

LOCAL TELECOMMUNICATION COMPETITION SURVEY

YEAR 2008 REPORT

Economic Research and
Financial Analysis Division

Public Utility Commission of Oregon

December 2008

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Executive Summary

In January 2008, the staff of the Public Utility Commission of Oregon (OPUC) sent its ninth survey to the 265 certified local exchange carriers (LECs) in Oregon for the purpose of assessing the status of local telephone competition in Oregon. The survey asked all carriers, both incumbent local exchange carriers (ILECs) and competitive local exchange carriers (CLECs), to provide information about the local services they provided in 2007. Survey responses were received from all 34 ILECs and 184 out of 231 CLECs, for a total response rate of 80 percent.

HIGHLIGHTS

Total Oregon Local Exchange Service Revenue 2007	\$898 Million
ILEC Revenue - \$Millions / Share	\$747 / 83%
CLEC Revenue - \$Millions / Share.....	\$151 / 17%
Total Switched Lines at Year-end 2007.....	1,915,585
ILEC Switched Lines / Market Share.....	1,605,911 / 84%
CLEC Switched Lines / Market Share	309,674 / 16%
Total Residential Switched Lines at Year-end 2007	1,065,167
ILEC Residential Switched Lines / Market Share	1,018,166 / 95.6%
CLEC Residential Switched Lines / Market Share	47,001 / 4.4%
Total Business Switched Lines at Year-end 2007	656,282
ILEC Business Switched Lines / Market Share	396,213 / 60%
CLEC Business Switched Lines / Market Share	260,069 / 40%
Total Wholesale Switched Lines at Year-end 2007.....	194,136
ILEC Wholesale Switched Lines / Market Share	191,532 / 99%
CLEC Wholesale Switched Lines / Market Share.....	2,604 / 1%
Change from prior Year - Total Switched Lines / % Change	-67,722 / -3.4%
Change from prior Year - ILEC Switched Lines / % Change	-46,989 / -2.8%
Change from prior Year - CLEC Switched Lines / % Change	-20,733 / -6.3%
UNE-P and QPP, Lines.....	42,116 / -75%
CLECs Having Certificates	231
CLECs Doing Business / % of Total CLECs.....	131 / 57%
Total Number of Private Line Circuits	24,909
Lower Capacity Circuits / % of Total.....	18,838 / 76%
Higher Capacity Circuits / % of Total.....	6,071 / 24%

Total Number of DSL.....	377,975
All LEC Capital Expenditures - \$Millions / % of Revenue	\$.165.9 / 18.5%
CLEC Capital Expenditures - \$Millions / % of Revenue.....	\$.52 / 34.5%
ILEC Capital Expenditures - \$Millions / % of Revenue.....	\$.114 / 15.3%

Growth in the number of operating competitive local exchange providers has leveled off over the last several years. While over the last nine years, the number of certified CLECs increased from 101 to 231 and the number of CLECs actually providing services in Oregon has increased from 22 to 131.

CLEC Certificate Trends 1998 to 2007



As of December 2007, 131 out of the 231 certified CLECs reported that they were actually providing local exchange services (56.7%, down from 67% in 2006). By using a widely recognized measure of market share, percentage of local switched telephone lines, CLEC market share was 16.2 percent (about the same as 16.7% in 2006). According to the survey responses, competitive entry in Oregon's telecommunications market is still small in the residential sector. In 2007, CLECs had a 4.4 percent (down from 5.2% in 2006) share of the Oregon residential market. Most competitive entry is in the business sector. CLECs were supplying 39.6 percent (up from 39.4% in 2006) of business customers' switched local exchange lines statewide.

The number of total Oregon LEC switched local exchange lines dropped 3.4 percent, from 1.98 million to 1.91 million in 2007. The following table summarizes the switched lines serviced in Oregon.

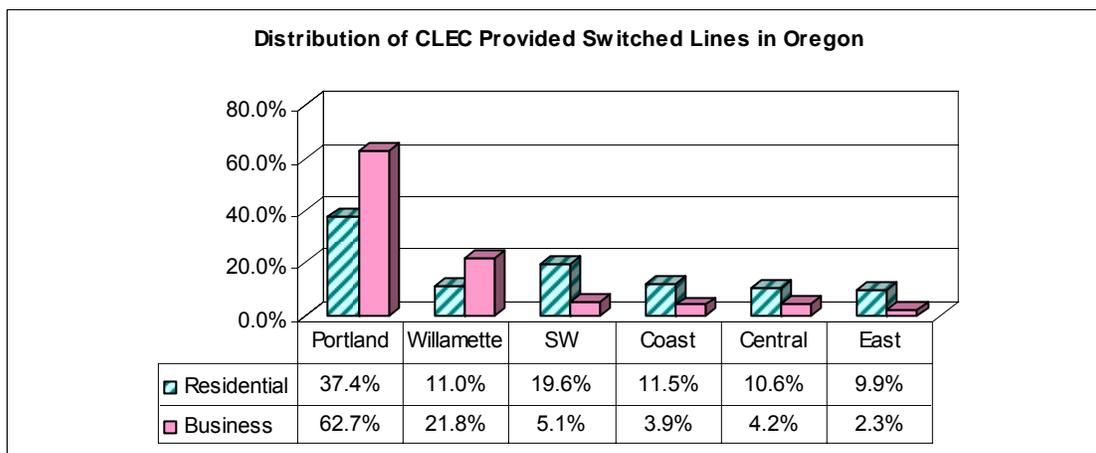
All LECs Switched Services: Lines (000s) and Shares (%)

2007	Survey Sent	Responded	Response Rate %
Total LECs	265	218	82.3%
ILECs	34	34	100.0%
CLECs	231	184	79.7%
2007	Survey Sent	Service Provided	Operation Rate %
Total LECs	265	165	62.3%
ILECs	34	34	100.0%
CLECs	231	131	56.7%

Competitive entry into the telecommunications market varies across different regions in Oregon. In Portland, and the Willamette Valley, CLECs were providing 63 percent and 22 percent of business customers' switched local exchange lines, respectively. While on the Coast, Central, Southwest and Eastern Oregon CLECs were providing 15 percent of switched lines to business customers.

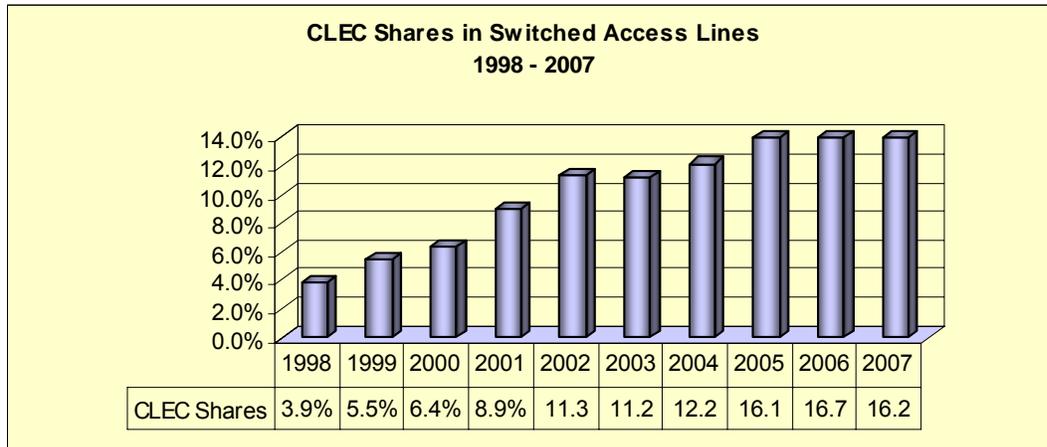
Of the 1.91 million switched access lines served by all local exchange carriers, 56 percent were residential lines. Out of 1.06 million residential lines, CLECs served 4.4 percent. Forty-one percent of all residential lines were in the Portland area. Out of this 41 percent residential service in Portland, CLECs served 4 percent.

Distribution of Switched Access Lines Provided by CLECs



About 63 percent of CLEC's business lines and 37 percent of residential lines were in the Portland Metropolitan area. CLEC switched service revenues were \$115 million in 2007, down from \$155 million in 2006.

Growth of Competition in Oregon 1998 – 2007



The share of switched access lines served by CLECs at the end of 2007 represented 16.2 percent of total access lines in Oregon, compared to a CLEC share of 17.6 percent across the entire country at the end of June 2007. CLECs have 4.4 percent of the residential market in Oregon compared to 12 percent nationally. In the business market CLECs have 39.6 percent in Oregon compared to 25 percent across the country.¹

The number of CLEC lines in Oregon decreased by 6.3 percent in 2007, from 330,407 to 309,674. By comparison, total ILEC lines decreased by 2.8 percent during the preceding year, from 1,652,900 to 1,605,911.

¹ Source of national data is the March, 2008, Federal Communications Commission (FCC) Data Release on "Local Telephone Competition"

I. Purpose of the Survey

The purpose of the survey is to collect information from incumbent and competitive local exchange carriers to determine the status of competition for local exchange services in Oregon. This study is a key component of the 1999 Oregon legislation requiring the OPUC to report on telecommunications issues.

II. Survey Participants and Responses

In January 2008, the Commission staff sent a survey to all 265 carriers currently holding a certificate issued by the Commission to provide local services in Oregon. Of the 265 LECs, 34 are ILECs, and 231 are CLECs. The ILECs consist of 23 telecommunications utilities and 11 cooperatives. These are the traditional local telephone service providers in the state. CLECs compete with the traditional carriers. The survey asked all LECs to provide information regarding their operations in 2007.

All 34 ILECs responded to the survey. For CLECs, 184 out of the 231 (79.7%) responded. The overall response rate for LECs was 82.3 percent (Table 1). In 2007, 62 percent (72% a year earlier) of all certified carriers were actually providing services, 100 percent of ILECs and 57 percent (68% a year earlier) of CLECs (131 out of 231). For purposes of this analysis, we assume that all non-responding CLECs were not providing local service in Oregon.

Table 1. Survey Response Rates and Service Operation Rates

2007	Survey Sent		Response Rate %		
		Responded			
Total LECs	265	218		82.3%	
ILECs	34	34		100.0%	
CLECs	231	184		79.7%	
		Service Provided		Operation Rate %	
Total LECs	265	165		62.3%	
ILECs	34	34		100.0%	
CLECs	231	131		56.7%	

III. Service Types

1. ILEC Service Types

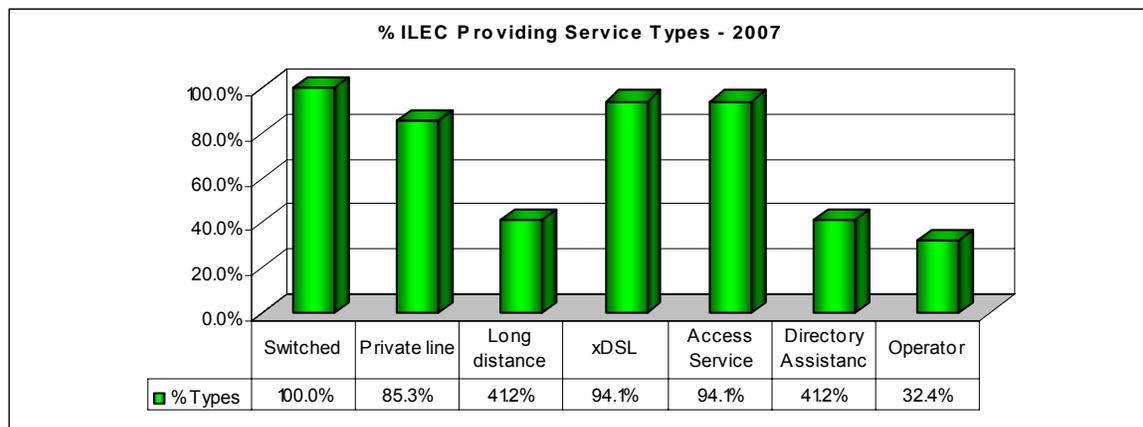
All 34 ILECs provided local exchange switched service to retail customers. Local switched services include dial tone, local (toll-free) calling, directory listings, and various

features such as call waiting and caller ID. Local exchange private line (i.e., dedicated, point-to-point) services also include DSL (Digital Subscriber Lines) services. ILEC service types and the percentage providing each type for 2007 are shown in Table 2 and Figure 1.

