



Telecom Competition In Ohio

Fall 2006

Executive Summary

The Ohio Telecom Association commissioned this report to quantify the impact of competition among telecommunications providers in the state. Data was gathered from the Federal Communications Commission and several prominent national research organizations and reveals that telecom competition is thriving in Ohio.

Following are key findings of the report:

- Telecommunications is a \$14 billion industry in Ohio.
- There are more than 400 telecom providers in Ohio, competing for the consumer's total telecom business: voice, video, and data communications.
- As a result of competition from the CLEC, wireless and cable television sectors, traditional Ohio telcos have lost 20% of their lines over the past four years.
- There are now more mobile wireless customers in Ohio than wireline, with more minutes being sent over the wireless network than the wireline network.
- Consumers spend approximately \$182 a month for their telecommunications services. Wireless is the largest expenditure at an average of \$60 per month – almost double that of wireline and 33% more than subscription video.
- Seventy percent of Ohio homes subscribe to Internet service; 33% of all Ohio homes (or about half of Internet subscribers) pay additional for high-speed Internet (broadband). Cable providers have 64% market share of broadband customers.
- Subscription video is in 85% of homes. Cable television has 69% market share and satellite has 28% market share.
- CLECs serve 15% of Ohio access lines, or about 1 million customers; 94% of zip codes in Ohio are served by at least one CLEC.

For additional information or questions concerning this report, please contact Charley Moses, President, Ohio Telecom Association, 614-221-3231 or moses@ohiotelecom.com



Defining Competition in Ohio

There are now more than a dozen different ways for consumers to make a simple telephone call, choosing a different service provider and technology for practically every call:

- Wireline (local, long distance, calling cards, dial-around, collect)
- Mobile wireless (cellular, PCS, prepaid)
- Fixed wireless (MMDS, LMDS, 700 Mhz, satellite)
- Voice Over Internet Protocol

Additional ways to communicate include text-messaging, email, instant-messaging, webcams and more. Television and interactive video are also defined as telecommunications services.

For each of these choices, there are multiple service providers in any given market. Even in the most rural Ohio town, there are landline, wireless, cable television, satellite and Internet service providers competing for consumers' communications business. Cable companies now offer phone service; telephone companies are rolling out video; and wireless carriers are deploying broadband.

Competition in Ohio is thriving with more than 400 providers vying for voice, video and data customers.

Number of Service Providers

Type of Carrier	U.S.	Ohio
Incumbent Local Exchange Carriers (ILECs)	1,307	42
Competitive Local Exchange Carriers (CLECs)	859	190
End-user VoIP Service Providers	160 ¹	Unknown
Long Distance Providers	330	243 ²
Mobile Wireless Providers	432 ³	11
Subscription Video Providers	3,500+	21 ⁴
High-speed Internet Providers	1,270	76

¹ Registered with the FCC.

² With effective tariffs on file with the PUCO. This number includes affinity groups, resellers, and wholesale and facilities-based service providers.

³ Reporting to the FCC. Carriers with fewer than 10,000 subscribers are not required to report.

⁴ Includes cable television and direct broadcast satellite (DirecTV and Dish Network). Does *not* include video over DSL or fiber-to-the-premise.



Who's Competing in Ohio

Telecommunications in Ohio is an annual \$14 billion industry with wireless leading the pack among all telecom providers.

Annual Revenues

Local Voice (ILEC and CLEC)	\$3.2 Billion
Long Distance	\$2.5 Billion
Mobile Wireless	\$3.3 Billion
Subscription Video	\$2.1 Billion
Access and SLC	\$1.3 Billion
Internet and Broadband	\$1.5 Billion
TOTAL	\$13.9 Billion

