

**AVAILABILITY OF ADVANCED TELECOMMUNICATIONS
CAPABILITY IN PUBLIC BODIES**

2010 REPORT

Economic Research and
Financial Analysis Division

Public Utility Commission of Oregon

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Availability of Advanced Telecommunications Capability in Public Bodies - 2010

Among the amendments HB 2577 enacted in 2003 was the requirement that the Public Utility Commission of Oregon annually submit a report including information on "[t]he number of public bodies, as defined by ORS 174.109, providing basic telecommunications infrastructure so that private entities may use that infrastructure to provide advanced information and communications services."

According to ORS 285C.530(a), "[a]dvanced telecommunications facilities" means high-speed, dedicated, or switched broadband telecommunications infrastructure or equipment that enables users to send or receive high quality voice, data, or video telecommunications using any technology.

While the statutory requirement to conduct the survey has sunset, in order to monitor and analyze the market for telecommunications services, the OPUC staff identified and surveyed public bodies in Oregon during fall 2010, gathering information on the existence and use of advanced telecommunications facilities.

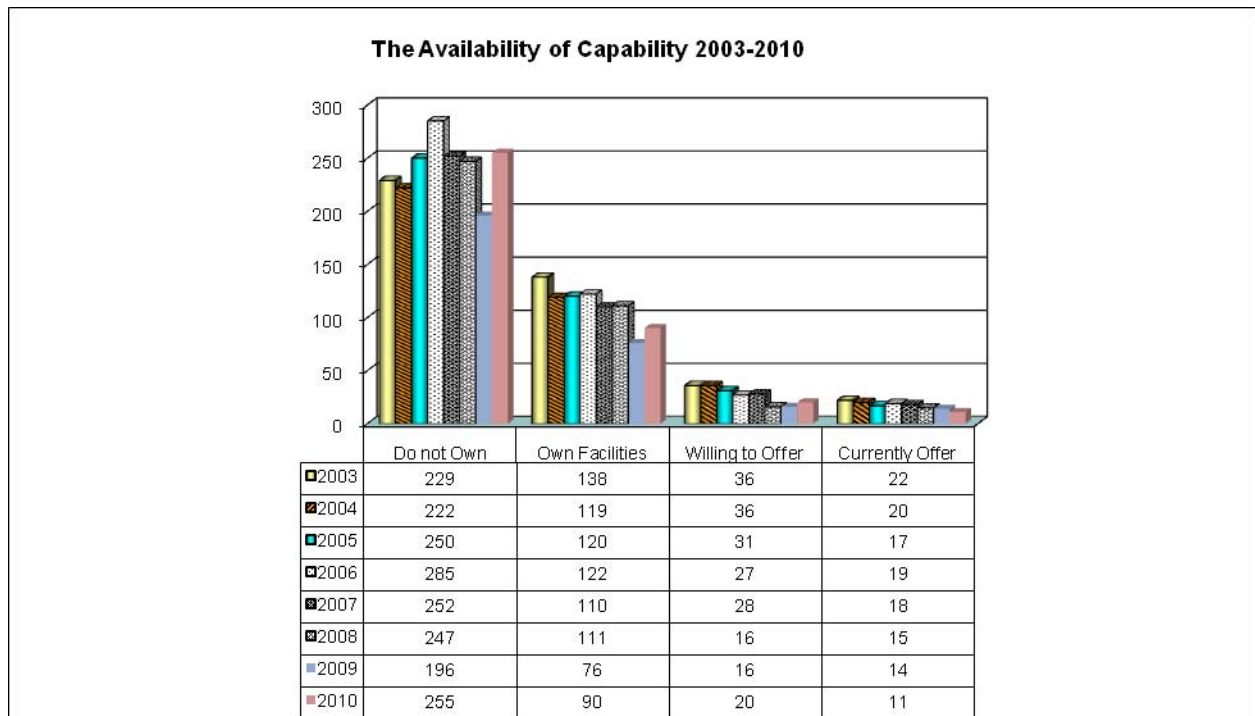
Survey Results:

I. Market in General - Statewide

The survey was sent to 526 public bodies in Oregon of which 345 were completed and returned for a response rate of 66 percent.

Of the 345 respondents, 74 percent (255) do not own advanced telecommunications facilities, while 26 percent (90) of the respondents own some types of facilities. About 22 percent (20/90) of respondents who own some types of facilities are willing to offer some type of high-speed telecommunications services. About 12 percent (11/90) of respondents currently offer high-speed telecommunications services (see Figure 1).

Figure 1. The Availability of High-Speed and Advanced Telecommunications Capability in Public Bodies



1. The Survey Questions

The first part of the survey includes three questions.

Q1. Do you own the following telecommunications facilities?

