WHITE PAPER

# **Consumer Broadband:** The Path to Growth and Profitability

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Internet Business Solutions Group (IBSG)

Cisco Systems

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## Broadband Is the Future

Most residential customers worldwide still use a dialup connection to access the Internet. With the notable exception of South Korea, where an estimated 75 percent of households have high-speed connections,[1] the consumer broadband market is still in its infancy—penetration rates in the United States are just slightly above 20 percent, and Europe as a whole averages only 15 percent.[2]

Consumer broadband provides one of the best opportunities for service providers of all types—incumbent, alternative, cable, and mobile—to increase revenues and profitability. Europe and the United States are expected to reach an average household penetration rate of more than 60 percent by 2010.[3] This is good news at a time when revenues from traditional voice services are flat or declining, and the ability of the telecommunications industry to continue to grow is being questioned.

Consumer broadband does have its challenges. Opportunities for growth are often accompanied by threats to current revenue streams. While consumer broadband may offer traditional telecommunications service providers the chance to enter the video distribution business, it also allows cable service providers to compete in the voice market. Broadband allows service providers to approximately double the average access revenue per user (ARPU) when compared to traditional dialup,[4] but it also provides consumers with the opportunity to consolidate multiple lines for fax, voice, and Internet access into a single broadband line. Already, service providers are seeing once-lucrative voice revenues erode as consumers start moving to voice over IP (VoIP). In Asia alone (excluding Japan), consumer VoIP revenues reached US$1.7 billion in 2003 and are expected to reach $3.4 billion by 2007.[5] Cable service providers and incumbents alike will soon face competition from pure IP-based service providers such as Yahoo! Broadband (BB) in Japan, FastWeb in Italy and B2 in Sweden.

Faced with these challenges, some service providers proceed cautiously, rolling out consumer broadband only when it doesn't endanger their current businesses. Some see broadband as simply a bad business to be in. One senior executive of a large European telecommunications company was heard to say in 2002, "We all know that [broadband access] is unprofitable."[6] Many see broadband simply as an opportunity to defend their traditional voice revenues. Others are keeping broadband prices high, effectively slowing its adoption.

This "go-slow" approach is often a mistake. Consumer broadband can be a profitable business, but only if it is fully embraced. Consumer broadband influences the migration to a full IP network and is the best reason service providers have to adopt a much-needed new approach to their business. The sooner service providers migrate to a full IP network with broadband connections for every customer, the sooner these companies will be on a sustainable path to growth and profitability, becoming in the process a new kind of company: the service provider of the future.

Competing in consumer broadband is not a simple task. It requires companies to make hard choices about which segments to target, which services to offer first, how to evolve their business model, and how to change their own organizations to operate and compete more efficiently. Should service providers focus their efforts on providing advanced broadband-enabled communications services, or should they branch out into the content business, competing directly with cable firms? Should they do both? Should cable companies focus on broadband access and vertically integrate across the content value chain to take advantage of the new medium, or should they focus on providing VoIP and other telecommunications services, competing even more with traditional telecommunications companies? How can alternative service providers take advantage of the consumer broadband opportunity to compete successfully with incumbent and cable service providers?

This paper helps service providers better understand these complex questions and begins to provide some of the answers. The findings and conclusions are based on the experiences that the Cisco Systems® Internet Business Solutions Group (IBSG) has accumulated during years of working with the world's leading service providers. The paper draws on more than 100 market and investment banking research reports, as well as IBSG's own research and analysis conducted over the past two years.

### This Paper Is Organized into Six Parts

**Part 01** Explores the state of the consumer broadband market, explains the decline of fixed-line revenues and the increase in broadband deployments, and provides an analysis of three major markets around the world. It ends with an overview of the main influences on broadband growth.

**Part 02** Closely examines the broadband consumer and answers questions such as: What types of broadband services do consumers use most? Will consumers pay a premium for certain broadband services? What impact does broadband have on the home networking market? How is this market likely to evolve?

**Part 03** Shows that despite the poor financial results of many early efforts, consumer broadband can be a profitable business. It takes a close look at the primary levers for profitability.

**Part 04** Examines the opportunities and threats of two distinct paths: diversification into content services and the development of advanced communications services.

**Part 05** Outlines the different broadband strategies that service providers can follow.

**Part 06** Offers some concluding thoughts.

# 01.

# State of the Consumer Broadband Market

The consumer broadband market is emerging during a time of tremendous change in the telecommunications industry. Conditions vary from country to country, but service providers worldwide are experiencing many of the same trends. Taken together these trends are, for most service providers, a mixed blessing. Every piece of good news seems to be matched by a piece of bad news.

The mobile communications market, for instance, is booming. In Sweden, for example, there are now more mobile phone contracts than citizens.[7] The number of mobile users worldwide is expected to grow from about 1.3 billion in 2003 to an estimated 2 billion by 2008, while the average amount of money spent by each user is expected to remain constant at about $390 per year.[8]

By comparison, broadband usage and spending are predicted to grow even faster, at a compound annual growth rate (CAGR) of 20.8 percent from 2003 to 20008, and reaching more than 340 million access lines by 2008.[9]

At the other end of the spectrum, revenues from traditional fixed-line voice services continue on a downward trend, with CAGRs of -1.5 percent to -4 percent.[10] The total number of fixed lines is now declining in both the business and consumer markets, at a rate of between -1 percent and -3 percent in Western Europe.[11]

### Fixed-Line Revenues Are Declining

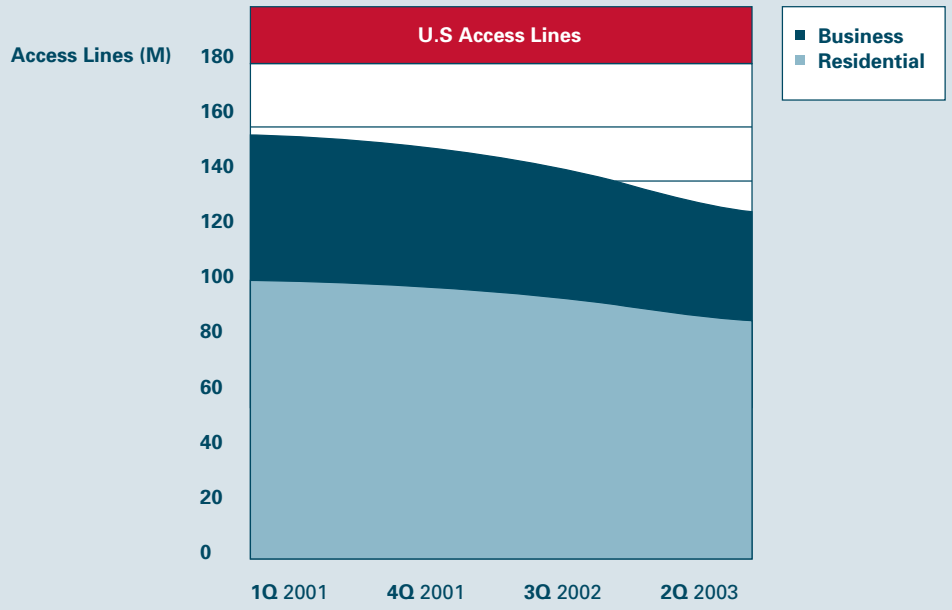
While broadband connections are on the rise around the world, most service providers are experiencing a decline in their fixed-line business. This is the result of revenue erosion in the traditional voice business caused by competition after a market liberalization coupled with an actual decline in the total number of fixed lines. In the United States, the number of fixed lines in business and residential markets is declining at a precipitous rate (Figure 1), mostly due to the increase in broadband lines and the cannibalization of mobile phone services. About 10 million U.S. households have two or more fixed lines, often for different services such as phone, fax, and Internet access. As those households move to a broadband connection they can consolidate all or most of those services onto a single broadband line. Meanwhile, some consumers are canceling their home telephone and replacing it with a mobile line. With the recent introduction of wireless number portability in the United States, 15 percent to 25 percent of consumers are expected to cut fixed-line service by 2007.[12]

In Europe, the impact on the consumer fixed-line market is similar. The average amount of money spent by each household on fixed lines is expected to decline steadily between 2002 and 2007, from €237 per year to €207 per year.[13]

FIGURE 1

**Fixed Lines Are Declining in the United States**




SOURCE: U.S. FCC, 2003

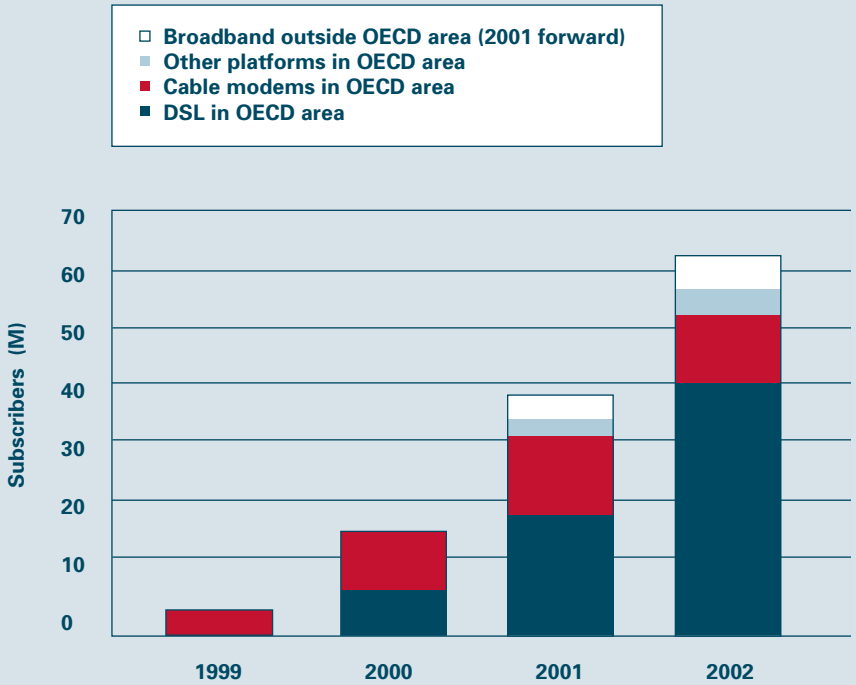
## Broadband Connections Are Increasing

Broadband deployments have grown explosively over the last two to three years. Despite the economic downturn, the number of broadband subscribers worldwide grew from 33 million at the end of 2002 to 97 million at the end of 2003 and is expected to reach 140 million by the end of 2004.[14]

Just as importantly, the growth was not confined to a single region, but took place worldwide (Figure 2).

