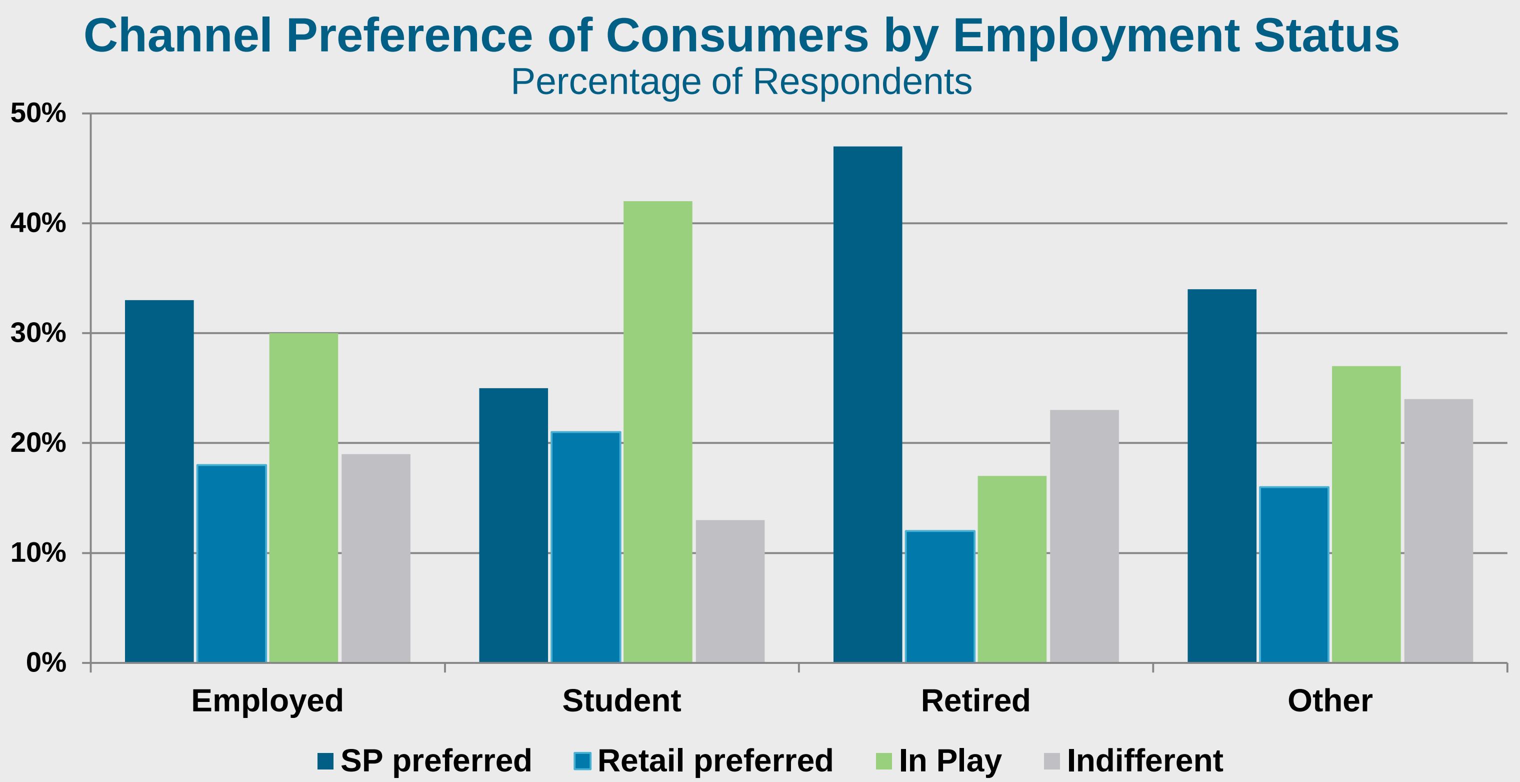
- Consumers under 30 years old have more tendency to be In Play
- Consumers over 40 are more likely to prefer SPs or be indifferent

Source: Cisco IBSG Connected Life Market Watch, 2011

Base: 3,900 broadband consumers

Retail Strongest with Students; SP Strongest with Retirees

However, Students Are Most Likely To Be "In Play"