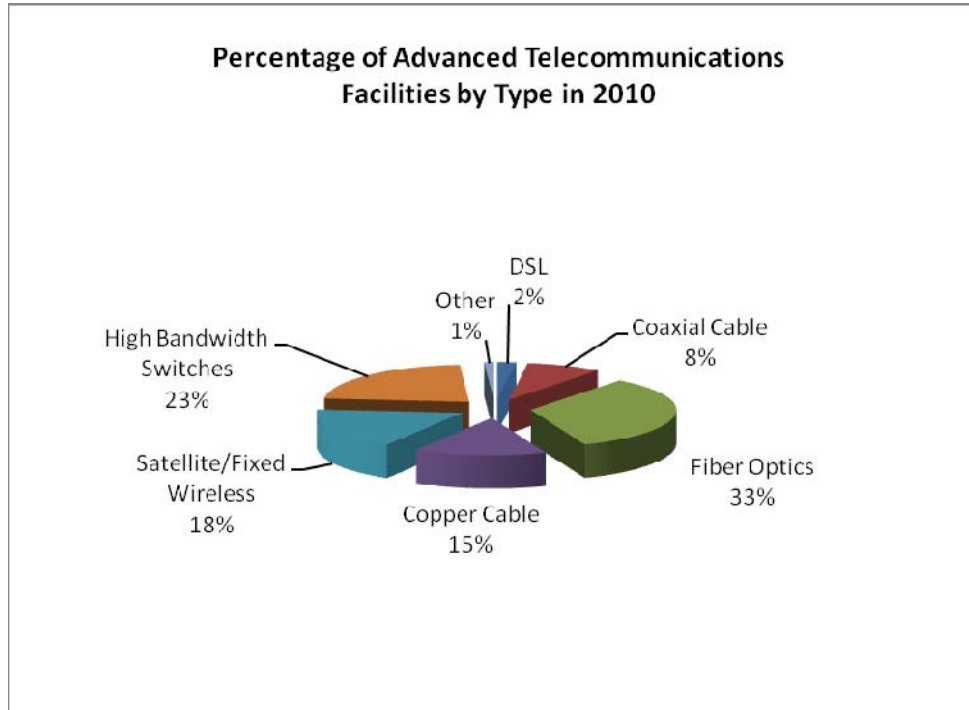
- a. DSL (digital subscriber line)
- b. Coaxial Cable
- c. Fiber Optics (DS-1, DS-3, OCn, SONET, includes Dark Fiber)
- d. Copper Cable (T-1, DS-1)
- e. Satellite or Fixed Wireless
- f. High Bandwidth Switches
- g. Other

Following are descriptions of the various types of advanced telecommunication facilities:

- a. **DSL:** Digital Subscriber Line - is a communication technology that uses existing twisted-pair telephone lines to transport high-bandwidth data, such as Internet, multimedia, and video.
- b. **Coaxial Cable:** Typically used to connect a television to cable TV services, coaxial cable consists of a small copper tube or wire surrounded by an insulating material and another conductor with a larger diameter, usually in the form of a tube or copper braid.
- c. **Fiber Optics:** High-speed transmission using light to send images (in telecommunications: voice or data) through a bundle of glass fibers.
- d. **Copper Cable:** Copper cable is a pair of traditional copper telephone lines using electric current to carry signals.
- e. **Satellite or Fixed Wireless:** A satellite is used to relay telecommunications information. Fixed wireless means the use of radio or microwaves to connect any two stationary points.
- f. **High Bandwidth Switches:** Bandwidth, in digital systems, refers to data speed usually measured in bits per second (bps). High bandwidth is often equated with high-speed. ATM (Asynchronous Transfer Mode) is a high bandwidth, low-delay, connection-oriented, packet-like switching and multiplexing technique.
- g. **Other:** Item "other" includes video telecommunications equipment.

Of the 345 public bodies responding to this year's questionnaire, 90 currently own one or more type(s) of advanced telecommunications facility. Some of these 90 public bodies own more than one type of facility. Sixty-four (64) respondents own fiber optic facilities, 43 own high bandwidth switches, 28 own copper cable, 34 own satellite or fixed wireless facilities, 16 own Coaxial Cable, four (4) own DSL, and two (2) own other telecommunications facilities (see Figure 2 for the percent of advanced facilities by type).

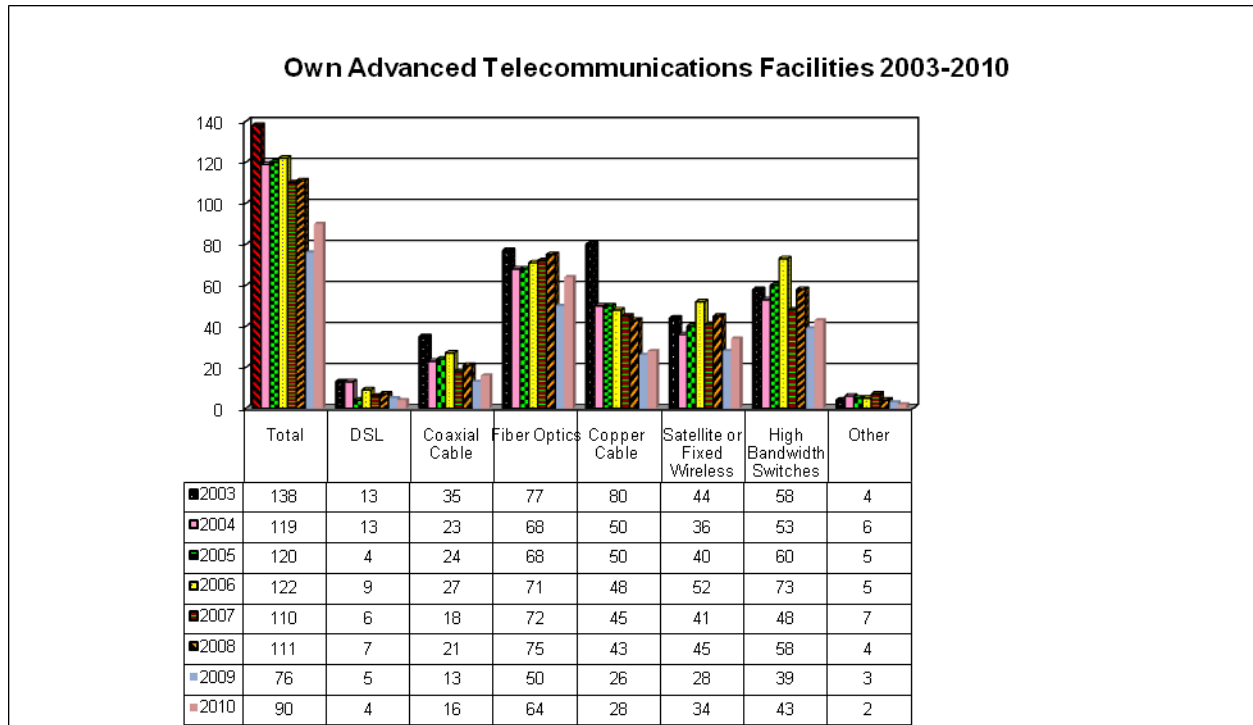
Figure 2. Percentage of Advanced Telecom Facilities by Type in 2010