FIGURE 2

**Broadband Deployments Are Growing Rapidly Worldwide**



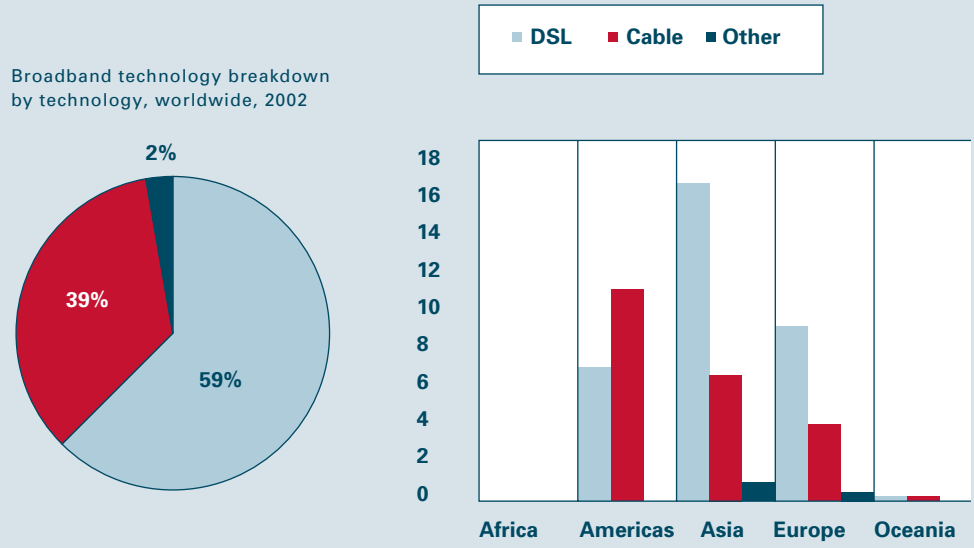

SOURCE: OECD, APRIL 2003

*Note: The Organisation for Economic Co-operation and Development (OECD) represents 30 of the most economically advanced countries in the world, including Europe, North America, Australia, Japan, and Korea. It does not include China.*

The most commonly used broadband access technology around the world is digital subscriber line (DSL), but cable-modem accounts for slightly more than one-third of all installations (Figure 3). Nearly half of all broadband cable subscribers are in the United States, where cable service providers have been particularly aggressive. Most market observers believe that DSL will increase its share of the worldwide broadband market in the future, and will close the difference with cable in the United States as well, reaching up to 45 percent of the total market, compared to only 30 to 35 percent today.[15]

FIGURE 3

## DSL—The Most Common Technology




SOURCE: ITU, SEPTEMBER 2003

Other broadband access technologies, such as Wi-Fi, fiber to the home, WiMAX, and power-line communications (PLC), are either complementary to DSL and cable or offer niche opportunities. These new access technologies will comprise about 2 percent of the total market in 2003, and grow to as much as 10 percent by 2008.[16]

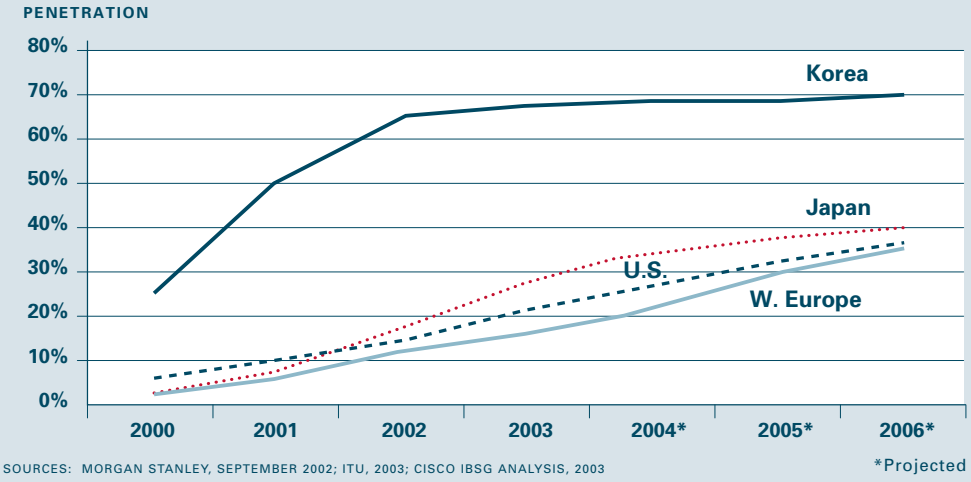
### Survey of Major Markets

The extent and nature of broadband connections to the home varies widely across countries or regions. South Korea leads the world in consumer broadband access by a wide margin, due in large part to the aggressive programs taken by the government in the mid-1990s to encourage Korean citizens to join the Information Society.[17]

Europe, on the other hand, lags behind the rest of the developed world in overall broadband penetration. Belgium, Denmark, the Netherlands, and Switzerland have high rates of penetration ranging from 25 to 30 percent of households, while other countries, such as Ireland and Greece, have household penetration rates well below 10 percent.[18] The majority of countries in Europe have penetration rates in the mid-to-low teens, mostly because of the lack of robust competition.

FIGURE 4

**Broadband Penetration—Japan, Korea, and the United States**




SOURCES: MORGAN STANLEY, SEPTEMBER 2002; ITU, 2003; CISCO IBSG ANALYSIS, 2003

*Projected

In the United States, cable operators are the main providers of broadband, holding about 65 percent of the market. In other countries, such as Japan, alternative service providers with full IP networks, such as Yahoo! BB, hold sway with about 40 percent of the market.[19]

Over time, these dramatic differences between countries and regions will diminish (Figure 4). Broadband penetration is expected to reach maturity at between 60 and 80 percent of households worldwide. For now, each market is defined distinctively. Following is a brief look at the U.S., European, Japanese, and Korean markets.

## UNITED STATES

The United States was the early leader in the narrowband market. Today some 70 million consumers access the Internet using a dialup connection.[20] America Online, for example, became a world leader by selling dialup connections, but that very success is one of the reasons the United States is not the leader in broadband connectivity. While 89 percent of households now have access to some kind of high-speed Internet connection, only about 20 percent have signed up for the service.

Many consumers are satisfied with their narrowband connections, and many telecommunications service providers—incumbent local exchange carriers (ILECs) and

competitive local exchange carriers (CLECs)—have been reluctant to roll out broadband for fear of cannibalizing the lucrative narrowband business. The length of the local loop has made it technically difficult to offer DSL service with significant levels of bandwidth to many residences, and the regulatory environment has done little to encourage investment in a new network infrastructure. Thus, U.S. telecommunications service providers have been slow to act.

U.S. consumers have been unwilling to pay high prices for a service that is not perceived to be significantly better than their narrowband connections. They are charged on average $35 a month for broadband service that is 20 times slower than what is provided to South Korean consumers, who pay about $25 per month.[21]

U.S. cable service providers, on the other hand, have been unusually aggressive in rolling out broadband. After the Telecommunications Act of 1996, and faced with strong competition from satellite service providers, cable operators were compelled to upgrade their networks, spending about $75 billion.[22] These network upgrades not only enabled cable companies to compete against satellite, but also enabled them to compete against the phone companies, helping spur the broadband revolution.

As a result, the U.S. consumer broadband market has evolved in a unique way. It is the only major country where cable operators have a larger share of the home broadband market than telecommunications service providers. However, phone companies are now aggressively pursuing the broadband market. With PCs in more than 83 percent of U.S. homes[23] and the Federal Communications Commission (FCC) maintaining a hands-off approach to regulating Internet usage, most observers believe that the U.S. broadband market will grow quickly. In fact, in first quarter of 2004 DSL captured 51 percent of new subscribers, outpacing cable subscribers.

### EUROPE

Incumbent service providers offering DSL dominated the growth of the European broadband market in recent years, accounting for 72 percent of aggregate broadband penetration in 2003.[24] They dominate not only the fixed-line voice business, but Internet access (and, in many instances, cable services), as well.

In contrast to the United States, cable operators are not prominent in most of the largest European countries, providing little competition in consumer broadband. The exceptions are Austria, Belgium, Denmark, the Netherlands, Spain, Sweden, and Switzerland, which are also the countries with the highest broadband penetration per household. Broadband delivered via Internet-enabled cable in these countries averages 36 percent.[25]

Some cable service providers, such as NTL and UPC, are just emerging from bankruptcy, and have not been able to invest the money required to upgrade their networks to effectively compete in the broadband market, as their U.S. counterparts did in the late 1990s.

The European Commission and governmental regulatory authorities have found it difficult to impose regulations that foster competition in the consumer broadband market. The unbundling of the local loop (ULL) had a false start in 2000, in large part because incumbents were slow to make their facilities available to competitors and because of very high reseller-pricing for accessing just the copper wire.[26] As a result, most broadband service providers opted for reselling full DSL services (copper access and DSL) developed by the incumbent operators, rather than developing their own networks.

Incumbent service providers were also slow to roll out their own consumer broadband services for fear of cannibalizing narrowband revenues. European operators had even less incentive to do this than their U.S. counterparts, because lucrative, per-minute charges for local calls were often the norm throughout much of Europe.