Table 2. Market Coverage for General Services – ILECs

Service Types	# of ILECs Providing Service	% of ILECs Providing Service
Local Exchange Switched Service	34	100.0%
Local Exchange Private Line Service:	29	85.3%
Lower Capacity	29	85.3%
Higher Capacity	19	55.9%
Long Distance Service	14	41.2%
xDSL (Digital Subscriber Line)	32	94.1%
Access service	32	94.1%
Directory Assistance	14	41.2%
Operator	11	32.4%
Telecom using Cable TV Facilities	0	0.0%
Telecom using VoIP	0	0.0%
Others	8	23.5%

Figure 1. Service Types and Distributions – ILECs



2. CLEC Service Types

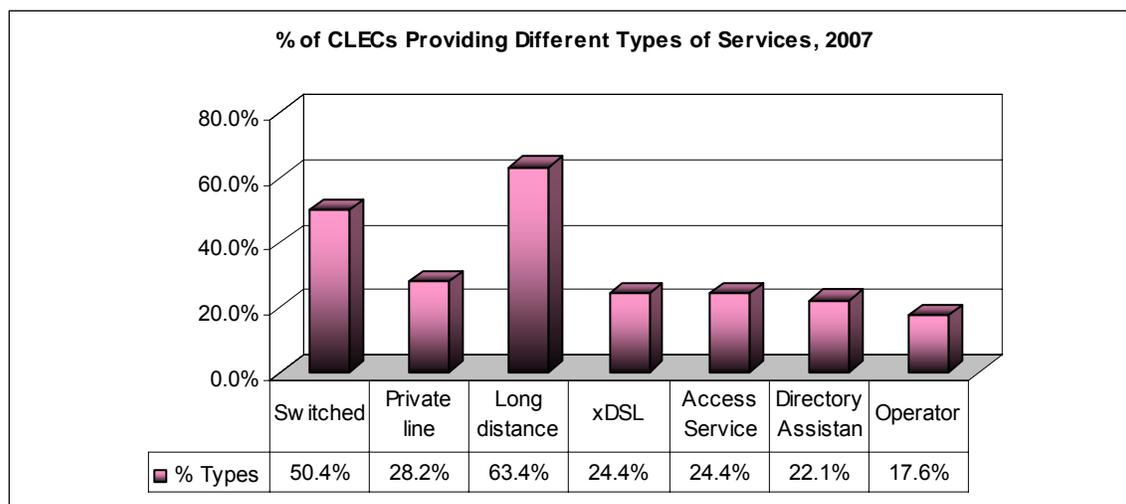
As of December 2007, of the 231 certified CLECs, 131 (57%) were providing some kind of telecommunications service in Oregon (down from 68% in 2006). We assume

that only those CLECs that responded to our survey were providing services in Oregon. Of the 131 CLECs that were providing services, 66 were providing local exchange service (69 in 2006). Eighty-three CLECs were providing long distance service (88 in 2006), and 37 were providing inter-exchange private line services. The CLECs service types and distributions are shown in Table 3 and Figure 2.

Table 3. Market Coverage by General Services – CLECs

CLEC Service Types	#of CLECs Providing Service	% of CLECs Providing This Service
Operating CLECs	131	
Local Exchange Switched Service	66	50.4%
Local Exchange Private Line Service:	37	28.2%
Lower Capacity	22	16.8%
Higher Capacity	30	22.9%
Long Distance Service	83	63.4%
xDSL (Digital Subscriber Line)	32	24.4%
Access service	32	24.4%
Directory Assistance	29	22.1%
Operator	23	17.6%
Telecom using Cable TV Facilities	4	3.1%
Telecom using VoIP	8	6.1%
Others	35	26.7%

Figure 2. Service Types and Distributions – CLECs



IV. Switched Services – Market Size and Share Analysis

1. Market Size and Shares

While the last few years have been an exception to the general trend, the market share of ILECs has fallen in the local market as CLEC services have expanded. In 2007, there were 131 CLECs competing in the local telecommunication services market. The CLECs as a group had a market share ranging between 7.4 percent and 16.2 percent, depending on how market share is measured. In this report, market share is measured in three ways: (1) customers, (2) lines, and (3) revenues.

Table 4. Oregon Switched Service Market Shares – 2007

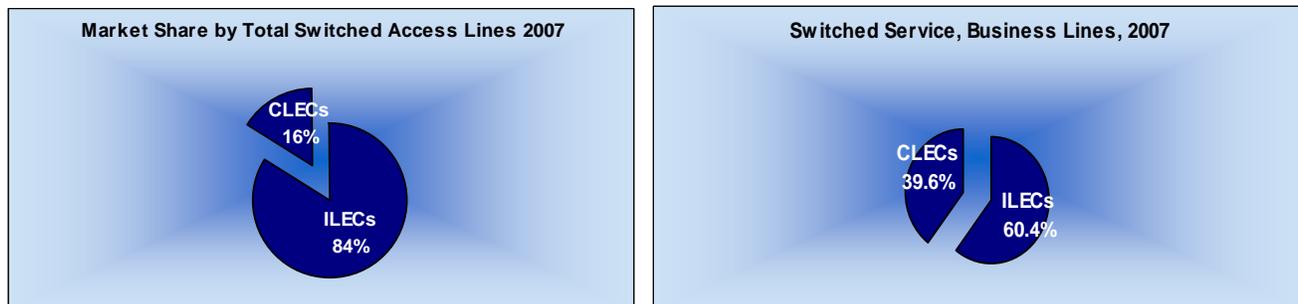
2007	Customers	Lines	Revenue-\$millions
ILECS	1,105,971	1,605,911	618.4
CLECS	88,728	309,674	115.5
Total	1,194,699	1,915,585	733.9
%	Customers	Lines	Revenue
ILECS	92.6%	83.8%	84.9%
CLECS	7.4%	16.2%	15.1%
Total	100.0%	100.0%	100.0%

(1) The CLEC share of retail customers² was 7.4 percent. Few customers obtained local exchange switched services from anyone other than their traditional supplier, the ILEC. According to the survey responses, Oregon LECs were providing local exchange switched services to 1,194,699 Oregon customers. ILECs served 1,015,971 (92.6 percent) of the total, while CLECs served 88,728 customers (7.4%). (See Table 4).

(2) The CLEC share of retail lines³ was 16.2 percent in 2007 (Figure 3). All Oregon LECs were supplying 1,915,585 (down 3.4% from a year earlier) local switched telephone lines to retail customers. Of that total, the ILECs were supplying 83.8 percent (1,605,911 or 2.8% less than the prior year) of all lines leaving the CLECs with the remaining 309,674 (16.2% of total and a 6.3% decrease from the prior year). The CLECs were supplying an average of 3.5 lines per customer (up from 3.3 in 2006), while ILECs were supplying an average of 1.5 lines per customer (up from 1.4 in 2006).

(3) The CLEC share of retail revenues⁴ was 15 percent (Figure 3), down from 20% in 2006. In 2007, retail revenues from total switched access services in Oregon were an estimated \$734 million (down from \$770 million in 2006). Of the total, ILECs received \$618.4 million (up from \$615.8 million in 2006), that was 85 percent of total switched access line revenue, and CLECs captured the remaining \$115.5 million (down from \$154.8 million in 2006), or 15 percent of total switched revenue.

Figure 3. Market Shares for Switched Service



² The survey defined "**customer**" as "any person or entity that has a physical location within Oregon, and has applied for, been accepted, and receives service for a price. Included are residential and business end users (i.e., retail customers), as well as other telecommunications carriers (i.e. wholesale customers)."

³ The survey defined "**local exchange lines**" as "voice level transmission paths (64kbps digital or <4kHz analog) that link an end user location with the switching center that provides dial tone. For ISDN, each B channel was counted as one line. For Centrex, each station line was counted as one line."

⁴ The survey defined "**revenues**" as the amount billed "for switched local exchange services, whether billed in advance or arrears. Include regulated and non-regulated, federal and state charges. Include charges for switched lines, local usage, extended area service (EAS), repair and maintenance services, directory listing services, and add-on features such as call waiting, voice messaging, and caller ID. Exclude taxes that your firm billed to customers."

The CLECs achieved a higher share of lines per customer (with roughly comparable revenues per line) and a correspondingly significantly higher share of revenues than customers. This is because the CLECs have concentrated on providing service to business customers. Of all CLEC switched service revenues, 84 percent was from the CLEC business sector in 2007, compared to the ILECs, where business revenue was 25 percent of total revenue in switched service. The ILECs' average annual switched service revenue per line was \$373. For CLECs, the annual switched service revenue per line was \$468 (see Table 5).

Table 5. Average Switched Service Customers, Lines and Revenues – 2007

2007	CLECs	ILECs
Lines / Customer	3.5	1.5
Revenue / Line / Year	\$373	\$385
Revenue / Customer / Year	\$1,301	\$559

The 34 ILECs providing local exchange switched service had 93 percent of customers, (up from 92 percent in 2006), 84 percent of switched access lines (83 percent in 2006) and 84 percent of switched service revenues (up from 80%) (see Table 4). Within the ILECs, the Big Four (CENTURYTEL, QWEST, UNITED/SPRINT and VERIZON) incumbent operators have the major market share of local exchange switched service in Oregon. In 2007, the Big Four had 83.5 percent of total customers (83.9% in 2006), 77 percent of total exchange lines (77% in 2006), and 78 percent of total switched service revenues (down from 74% in 2006).

Table 6. Market Shares of ILECs, CLECs and Big 4 ILECs – 2007

CUSTOMERS	ILECs/Total	CLECs/Total	Big-4 ILECs/Total
Residential	95.8%	4.2%	87.0%
Business	77.4%	22.6%	60.4%
Wholesale	99.9%	0.1%	99.9%
Total Customers	92.4%	7.6%	83.5%
SWITCHED LINES	ILECs/Total	CLECs/Total	Big-4 ILECs/Total
Residential	94.8%	5.2%	86.5%
Business	60.6%	39.4%	55.5%
Wholesale	96.0%	4.0%	98.7%
Total Lines	83.3%	16.7%	77.1%
REVENUES	ILECs/Total	CLECs/Total	Big-4 ILECs/Total
Residential	90.2%	9.8%	87.5%
Business	67.8%	32.2%	65.7%
Wholesale	90.8%	9.2%	95.6%
Total Revenues	79.9%	20.1%	78.4%

A. Business Market Share

CLECs supplied service to 28.6 percent of business customers in 2007, compared to 7.4 percent of all types of customers. CLECs supplied 39.6 percent (39.4% in 2006) of business switched access lines (see Figure 4). This is substantially greater than the 13.6 percent CLEC share of Oregon total lines. Similarly, CLECs had a 30.5 percent (32.2% in 2006) share of switched business service revenues, compared to a 15.7 percent (20.1% in 2006) of total revenues in the State switched service.

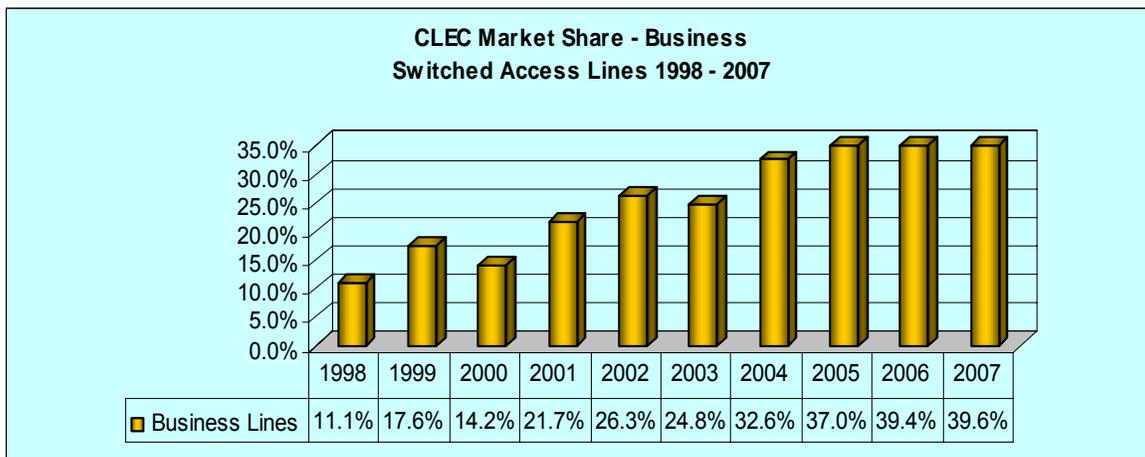
The CLEC share of business revenues was higher than their share of business lines. For CLECs, in 2007, the annual revenue per business line was \$444. For ILECs, the average was \$573 per line.