The pie chart of Advanced Telecommunications Facilities by Type shows that 23 percent was High Bandwidth Switches, two (2) percent was DSL, 33 percent was Fiber Optics, 15 percent was Copper Cable, eight (8) percent was Coaxial Cable, and 18 percent was Satellite or Fixed Wireless.

The bar chart below displays the data (see Figure 3). The total of the numbers in each row in Figure 3 exceeds the number of responding public bodies with advanced facilities because some own more than one type of advanced telecommunications facility.

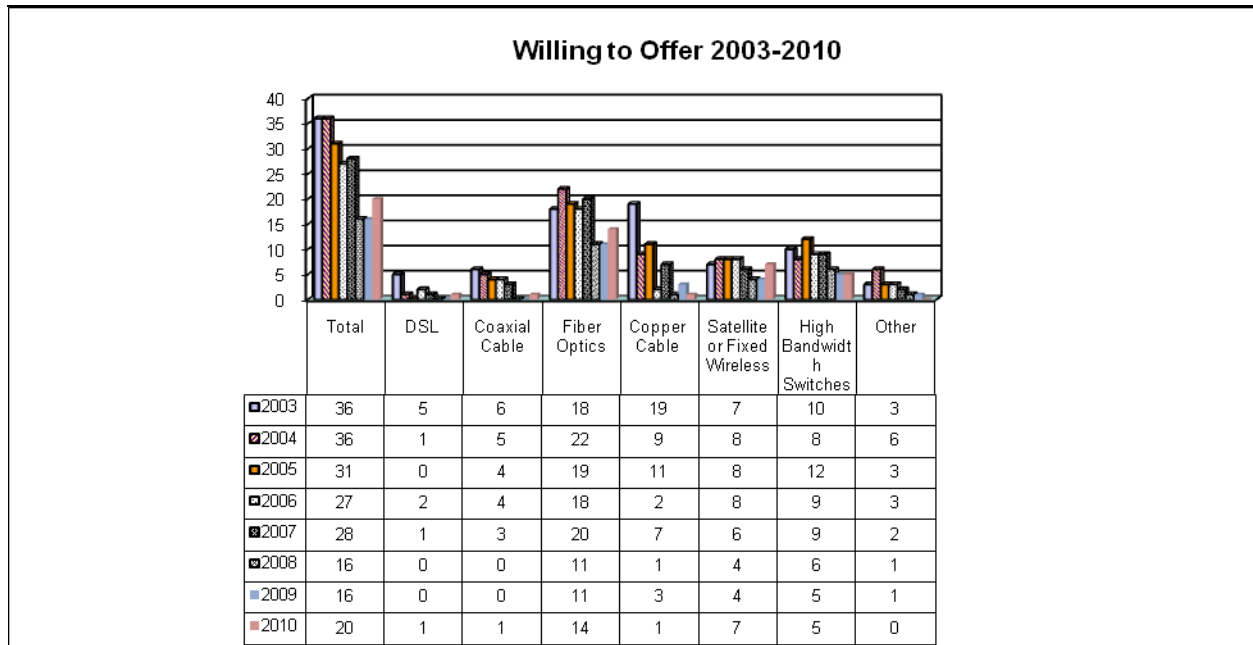
Figure 3. Number of Public Entities Owning Advanced Telecommunications Facilities by Type 2003-2010



Q2. If you own telecommunications facilities above, are you willing to offer telecommunications facilities to private entities for their use for advanced telecommunication services? If yes, indicate which facilities from the above list?

Of the respondents who own facilities, 20 public bodies said they are willing to offer their facilities for use by private entities. Fourteen respondents are willing to offer fiber optics, while one is willing to offer Copper Cable, seven are willing to offer satellite or fixed wireless, and five are willing to offer high bandwidth switches (see Figure 4).