This situation began to change in 2002. Incumbents have realized that broadband is an opportunity, not a threat. The European Commission has improved the conditions for ULL and has added Bitstream[27] to increase competition. And the consumer broadband market has materialized at the same time that the financial situation of alternative service providers has improved. As a consequence, net ULL additions in the last quarter of 2003 were 11 percent, compared to 4 percent at the beginning of that year.[28] New players in France such as Iliad (Free) and 9Telecom have taken advantage of this ULL opportunity. Similar developments are expected to take place in most European countries.

### JAPAN AND SOUTH KOREA

Japan and South Korea share many similarities in the consumer broadband market. Both countries were late to enter the Internet access market compared to the United States and Europe. The percentage of residences that had narrowband Internet connections was quite low compared to the United States, and even much of Europe. And both countries had dense urban areas, making it more cost-effective to deploy broadband.

The Japanese and South Korean governments recognized the need to catch up. But rather than starting with narrowband connections, they aggressively promoted broadband.[29]

South Korea is now the world's leading consumer broadband market. About 95 percent of homes are within the reach of a broadband line, and some 73 percent of homes are connected. Not content to wait for the market to evolve on its own, the South Korean government has committed more than $10 billion to bring VDSL, or fiber, to 80 percent of South Korean homes by 2005.

In Japan, the government has also taken an aggressive approach, forcing the incumbent service provider NTT to open up the local loop to alternative service providers at the low price of $1.40 per user per month, compared to an industry average of $13.[30] Yahoo! BB has taken advantage of this policy and is growing rapidly by developing a full IP network and offering DSL connections to consumers at very competitive prices.

In early 2001, Yahoo! BB[31] launched an 8-Mbps asymmetric DSL (ADSL) data service for $19 a month, and in early 2002 added BB Phone for a basic fee of $3 a month. In July 2002, Yahoo! BB upgraded its data service to 12 Mbps for $20.75 a month, and in March 2003 introduced its TVoIP service, Yahoo! TV, for an initial subscription fee of $82 and a monthly charge of $20.

## Consumer Broadband Growth Factors

Many factors influence the rate of growth of consumer broadband. Every country will have its own unique set of drivers, but these six are the most universal.

### CREATE STRONG COMPETITION

The most important factor driving broadband growth is competition, and the most effective competition comes from service providers using an alternate technology platform, not simply reselling the incumbent's offering. Consider what happened in Europe. Most observers might expect one of the Scandinavian countries, which typically lead in technology adoption, to have the highest rate of consumer broadband penetration, but instead it is Belgium. Belgium has both a strong incumbent service provider and two strong cable operators, UPC and Telenet, which have spurred one another to offer broadband services at competitive prices, 3 Mbps for about €39.[32] In the United States, strong competition between cable service providers and telecommunications companies has accelerated the adoption of broadband. In other countries, the most effective competition is coming from alternatives such as FastWeb in Italy, Yahoo! BB in Japan, and B2 in Sweden. These firms have built wholly new IP networks, which allow them to offer better broadband services at competitive prices because of a cost advantage of between $6 and $10 per subscriber per month.[33]

### PROVIDE TRUE BROADBAND

Providing consumers with high-bandwidth connectivity is the second most important factor influencing growth. Early in the move to broadband, some U.S. and U.K. service providers offered what was advertised as broadband connectivity, even though it was just 256 kbps.[34] This rate was only marginally faster than what could be achieved using

ISDN or fast modems with dialup connections, causing many consumers to wonder if broadband was one more service that did not deliver what was promised. To offer videoconferencing and video on demand (VoD), service providers must offer broadband connectivity of at least 2 Mbps downstream and 512 kbps upstream. In Japan and South Korea the average speed of a broadband connection is approaching 10 Mbps, with Yahoo! BB providing a full 45 Mbps for $37 per month. At these speeds, broadband offers noticeably faster performance rates that can begin to sustain advanced content services such as streaming audio and video, music and video downloads, and multiuser online gaming.

### MAKE BROADBAND AVAILABLE AT A FLAT RATE AND A LOW PRICE

Until recently, many consumers could not get broadband lines to their homes. Building out the infrastructure to make broadband widely available, as it is in Australia, where 94 percent of homes have access, is critical. Pricing is another factor. Some service providers have taken years to drop prices to levels that appeal to mass markets. A recent survey by the Yankee Group found that only 17 percent of consumers were likely to subscribe to broadband when it was priced at $45 per month, while 71 percent of dialup Internet customers said they would switch to broadband if it were available at a lower price.[35]

### REDUCE THE COST OF EQUIPMENT, PROVISIONING, AND CUSTOMER ACQUISITION

The cost of providing consumer broadband service was at one time so high that many service providers thought it would prove to be an unprofitable business. The cost of acquiring customers was high, as is typical of any new service. The cost of installing a DSL access multiplexer (DSLAM) to service the initial customers was also high because initially the cost could not be spread over a wide base of subscribers. The cost of provisioning the service was high because it often required a technician visit. It was also difficult to turn a profit when there was a flat fee on the revenue side whith a variable fee on the cost side (peering points). And because the service was new, customer service calls were frequent, adding to the overall cost of providing the service. Customer acquisition costs were about $400 per customer in 2001, but average below $100 today. Capital expenditures per subscriber were $600 in 2001, but are only $200 today.[36] As service providers have benefited from the learning curve and begun to benefit from economies of scale, the economics of the broadband business have changed considerably.

### CREATE AN EFFECTIVE REGULATORY ENVIRONMENT

The former PTTs were able to build a local loop because government regulators provided the financial subsidies and regulated prices that financed its construction. And cable service providers were able to construct an infrastructure to bring wires directly into customer homes because of strong market protection from the government. However, new entrants to the market—alternative service providers—have not been able to build a local loop because the costs are prohibitive. It is up to government regulators to ensure that alternative service providers can access the local loop at reasonable prices. Japan has been effective at this, forcing NTT to give competitors such as Yahoo! BB access to its customers at a relatively low price. And recent regulatory activities in the United States and Europe are heading in the same direction.[37]

Regulatory authorities should also consider promoting alternate access technologies such as fiber to the home. Japan, South Korea, and some European municipalities are already offering this.

### DEVELOP LOCALIZED BROADBAND CONTENT

English-speaking consumers have a wealth of Internet content to choose. For others around the world, there is a dearth of content in their native languages. Many early adopters in other countries do speak English, but if broadband is to become a mass market in large countries such as Brazil, China, and India, content will have to be developed in Portuguese, Mandarin, and Hindi. There are some exceptions, such as Daum, South Korea's most popular Web portal. It offers services in Korean that are customized to local demands and tastes and is now one of the top five Websites in the world.[38] Without that type of content, consumers have little reason to spend the extra money for broadband connectivity.

## Conclusion

The broadband consumer market is growing rapidly around the globe. But differences in government policies, the competitive environment, the financial health of local service providers, and demographics have meant that some countries are further along the path to creating an information society than others.

Despite the many differences among countries, six universal factors most often influence the adoption of consumer broadband—creating strong competition among service providers; offering connections that are truly broadband in speed; selling broadband at low prices and flat rates; reducing the cost of acquiring, provisioning, and servicing customers; ensuring the unbundling of the local loop at a low rate; promoting alternate access technologies; and providing localized broadband content. The main factor, however, is understanding the needs of the broadband consumer.

# 02.

# The Broadband Consumer

The consumer broadband market is growing. In Europe, North America, and the developed countries in Asia, consumers continue to sign up for broadband Internet connections. Why do consumers want broadband access?

The ready answer is that people want faster downloads and uploads of files and an always-on connection with a flat monthly fee—but this is just a start. What follows are five main characteristics shared by broadband consumers around the world. Service providers of all kinds can use this consumer profile to begin to devise successful broadband business strategies.

### 1. Takes Full Advantage of the Medium

Consumers that have a broadband connection behave as consumers with a narrowband connection. They download videos, software, and music; listen to the radio; exchange email and chat; shop; and seek out information. These are the same types of activities that consumers with dialup connections do, except that broadband consumers do a lot more of them.[39] That is because they can. A high-speed connection makes it possible to view more videos, play more games, and exchange more photographs.

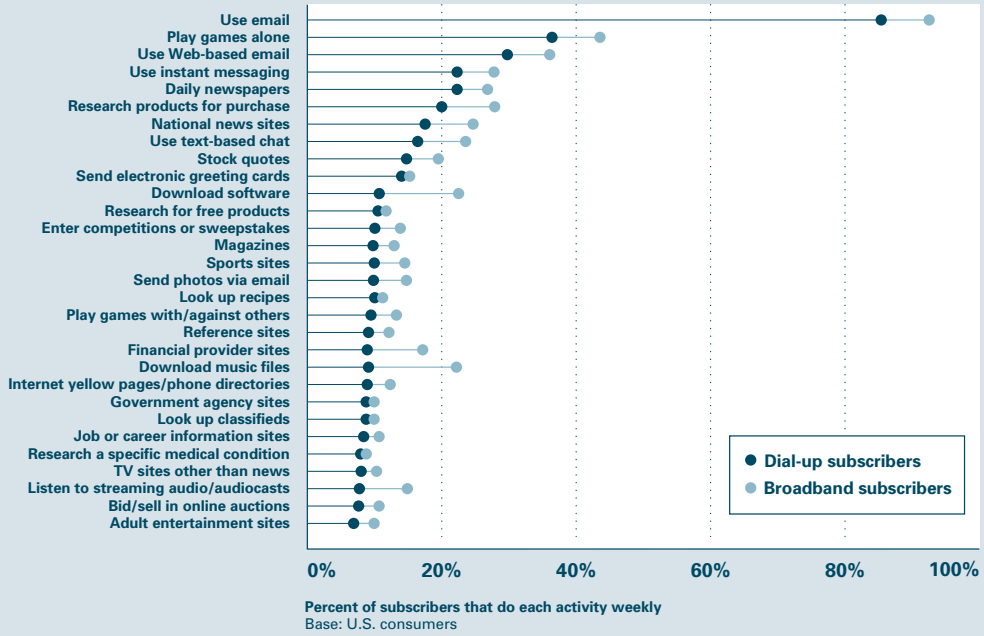
Figure 5 details how U.S. consumers' online behavior changed when they went from a narrowband to a broadband connection. The same sort of results are expected regardless of the country surveyed.