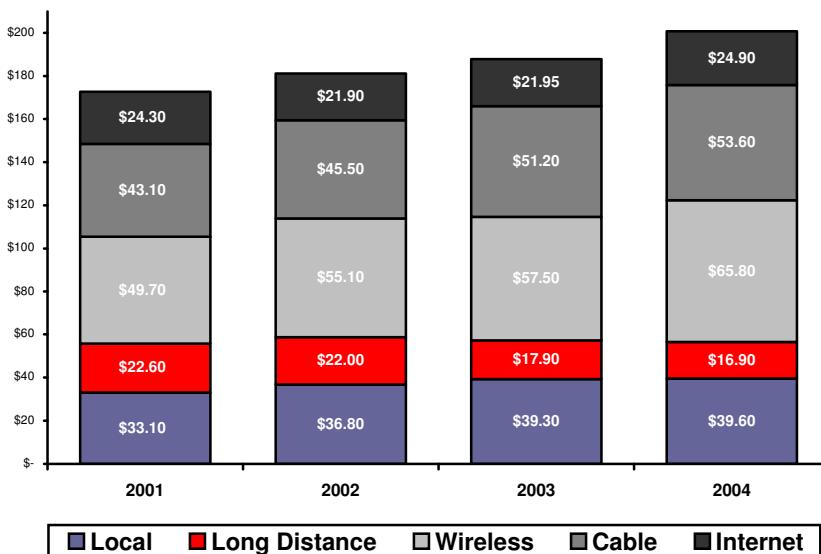
Annual revenues for local voice and long distance are decreasing, while wireless and video are increasing.

Telecom Growth

The growth sectors in telecommunications are wireless and video. According to a study of technologically advanced households conducted annually by the Yankee Group, voice and Internet spending have remained stagnant, while wireless and video spending have increased 24% and 19.5%, respectively.

Monthly Spending for Advanced Households with All Services

Source: 2005 Yankee Group TAF Study.



Video and wireless are taking a bigger percentage of the customer's "wallet share" for telecom services.

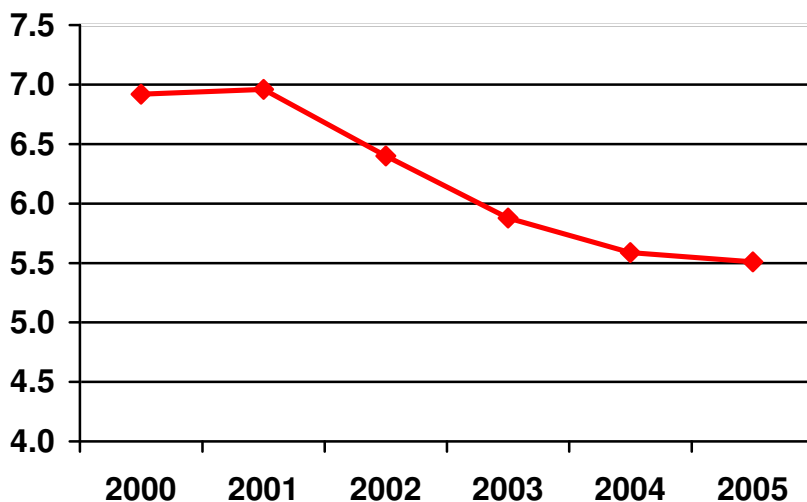
The Telephone Company or “Telco”

Incumbent Local Exchange Carriers, also known as telcos, provide local telephone service to defined geographic areas. In Ohio, there are 42 ILECs. The largest, AT&T-Ohio, serves 2.7 million access lines. The smallest, Vaughnsville Telephone Company, has only 358 access lines.

Traditional landline telephone service is in decline, rapidly being replaced by wireless, VoIP and data technologies. For example, the number of minutes over the wireless network has already eclipsed wireline. There are now more wireless subscribers than wireline. And broadband adoption is contributing to an annual 4% wireline attrition rate, as customers eliminate second lines formerly used for dial-up Internet access.

Since peaking in 2001, Ohio ILECs have lost 20% of their access lines, going from almost 7 million lines down to 5.5 million lines in just four years.

ILEC Lines in Ohio in Millions



Faced with the decline of their voice business, ILECs are upgrading and leveraging their networks to become full-service broadband providers. Many now offer customers high-speed Internet and subscription video services in addition to their full spectrum of voice products. But ILECs are in an unusual spot. Regardless of their diversification efforts, they must continue to meet the strict state and federal requirements of operating a local telco and fulfill universal service policy goals.

Ohio ILEC Stats:

42 ILECs in Ohio.

7 large, regional telcos.

35 small, mostly rural, independent telcos.

\$2.7 billion in annual revenues.

20% of lines lost to competition and alternative technologies over the past 3 years.

Diversifying to offer video and broadband.

67% are subscription video providers.

93% are Internet Service Providers.

98% offer broadband.

\$34.47 monthly consumer expenditure (includes calling features, taxes, surcharges and mandated fees).

Regulated by the Public Utilities Commission of Ohio and the Federal Communications Commission.