Figure 4. Number of Public Bodies Owning Facilities And Willing to Offer Use to Private Entities



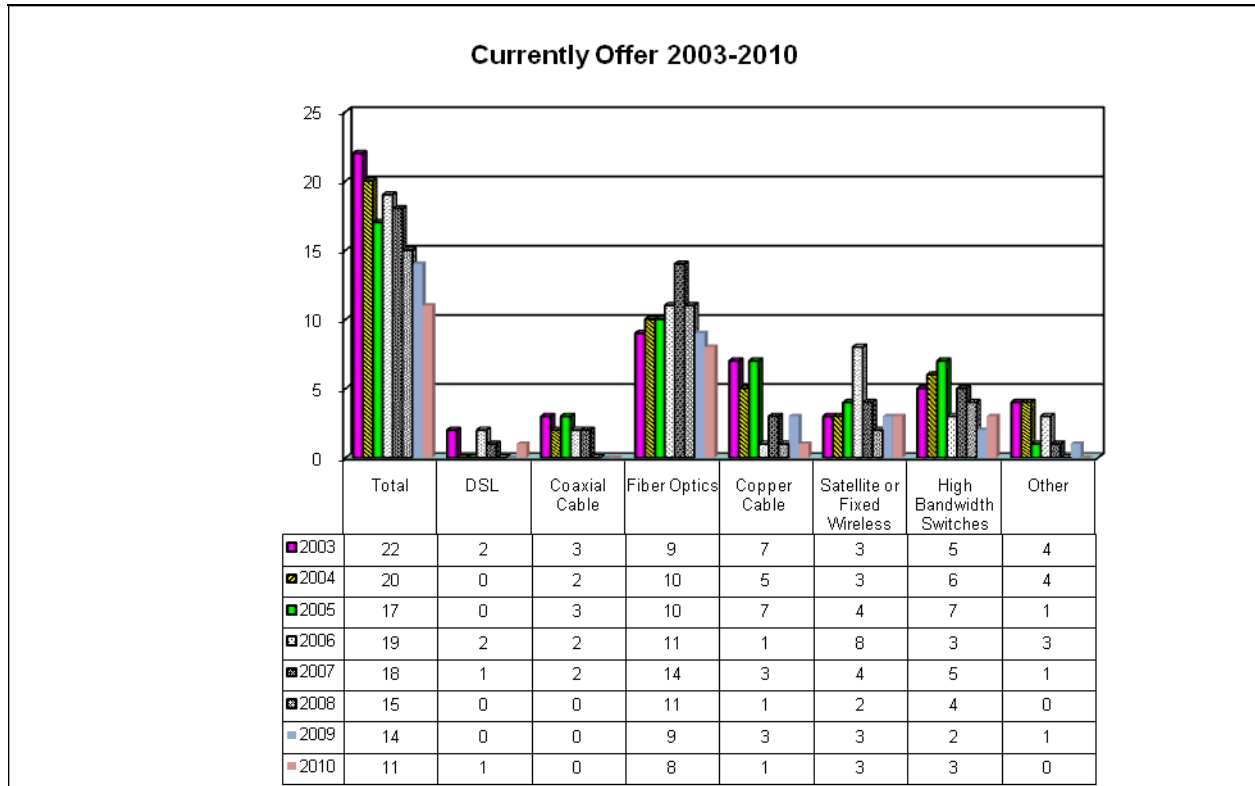
Twenty-two percent of Fiber Optics owners (14/64) are willing to offer those facilities to private entities, followed by 21 percent (7/34) for Satellite or Fixed Wireless, and 12 percent (5/43) for High Bandwidth Switches.

Q3. If you own telecommunications facilities above, do you currently offer telecommunications facilities to private entities for their use for advanced telecommunications services? If yes, indicate which facilities from the above list?

Twelve percent (11/90) of the public bodies with advanced facilities said they currently offer those facilities to private entities for their use for advanced telecommunications services. Eight respondents currently offer use of their Fiber Optics facilities, three offer use of their Satellite or Fixed Wireless facilities, one offers use of their Copper Cable facilities, and three offer use of their High Bandwidth Switch facilities.

As Figure 5 indicates, there has been a reduction over the last seven years in the number of public bodies offering the use of their advanced telecommunications facilities to private entities.

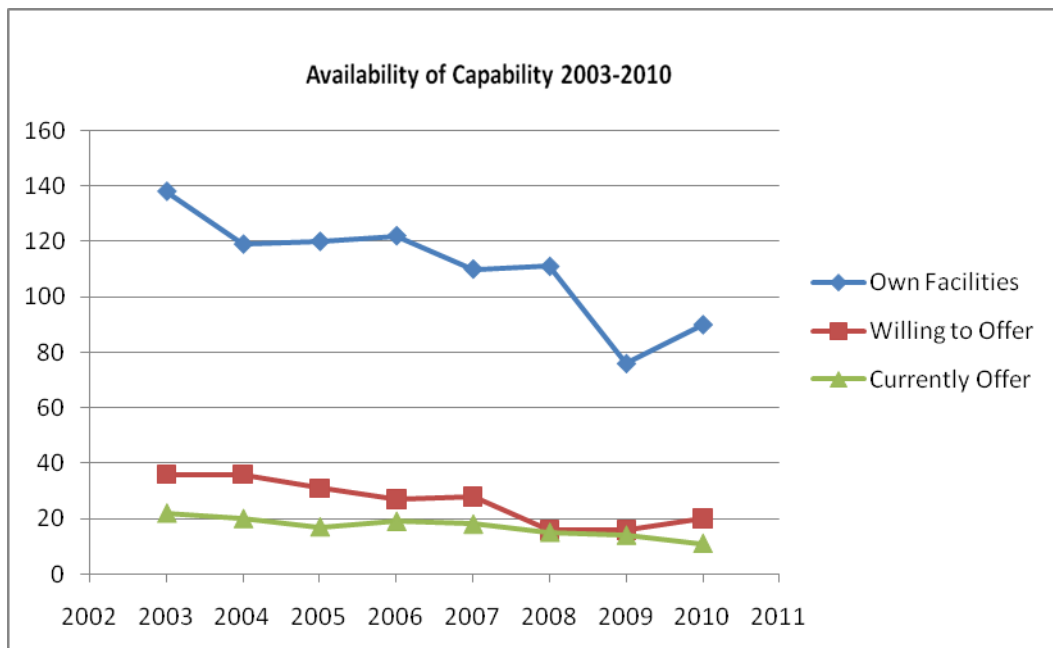
Figure 5. Number of Respondents Owning Facilities Currently Offering Service to Private Entities