What is also interesting is that broadband consumers didn't engage in more of just one activity (watching streaming video, for example)—they spent more time doing many different activities. In other words, there is no so-called "killer application" in broadband, or no single activity that will generate significantly more demand. It is the confluence of Internet experiences that attracts consumers to broadband.

FIGURE 5

## Broadband Users Do More




Percent of subscribers that do each activity weekly
Base: U.S. consumers

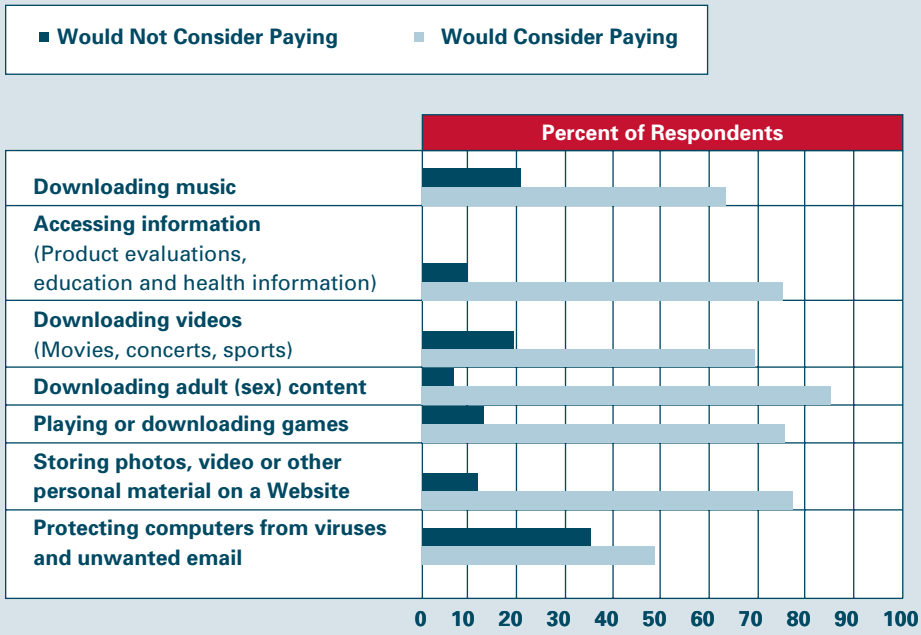
SOURCE: FORRESTER RESEARCH, 2003

## 2. Is Willing to Spend More Money Online

The popularity of iTunes, Apple Computer's paid music downloading site that sold more than 70 million songs in its first year in the United States alone,[40] demonstrates that consumers are willing to pay for content and services when they are available, easy to use, and reasonably priced. According to Forrester Research, downloads of online tracks alone will generate more than $200 million in 2004, up from $36 million in 2003.[41] The Wall Street Journal Online has more than 689,000 paid subscribers. Some European consumers would pay to view the latest episodes of *The Simpsons* or *The Sopranos*, if they were available over the Internet. Others would pay for sporting events that may not be carried by local cable or broadcasting channels. As Figure 6 demonstrates, most U.S. broadband consumers would pay for value-added services. The problem today is that, with the exception of the adult entertainment industry, there are not enough publishers, recording studios, movie studios, and the like that have developed creative ways to deliver their content and services to consumers securely.

FIGURE 6

**European Consumers Would Consider Paying for Value-Added Service**




SOURCE: THE YANKEE GROUP, NOVEMBER 2003

## 3. Spends More Time Online

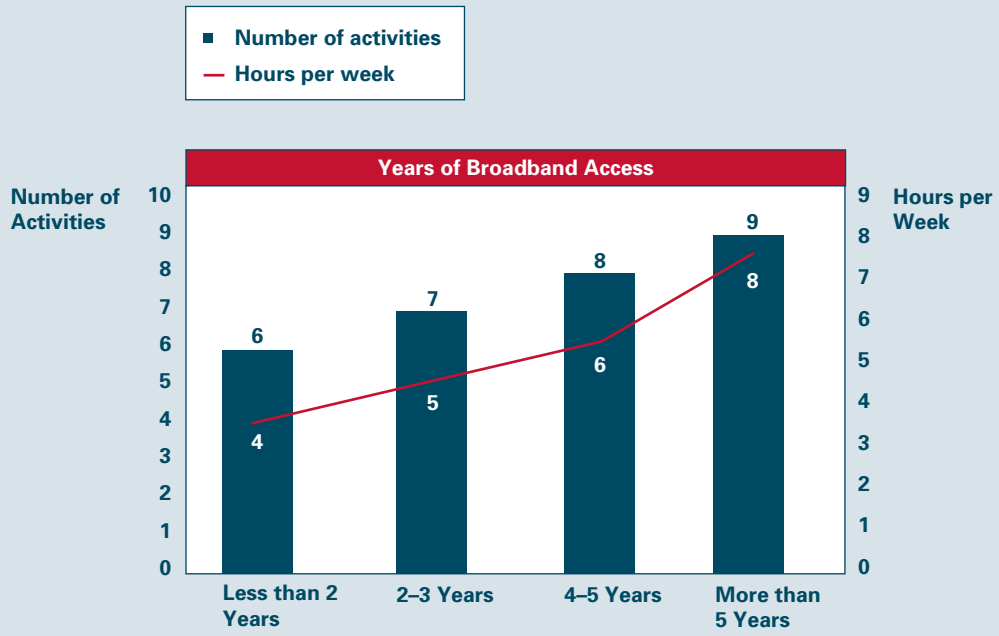
A misconception about the broadband market is that consumers with high-speed connections spend less time online because they can do things more quickly. Because email is faster, music downloads are faster, and Websites load faster, broadband users can finish what they are doing more quickly and get on to other activities.

In fact, the opposite is true. Broadband users actually spend more time online than narrowband users. What's more, the longer consumers have broadband service, the more time they spend online (Figure 7). The added time that consumers spend online comes at the expense of other activities, such as watching television, listening to the radio, or reading. More than 25 percent of broadband users say they watch less television now than they did before they had broadband.[42] That is good news for the companies that provide broadband connections and services.

FIGURE 7

**Broadband Users Spend More Time Online**




SOURCE: STANFORD UNIVERSITY, 2003

## 4. Spends More Money on Communication Services

Consumers do not have unlimited resources to spend on communication services, but there is more flexibility than some might think. Between 1990 and 2000, consumer spending on communications services increased 65 percent, from $534 in 1991 to $933 in 2000, mostly for mobile phone services and the Internet (Figure 8).[43] This outpaced the increase in consumer spending on most other goods and services, including healthcare, food, education, transportation, and utilities. This is also the result of growing income and disposable income in the last decade. In the United States, for example, total disposable income grew 46 percent from 1990 to 2003 (adjusted for inflation), according to the U.S. Bureau of Economic Analysis.

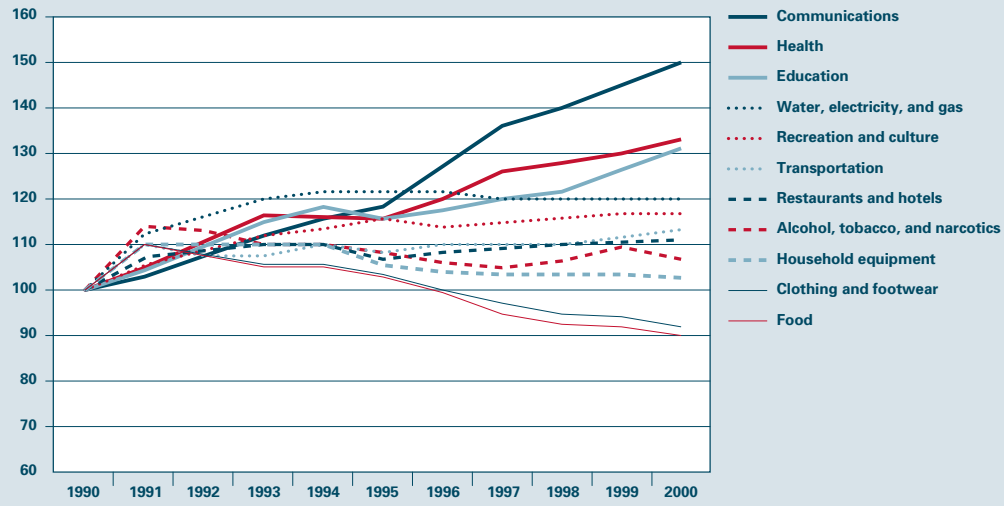
This demonstrates that consumers will find a way to pay more for services they value. In this case, much of the increased spending went initially to pay for mobile telephony, and most recently for Internet and broadband access. What is also clear is that consumers will find the money to pay for new broadband services if they value them.

FIGURE 8

## Broadband Promotes Higher Consumer Telecommunications Spending

**Evolution of Household Spending in OECD Countries, 1990-2000**

Index 1990=100




SOURCE: OECD, 2003

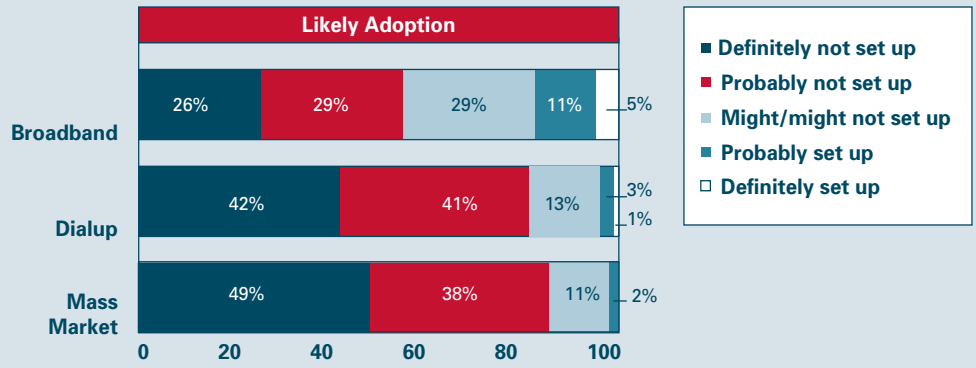
### 5. Buys More Home Networks

Broadband consumers not only spend more time and money online, but they are also more likely to have local area networks (LANs) installed in their homes (Figure 9). By 2008, 47 percent of broadband households in Europe will have a home network.[44] Home networks are not only used to connect PCs and printers, but are increasingly being used to link other home digital devices such as televisions, DVD players, radios, and security systems. These and other digital devices provide a platform onto which service providers can sell value-added services.