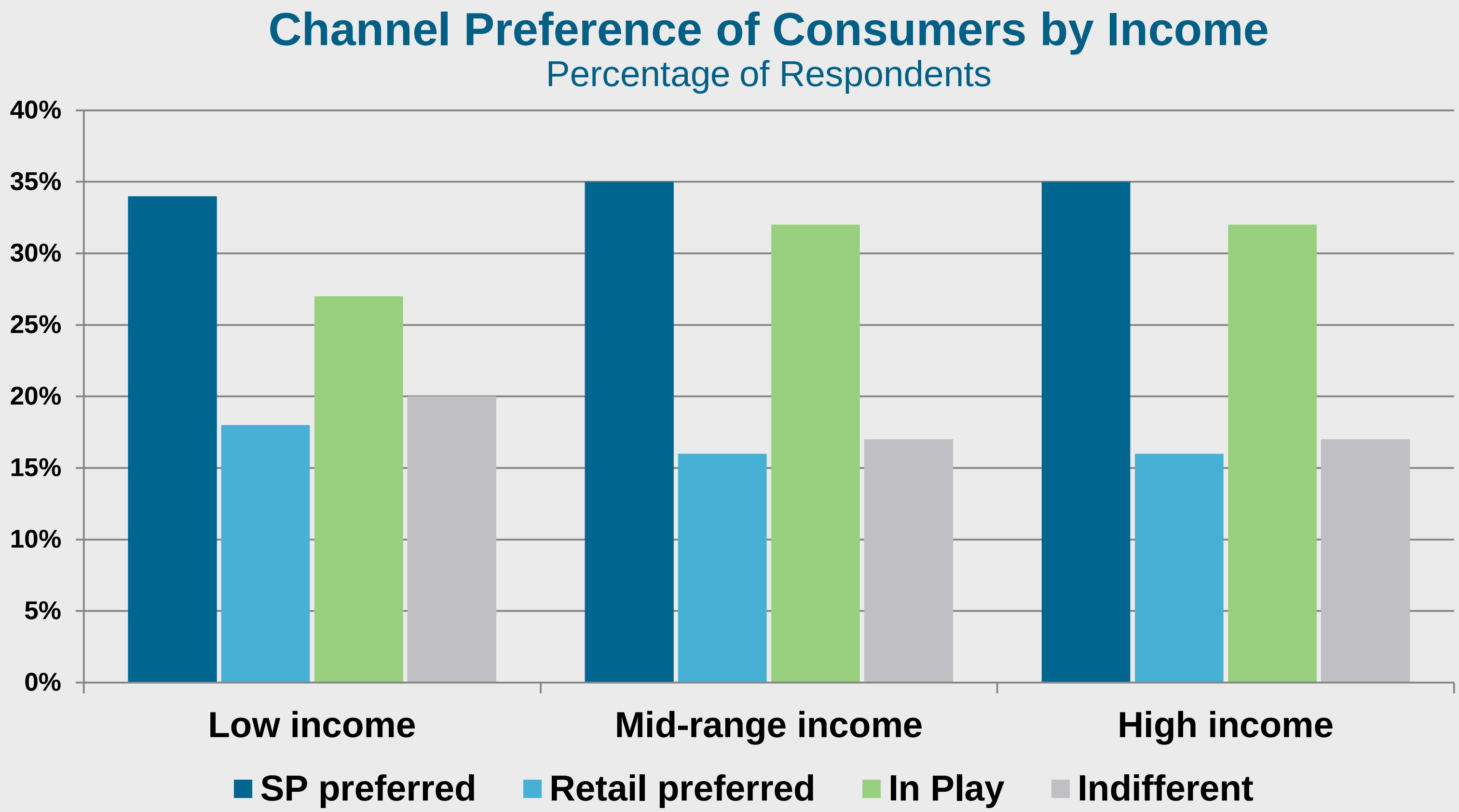


Opportunity area for SPs: plans and options targeting students

Source: Cisco IBSG Connected Life Market Watch, 2011

Base: 3,900 broadband consumers

Both Indifference and Preference for Retail Rise with Income Level

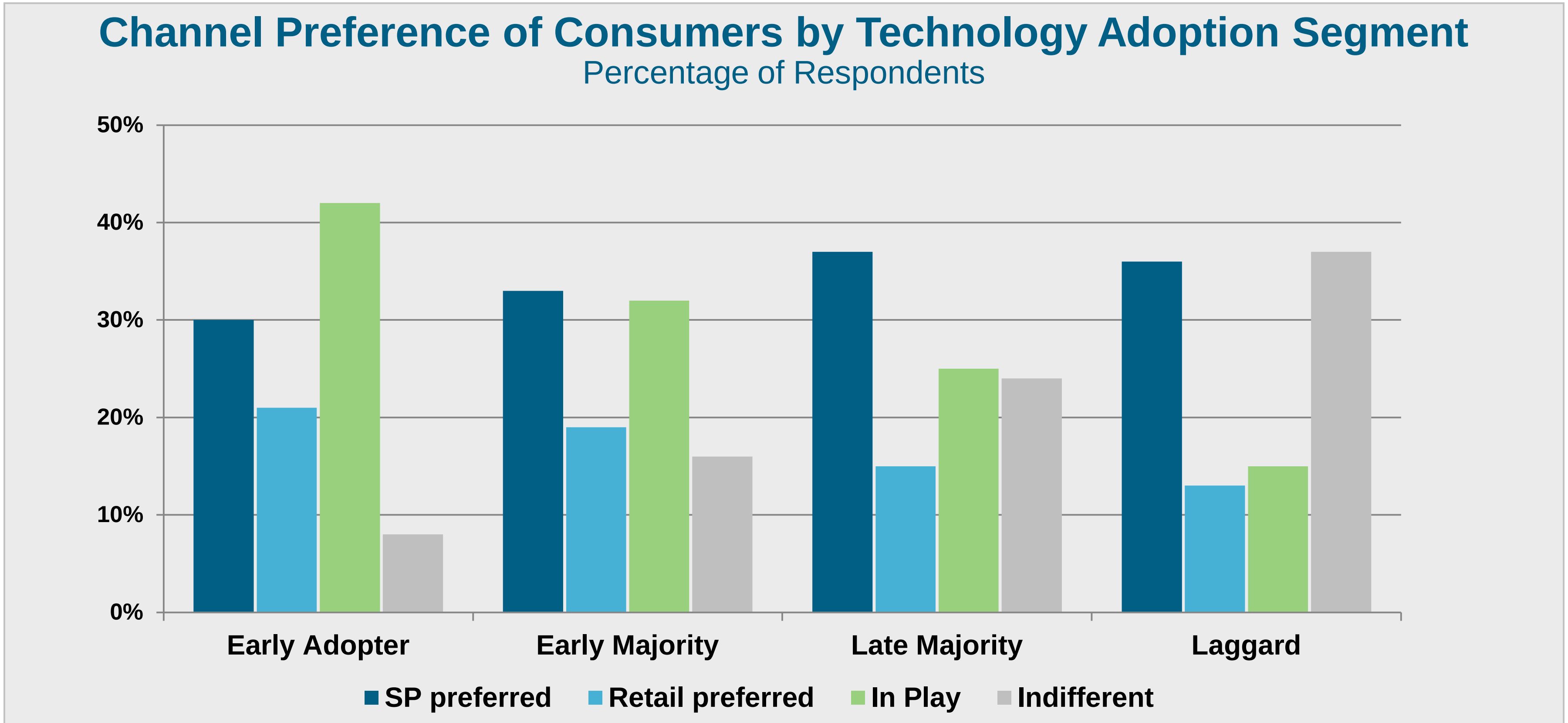


Opportunity area for SPs: indifferent consumers; with higher income come more choices and greater demand for unique and differentiated services

Source: Cisco IBSG Connected Life Market Watch, 2011

Base: 3,900 broadband consumers

Tech-Savvy Most Likely To Be "In Play" or To Prefer Service Provider



Takeaway for SPs: Tech-savvy consumers are informed and choosy shoppers; capturing market and winning loyalty require high-value, innovative services

Source: Cisco IBSG Connected Life Market Watch, 2011

Base: 3,900 broadband consumers

Key Service Provider Implications

Topics	Implications
Technology Use	• Tailor all services to **multiscreen** delivery • Translate importance of smartphones into paid-for mobile data plans • Leverage importance of broadband as anchor for multi-play services • Leverage importance of broadband importance to drive willingness to pay
Buyer Behavior	• Build and leverage SP strong points (reliability, ease of use & setup, troubleshooting) when positioning for innovative services
Wi-Fi	• Leverage **Wi-Fi** and **small cell** solutions for network build-out, home gateways, and mobile offload strategies
End-User Pricing	• Remove the flat-rate paradigm • Move beyond usage-based and capped plans • Develop differentiated value-based pricing plans that require **advanced network-based capabilities** such as deep packet inspection
Consumer Cloud & Connected Life	• Build and leverage **differentiating cloud service attributes** ("easy-to-get" features, for example) to educate users and attract them to cloud services • Develop cloud-based "lighthouse" services such as online backup
Expanding Potential	• Aggressively move to claim the spot for large share of customers who are still undecided about where to buy

Source: Cisco IBSG Connected Life Market Watch, 2011

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