2. Market Trends

Although ownership of facilities providing high-speed and advanced telecommunications capabilities by public bodies has trended downward since the survey was initially administered in 2003, there was an increase in facility ownership in 2010 over 2009.

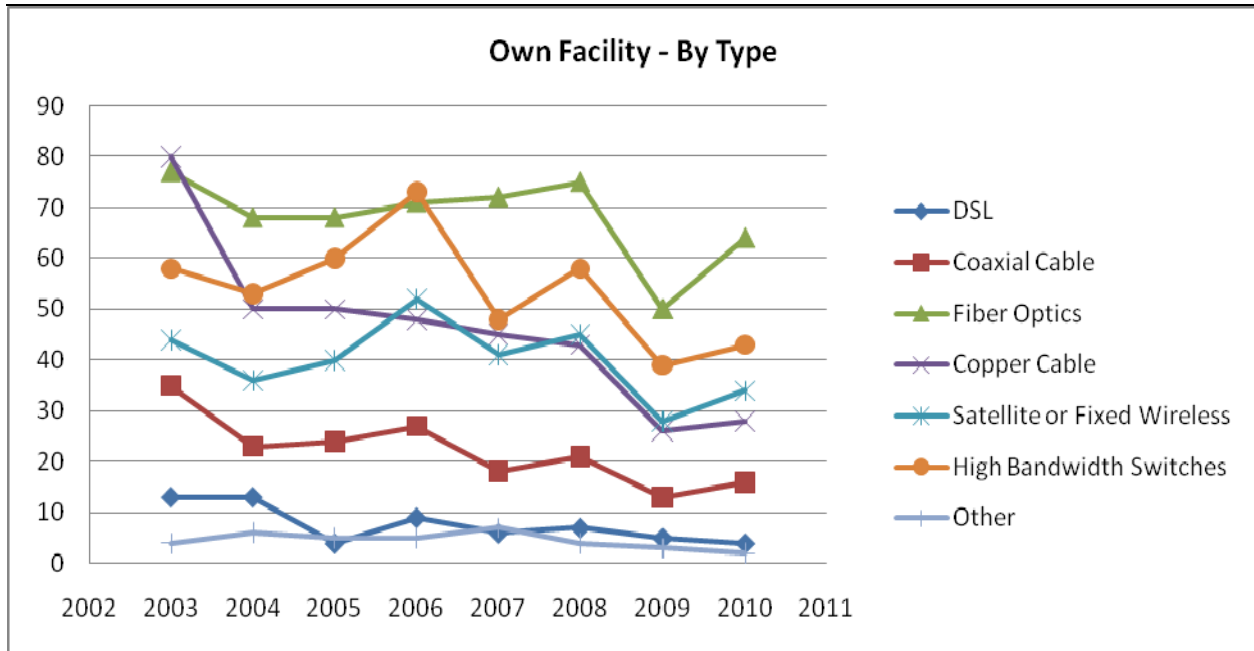
Figure 6. Availability of Capability 2003-2010



Several trends are present regarding the availability of advanced telecommunications capability in public bodies:

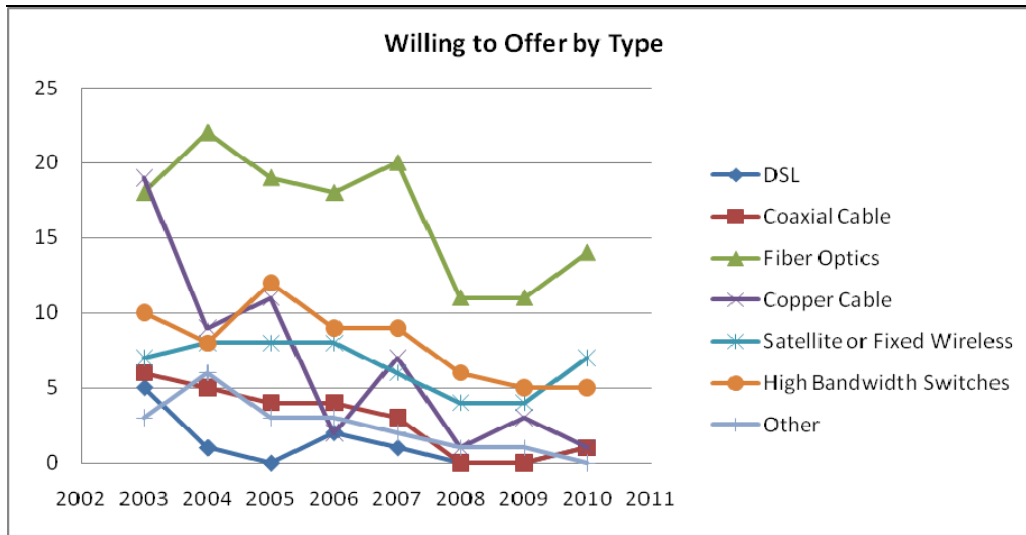
- (1) A 5.9 percent annual average rate of decline from 2003 to 2010 in the number of public bodies who OWN advanced telecommunication facilities, and a decline of 35 percent over this timeframe (see Figure 7).