Some observers believe that home users will buy a single, multipurpose box that becomes not only the Internet gateway, but also a server with LAN capabilities, gaming features, video serving capabilities, and more. We believe that most consumers will take an incremental approach, adding new capabilities as they become comfortable with the technology. The evolution is likely to happen in five basic phases: sharing home PCs and peripherals such as printers and scanners; sharing a broadband Internet connection; introducing a wireless network that provides mobility within the home; adding network applications such as security and home automation; and adopting advanced applications such as VoIP and VoD.

FIGURE 9

**Broadband Propels the Home Networking Market**




SOURCE: INTERNET HOME ALLIANCE, STATE OF THE CONNECTED HOME MARKET STUDY, OCTOBER 2003

Home networks that incorporate broadband access give service providers a platform that allows them to offer new value-added services (Table 1).

TABLE 1

**Broadband Propels the Home Networking Market**

| Category | Services |
|---|---|
| Information services | Internet access, VPN, firewall, security |
| Entertainment services | Streaming video, VoD, music, online gaming |
| Communications services | VoIP, 802.11 phones, key systems, video telephony, videoconference |
| Automation and control services | Home surveillance, nanny cam, utilities |

## Conclusion

Today's broadband consumers share several characteristics, regardless of where they live. Like their narrowband counterparts, broadband consumers use their high-speed connections to listen to music, download software, shop, send emails, play online games, book vacations, do their financials, and chat. And they do more of it. As a result, broadband consumers spend more time online than narrowband consumers. Studies also show that consumers are willing to spend more money on communications

services, and as evidenced by the popularity of services such as Apple Computer's iTunes, they are also willing to pay money for high-value services. These same broadband consumers are also more likely to buy home networks to connect PCs and peripherals, and to share a high-speed Internet connection. Service providers must learn how to take advantage of these consumer traits to generate revenue.

# 03.

# Making Money in Broadband

Until recently, consumer broadband had a mixed reputation in the telecommunications industry. During the early phase of DSL deployment, many service providers spent hundreds and sometimes thousands of dollars on each customer—to market DSL, install the new equipment, and provision the service—money that could not be recovered in monthly charges after customer churn was factored in.

In the United States, the typical capital expenditure per customer in 2000 was $630, and customer acquisition costs (equipment, marketing, and provisioning) were in excess of $400.[45] With a typical customer churn rate in excess of three percent per month, the more customers that service providers added, the more money they lost.

But what many service providers failed to recognize is that DSL would follow the same learning and profit curves as other new businesses. Put simply, as more DSL customers are added, the incremental costs of providing the service go down, and profits go up. Today, for example, the average capital expenditure per customer has declined to about $270, with customer acquisition costs typically below $100 and the cost of service down to about $13. As a result, a large U.S. incumbent can break even on a new DSL customer within one year, and turn a profit thereafter.[46] ARPUs of $30 to $40 per month are common, with gross margins higher than 60 percent.[47] In Europe, the figures are even better. Because of shorter local loops and higher DSL penetration, broadband access becomes a net positive contributor to revenues once household penetration reaches just 7 percent.[48]

Broadband has the added advantage of decreasing customer churn and increasing customer loyalty, leading to higher revenue and profit. Even VoIP, often thought to be a direct threat to a service provider's existence, can be profitable when bundled with broadband access.

Following are three keys to making money in today's consumer broadband market.

### 1. Increase Penetration

If there is one key to growing revenues and turning a profit in the consumer broadband market it is this: continue to increase the number of subscribers, while decreasing customer acquisition and provisioning costs. For example, DSL is not a particularly good business at the beginning of its deployment (Figure 10). Until a certain percentage of the customer base has adopted DSL, it actually has a negative impact on revenues. In Europe, the threshold is about seven percent, but in the United States, it is about 15 percent, due to lower population densities and the resulting higher costs of longer local loops.[49]

One reason for this is that early DSL adopters are typically the service provider's best narrowband customers, those that have multiple lines and spend time using them, paying higher than average fees. When those customers move to DSL, it actually reduces the amount of money they pay to the service provider. But the converse is also true: customers that sign up later for DSL often pay higher fees than they did as narrowband customers.

The second reason DSL is not profitable in the early stage is because, as with any new business, the cost of marketing the service, buying the equipment, installing the

equipment, upgrading lines and provisioning the service are all higher on a per-customer basis at the beginning than they are later on. The only solution is to continue to invest with the knowledge that the learning curve and economies of scale will kick in.

### 2. Reduce Churn by Offering Bundles

Customer churn is one of the biggest problems facing service providers in competitive markets today. Incumbent and cable service providers have not had to face this issue in the past, because they enjoyed a strong position in their respective markets. Mobile phone operators, on the other hand, are familiar with churn—from the beginning, this industry was designed to be competitive with at least two players in every market. Therefore, they expected to lose customers to competitors offering new phones, lower prices, or better coverage.

With increased competition across all types of communications and content services, all service providers must pay close attention to customer churn, which can often be the difference between making a profit and losing money. This is particularly important in broadband, which requires large up-front investments to provide the service and a longer time to recoup the investment.

One of the best ways to reduce churn is to bundle services. During a recent analyst conference, BellSouth management stated that when a local or long-distance customer adds just one additional service—DSL, wireless, or dialup—churn decreases by about 45 percent.[50] Similar results have been published by cable service providers.

Bundling also allows service providers to lower the monthly price of broadband access without sacrificing subscriber profitability because of higher ARPU and lower churn.[51] As Table 2 demonstrates, the more services the provider offers, the longer customers tend to stay, and the more money they spend. When just one service is offered, the average life of a subscriber is 32 months. But when three services are bundled together, the average life of a subscriber doubles to 64 months.

Early on, the variety of bundles that service providers can offer is limited. But as new features and services are developed, the types of bundles that service providers can offer will multiply, as will the ways that these services and features can be packaged, marketed, and sold to consumers.

TABLE 2

**Churn Reduction and Overall Broadband Access Profitability**

| Life of *Sub (mn) | Churn Rate | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2.5% | 2.75% | 3.00% | 3.25% | 3.50% | 3.75% | 4.00% | 4.25% | 4.50% | 4.75% | 5.00% |
| 40 | $1,036 | | | | | | | | | | |
| 36 | | $910 | | | | | | | | | |
| 33 | | | $815 | | | | | | | | |
| 31 | | | | $720 | | | | | | | |
| 29 | | | | | $657 | | | | | | |
| 27 | | | | | | $594 | | | | | |
| 25 | | | | | | | $531 | | | | |
| 24 | | | | | | | | $499 | | | |
| 22 | | | | | | | | | $468 | | |
| 21 | | | | | | | | | | $436 | |
| 20 | | | | | | | | | | | $104 |

| | Cox | | | Insight | | |
|---|---|---|---|---|---|---|
| Products in Bundle | Churn | Life of Sub (mn) | Life of Sub (yrs) | Churn | Life of Sub (mn) | Life of Sub (yrs) |
| 1 | 3.10% | 32.26 | 2.69 | 3.20% | 31.25 | 2.601 |
| 2 | 2.46% | 40.65 | 3.39 | 2.80% | 35.71 | 2.98 |
| 3 | 1.55% | 64.52 | 5.38 | 1.20% | 83.33 | 6.94 |

*Subscriber

SOURCES: BEAR STEARNS, UBS, SEPTEMBER 2003

## 3. Bundle VoIP and Broadband Access

Most service providers get nervous when the topic of VoIP is raised. What could be good about transitioning customers from a service they often pay for by the minute—traditional line switched voice communications in a public switched telephone network (PSTN)—to one they get for a flat fee or nearly for "free"—VoIP? Inroads by companies such as Vonage and 8x8 in the United States, and by Skype worldwide, have already made a small dent, particularly in the long-distance and international voice market. Consumer VoIP revenues in the United States are expected to grow from $700 million in 2004 to close to $10 billion by 2008.[52] In Europe, consumer IP voice revenues were $611 million in 2003 and are expected to grow to $2.1 billion by 2007.[53]

At first look, VoIP in the consumer market does not appear particularly attractive for service providers that offer traditional voice (Figure 10). But we will demonstrate that this view is misleading. The reason it appears unattractive is because VoIP by itself has a negative impact on a service provider's total fixed-line revenues. One might expect that as more customers subscribe revenues would move into the black, but at 15 percent adoption, where DSL breaks even in the United States, VoIP still shows a 2.5 to 7.8 negative impact. Even at a 50-percent adoption rate VoIP results in a 1-percent decline in revenues. This does not seem good. However, it does not take