Customers are moving toward bundled purchasing where they receive all of their media services – voice, video and data – from a single company at a discounted rate, on one bill. Bundled customers are considered “sticky,” or very unlikely to change providers. *This is the space in which competition for residential service is playing out.*

Add to this the increasing demand for and dependence on mobility, accounting for wireless’s growth, and the telecom marketplace becomes very crowded.

Since customers are less likely to change providers after selecting a bundle, being first to market is critical. However because of strict regulatory requirements, telcos are often mired in tariffing and filing processes that put them at a disadvantage. Their deregulated competitors regularly beat them to market with bundled offerings.

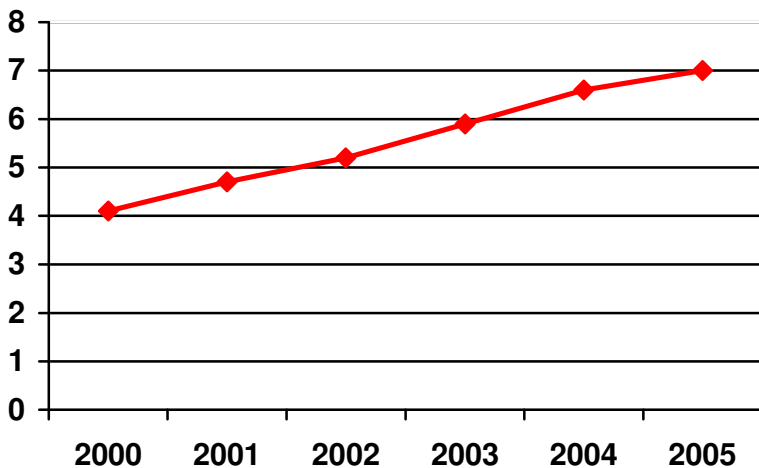
The Impact of Wireless

Mobile Wireless is an annual \$3.3 billion industry in Ohio – \$100 billion nationwide. There are an estimated 7 million wireless users in Ohio and more than 200 million users across the United States.

Wireless is now bigger than wireline – both in Ohio and the U.S. – in terms of number of users, minutes-of-use, customer spending and total company revenues.

The number of wireless subscribers is growing annually. Currently, 64% of *all* Ohio residents have wireless service.

Number of Wireless Subscribers in Ohio in Millions



For their wireless rate plans, customers purchase an average 837 minutes per month. Wireless is a retail-intense business: 31% of customers changed their rate plans in the past year with 40% of those increasing their minutes and only 15% decreasing their minutes.

Sixty-one percent of wireless plans have two or more users on the account for an average of 2.4 users per plan. Customers spend an average of \$60 per month for their wireless service.

Ohio Wireless Stats:

7 million users.

75% increase in subscribers over the past four years.

\$3.3 billion in annual revenues.

Average \$60 monthly consumer expenditure.

2.4 persons per plan.

837 minutes per month per plan.

12% of subs have increased their minutes within the last year.

Less than 1% of subs have decreased their minutes in the last year.

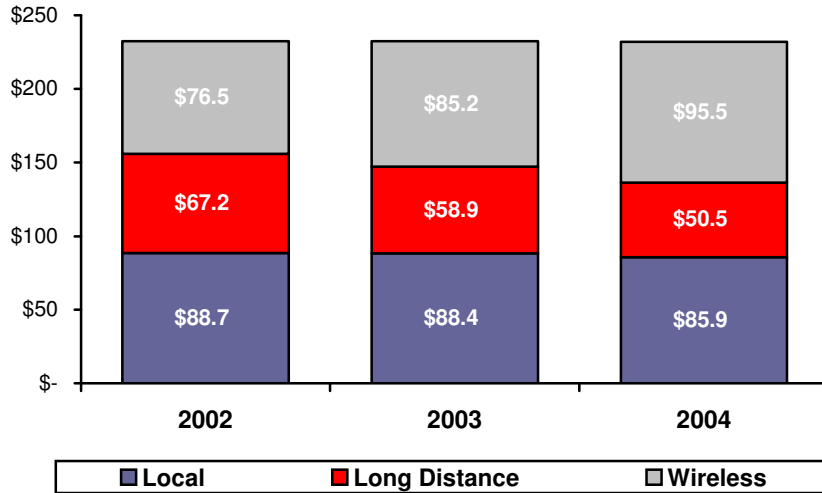
48% of wireless calls would be long distance if made from a wireline phone.