Figure 4. Business Market Share, Measured by Lines Served



CLECs' market share of switched access lines for business has increased steadily during the past eight years; the share was 11 percent in 1998, and close to 40 percent in 2007 (see Figure 5).

Figure 5. CLEC Business Line Market Share Growth



B. Residential Market Share

Table 7. Switched Service RESIDENTIAL Market Shares, 2007

Switched Service RESIDENTIAL Market Shares			
Residential	Customers	Lines	Revenues \$millions
ILECs	985,579	1,018,166	341.1
CLECs	43,338	47,001	13.7
Total	1,028,917	1,065,167	354.7
ILECs/Total	95.8%	95.6%	96.1%
CLECs/Total	4.2%	4.4%	3.9%

(1) The CLEC share of residential customers was 4.2 percent in 2007 (see Table 7). According to the survey, Oregon LECs were providing local exchange switched services to 1,028,917 Oregon residential customers. ILECs had 985,579 residential customers that was 95.8% of the total, while 43,338 residential customers were served by CLECs.

(2) The CLEC share of residential lines was 4.4 percent in 2007. Oregon LECs were supplying a total of 1,065,167 local switched telephone lines to residential customers. ILECs were supplying 95.6 percent or 1,018,166 residential lines, and the CLECs provided 47,001 residential lines.

In 2007, ILECs served 95.6 percent of the residential line market; the number is higher than a year earlier (94.8%). The Big-4 ILECs (QWEST, VERIZON, CENTURYTEL, SPRINT) served 86.5 percent of total residential line market, compared to 90.2 percent a year earlier. On average, typical residential local phone service is less profitable than typical business service because it costs more on a per line basis to wire an individual home than it does to wire typically more tightly clustered business buildings. About 15 percent of total CLEC lines serve residential customers, while 63.4 percent of ILEC lines serve residential customers. A greater percentage of CLEC operations focus on the more profitable business sector.

(3) Overall residential revenues from local exchange switched service in Oregon in 2007 were an estimated \$354.7 million; it was about \$376.7 million in 2006. Residential monthly average revenue was \$22 per line for CLECs, \$28 per line for ILECs. The reason that CLEC's revenue per line was low was one company discontinued its circuit switched service as of November 2007, so no line was reported as of December 2007, and its revenue in switched service went down significantly.

2. CLEC Provisioning of Switched Service

In December 2007, 36 of the 66 CLECs (55%) providing local switched service were ILEC service resellers. A CLEC reseller buys complete retail services from ILECs, and then resells those services under the CLEC's own name to consumers.

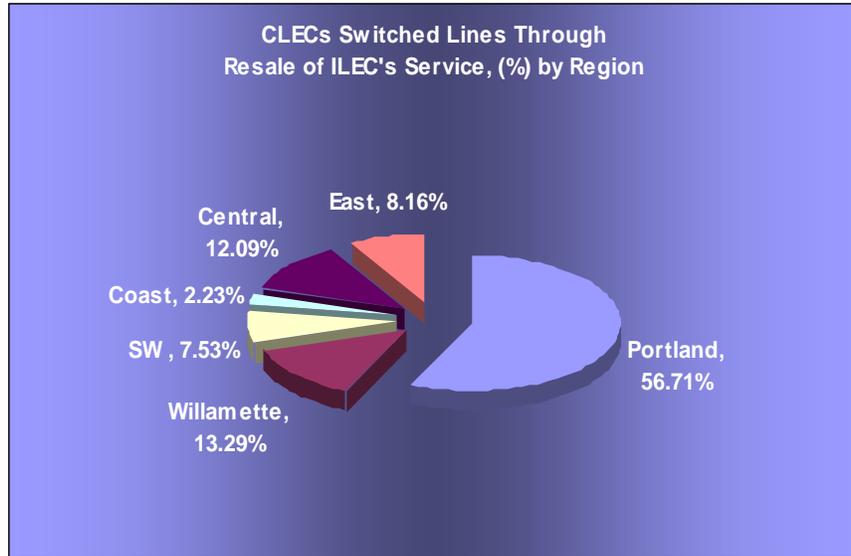
A. Facility-Based CLEC

Ex-FCC Chairman, Mike Powell, has made it clear that he thinks the only real, lasting competition has to be facilities-based. He would like to see both CLECs and ILECs invest more in the nation's networks. The ILECs say that they don't want to invest aggressively if they have to sell wholesale new networks to their competitors at high discounts.

About 47 percent (31/66) of CLECs providing local switched service are fully or partially facility-based providers. These fully or partially facility-based CLECs provided 252,451 switched access lines, which was 81.5 percent of total CLECs' lines, and 13.2 percent of all LECs' switched access lines. There were thirty-one CLEC facilities-based providers identified in the survey. However, this does not mean that all of these lines were provisioned using facilities the CLECs own and operate. Often, a facilities-based carrier owns and operates some telecommunications equipment, but also provides service by resale.

Over 57 percent of resold ILEC service occurred in the Portland area, and 13 percent of resold CLEC service occurred in the Willamette Area (see Figure 6).

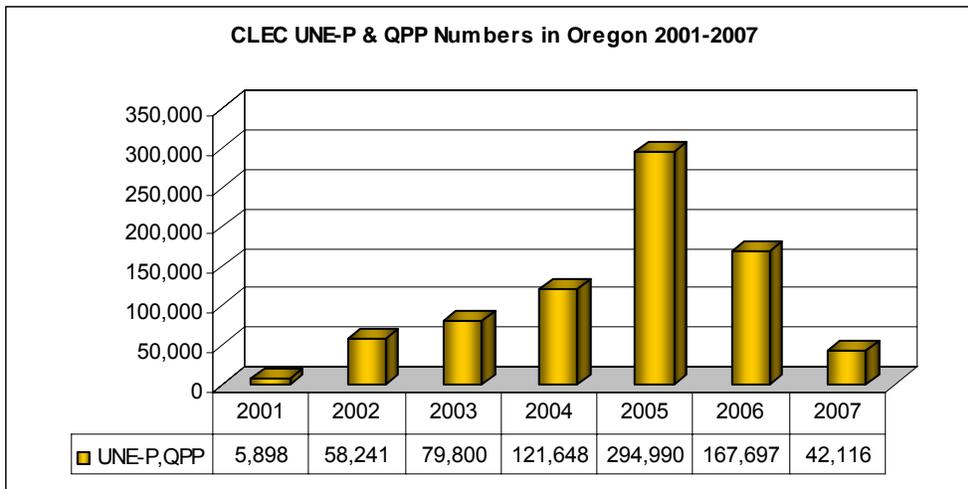
Figure 6. Market Concentration – CLEC Resale of ILEC's Lines in 2007



B. UNE-P CLEC

Fifteen CLECs reported providing switched access lines or private line services by Purchasing Unbundled Network Elements Platform (UNE-P) or Qwest Platform Plus (QPP) which is UNE-P Equivalent. The UNE-P and QPP numbers were 42,116 (lines) in December 2007 which was 75% decreased from the year before (167,697 UNE-P & QPP). The Figure 7 below indicated that as Federal Communications Commission's (FCC) policy changed, UNE-P number changed correspondingly.

Figure 7. CLEC UNE-P Numbers in Oregon 2001-2007



UNE-P policy background:

ILECs filed complaints with the FCC that UNE-P actually made them subsidize competitors. The CLECs rebuttal was that UNE-P was a part of the deal the ILECs made during negotiations over the 1996 ACT in exchange for being allowed to get into the long distance market.

On May 13, 2002, the U S Supreme Court ruled against the ILECs, (Verizon and the Bell Companies), and in favor of the FCC and CLECs, on every issue, validating the FCC's TELRIC methodology in setting competitive rates for UNE-P. This decision was in response to a number of consolidated lawsuits filed by the ILEC's (<http://www.supremecourtus.gov/opinions/01pdf/00-511.pdf>).

Strangely though, on March 2, 2004 the U.S. Court of Appeals for the District of Columbia Circuit overturned the FCC's national finding that competitors are impaired without access to transport at the current UNE rates. This ruling states that the RBOCs (Regional Bell Operating Company) are no longer obliged to supply UNE-Ps to their competitors. As a result, the local service may be transferring back to the ILECs.

On February 4, 2005, the FCC released an Order on Remand Triennial Review Remand Order (TRRO), wherein the FCC's final unbundling rules were adopted with an effective date of March 11, 2005. The FCC found that "[i]ncumbent LECs have no obligation to provide competitive LECs with unbundled access to mass market local circuit switching" (used for the UNE platform, i.e. the combination of an unbundled loop, unbundled local circuit switching, and shared transport).
http://www.dwt.com/practc/telecom/bulletins/02-05_TRRO.htm

With the FCC rulings in 2005 regarding UNE-P, CLECs are faced with the difficult challenge of how to remain competitive.

3. Market Trends in Switched Access Services

CLECs reported 309,674 (or 16.2 percent of all LECs) of 1,915,585 statewide local switched access lines in service at the end of 2007. This represents a 6.3 percent drop in CLEC switched lines during 2007. By comparison, the number of lines served by ILECs decreased by 2.8 percent during the preceding year, from 1,652,900 to 1,605,911 lines.

Figure 8. Change of ILECs Market Share in Switched Services, 1998 to 2007



Figure 8 shows the market share of ILEC switched service has been on a downward trend. But in 2007, ILEC' shares of customer and line number stopped dropping and the share of revenue increased by 4.35%. This was due to ILECs selling less UNE-Ps to CLECs.

ILEC residential revenue was \$341 million, up from \$339.6 million. ILEC business revenue increased 6.8 percent to \$240 million from \$224 million.

CLEC revenue from the residential market was \$13.7 million in 2007, down from \$37.1 million in 2006. CLEC revenue from the business market was \$99.5 million, which was down 12.7 percent from 114 million in 2006.

Table 8. Trends in Switched Access Lines, 1998 to 2007

Date	ILEC Lines	CLEC Lines	Total	CLEC Share
Dec-98	2,116,322	85,146	2,201,468	3.9%
Dec-99	2,078,678	121,277	2,199,955	5.5%
Dec-00	2,257,594	153,578	2,411,172	6.4%
Dec-01	2,238,640	219,990	2,458,630	8.9%
Dec-02	2,115,892	270,494	2,386,386	11.3%
Dec-03	2,024,882	256,571	2,281,453	11.2%
Dec-04	1,959,459	271,344	2,230,803	12.2%
Dec-05	1,803,832	346,923	2,150,755	16.1%
Dec-06	1,652,900	330,407	1,983,307	16.7%
Dec-07	1,605,911	309,674	1,915,585	16.2%