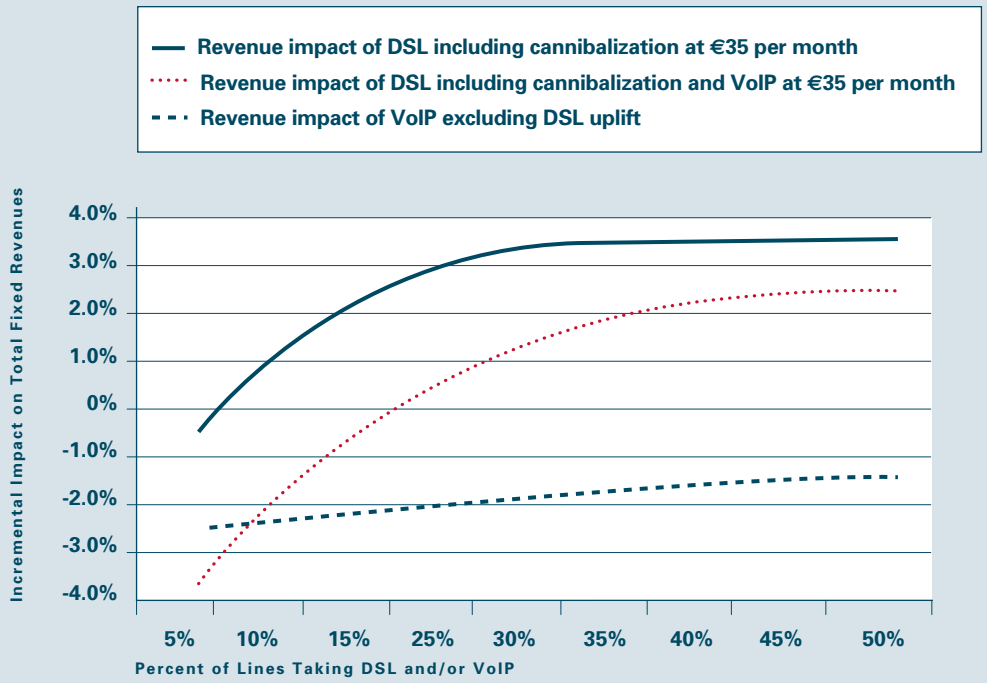
into account the significant positive impact VoIP delivers through associated benefits. These include revenue enhancers such as improved customer loyalty and a significant reduction in operating expenses.

When the adoption rate reaches 15 percent of subscriber lines, revenues, while still negative for VoIP alone, do begin to increase at a steady rate. Combine VoIP with DSL Internet access and this becomes a good business to be in. Add to this the reduction in customer churn, and the financial benefits improve even more. In short, the net impact of DSL and VoIP is positive for a typical incumbent.

Some people have argued that the benefits are greatest when an incumbent offers a combination of DSL and traditional PSTN voice, we believe that this scenario is not plausible in a competitive market because VoIP is inevitable. VoIP is already a reality in all markets with significant growth forecast. Once a provider delivers VoIP in a market, an incumbent will not only lose the customer for broadband service, but also for traditional voice service.

FIGURE 10

**VoIP Bundled with Broadband Access**




SOURCES: OFTEC DATA, COMPANY DATA, LEHMAN BROTHERS, SEPTEMBER 2003

Further, when all a service provider's subscribers switch to broadband, and voice is provided as an application, there will no longer be a need for a PSTN. The shift to a full IP network, which reduces the costs of operating the network infrastructure by at least one order of magnitude, will cause significant changes to the financial and business model of the service provider industry. That is why broadband is driving the migration to a full IP network, and why VoIP is rapidly becoming the critical application in the adoption of broadband.

BT's recent announcement to transform its telecommunications infrastructure into a pure IP-based network by 2009 is a clear example of this trend. Matt Bross, BT's CTO, acknowledged that VoIP is seen as an opportunity, not a threat.[54] Yahoo! BB in Japan and FastWeb in Italy are examples of alternative service providers following this pathway. In the United States, TWC launched a VoIP service in Maine in 2003. Comcast and AT&T have also launched VoIP services.

## Conclusion

When service providers first began offering broadband, the costs of acquiring customers, installing the equipment, provisioning the service, and supporting customers were high, many companies lost money in the process. With time and experience, service providers are demonstrating that it is possible to make money in the consumer broadband access market. The most important factor in making a profit is market penetration. Once the break-even point is reached, about a 7-percent adoption rate in Europe and a 15-percent rate in the United States, service providers can make a profit from broadband access. Because customer churn is an important variable in profitability, service providers need to retain their customers, and broadband access bundled with voice has proven to be an excellent way to develop loyalty.

VoIP is inevitable. It is very attractive for those SPs that do not have a legacy voice offering. For those that do have legacy voice, VoIP can be used in combination with broadband access to improve net revenue, as long as they provide the bundle and manage the introduction of VoIP.

The profound transformation that service providers will undergo by migrating their customers from a voice to a broadband dial tone will dramatically improve the underlying economics of their business, by replacing legacy voice networks with full IP-networks that are cheaper to run and maintain. VoIP is just one of many advanced IP-based communications and content services that service providers can offer. Understanding these new services, and deciding which ones to offer and which ones not to offer, is one of the keys to success. That is the subject of the next section.

# 04.

# Communication Versus Content

The foundation of a consumer broadband business is a fast Internet connection, such as DSL or cable. That is only the start. Numerous value-added services and features can be added on top of raw connectivity, such as VoIP and home networking. These and other services and features create increased customer loyalty, additional revenue streams, and greater profits.

Today, service providers can make money simply by providing raw speed. But that will be more difficult as time goes on. Competitors will step in with lower prices, faster connection speeds, and new services. To stay competitive, service providers can not stop with simple Internet access, but must build out a portfolio of features and services to meet the needs of a wide range of users.

The challenge is to figure out which services and features to offer and when to offer them. Some are more popular with consumers, others more profitable for service providers, and still others are just necessary. Creating a strategy for rolling out broadband services and features is critical to building a successful and profitable business.

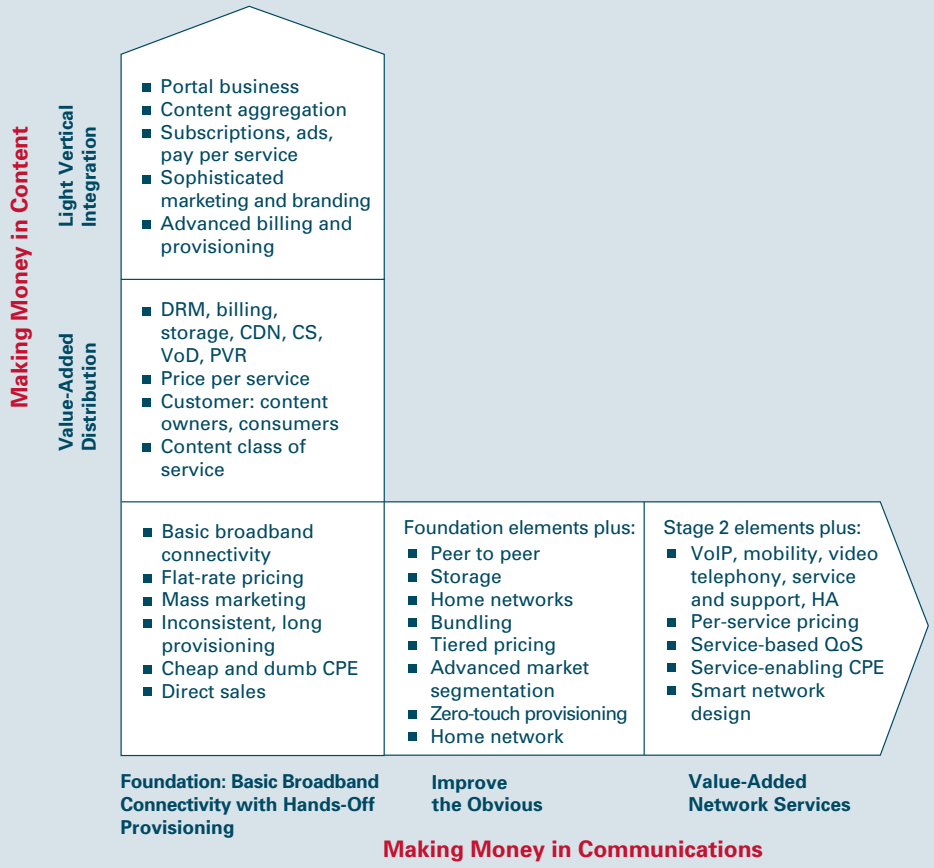
Service providers can take two primary paths when developing a rollout strategy for consumer broadband. One is to offer services and features that fall under the general heading of communications, and the other is to offer services and features that fall under the general heading of content (Figure 11).

Each approach has merit. The proponents of content say that it is a more lucrative path, and one that allows telecommunications service providers to challenge cable service providers directly. The proponents of communications say that it is a more natural fit for telecommunications service providers that build on their existing strengths and core competencies. Section 05 will explore this question in some detail while in this section the two alternatives are explored.

FIGURE 11

## Selling Content versus Communications




SOURCE: CISCO IBSG

### Building the Foundation: Basic Broadband Connectivity with Hands-Off Distribution

Regardless of whether a service provider ultimately pursues a content or communications strategy, or both, the provider must start with basic broadband connectivity and hands-off content distribution. Cable operators depart from service providers that want to move up the content value chain by providing a simple connection at this stage; collecting access fees but letting all of the other money go to the content owners and aggregators. At this stage, ARPUs for access fees range between US$25 and $40 per month, with gross margins at about 65 percent. The inefficiencies in provisioning and marketing often cause service providers to lose money or barely break even.[55]

This process has the following characteristics.

- Basic broadband connectivity. Revenue comes from selling basic broadband connectivity, not from selling content or other value-added services.
- Flat-rate pricing. All customers pay the same price for the same basic service.
- Mass marketing. Marketing is directed at everyone, rather than tailored by segment.
- Inconsistent and long provisioning. Provisioning broadband service is a labor- and capital-intensive process, often requiring someone to drive to the customer's home and set it up.
- Cheap and dumb customer premises equipment (CPE). The equipment that resides in the customer's home is inexpensive and crude, incapable of offering advanced services or basic home networking.
- Direct sales. The majority of broadband connections are sold directly to the customer rather than through retail partners.

## Making Money in Communications

### Stage 1. Building the Foundation

Companies that choose to pursue broadband communications first build the foundation as described in the previous section.