More wireless subs than wireline.

More wireless minutes than wireline.

Wireless is now the largest consumer expenditure. The average monthly wireless bill far exceeds local, long distance, Internet and even subscription video. Wireless is also a major growth industry with innovative handsets, mobile broadband, video storage and streaming, and other features that will drive up wireless revenues.

Total U.S. End-User Revenues in Billions



In Ohio, wireless generates the greatest share of annual voice revenues:

ILECs: \$2.7 Billion

CLECs: \$469 Million

Long Distance: \$2.5 Billion

Wireless: \$3.3 Billion

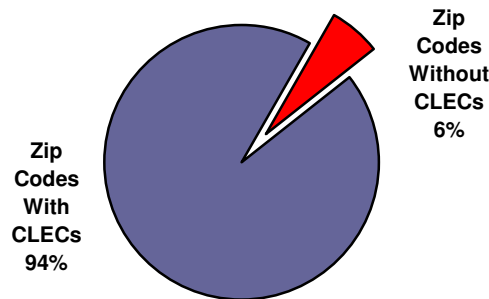
Note: The combined revenues for the three voice services are not changing much from year to year, remaining around \$230 billion. Wireless is simply taking a greater percentage of revenue and market share from wireline.

Long distance is experiencing the biggest impact with a 25% decline in revenues over the past three years. *On average, customers estimate that almost half (48%) of calls placed on cell phones would be billed as long distance, if made from a landline phone.*

The Impact of CLECs

Competitive local exchange carriers (CLECs) are very active in Ohio. Ninety-four percent (94%) of all zip codes in the state are served by at least one CLEC; 66% of all zip codes have *four or more* CLECs in the market; and 37% of the Ohio zip codes have *10 or more CLECs present*.

Ohio CLEC Coverage

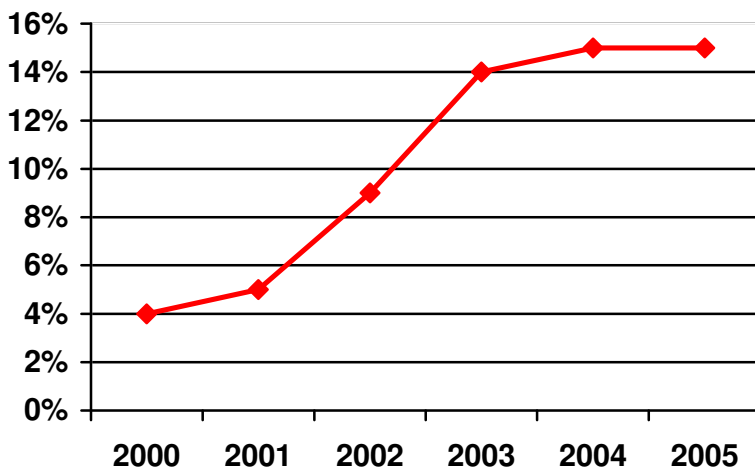


In Ohio, CLECs have grown from 4% market share in 2000 to 15% in 2005. This is trending with the national average of CLECs serving 19% of all access lines across the United States.

End-user Access Lines in Ohio – December 2005

ILEC Lines	CLEC Lines	Total	CLEC Share
5,519,782	981,363	6,501,145	15%

Growth of CLEC Market Share in Ohio



Ohio CLEC Stats:

Almost 1 million CLEC customers.

CLECs in 94% of all Ohio zip codes.

15% market share.

13.4% of CLEC lines are provisioned by cable television companies.

400% growth in CLEC market share over the past four years.

ILECs have lost 20% of lines to CLECs and other competitors.

Ohio CLEC market share is trending with national averages.

Important note:
CLEC market share is based on the total number of lines in Ohio. Because CLECs are not present in 100% of markets, it is estimated that in the markets they serve, CLECs have acquired an average 20% market share.

A strong gauge of competition is the number of providers with access to phone numbers in a given rate center (a.k.a. an “exchange”). Unlike competitive services offered on a resale basis (using another provider’s facilities), competitors with access to phone numbers have deployed their own switch facilities and, in many cases, provide resale services to other competitive providers, including VoIP service providers.