Figure 9. Competitive Growth, CLEC Switched Lines

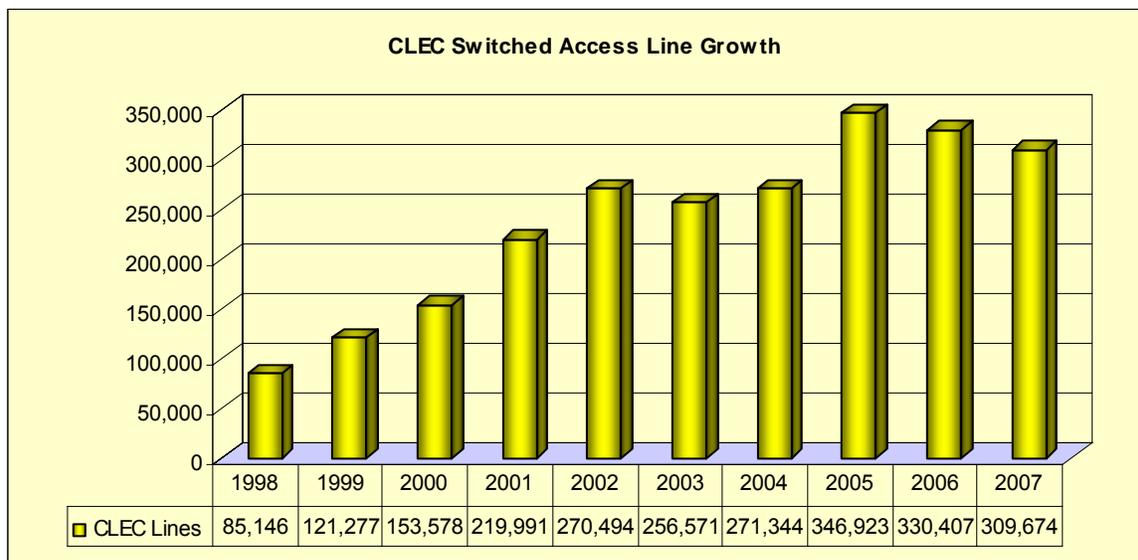
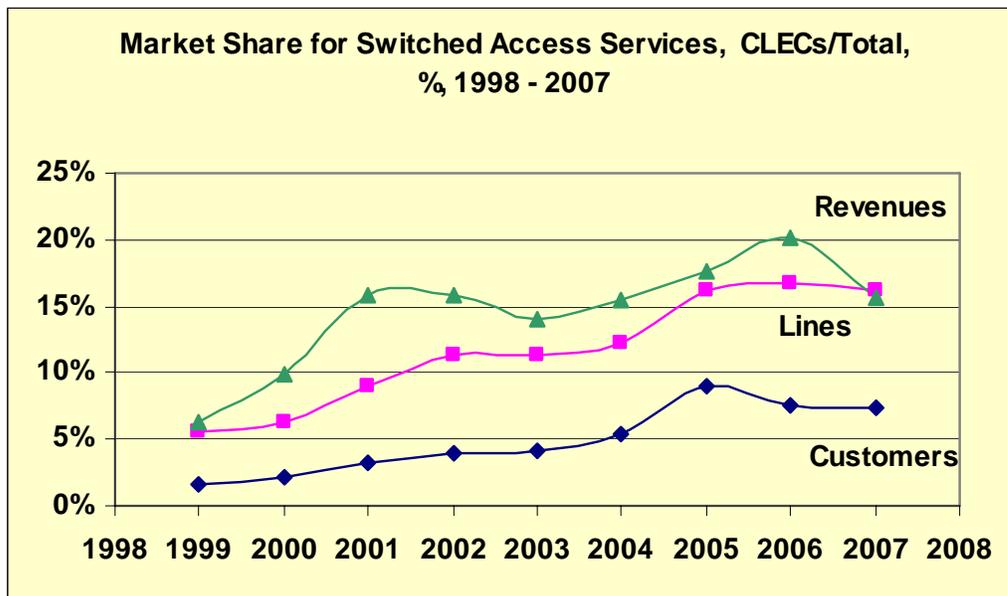


Table 8 and Figure 9 show that the CLEC switched access lines has decreased after 2005. This was due to some companies leaving the market or shifting the service of switched access lines to other non-regulated telecom services. However, growth in the number of CLEC switched lines has averaged 15.4 percent over the 1998-2007 periods, from 85,146 lines in 1998 to 309,674 lines in 2007. During the same period, the number of ILEC switched access lines has declined by an average of 3 percent per year, from 2.1 million lines in 1998 to 1.6 million lines in 2007. The total number of lines has declined by 13 percent since 1998. The line number decline was most likely due to the

increase of cell phone use, replacing a second line with DSL, and use of cable service for Internet access.

Figure 10 below shows market growth for CLECs. CLEC share of switched service revenue was 15.7 percent in 2007 compared to 5 percent market share in 1998. The CLEC share of switched lines was 16.2 percent in 2007, up from 3.9 percent in 1998. Finally, the CLEC share of customers was up to 7.4 percent in 2007, from 1.0 percent in 1998. The annual increase for CLEC switched access lines in the last nine years has averaged 15.4 percent.

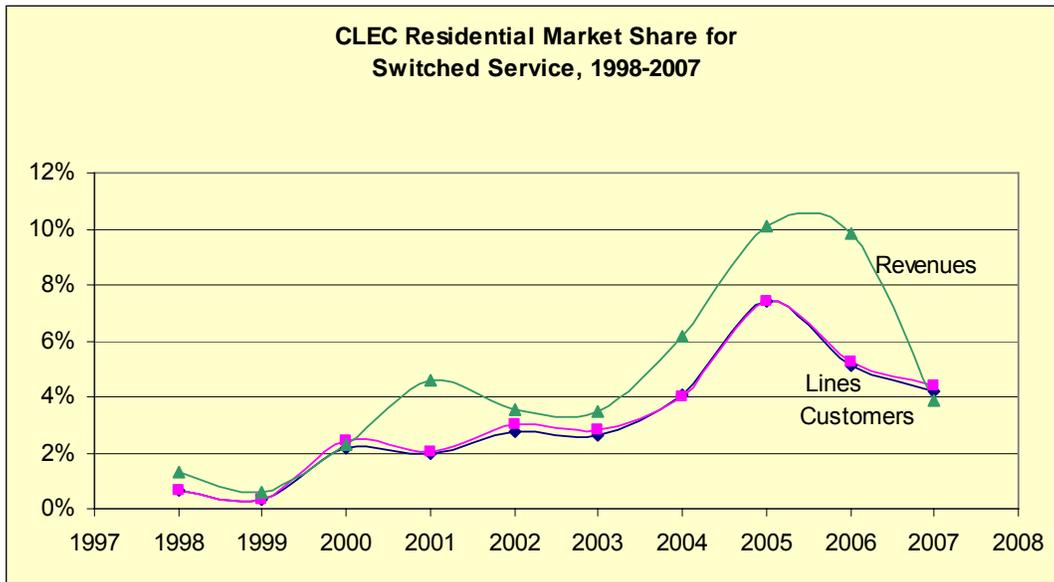
Figure 10. CLECs Growth in Switched Access Services – 1998 to 2007



CLECs' share of residential switched service revenue decreased by 24.6 percent in 2007. The primary reason is that a large phone company discontinued its switched service as of November 2007 and shifted the regulated switched wholesale services to the unregulated Voice over Internet Protocol (VoIP) service.

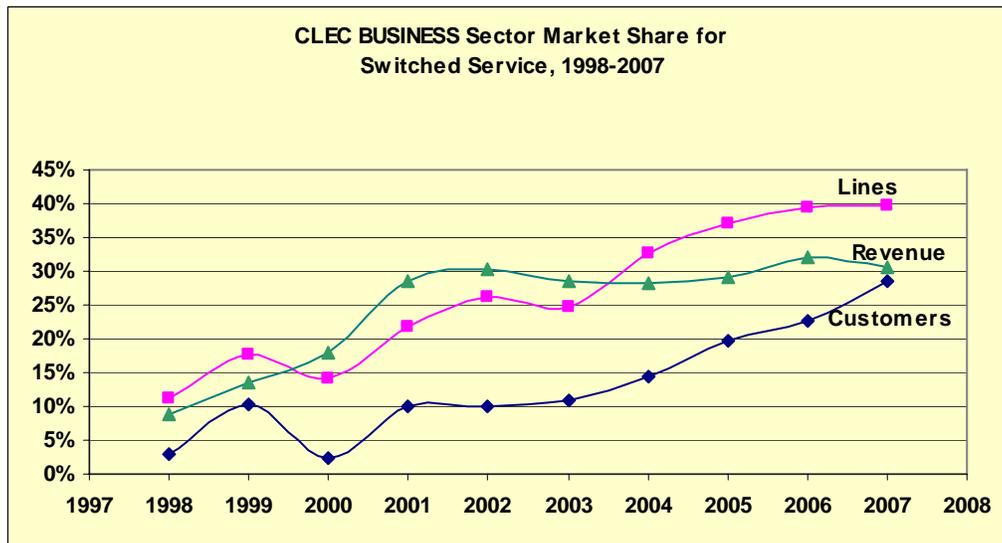
CLECs' share of residential switched service revenue was 4% in 2007, compared to 1.3% in 1998. Over the same period, CLEC's market share for both residential line numbers and customers increased to 4 percent from 0.7 percent 9 years ago. (See Figure 11)

Figure 11. CLECs Residential Market Share for Switched Service, 1998 to 2007



CLECs' share of business switched service revenue increased to 30.5 percent in 2007, from 8.9 percent 9 years ago in 1998. In the same period, the CLEC share of business lines increased to 39.6 percent from 11.1 percent. CLECs' share of business customers increased to 28.6 percent from 2.8 percent. (See Figure 12)

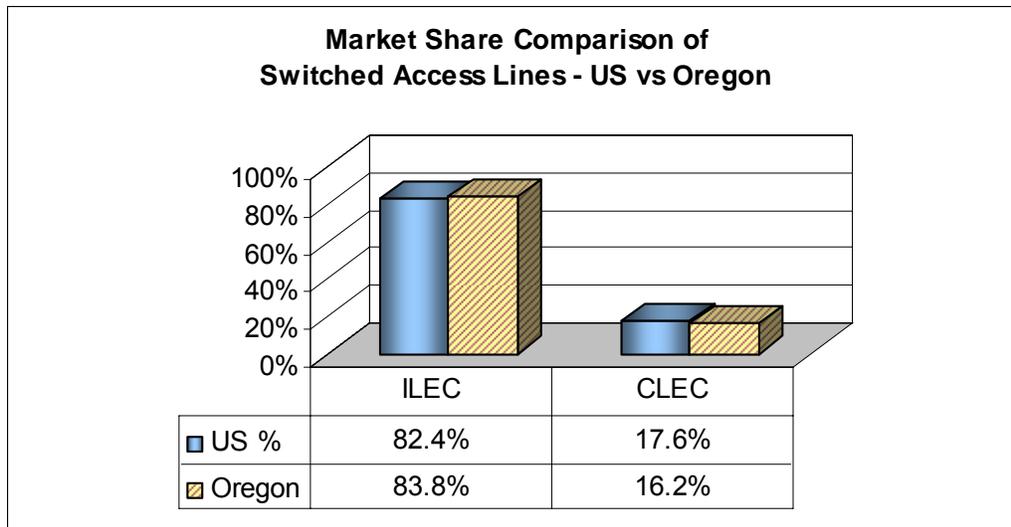
Figure 12. CLECs Business Market Share for Switched Service, 1998-2007



According to FCC News (March 20, 2008), as of June 30, 2007, the national US end-use customers obtained local telephone service by utilizing approximately 134.5 million ILEC switched access lines (82.4% of total LEC lines) and 28.7 million CLEC switched access lines (17.6% of total). By comparison, in Oregon, ILECs provided 83.8% of lines

and CLECs provide 16.2 percent of lines, about the same as the national average. (See Figure 13)

Figure 13. Market Share Comparison of Switched Access Lines - US vs. Oregon



V. High Speed Access Services

1. Market Size and Share

A. Private Line Service

Local exchange private lines are dedicated circuits that customers use to transmit information between two or more pre-selected locations within a telephone exchange. Local private line services vary in capacity. The survey distinguished between lower capacity circuits (speeds less than 1.544 Mbps) and higher capacity circuits (speeds at 1.544 Mbps or greater).

The revenue from private line services made up 5.5 percent of total service revenues, DSL was 12.8 percent, and switched services provided 81.7 percent.

Thirty-seven CLECs reported they provide local exchange private line services. These CLECs share of the private line market ranged from 4.3 percent for lower capacity circuits to 46.9 percent for revenue (see Table 9). The percentage depends on how market share is measured and whether the focus is on lower or higher capacity private line circuits. The survey measured CLEC market share in three ways: (1) customers, (2) circuits, and (3) revenues.

Table 9. Local Private Line Services

2007	All LECs	CLECs	ILECs	CLEC' Share
Customers	8,075	2,105	5,970	26.1%
Total Circuits	24,909	2,991	21,918	12.0%
Lower Capacity	18,838	803	18,035	4.3%
Higher Capacity	6,071	2,188	3,883	36.0%
Revenues Year - \$000	\$49,372	\$23,131	\$26,241	46.9%
Revenue\$ / Circuit - Year	\$1,982	\$7,733	\$1,197	390.2%

(1) The CLEC share of local private line customers⁵ was 26 percent, or 2,105 customers.⁶ The ILECs provided service to 5,970 customers, 74 percent of the total.

(2) The CLEC market share of all private line circuits⁷ was 12 percent. The CLEC market share of lower capacity circuits was 4.3 percent, while the CLEC market share

⁵ The survey defined private line "**customers**" as "persons or entities that had applied for, been accepted, and were receiving local exchange private line services for a price during the month. Customers include end users (i.e., retail customers) and other telecommunications carriers (i.e., wholesale customers)."

⁶ Note that survey results may overstate the CLECs' share of local private line customers, since local private line customers may buy private line services from more than one carrier at a time. As a result, a CLEC and an ILEC may report the same customer.

for higher capacity circuits was 36 percent. Total private line circuits, including lower and higher capacity circuits, numbered 24,909 in 2007.