Figure 7. Own Facilities



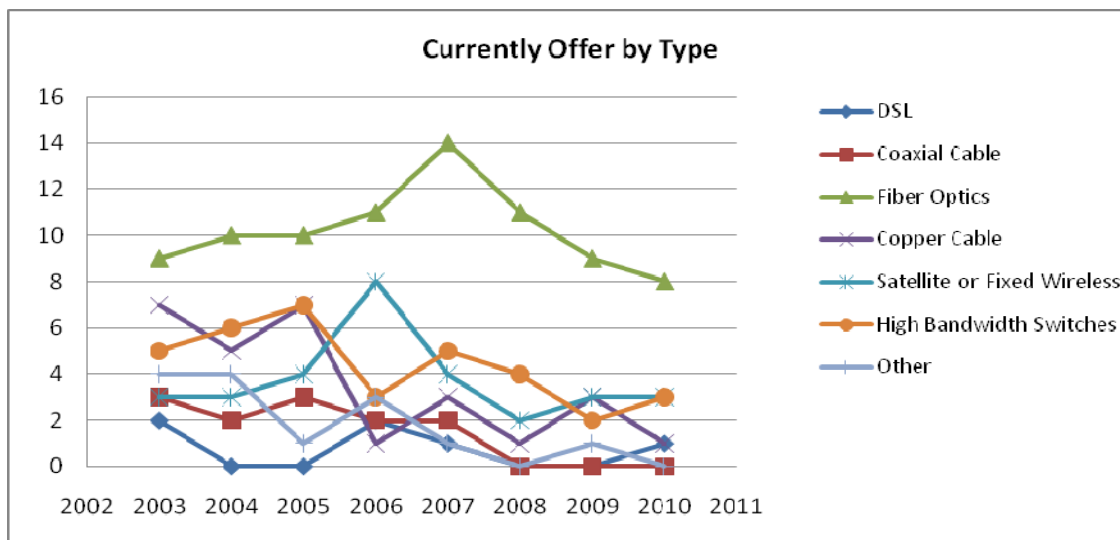
(2) An 8.1 percent annual average rate of decline from 2003 to 2010 in the number of public bodies who OWN advanced telecommunication facilities and are WILLING TO OFFER the service to others, and a decline of 44 percent over this timeframe (see Figure 8).

Figure 8. Willing to Offer



(3) A 9.4 percent annual average rate of decline from 2003 to 2010 in the number of public bodies who OWN advanced telecommunication facilities and CURRENTLY OFFER the use of their facilities to others, and a decline of 50 percent over this timeframe (see Figure 9).

Figure 9. Currently Offer

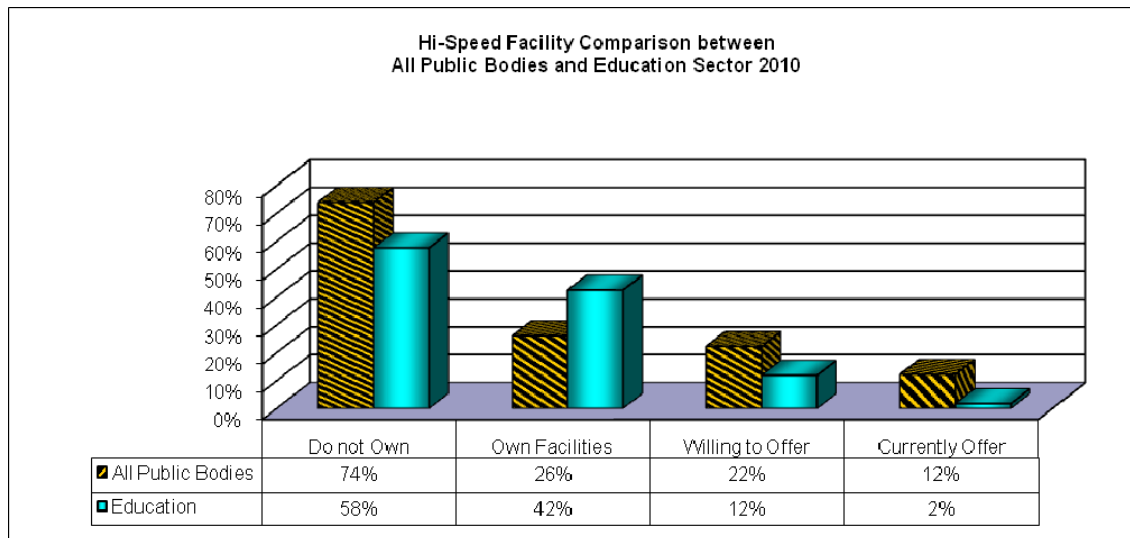


II. Education Sector

Increasing the quality of education is driving demand for high-speed connections and faster computers. Advanced high-speed telecommunications infrastructure is crucial for achieving the state’s targets for the public education sector. Access to greater bandwidth and higher speed data transmission will clearly provide a competitive advantage for Oregon’s quality education and information solutions.