Rate Centers In Ohio

- There are 739 rate centers.
- 3,785 entities claim numbering resources. This averages to just over 5 providers per rate center.
- Rate centers are not balanced equally. Those with the greatest population have the greatest number of competitors.
 - Fewer than half, or 328, of Ohio rate centers have only one provider of service. These rate centers represent the smallest most rural areas of the state and tend to be served by an independent telephone company.
 - The major urban centers of Ohio have more than 25 competitive providers with numbering resources. Columbus, for example, is served by more than 50 providers
- Twenty-two percent of Ohio rate centers are highly competitive with 8 or more service providers.

The Impact of VoIP

Voice Over Internet Protocol (VoIP) is a relatively new technology that gives customers with a broadband connection unlimited local and long distance calling. It converts voice into data and sends calls as data packets over the data network. VoIP does not utilize the traditional public switched network on the outbound call, but it has *connectivity* with the PSTN to make and receive calls to and from any telephone number. The largest end-user provider of VoIP in the U.S. is Vonage with just over 48% of end-user VoIP market share.

Although many states attempted to define VoIP as a telecommunications service, subject to state and federal regulation, Vonage successfully fought to position VoIP as an information service – no different than accessing a web site. As a result, VoIP has the capabilities of traditional telecom – phone calls, long distance, calling features – without the corresponding regulatory requirements.

Summary of Telecom Requirements

	VoIP	ILEC
Telecom Taxes	Exempt	Applies
Universal Service Fund Support	None	Available
Local Loop Facilities	None	Regulated
Quality	Market Driven	Regulated
Disconnection for non-payment	At will	Regulated
Billing rules	None	Regulated
State Jurisdiction	None	Regulated
Federal Jurisdiction	None	Regulated
Equal access to LD carriers	None	Regulated
911 Access	Required	Required
Tariff	None	Required
Social Programs	None	Required
Support of TDD, etc. programs	None	Required

The Impact of Subscription Video

Is Cable Telecom?

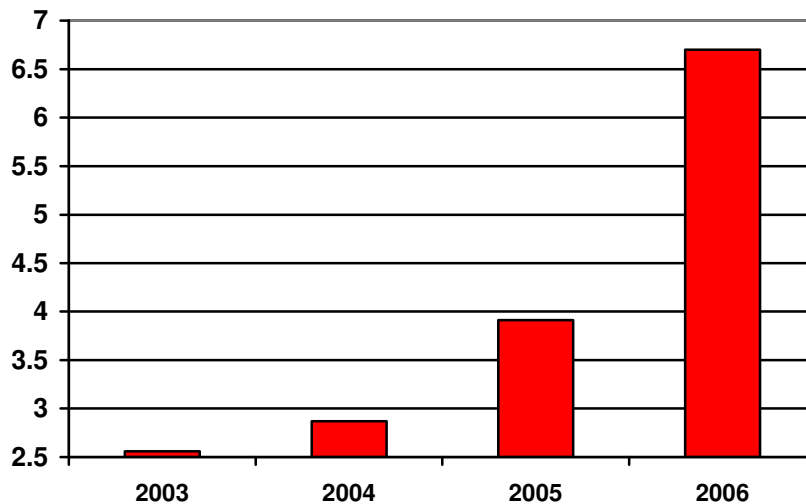
From a consumer and marketing perspective, yes. Regardless of legal or regulatory classifications, cable television providers are entering the voice business to compete with ILECs.

Cable companies can use VoIP technologies, leased telephone lines, their own switched networks, or a combination of the three options to offer voice service. According to the FCC, cable serves 13.4% of CLEC lines.

In November 2004, the FCC ruled that cable VoIP is not subject to state regulation.

According to the National Cable Television Association, as of March 2006, there were an estimated 6.7 million cable *telephone* customers. One of the largest cable companies, Time Warner has launched VoIP service across its entire 27-state footprint.

Cable Telephone Subscribers in Millions
Source: NCTA



Ohio Video Stats:

\$2.1 billion in annual revenues.

85% of homes are video subscribers.

3.75 million residential customers.

Cable has 69% of video market share.

Satellite has 28% of video market share.

Telcos and others have 3% video market share.

Average \$45 monthly consumer expenditure for video.

20% increase in customer spending over the past four years.

Potential to increase revenue with premium packages, digital video recording, video on demand, and HDTV.

6.7 million cable telephone customers nationwide.

Video Competition

Due to its significant bandwidth requirements, subscription video has been slower to experience competition than traditional voice services. In any given market, there is usually a single cable television provider competing against two direct broadcast satellite providers (DBS) – DirecTV and Dish Network. This will change as more telcos enter the video business, but as of yet, telcos have acquired less than 3% market share to cable's 70% and satellite's 28%.