Table 10. Private Line Service Revenues, 2007

2007	Total	ILECs	CLECs
Shares	100.0%	53.1%	46.9%
\$ Million/year	\$49.4	\$26.2	\$23.1

(3) The CLECs' share of total private line service revenues⁸ was 46.9 percent (see Table 10). Total revenues from private line services were an estimated \$49.4 million annually. Of the total estimated annual revenues, ILECs received \$23.1 million (53.1%), and CLECs the remaining \$26.2 million (46.9%). The CLECs' share of revenues was greater than their share of customers, indicating that the CLEC are targeting and serving larger customers.

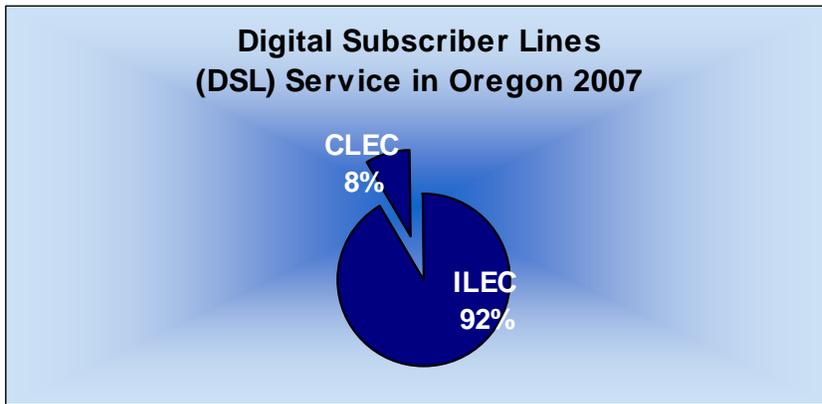
B. DSL Service

DSL is a technology that combines two way voice and data transmissions at very high speeds over normal telephone lines. Total number of DSL in Oregon in 2007 was 377,975, up 13 percent from 2006. Ninety-two (92%) percent of DSL was provided by ILECs and 8 percent was provided by CLECs (See Figure 14). Revenues from DSL were \$114.9 million in 2007, up 23 percent from 2006.

⁷ The survey defined "**circuits**" as circuit terminations a firm provides and bills to its customers. If a firm provides a circuit that connects two customer locations, and bills the customer for both ends of the circuit, two terminations were counted. The capacity of a circuit is determined by the capacity your firm delivers to the customer at the point of termination, even though the customer may further subdivide that capacity using its own multiplexing or other equipment.

⁸ The survey defined private line "**revenues**" as the amount a firm billed in December 2007 for local exchange private line services, whether billed in advance or arrears. This included regulated and non-regulated, federal and state charges. Exclude taxes that your firm billed to customers."

Figure 14. Oregon Digital Subscriber Lines (DSL)



2. CLEC Provisioning of Private Line Circuits

Nineteen (19) CLECs provided private line services by reselling ILEC services. Nine (9) CLECs provided private line service by reselling other CLEC services. Most of this resale was to business customers in the Portland metropolitan and Willamette Valley areas.

3. Market Trends in Local Private Line and DSL Services

Technological change is the driving force in the telecommunications industry. Many different technologies and types of networks can provide voice telephone service, with new ones arriving seemingly every year. The relatively narrow bandwidth of traditional modems is being replaced by much faster alternatives such as cable modems, digital subscriber lines (DSL), T-1 lines, satellites, fixed or mobile wireless, and fiber optic cable.

The percentage of Oregon consumers (residential and business) having high-speed digital access was 18.4 percent as measured by revenue. Oregon's 18.4 percent for high-speed access services consists of 5.5 percent private line service and 12.8 percent DSL services, plus 0.1 percent cable TV network in switched services.

VI. Market Segments by Region and Type of Service

The survey identified six geographic regions within Oregon. The regions are based on clusters of ILEC local exchange serving areas (see Figure 15). The regions are: (1) Portland Metropolitan,⁹ (2) Willamette Valley,¹⁰ (3) Southwest Interior,¹¹ (4) Coast,¹² (5) Central,¹³ and (6) East.¹⁴

⁹ "**Portland Metropolitan**" region consists of the following exchanges: Aurora, Beaver Creek, Beaverton, Burlington, Canby, Carlton, Charbonneau, Colton, Corbett, Estacada, Forest Grove, Gresham, Hillsboro, Hoodland, Lake Oswego, Molalla, Newberg, North Plains, Oak Grove/Milwaukie, Oregon City, Portland, Redland, Sandy, Scappoose, Scholls, Sherwood, Stafford, Sunnyside, Tigard, Vernonia, Woodburn/Hubbard, Yamhill.

¹⁰ "**Willamette Valley**" region consists of the following exchanges: Albany, Alsea, Amity, Aumsville/Turner, Bellfountain, Blodgett, Blue River, Brownsville, Clatskanie, Corvallis, Cottage Grove, Creswell, Dallas, Dayton, Deadwood, Detroit, Drain, Eugene/Springfield, Falls City, Gervais, Government Camp, Grand Island, Grand Ronde, Halsey, Harlan, Harrisburg, Horton, Independence/Monmouth, Jefferson, Junction City, Leaburg, Lebanon, Lobster Valley, Lowell, Lyons, Marcola, McMinnville, Mill City, Monitor, Monroe, Mt. Angel, Murphy/Provolt, Oakridge, Philomath, Ripplebrook, Salem, Scio, Shedd, Sheridan, Silverton, St. Helens, Rainier, St. Paul, Stayton, Summit, Sweet Home, Triangle Lake, Veneta, Willamina.

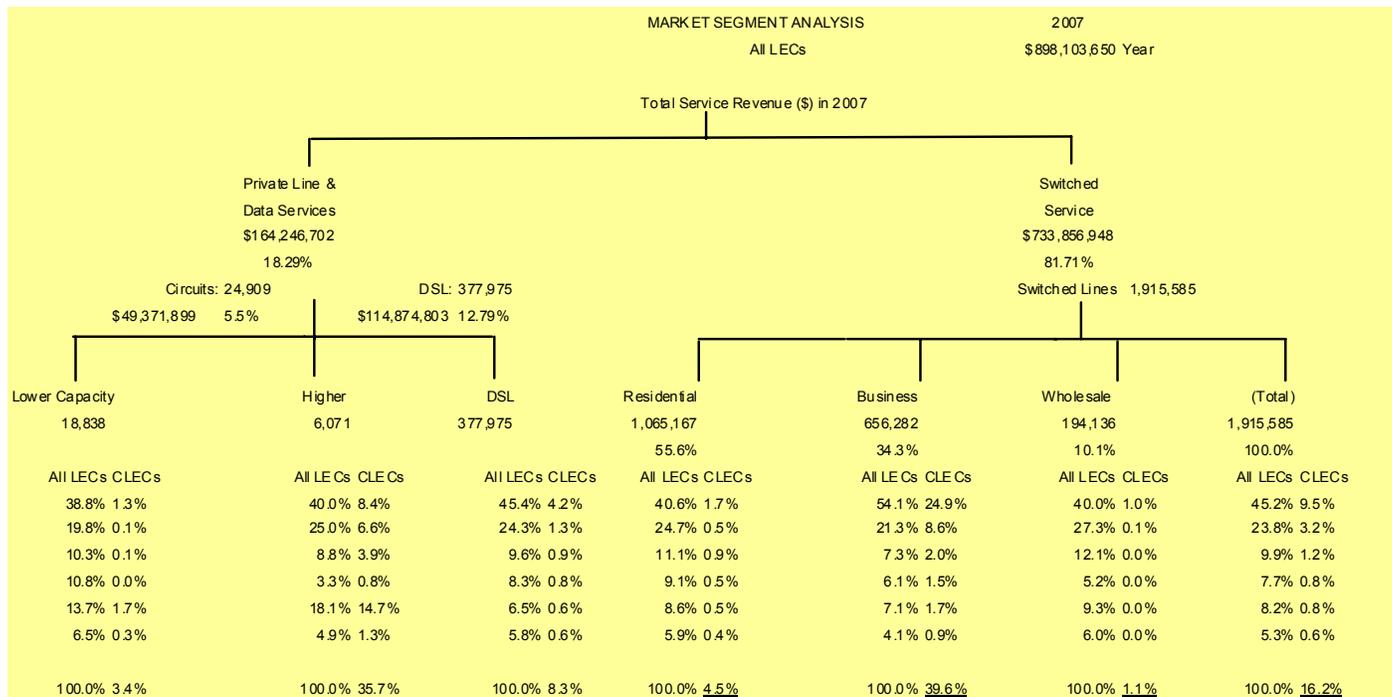
¹¹ "**Southwest Interior**" region consists of the following exchanges: Ashland, Azalea, Butte Falls, Camas Valley, Canyonville, Cave Junction, Central Point, Crater Lake, Days Creek, Diamond Lake, Elkton, Fish Lake, Glendale, Glide, Gold Hill, Grants Pass, Jacksonville, Medford, Myrtle Creek, North Umpqua, Oakland/Sutherlin, O'Brien, Phoenix/Talent, Prospect, Riddle, Selma, Shady Cove, Rogue River, Roseburg, White City, Wolf Creek, Yoncalla.

¹² "**Coast**" region consists of the following exchanges: Ash Valley, Astoria, Bandon, Bay City, Beaver, Brookings, Cannon Beach, Chitwood, Cloverdale, Coos Bay/North Bend, Coquille, Depoe Bay, Florence, Garibaldi, Gleneden Beach, Gold Beach, Jewell, Knappa, Lakeside, Langlois, Lincoln City, Mapleton, Myrtle Point, Nehalem, Newport, Pacific City, Port Orford, Powers, Reedsport, Rockaway, Scottsburg, Seaside, Siletz, South Beach, Tidewater, Tillamook, Toledo, Waldport, Warrenton, Westport, Yachats.

¹³ "**Central**" region consists of the following exchanges: Antelope, Arlington, Bend, Bonanza, Camp Sherman, Cascade Locks, Chemult, Chiloquin, Condon, Culver, Dufur, Fort Klamath, Fossil, Gilchrist, Grass Valley, Hood River, Klamath Falls, Lakeview, La Pine, Madras, Malin, Maupin, Merrill, Mitchell, Moro, Mosier, Mt. Hood Meadows, Odell, Paisley, Parkdale, Paulina, Pine Grove, Prineville, Redmond, Rocky Point, Rufus, Silver Lake, Sprague River, Sisters, The Dalles, Tygh Valley, Wamic, Wasco.

¹⁴ "**East**" region consists of the following exchanges: Adrian, Athena/Weston, Baker, Bates, Boardman, Burns, Cove, Dayville, Durkee, Echo, Elgin, Enterprise, Flora/Troy, Haines, Halfway, Harney, Helix, Heppner, Hereford/Unity, Hermiston, Huntington, Imbler, Ione, John Day, Jordan Valley, Joseph, La Grande, Lexington, Long Creek, Lostine, Meacham, Medical Springs, Milton-Freewater, Monument, Mt. Vernon, North Powder, Nyssa, Ontario, Oregon Slope, Pendleton, Pilot Rock, Prairie City, Richland, Ridgeview, Seneca, Spray, Stanfield, Starkey, Sumpter, Ukiah, Umatilla, Union, Vale, Walla Walla (Stateline), Wallowa.