### Stage 2. Improving the Obvious

Most incumbent service providers are transitioning to this stage in their evolution. ARPUs generally stabilize at around US$30 to $35 per month, but more importantly, earnings before interest, taxes, depreciation, and amortization (EBITDA) margins grow to a healthy 35 percent.[56] At this stage, service providers have moved beyond basic broadband connectivity and are offering some of the following enhancements to the core set of services and features.

- Peer to peer. Networks are optimized for peer-to-peer file sharing, and ways are found to generate additional revenues from the service or at least to minimize its impact on the performance of the network. For example, DT has optimized its DSL connections for multiplayer gaming by minimizing delay and jitter.
- Storage. Archival services are provided to store digital photographs, videos, audio recordings, and other large files in a safe and secure place, a service that consumers will pay for.
- Home networks. Equipment for home networks is sold to customers to connect their computer equipment, share broadband access, manage home security and surveillance,

distribute music throughout the home, and to perform other such applications. These are easy to install and easy to use.

- Bundling. Broadband connectivity is bundled with other services to increase customer loyalty and generate added revenues.
- Tiered pricing. Different levels of bandwidth for different types of customers are sold and priced accordingly, generating greater revenues than flat-rate pricing.
- Advanced market segmentation. Using sophisticated segmentation, marketing campaigns are developed that target specific groups of customers, offering them different types of services, and resulting in increased sales and lower cost of acquisition.
- Zero-touch provisioning. The ability to activate broadband service without any human assistance helps service providers save time and money and increases customer satisfaction.
- Home network. Direct customer sales are supplemented with alternative distribution channels such as consumer electronic retailers, increasing the reach and reducing the cost of selling to consumers.

**Stage 3. Value-Added Network Services**

Very few service providers are at this stage. Those that are have achieved ARPUs of about US$75 to $100 per month and EBITDA margins of 50 to 70 percent.[57] The services that are offered include

- VoIP, video telephony, and other IP-based telephony services are offered to customers, helping service providers begin migrating to a full IP network. Advanced home networking-based services include intelligent fault handling, remote household management, healthcare monitoring, home social services, and home security. Mobility such as Wi-Fi and other high-speed wireless connections, along with integrated fixed-line and mobile-based services, allow service providers to bundle more services and increase customer loyalty. Specialized service and support gives customers multiple digital devices and advanced home networks, generating new revenues.
- Per-service pricing. Customers who are willing to pay more for higher quality and specialized services can get them, helping service providers differentiate their services from the competition.
- Serviced-based quality of service (QoS). The network is end-to-end "service aware" allowing the service provider to guarantee service.
- Service-enabling CPE. Sophisticated network gateways and home controllers make it easy to provision new features and services, providing more consistent levels of quality and service. Examples include firewalls, virus checking, and other managed services.

- Smart network design. Intelligent networks that recognize what application is being used can adapt to the needs of that application, providing higher quality and performance along with lower operating costs.

## Making Money in Content

Service providers that choose the broadband content path are likely to move through these three stages.

### Stage 1. Building the Foundation

Companies that choose to pursue content first build the foundation as described in the previous section.

### Stage 2. Value-Added Distribution

Most telecommunications companies need to make significant investments and provide a minimal set of value-added services before they can distribute content. Typical ARPUs at this stage are about US$45 to $60 per month, while EBITDA margins are in the region of 35 percent.[58] Cable companies already have all of these services in place.

- Digital rights management (DRM). Content owners want to be sure that service providers have digital rights management to protect their content against piracy when it is distributed over the Internet. Sophisticated customer billing systems need to recognize a variety of content-related services. Distributed servers and storage area networks (SANs) with content delivery networks (CDNs) need to be created at the edges of the network to bring content close to the consumer and enhance quality and performance. Customer support is an extra service. Current technology also enables VoDs, pay per view, and personal video recorders (PVRs).
- Price per service. On top of flat rates for Internet access and basic applications, service providers can offer consumers a menu of individually priced services.
- Customer. The customer is the content owner as well as the user. Service providers must develop corresponding business processes.
- Content class of service. Intelligent networks that can recognize and adapt to different types of content are a critical part of the infrastructure that service providers need to have in place.

### Stage 3. Light Vertical Integration

Many cable service providers are at this stage of their evolution: owning some of the content they distribute, but relying on outside firms to develop, produce and package

most of the content. There are not significant improvements in ARPU because most of the services offered at this stage are intended to generate loyalty and protect the distribution business, not to generate revenues. Because of increased loyalty, the provider can expect a reduction in customer churn, which could increase EBITDA margins to the 55-to-65-percent range.

- Portal business. As the Internet becomes a more mature platform for distributing content, service providers will have to acquire some of the same skills that traditional Internet portal firms have.
- Content aggregation. Service providers need to become Internet aggregators, providing both traditional and new content to consumers.
- Subscriptions, ads, and pay per service. Additional sources of revenue and profits can be developed from subscriptions, advertising, and pay per service.
- Sophisticated marketing and branding. To effectively compete, a service provider must develop and market its content distribution services as a brand.
- Advanced billing and provisioning. Pay per view and other types of differentiated content need to be supported by advanced billing and provisioning services.

## Conclusion

Offering a fast Internet connection is the first step service providers need to take, but certainly not the last. As simple broadband access becomes more widely available from service providers, it will become much more competitive. To prosper, service providers need to either expand the breadth of services they offer in their core market, or move up the value chain, offering more advanced IP-based services and features. Developing a strategy that defines which services and features to offer and when is critical to success.

Service providers can take two distinct paths in the initial stages of the consumer broadband market. One is to focus on offering new communications services, and the other is to focus on content services. Each company will develop its own strategy based on its own unique conditions.

# 05.

# Broadband Strategies

Every service provider will develop its own unique strategy for tackling the consumer broadband market. Strategies will differ depending on many factors: which sector of the communications industry the company is a part of, the company's existing mix of infrastructure platforms and service offerings, the regulatory and competitive environment, the culture and demographics of the customers, the company's tolerance for risk, the financial health of the company, and more.

This section focuses on determining broadband strategies based on the industry sector.

### Incumbent Service Providers

The best consumer broadband strategy for incumbent service providers is to focus first on the same types of services they already offer—communications (Figure 12). There are many opportunities for new revenues and profits, and many challenges in creating the new IP networks and services, which can keep incumbent service providers busy for the next three to five years.

The content business, on the other hand, requires entirely new sets of skills, partners, and services from those that incumbent service providers are familiar with. A decade ago, many service providers were distracted by the allure of content, and made the mistake of entering it too early. AT&T bought cable companies before turning around and divesting them, while others, such as Pacific Bell, flirted with VoD (remember the promise of 500 channels?) before abandoning that costly effort.

The communications business has been and still is a larger and more profitable business than content.[59] Online paid content will total only 25 percent of broadband access revenues over the next three years.[60]

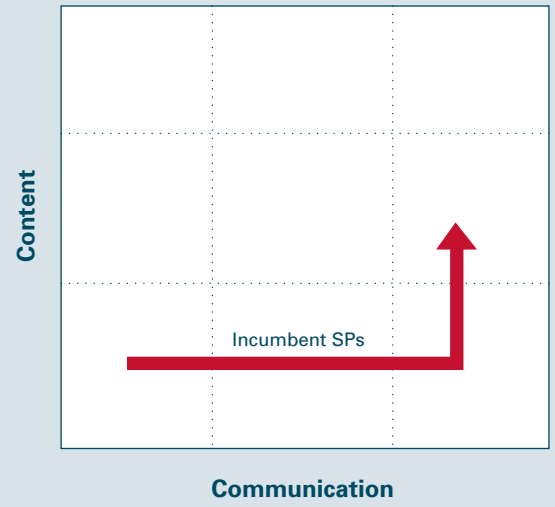
But can a service provider continue to make money in the long-run if it also turns to providing content? Not likely. The Internet, for the first time in the history of media, decouples the content from the platform. That is, as long as the customer has a quality broadband connection he or she can arguably get whatever content is available on the Web. We do not see the impact of this disruption yet as broadband is still in its early days; however, examples such as the Apple iTunes described before should be seen as a warning sign for service providers' ambitions in making money from providing content. In short, it is more likely that skilled Internet content aggregators will win this space in the value chain and capitalize on the opportunity.

It may still be appropriate for service providers to test or enter the content distribution business, but only after having built up strong customer franchises with their broadband communications businesses. Incumbent service providers in non-English-speaking countries where there is little or no cable or satellite penetration should also consider offering a cable-like service to their broadband customers. In the United States, incumbents such as SBC, BellSouth, and Qwest plan to resell satellite service to their customers.

FIGURE 12

**Recommended Path for Incumbents**




Incumbent service providers that follow this suggested course of action should concentrate on:

1. Growing their basic broadband businesses as fast as possible to capture customers, build customer loyalty, and upgrade their infrastructures;
2. Entering the home networking market to provide a platform for next-generation services and to protect their voice businesses;
3. Partnering with content developers and aggregators when necessary instead of tackling content on their own, particularly for high-value and unique content such as movies and localized and specialized content.
4. Partnering with satellite service providers to compete against cable operators;
5. Establishing a leadership role in VoIP even though it will cannibalize revenues and profits in the short term;
6. Beginning the planning, constructing, and migration to a full IP network;
7. Becoming an alternative service provider by offering a full IP portfolio in other incumbents' markets.

### Alternative Service Providers (Challengers)

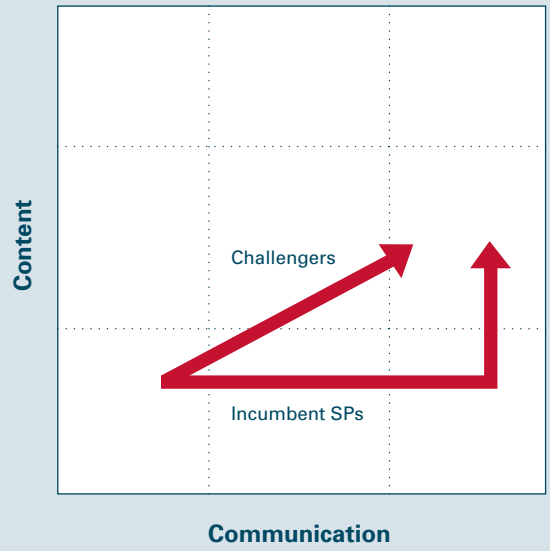
The best strategy for alternative service providers is to turn what might be considered weaknesses into strengths. Compared to incumbent service providers, these companies are usually smaller in size, with fewer customers and less of a network infrastructure. This allows alternative service providers to be more nimble and move faster into new markets, bringing new technologies and services to capture new customers, and lowering their operating expenses.