	2004	2005
Cable	71.6%	69.4%
DBS	25.1%	27.7%
Other	3.3%	2.9%

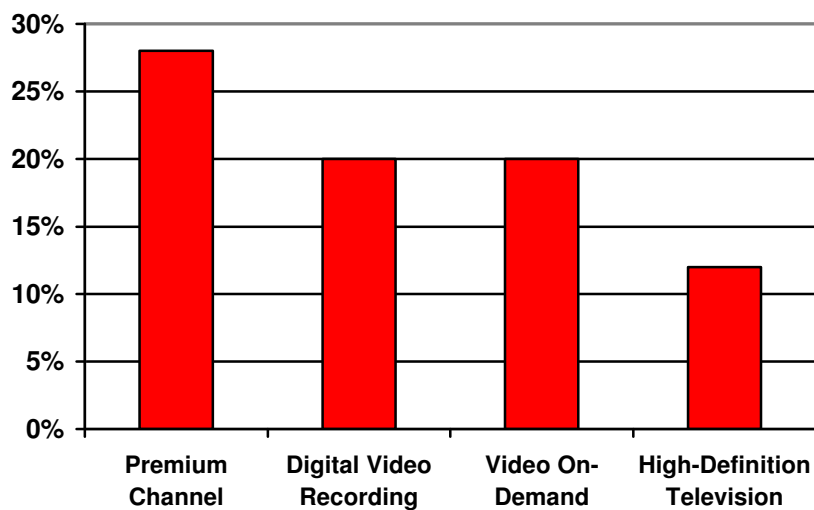
In Ohio, cable television serves 70% of the 3.75 million video households for a total of 2.6 million customers.

There are 18 cable television companies in Ohio, compared to 42 telcos. The country's four largest – Comcast, Time Warner, Cox and Charter – are all present in Ohio, but because of franchising arrangements, do not compete against each other.

Video Revenues

Subscription video is a growth industry. New content and digital services are driving up average revenue per user (ARPU). Premium packages, digital video recording, video on-demand and high-definition television can add an additional \$60 per month to the consumer's video bill.

Percent of Homes Subscribing to the Service, Where Available



Demand for advanced video services is nearing critical mass. On the market for only a few years, and HDTVs are already in 12% of homes.

Franchising

Nationwide, most cable television companies are required to receive a franchise – or license to provide service – from the local municipality. Each municipality determines its own franchise requirements and fees. For cable companies that serve multiple municipalities, the franchising process can be very political, expensive and time-consuming.

In Ohio, the public utilities commission issues statewide certification of authority to permit the provisioning of telecommunications services. While municipalities are presumably unable to require additional franchising authority to these competitive telecommunications providers, with the convergence of video and voice services, municipalities are exerting pressure on telecommunications carriers to negotiate additional franchise requirements. This requirement delays the introduction of competitive services and – anecdotally – has been used by some municipalities to unfairly favor one service provider over another.

As in most states, Ohio municipalities also maintain the right to manage local rights-of-way and can levy public-way fees.

On average, franchise fees account for 3% of cable's total revenues. In Ohio, that equates to an estimated **\$63 million paid to municipalities throughout the state.**

Other Competitive Impediments

In addition to franchising requirements, there are other factors that may inhibit entry and competition. For example, the discriminatory pricing and availability of video programming and content can be inhibitors. New entrant video providers find that nearly half their operating revenues are spent in video content fees.

As telcos and others attempt to roll out subscription video service in Ohio, obtaining a local franchise – or permit – can be political, expensive and time-consuming. In fact, franchises can become barriers to entry.

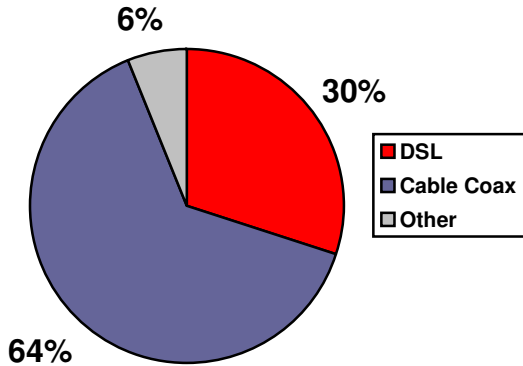
Local providers must purchase video content – or television channels – from the owner of each channel on a per-subscriber basis. Without the leverage of a large customer base, new video providers pay much higher rates for content than incumbent cable companies.