Figure 15. Local Exchange Carriers Market Segments and Shares

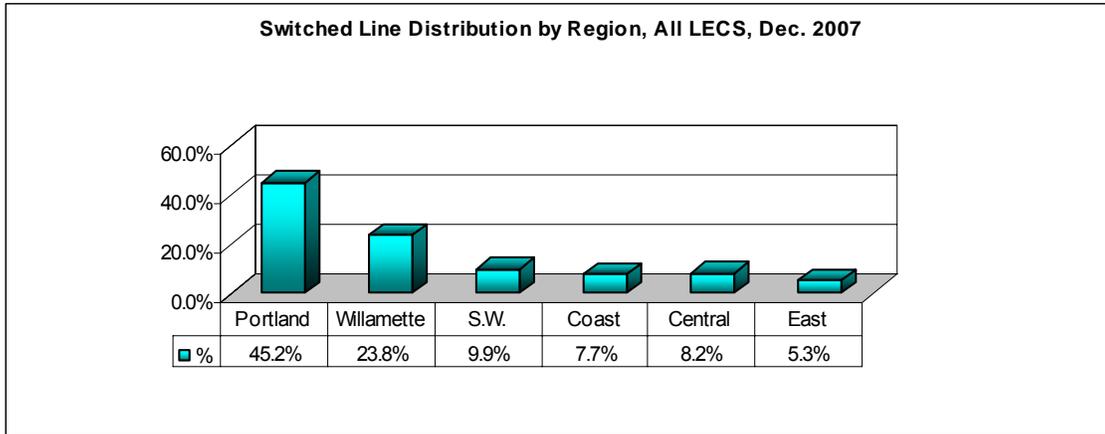


1. Market Segments by Regions

A. Switched Services by Region

The survey asked each LEC to report the number of switched local exchange lines it was supplying to customers in each region. Both ILECs and CLECs reported customers in all six regions. The Portland Metropolitan Region, the most populous area in the state, continues to be the largest regional market. It accounted for 45.2 percent (see Figure 16) of all retail local exchange switched lines in the state. Second was the Willamette Valley Region, with 23.8 percent of the lines. The other four regions accounted for less than a third of the state's lines: Southwest Interior (9.9%), Central (8.2%), Coast (7.7%), and East (5.3%).

Figure 16. Oregon All LECs Switched Lines by Region

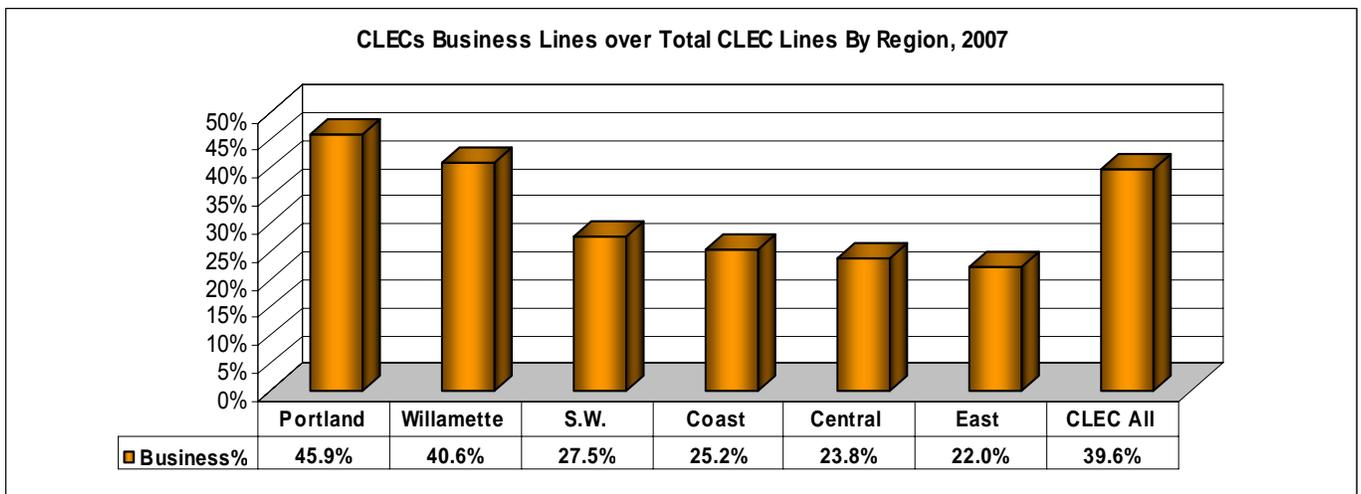


Survey responses indicate that CLECs were providing competitive local switched service in all six regions of the state. Competitive entry is highest in the Portland Metropolitan Region. Statewide, CLECs had a 16.2 percent share of switched local exchange lines. Fifty-nine (59%) percent of CLEC lines are in the Portland Metropolitan Region, followed by the Willamette Valley with 20.1 percent, then Southwest Interior (7.3%), Central (5.2%), Coast (5.0%) and the East (3.4%).

For the Residential sector, CLECs had 4.4 percent of lines in the State in 2007, and 37 percent of the CLEC residential lines were in the Portland Metro Region.

In the Business sector, CLECs had 39.6 percent of lines in the State, and 59.0 percent of all CLEC business lines were in the Portland Metro Region (see Figure 17).

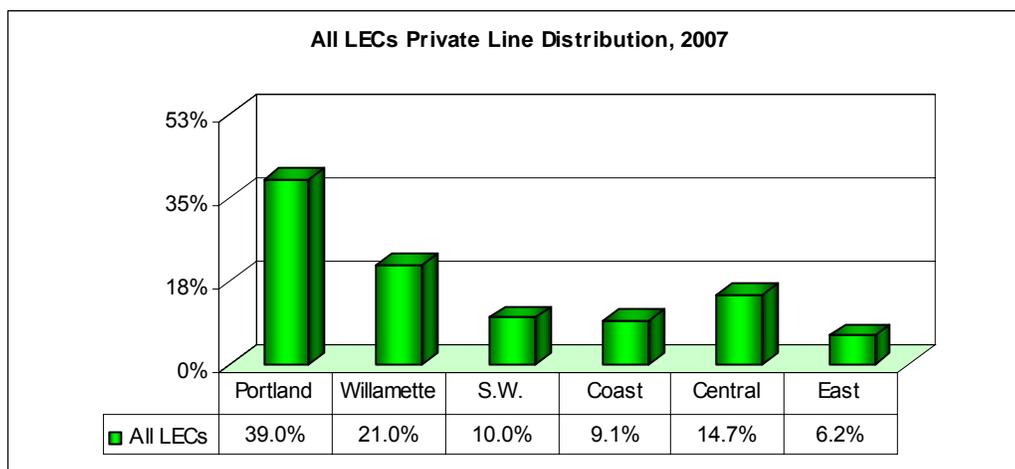
Figure 17. CLECs Business Lines over Total CLEC Lines by Region



B. Private Line Service by Region

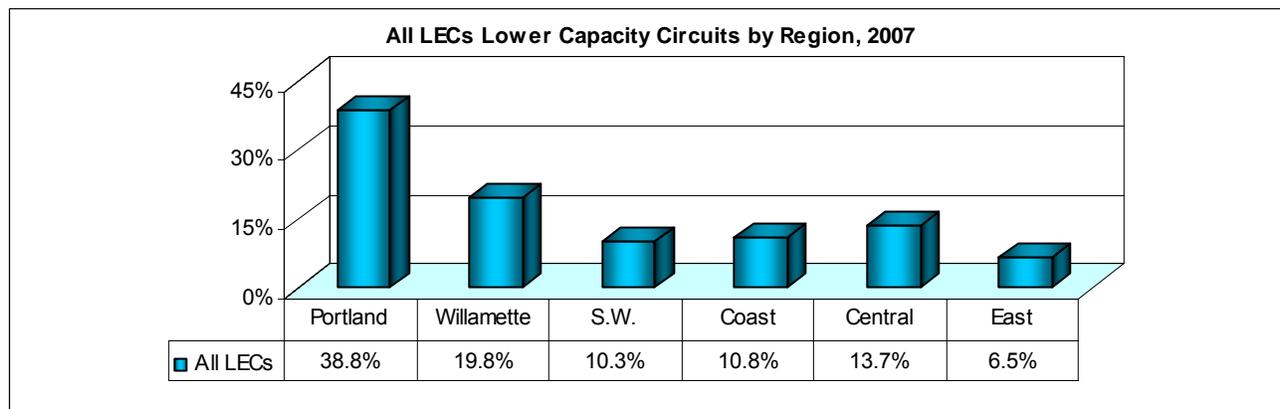
The Portland Metropolitan Region is the largest regional private line market, with 39 percent (see Figure 18) of all retail private line circuits in the state. The second largest was the Willamette Valley, with 21 percent of circuits. The other four regions together accounted for 40 percent of the state's circuits: Central (14.7%), Southwest Interior (10%), East (6.2%), and Coast (9.1%).

Figure 18. Oregon Private Line Service by Region - Dec. 2007



Lower Capacity Circuits: Of the state's 24,909 local exchange private line circuits, most (75.6 percent) were in the lower capacity category. The Portland Metropolitan Region was the largest market for lower capacity circuits, with 38.8 percent (see Figure 19) of the lower capacity circuits in the state. The second largest market was the Willamette Valley with 19.8 percent of lower capacity circuits, followed by Central (13.7%), Coast (10.8%), Southwest Interior (10.3%), and East (6.5%).

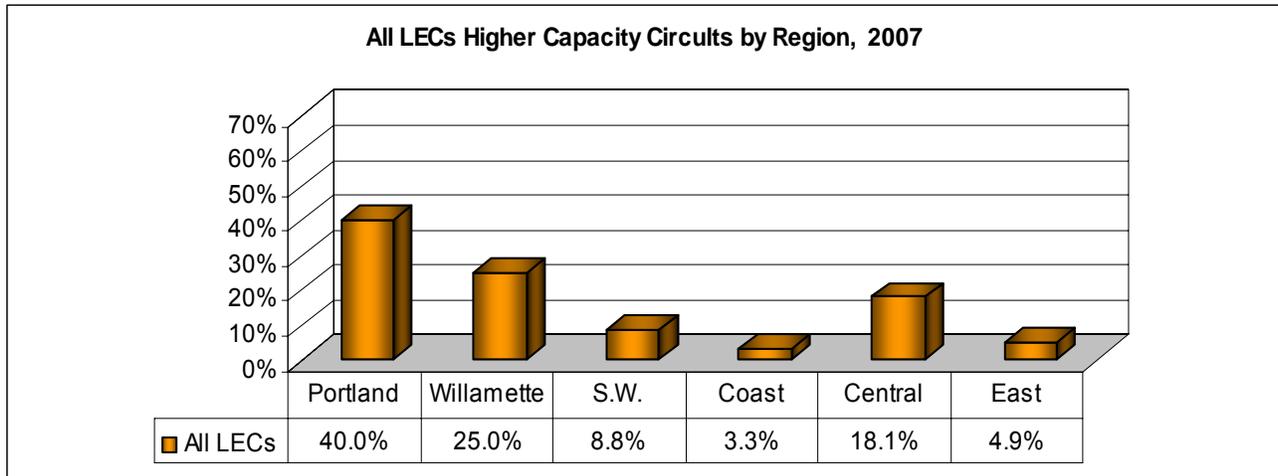
Figure 19. Oregon Lower Capacity Circuits Distribution by Regions - Dec. 2007



The CLECs' share of lower capacity circuits was 4.3 percent statewide. Higher capacity circuits accounted for 36 percent of the state's total private line circuits. In December

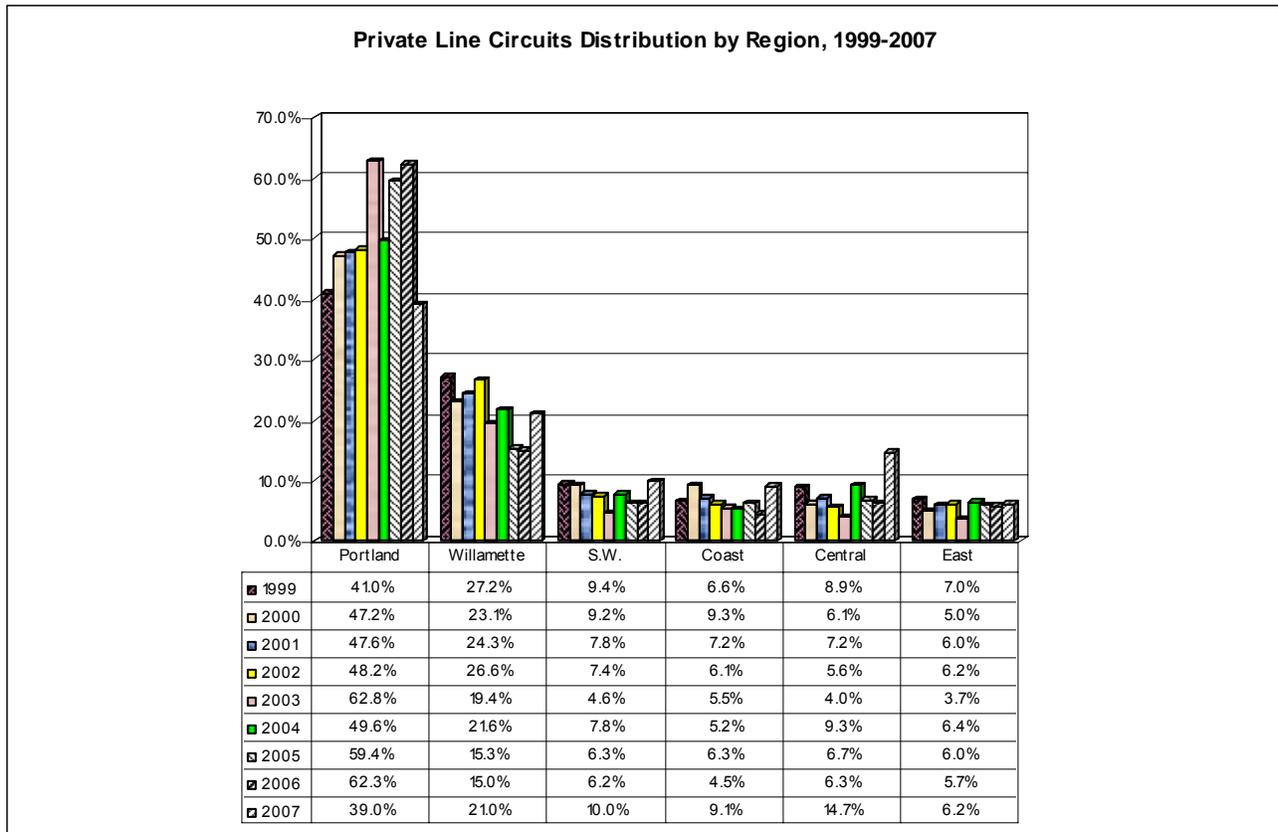
2007, the market for higher capacity circuits was concentrated in the Portland Metropolitan Region, with 40 percent (see Figure 20). The remaining five regions have 60 percent of higher capacity circuits.