The survey showed that 44 percent of Oregon’s responding public bodies are educational entities. Of the 345 survey respondents, 139 (40%) are school districts, colleges, or universities. Survey results include that, of the 139 respondents in the education sector, 42 percent (59 schools) own some form of advanced telecommunications facilities as compared to 26 percent (90/345) of all public bodies responding. Twelve percent (7/59 schools) of the education sector respondents owning advanced facilities are willing to offer use of those facilities to private entities as compared to 22 percent (20/90) of all public bodies responding. Only one education sector respondent currently offers high-speed telecommunications services as compared to 22 percent (11/90) of all public bodies responding (see Figure 10).

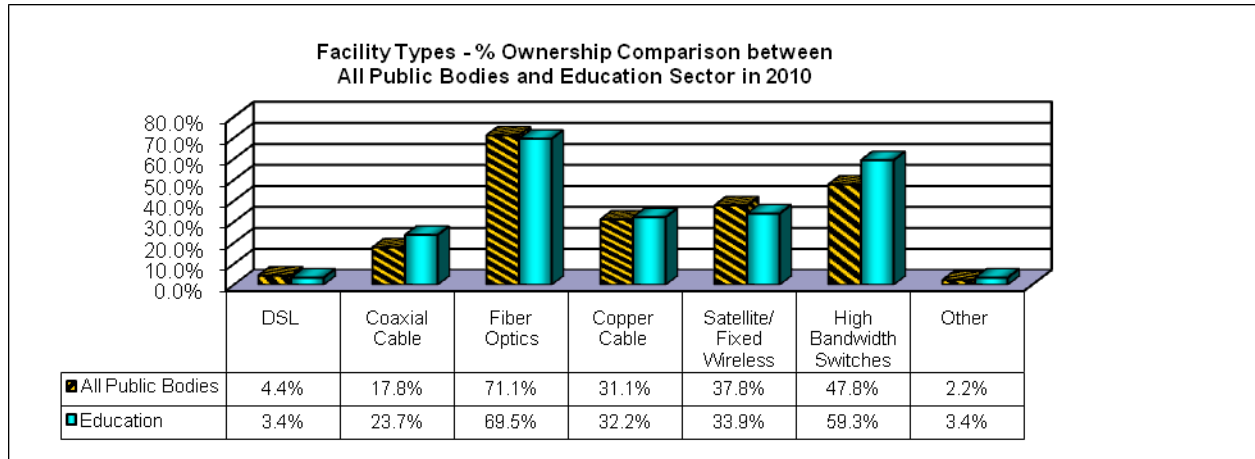
Figure 10. High-Speed Facility Comparison between All Public Bodies and the Education Sector 2010



1. Schools Ownership of Telecommunications Facilities

Of the 139 educational sector respondents, 41 own fiber optics, 19 own copper cable, 35 own high bandwidth switches, and 20 own Satellite/Fixed Wireless.

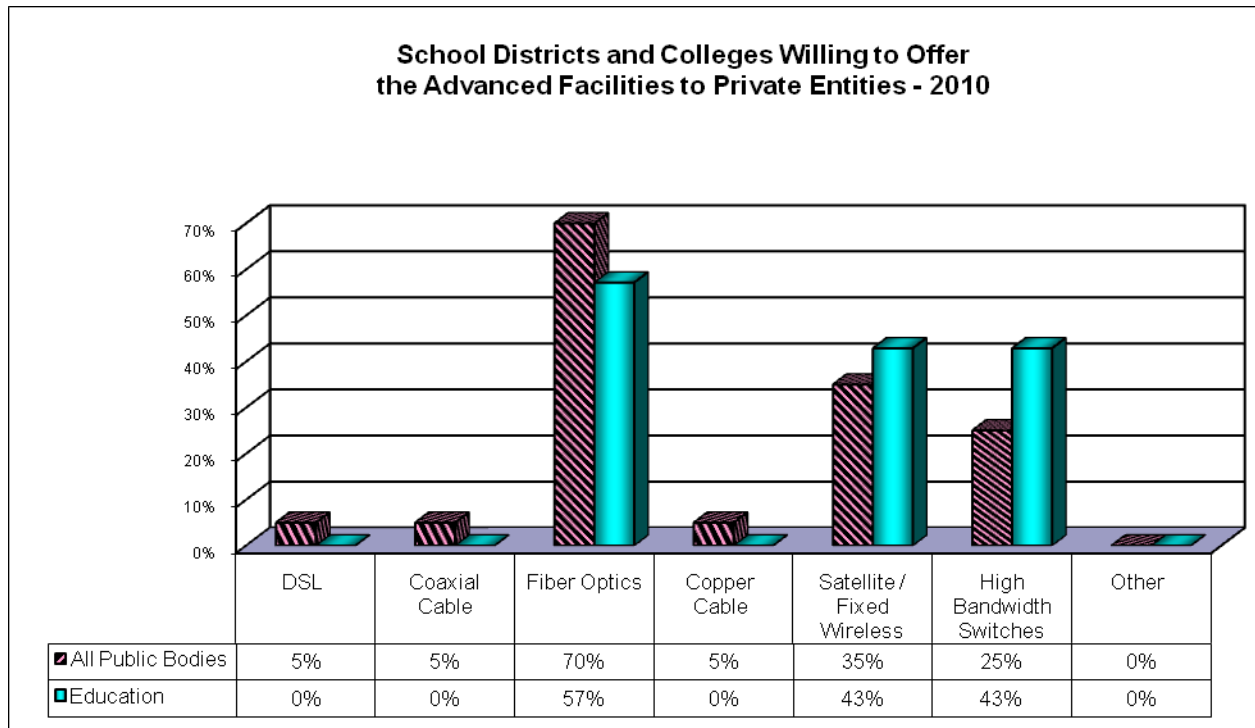
Figure 11. Distribution of Advanced Telecommunications Facilities Types - Comparison between All Public Bodies and the Education Sector in 2010