The Impact of Internet and Broadband

Internet access is becoming as common as the telephone with 70% of homes now subscribing to an Internet Service Provider. Broadband is well on its way to reaching critical mass with almost half of Internet subscribers paying additional for high-speed connections.

In Ohio, there are an estimated 3.3 million Internet homes with 1.5 million homes receiving broadband. Cable companies have a competitive advantage over telcos in broadband market share.

High-speed Lines by Technology in Ohio



Number of High-speed Lines	
DSL	454,754
Cable Modem	961,119
Other *	89,399
Total	1,505,272

* The "other" category is satellite, fiber-to-the-premise, fixed terrestrial wireless, and other non-DSL wireline broadband service, such as ISDN.

Internet and broadband are having a major impact on wireline: consumers now spend more time on-line and prefer email, instant messaging, chat rooms, and web "camming" to wireline phone calls. Data communications is replacing traditional voice.

In Ohio, the number of broadband customers has increased more than three-fold over the past four years.

Growth of High Speed Lines in Ohio

2001	2002	2003	2004	2005
436,766	710,355	977,886	1,157,787	1,505,272

Ohio Internet and Broadband Stats:

An estimated \$1.5 billion annual industry.

Broadband in 33% of Ohio homes.

76 broadband providers in Ohio.

1.5 million high-speed lines.

Cable providers have 64% of broadband market share.

Cable has a 2:1 market share lead over DSL.

3-fold increase in broadband customers in four years.

\$24 monthly consumer expenditure, averaging dial-up and high-speed.

80% of broadband customers do not know the speed they receive.

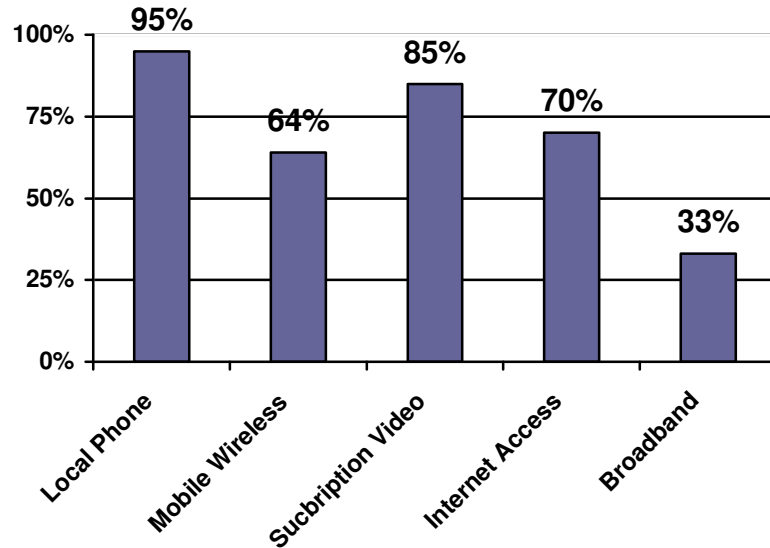
28% of homes without broadband plan to purchase it within the next 12 months.

Mobile wireless broadband is emerging.



Consumer Characteristics

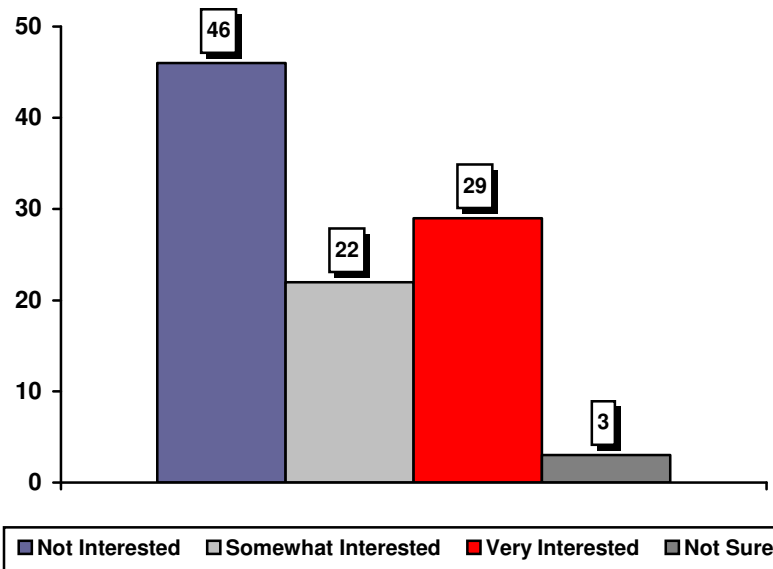
Percentage of Households Subscribing to the Service



Advanced communications are becoming ubiquitous household expenditures.