Figure 20. Oregon Higher Capacity Circuits Distribution by Regions - Dec. 2007



CLECs' share of higher capacity circuits was 36 percent statewide. The regional distribution of private lines has not changed much over the last several years as indicated in Figure 21. Of all private line circuits, 40% were in the Portland Metro Region in 2007 (Figure 20).

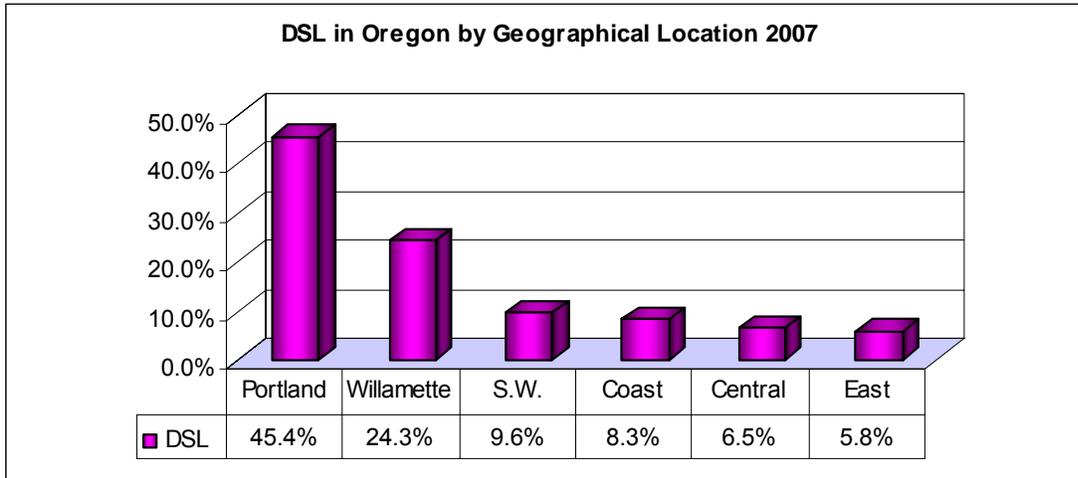
Figure 21. Private Line Circuits Distribution, 1999 to 2007



C. DSL Service by Region

During the year 2007, DSL (refers to all types of digital subscriber lines) service was provided by 377,975 lines and generated \$114.9 million in revenue. Of all DSL, 45.4 percent was in the Portland Metropolitan Region (see Figure 22), followed by Willamette Valley (24.3%), Southwest Interior (9.6%), Coast (8.3%), Central (6.5%) and East (5.8%).

Figure 22. DSL in Oregon by Geographical Location

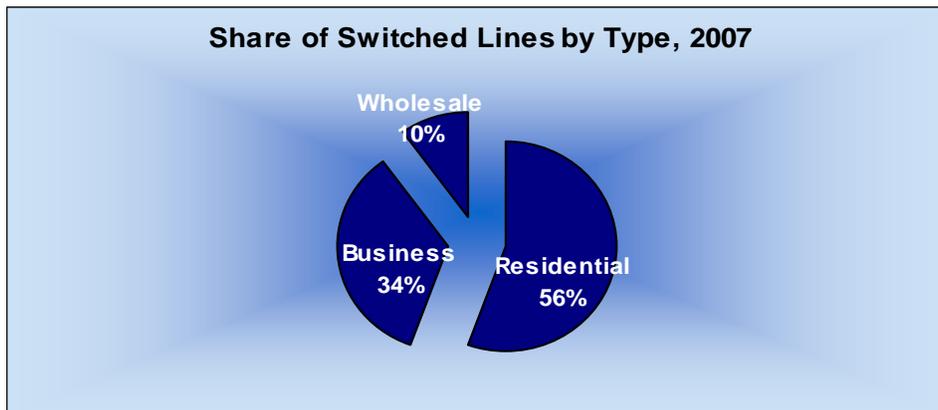


2. Market Segments by Type of Service

A. Switched Services

The survey grouped customers into three sectors: residential, business, and wholesale. Fifty-six percent of switched service lines were in the residential sector, 34 percent were business lines, and 10 percent were wholesale (see Figure 23).

Figure 23. Oregon Switched Service Lines by Types

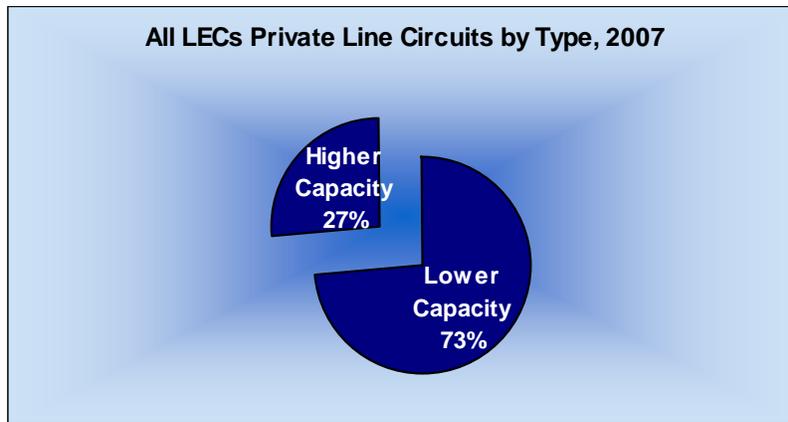


B. Private Line

A private line is a dedicated, non-switched link from one or more customer-specified locations to one or more customer-specified locations. A circuit is a complete electrical path providing one- or two-way communication between two points comprised of associated send and receive channels. Capacity is determined by the highest data

transmission rate in either direction. Figure 24 shows that 73 percent of private line circuits were lower capacity, and that 27 percent were higher capacity.

Figure 24. Oregon Private Line Circuits by Types



C. DSL

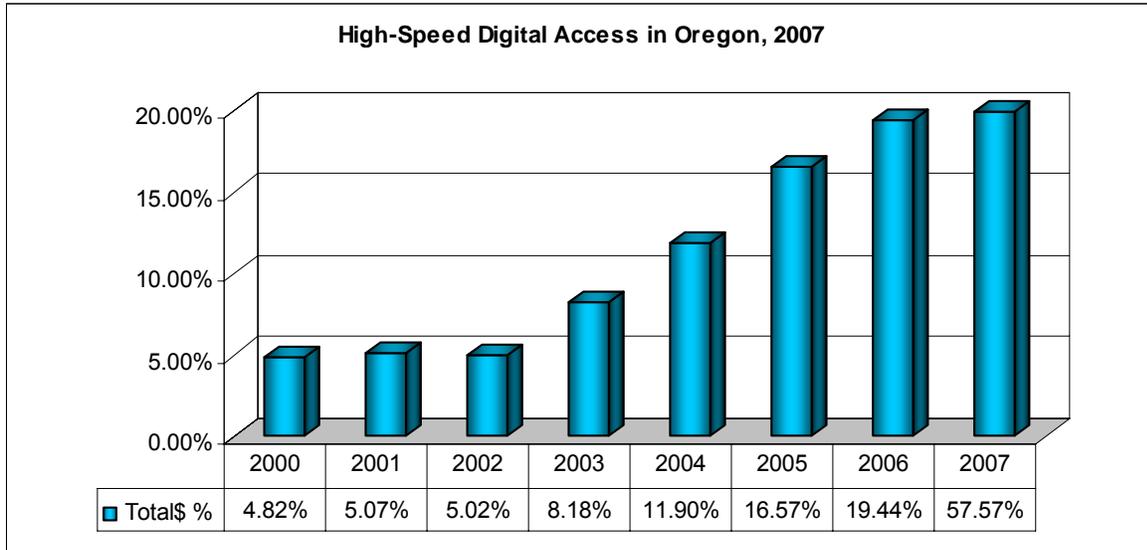
DSL service was provided on 377,975 residential and business lines and accounted for \$114.9 million of revenue. The DSL revenue per month was \$25.33/line.

Total High-Speed Digital Access in Oregon

High-speed digital access accounted for 18.3 percent of total LEC revenue in 2007. This was an increase from 19.4 percent in 2006. The 18.3 percent revenue figure for high-speed access services consists of 5.5 percent from private line services, 12.8 percent from DSL- Digital Subscriber Line, and 0.15 percent cable TV network in switched services.

High-speed digital access used to be a dream for most Oregonians: In 2000, about 4.8 percent of Oregon consumers (residential and business) had any type of speedy Internet hookup. This was comparable to the nationwide penetration of less than 5 percent in late 2000. The market share of high-speed digital access was low because of its availability in Oregon. Seven years later, the high-speed digital access penetration in Oregon increased to nearly 20 percent (see Figure 25 below).

Figure 25. Trend of High-Speed Digital Access in Oregon



VII. Business Plans and Competition

1. Capital Expenditures

Capital Expenditure is the money spent to acquire or upgrade physical assets such as switches and fiber optic cable. The survey asked for information on investment in capital assets (plant and equipment). Capital expenditures for local exchange service in Oregon were estimated at \$135.8 million, which was 15.1 percent of total revenue (\$898.1 million). (See Table 11)

Of the 231 certified CLECs, 153 reported some level of capital expenditures in 2007, with 74 percent (110 of 148) having made capital expenditure of less than \$10,000. Total CLEC capital expenditures were \$52 million. CLECs' capital investment represented 31.4 percent of CLECs' revenue (\$165 million).

All 34 certified ILECs reported having made some capital expenditures in 2007. Total ILEC capital expenditures were \$114 million. ILECs' capital investment represented 15 percent of ILECs' revenue (\$747 million).