2. Schools' Willingness to Offer use of owned Telecommunications Facilities

Twelve percent (7 schools) of the school respondents said they are willing to offer use of their owned telecommunications facilities to private entities. This compares to 22 percent (20 public bodies) of all public body respondents willing to offer use of their owned telecommunications facilities to private entities.

Figure 12. Distributions of Advanced Facility Types - Owners Willing to Offer to Private Entities – All Public Bodies vs. Education Sector in 2010



3. Percentage of Responding Schools That Currently Offer use of their Telecommunications Facilities to Private Entities

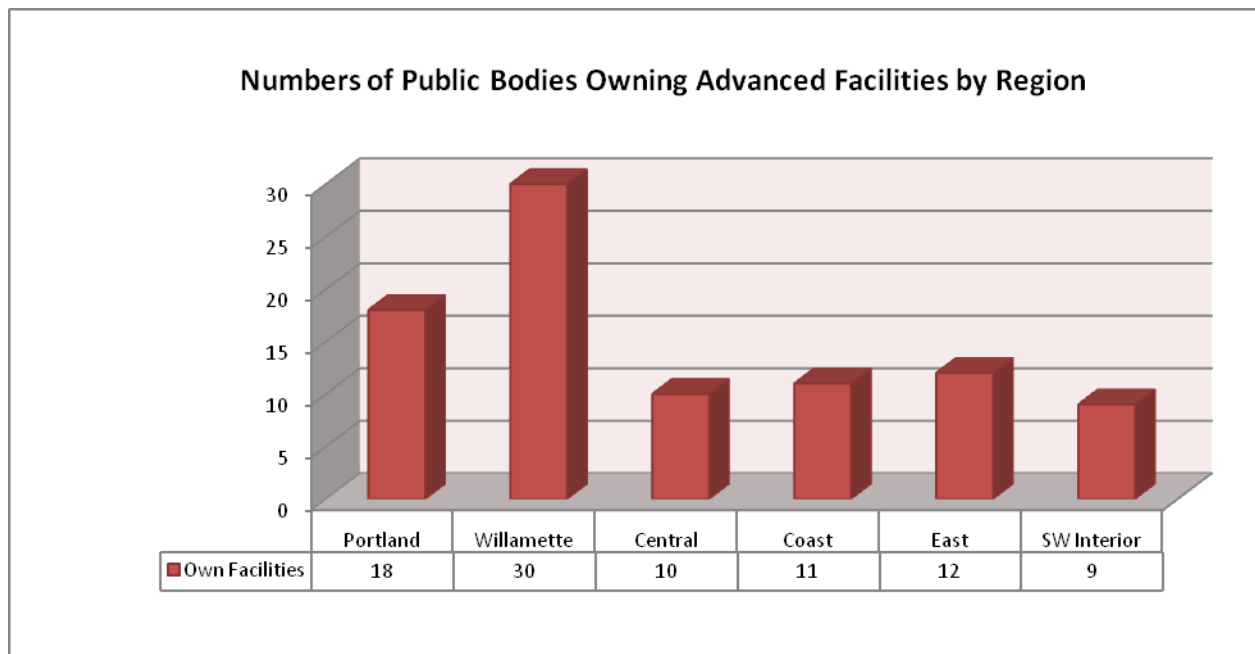
One school out of all school respondents currently offers use of their advanced telecommunications facilities as compared to 11 of all public bodies.

III. Market Distribution – by Region

The 526 public entities were grouped into one of six regions based on their geographic location. The six regions are: Portland Metropolitan, Willamette Valley, Coast, Central, East, and Southwest Interior.

Regional distribution of the 90 responding public entities that own some type of advanced telecommunications facilities is as follows: Willamette 30, East 12, Portland 18, Central 10, Coast 11, and Southwest 9 (see Figure 13).

Figure 13. Numbers of Public Bodies Owning Advanced Facilities by Region



The survey identified by region the advanced facilities currently owned, the number of public entities willing to offer use of their advanced facilities to private entities, and the number who currently offer use of their facilities. Statewide, of the 90 public bodies that own high-speed facilities, 20 are willing to offer use of their facilities to private entities and 11 currently do offer use of their facilities.

Of the 90 public bodies that own advanced facilities, 30 are in the Willamette Valley; followed by the Portland (18), East (12), Coast (11), Central (10), and Southwest regions (9).

Advanced Telecommunications
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Of the 20 public entities that are willing to offer use of their advanced facilities to private entities, four (4) are in the Willamette Valley region, three (3) are in the Southwest region, six (6) are in the East region, one (1) is in the Central region, five (5) are in the Coast region, and one is in the Portland region.

Of the 11 public entities that currently offer use of their advanced facilities to others, three are in the Willamette area, three are in either the East or Southwest regions, and a total of five are in the Central, Coast, and Portland regions.