Broadband is projected to be in 60% of homes within the next three years.

Customer Interest in Purchasing a Bucket of Wireline Minutes Indiscriminate of Local or Long Distance

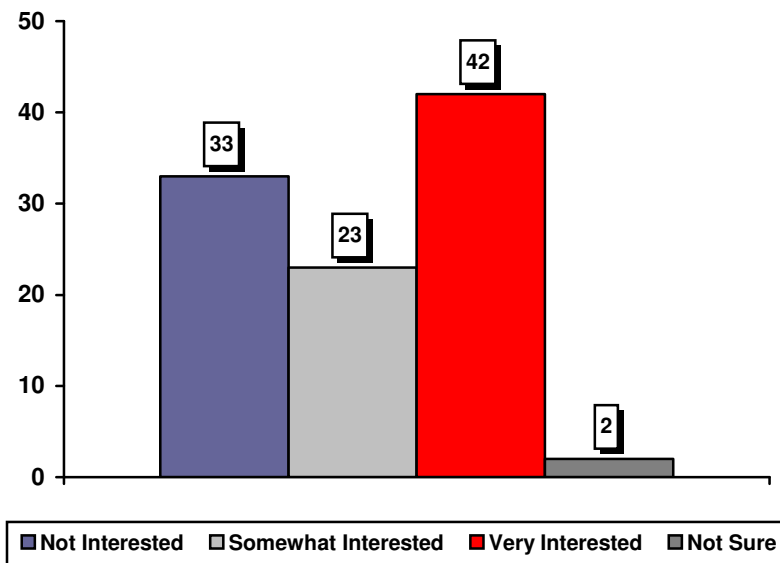


Number of minutes expected in such a plan:
542

Amount expected to pay per month:
\$37.82

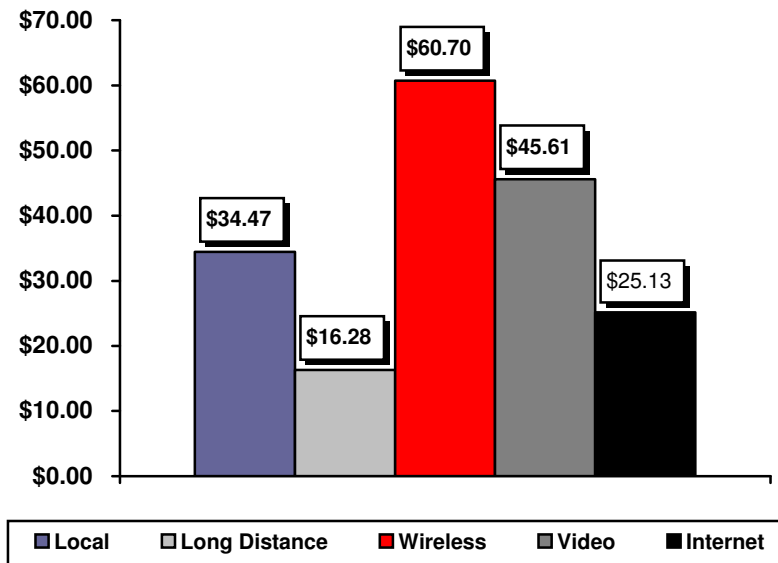
Resulting per minute rate:
6.9¢

Customer Interest in Purchasing Voice, Video and High-speed Internet from a Single Company



Demand for the “triple play” is very strong with 42% ready to purchase.

Average Monthly Expenditure



*The average household is spending **\$182.19** per month to talk on the phone, watch television and surf the Internet.*

Sources

Data was collected from the websites and various research reports of the following organizations:

- CTIA (formerly the Cellular Telecommunications Industry Association)
- Cronin Communications Consultants
- Federal Communications Commission
- National Cable and Telecommunications Association
- National Exchange Carriers Association
- National Rural Telecommunications Cooperative
- Ohio Telecom Association
- The Public Utilities Commission of Ohio
- The Yankee Group