Table 11. Capital Expenditures for Local Exchange Service In 2007

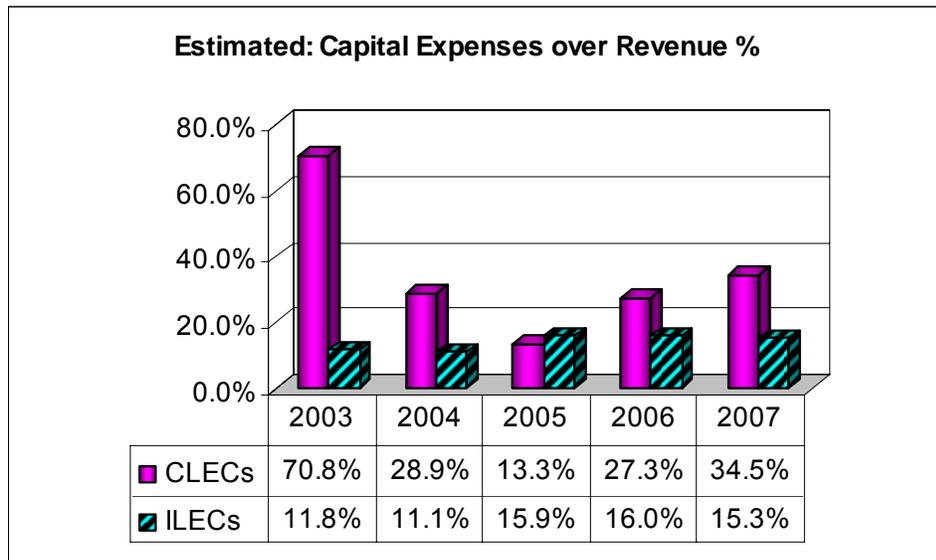
Capital Expenditures	ILECs	CLECs	All LECs
Less than \$10,000	0	110	110
\$10,000-50,000	3	6	9
\$50,001-100,000	4	6	10
\$100,001-1,000,000	12	16	28
\$1,000,001-10,000,000	11	10	21
More than \$10,000,000	4	0	4
# of LECs had Capital Expenses	34	148	182
Estimated Expenses (\$million)	\$114	\$52	\$166
Revenues (\$million)	\$742	\$183	\$925
Investment / Revenue (%)	15.4%	28.3%	17.9%

With the FCC rulings in 2005 regarding ending UNE-P, CLECs are faced with the difficult challenge of how to remain competitive, and as a result, the local service may be transferring back to the ILECs. Ex-FCC Chairman, Mike Powell, has made it clear that he thinks the only real, lasting competition has to be facilities-based. He would like to see both CLECs and ILECs invest more in the nation's networks.

The ILECs used to say that they don't want to invest aggressively if they have to wholesale new networks to the competitors at high discounts, and argue that the end of UNE-P could stimulate an increase in CLECs building their own networks.

Figure 26 shows the estimated percentage of capital expenses over revenues. For example, in year end 2003 from our survey, 70.8% of CLEC's Oregon revenue was used for its capital expenditures for local exchange service (not wireless or long distance services). 11.8% of ILEC's Oregon revenue was used for its capital expenditures. At the year-end 2005, CLEC's expenditure/revenue rate dropped to 13%, and ILEC's rate increased to 15.8% over the same period. For 2006 and 2007, CLEC's investment increased to 27% and 34% respectively, but ILECs were staying the same rate of 15-16% for the past 3 years.

Figure 26. Estimated: Capital Expenses over Revenue %



In Oregon, we can see that true competition resides in facilities-based carriers, not pure resellers. Now, after two years of FCC ruling regarding ending UNE-P:

(1) Has ILECs invested more after they end wholesaling new networks to the competitors at high discounts? Not yet. (2) Has end of UNE-P stimulated an increase in CLECs building their own networks? Not yet either.

2. Competition for Residential Market

The survey asked all local exchange carriers, "What do you believe are the reasons that you do not have a bigger share of Oregon's residential market (check all that apply)?" Out of 34 ILECs, 15 companies noted that cell phone usage has decreased the demand for wireline and second-line services (see Table 12), and 10 ILECs said they were restrained by geographical location, which made residential competition difficult or expensive.

Out of 184 responding CLECs, 29 said they could not compete on price (compared to 38 the previous year), 23 said they could not compete on facilities, 12 said that the incumbent local exchange carrier has name familiarity, and 17 said that they did not have enough capacity. Since CLECs' operations focus principally on business customers, only 16 companies responded that cell phone usage has decreased the demand for residential wireline and second-line services, and 18 CLECs considered that geographic location made residential competition difficult or expensive. The percentage of responding CLECs identifying each of the above reasons for not having a higher share of the residential market has remained about the same over the six-year period that the question has been asked.

Table 12. Residential Market Competition, 2007

Reasons	# of ILECs	# of CLECs
Cannot compete on price	2	29
Cannot compete on facilities	0	23
ILEC has name familiarity	0	12
Do not have enough capacity	1	17
Cell phone decreased the wireline demand	15	16
Hard to compete due to location	10	18
Other (explain):	12	81

Of the 81 CLECs who checked the option "other," most focused their activity on business customers or did not provide residential local exchange service in 2007. However, some of these 81 CLECs who checked "other," provided reasons why they did not have a bigger share of Oregon's residential market. The respondents' comments were as follows:

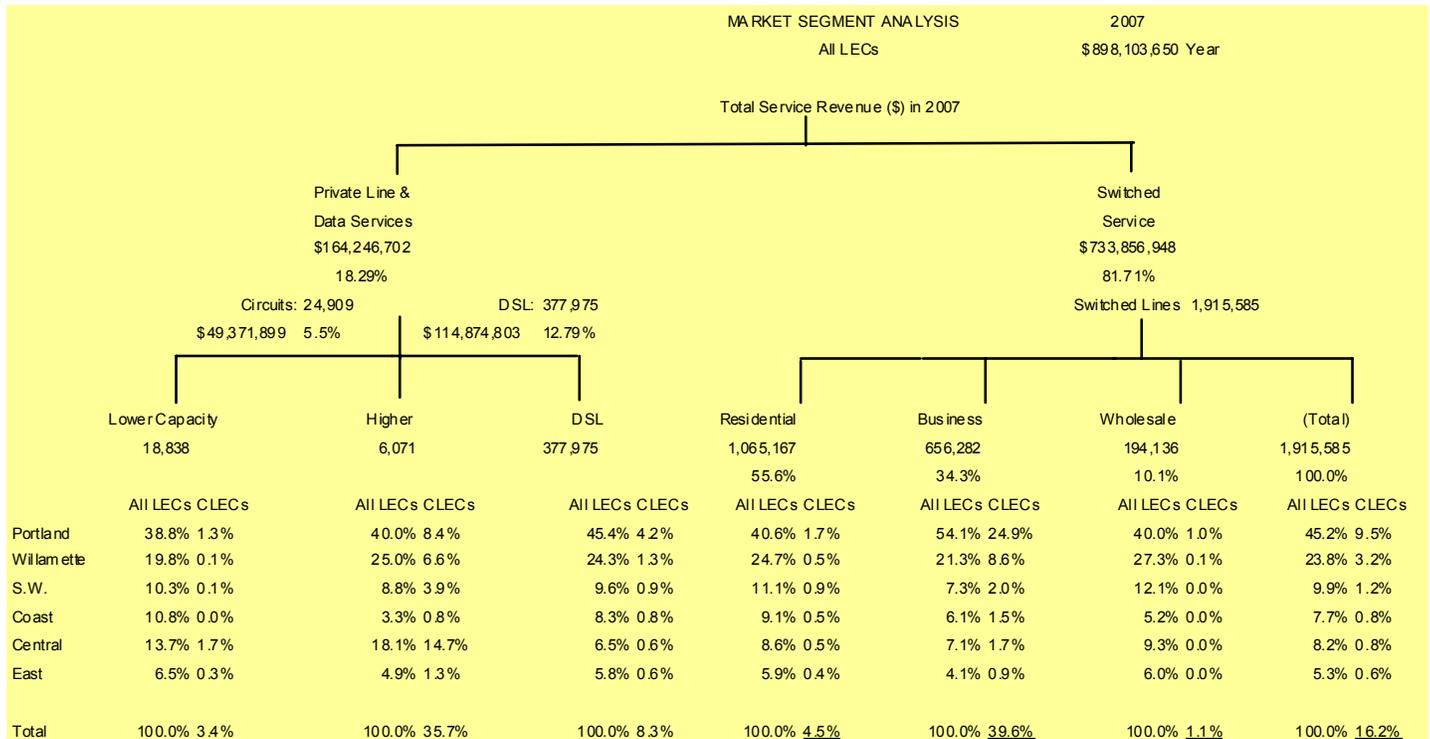
- Does not provide residential local exchange service because of the "Complex Franchise Requirements & Excessive Property Taxation".
- Does not provide residential local exchange service because of "Too many competitions in Major Markets and Cell Phone Competition which does not pay Local Access".
- Does not provide residential local exchange service because of "Excessive cost of facilities purchased from ILECs and Restricted access rates allowed to charge."
- Does not provide residential local exchange service because "LEC's make it hard for customers to switch. Failed orders & dropped balls seem rather odd at times. They also call clients we have converted save them expense. The ILECS offer better rates than the ILECS originally were charging and better than we can. If they wanted the customer, they should have given the customer better pricing up front rather than after move. Seems predatory, and against their own resellers!"
- Does not provide residential local exchange service because the cost to deploy fiber and high speed copper services is very high due to the lack of dark fiber availability from Qwest. FCC rulings which resulted in the loss of dark fiber were very detrimental to high speed availability for home and business from competitive prodders.
- Does not provide residential local exchange service because of the UNE rates
- Company ceased provision of local services because UNE-P price increases adversely affected our ability to competitively price our offerings.
- The Company will no longer be competing for residential local and standalone long distance (LD) customers.

- Not interested in serving Oregon's residential market; only interested in broadband service within the City of Sandy.
- Currently leasing dark fiber to other providers/customers.
- Company provides DSL and VoIP services to wholesales who provide end-user services to their customers.
- Company provides VoIP services direction to business customers.
- Company has not begun offering services in Oregon.
- Our market focus is business only.
- Does not provide residential local exchange service because of the "Complex Franchise Requirements".

VIII. Conclusion

In 2007 Oregon's local telecommunications market was an \$898 million industry, comprised of 1.92 million switched lines, 24,909 private line circuits and 377,975 DSL. Industry wide revenues decreased \$27 million from 2006. However, the number of switched lines served is now lower than when this survey was first taken in 1998, reflecting the competitive impact from the cellular phone, cable, and high-speed internet access services. See summary Figure below.

Figure 15. Local Exchange Carriers Market Segments and Shares



Competitive entry has leveled off over the last few years and the local telecommunications markets remain dominated by the incumbent providers, with competitors accounting for 16.2 percent of local exchange switched access lines. CLECs' share of exchange lines in the residential market was 4.4 percent in 2007. There does not appear to be sufficient incentives for CLECs to compete with ILECs on a broad scale in the local residential market. CLECs had captured 39.6 percent (up from 39.4% the year before) of the business lines by the end of 2007, indicating the larger margins available in that market sector.

High-speed digital access accounted for 18.3 percent of total LEC revenue in 2007. This was an increase from 19.5 percent in 2006. The 18.3 percent revenue figure for high-speed access services consists of 5.5 percent from private line services, 12.8 percent from DSL- Digital Subscriber Line, and 0.15 percent cable TV network in switched services.

Capital expenditures in support of local exchange service in Oregon in 2007 were estimated at \$165.9 million, which was 18.5 percent of total revenue (\$898 million). Capital investment by ILECs represented 15.3 percent of revenue, while CLECs spent 34.5 percent of revenue on capital investment.

In the residential local exchange market, 29 CLECs said they could not compete with the ILECs on price, 23 thought they could not compete on facilities, 12 believed that the incumbent carrier's name familiarity was a barrier, 17 answered that they did not have enough capacity, 16 responded that cell phone usage has decreased the demand for residential wireline and second-line services, and 18 considered that geographic location made residential competition difficult or expensive.

Out of 34 ILECs, 15 noted that increased cell phone usage has decreased the demand for wireline and second-line services, and 10 ILECs were restrained by the geographical location, which made residential competition difficult or expensive.

While the CLECs had a small percentage of the overall market, they achieved a significant presence in specific market segments. CLECs provided 39.6 percent of switched business lines. The predominant form of CLEC competitive entry was resale. Highest CLEC market concentration as of December 2007 was in the Portland Metropolitan Region, where CLECs provide 45.9 percent of the business lines.

CLECs have a small share of the Residential market at 4.4 percent. It was about the same as 2004 level. CLEC residential lines were increased from 0.7 percent in 1998 to 4.4 percent in 2007.

Finally, revenues from DSL service increased by 23 percent in 2007. The number of DSL was increased by 13 percent.

With the FCC rulings in 2005 regarding ending the requirement to provide UNE-P, CLECs are faced with the difficult challenge of how to remain competitive. Since then, with the unavailability to purchase at a discount the ILECs network facilities, it appears that the CLECs have not made significant network investments to build their own networks.

Note, new technologies have a significant impact on current telecom market, they introduce products with highly improved new features into the market and most often replaces the traditional telephony. However, our survey indicated that to avoid risks, the traditional wireline companies were quickly moving into Internet-based services. A large phone company in Oregon discontinued its switched service and shifted the regulated switched wholesale services to the unregulated Voice over Internet Protocol (VoIP) service. Therefore, the line number and revenue in the switched access service decreased from this survey, but the company's revenue in unregulated service increased which was not included in the survey.