Alternative service providers don't have to worry as much about whether VoIP will cannibalize their existing voice businesses, about how to transition their old switched voice networks to a new, full IP network, or whether providing billing services for new content aggregators will hurt their cable subscription revenues.

Alternative service providers should move as rapidly as possible from basic broadband services into new technologies and new services for both content and communications (Figure 13). The best hope they have is to change the rules of the game as rapidly as possible. That is what Yahoo! BB has done in Japan, and what FastWeb has done in Italy. Both are capturing significant shares of the market by offering services and features that neither incumbent service providers nor cable companies can or are willing to do.

FIGURE 13

**Best Path for Alternative Service Providers (Challengers)**



Alternative service providers that follow this suggested course of action should concentrate on:

1. Competing based on a more advanced and cheaper-to-operate technology platform, such as a full IP network with ULL or fiber access;
2. Developing a business model that takes advantage of their ability to offer broadband services for less than the incumbent;
3. Leading the way on the development and offering of new features and services;
4. Securing their sometimes-fragile position in the market with effective lobbying of government and regulatory agencies.

### Cable Service Providers

Cable service providers have the advantage of owning an existing broadband network running directly to the home. To fend off the threat from satellite video service providers, cable service providers in the United States upgraded their networks in the mid- and late 1990s to provide digital content. Today, their challenge is to begin to layer new IP-based services on top of the network (Figure 14). The first of these services is basic Internet access. In the United States, cable companies have been quite aggressive about pursuing that market, outpacing incumbent service providers to grab a large share of the consumer broadband Internet access business.

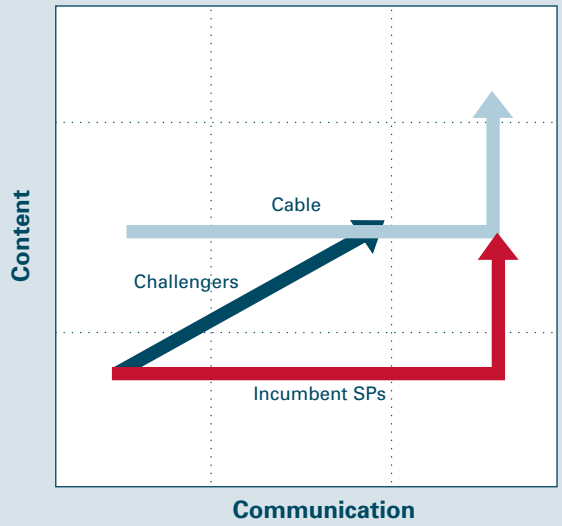
But Internet access is just the beginning. Cable service providers also need to offer voice along with new digital video services, something they can do without fear of cannibalization. Some cable companies, such as Time-Warner in the United States, have been aggressive about doing this, while others, such as NTL in Europe, have been slower.

The looming threat to the cable operator's business model—and in fact to all service providers willing to diversify into content—is the development of Internet-based content and content aggregators. What is to stop a company from developing a business modeled after Apple Computer's iTunes, but for videos? And what is to stop the NFL, MTV, or HBO from selling their offerings directly to the consumer over the Internet, bypassing the cable companies and their tariffs?

FIGURE 14

**Best Path for Cable Service Providers**




Cable service providers that follow this suggested course of action should concentrate on:

1. Rolling out triple-play services—voice, video, and data—as rapidly as possible;
2. Using their existing high-capacity networks that already go to homes to create new services that blend voice, video, and data in creative ways;
3. Competing on the basis of new and advanced features instead of competing on low prices;
4. Developing a portal business to ensure participation in the next generation of content services that will be enabled by the Internet.
5. Converting to a converged backbone network capable of supporting voice, video, and data.

## Satellite, Mobile, and Internet Portal Service Providers

Satellite video service providers face a long-term sustainability problem. They compete directly with cable service providers, which run wires into every one of their customer's homes that are capable of delivering upstream and downstream broadband connectivity. With this "fat pipe," cable service providers can provide numerous communications and content services. By themselves, satellite video service providers can only provide

downstream broadband communications. The only way they can offer two-way broadband communications and content services to consumers is by partnering with other service providers that can provide two-way broadband wired or wireless connections to the home (Figure 15). Incumbent service providers, with their broadband communications services, are in many ways natural partners for satellite video service providers and their high-speed content delivery infrastructure.

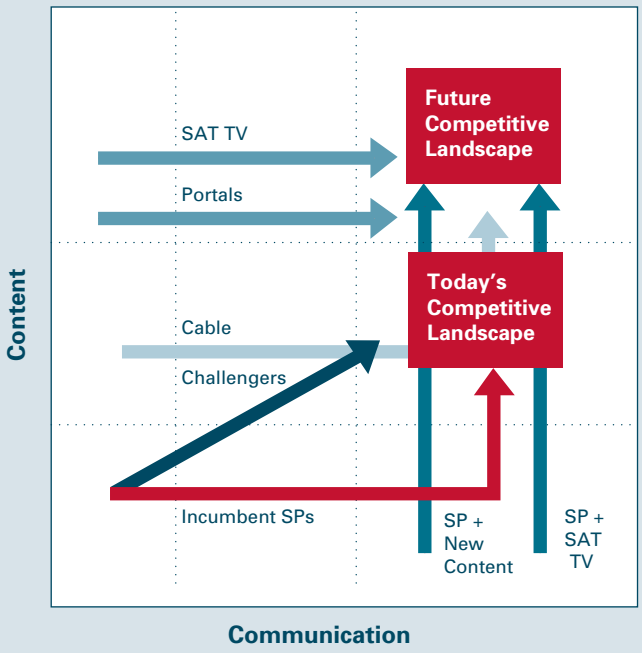
With the rollout of new technologies such as Wi-Fi, WiMAX, and third-generation (3G), mobile service providers are just beginning to enter the broadband consumer market. It is one of the fastest-growing segments of the consumer broadband market, albeit from a much smaller base. Most of the consumers that are purchasing wireless and mobile broadband services also have fixed broadband connections in the home. These consumers want to move seamlessly from wired to wireless, and fixed to mobile, without having to think about it. They want their same laptop to work at home, in the office, on the road, or at a coffee shop. This requires service providers of various types to partner and offer these services as an integrated bundle to consumers.

Internet portals are not often thought of as service providers, but they are. For the most part, they do not own a great deal of physical network infrastructure. Instead, they offer their IP-based and Web-based services over the existing Internet infrastructure. In some instances, portals are actively partnering with other service providers, such as incumbents. Yahoo! has taken this approach, partnering with SBC to brand and market consumer DSL service in the United States. More partnerships between portals and other types of service providers can be expected (Figure 15).

FIGURE 15

**The Current and Future Competitive Landscape**




## Conclusion

Many factors affect what strategy a service provider will pursue when tackling the consumer broadband market. Perhaps the most important factor is the sector of the industry the service provider comes from—incumbents, alternatives, cable operators, satellite video providers, Internet portals, or mobile service providers. Each has its own distinct business model, network infrastructure, set of services, regulatory environment, and other unique characteristics. Picking the appropriate strategy will play a major role in determining which service providers thrive, and which do not.

# 06.

# Taking the Next Step

The communications industry is changing, and nowhere is that more evident than in the arena of consumer broadband. Virtually every service provider is attempting to capture this still-nascent but exploding market—from incumbents, alternative service providers, and cable and satellite operators to mobile and Internet portals.

This paper provided a look at the forces that are shaping the service provider industry in the consumer broadband revolution, along with a guide to help service providers adapt to and profit from these changes.

We have seen that broadband access growth is robust, and it is the key growth engine for most service providers worldwide. It is by itself or will be soon profitable and will offset voice revenue decline for legacy-voice service providers. When considering the business case for broadband access one should take into account that broadband also drives greater telecom usage, increases home networking take-up, and reduces customer churn when bundled with other services. All of those make a very strong case for consumer broadband today. In the future, when layered services are added on top of plain access, the financials will become even better.

From the customer perspective, the main driver for broadband today is speed at a flat rate, plain and simple. Advanced applications become more important later in more mature markets. It is important that service providers use segmentations that identify the early-majority of the mass-market.

We have also explored in this paper the likely impact of VoIP offered over broadband access. We came to the conclusion that it is not only inevitable but it may actually be good for legacy-voice providers that bundle it with access. It will radically change the business model of service providers as these converge their networks to a single IP network with a broadband dial-tone.

Overall, the communications business is better than the content business. Diversification into content is not a low-hanging fruit. However triple-play is a "must-do" in markets where there is a player offering it. Partnerships are essential to succeed.

In the last section we explored different steps for each type of service provider. There are not clear ultimate winners as all service provider segments may find sustainable competitive positions. However, standing still is not an option.

The information in this paper is based on the extensive work that Cisco and its Internet Business Solutions Group have done with service providers of all types around the world.

Cisco IBSG helps customers turn their technology investments into strategic assets that increase productivity, reduce costs, and create new revenue sources. IBSG's Global Service Provider Practice works with customers to define and deliver new broadband-based services that will generate revenues and profits in the communications and content areas. It also helps customers become electronically enabled, yielding higher productivity and customer responsiveness as they take these new services to market. Cisco IBSG's effectiveness is rooted in a wealth of communication industry expertise and in-depth knowledge of the enterprise.

Cisco IBSG looks forward to sharing experiences and expertise with you, and helping you take the next step on the path to growth and profitability—consumer broadband.

# Endnotes

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