CHAPTER 3: COMPETITION IN THE LATE 1990S

The time was ripe for market forces to assert themselves in the Texas local telephone service market in the late 1990s. As discussed in Chapters 1 and 2, the Texas Legislature, Congress, and the Commission successfully laid the groundwork for competitive access to local exchange service in Texas over the last several years. This chapter examines how CLECs responded to this new opportunity.

As of December 31, 2000, a total of 432 carriers had been granted COAs or SPCOAs from the Commission. A company that obtains either of these certificates is considered a competitive local exchange company (CLEC). Qualifying for and obtaining either certificate is the minimum action that every CLEC must take to be allowed to provide local exchange service in Texas. While 311 of the carriers currently certificated to provide competitive local exchange service in Texas obtained their certificates by December 31, 1999, the period for which the Commission requested operations data for this report, many of these CLECs did not yet have customers. Many other CLECs were small with limited financial resources, so a simple review of the number of CLECs in Texas does not give a complete picture of the competitive choices available to customers in various geographic regions of the state.

This chapter presents snapshots of the statewide market penetration of CLECs in the late 1990s and discusses the factors involved in competitive local exchange service across the various regions of Texas. A data collection instrument was designed to capture the different means of entering the service territories of ILECs: reselling telephone services, leasing UNEs, or building new plant and equipment. The Commission's ability to collect data for this report from telecommunications providers in the emerging competitive market was limited due to increasing concern among providers about the confidentiality of competitively sensitive information.[40] To obtain information from providers for this report, the Commission allowed for aggregation of data among providers and across regional areas, which limits the extent to which analysis can be achieved. Appendix H discusses the data collection instrument and the information it requested from ILECs and CLECs.

In order to capture the spread of competition across the various areas of Texas, the Commission developed a data collection instrument that would capture the

[40] A recent Attorney General letter ruling and other judicial decisions and legislative changes have heightened the reluctance on the part of private companies to provide confidential information to public agencies. The fact that the Commission received data replies from only 128 of the 311 companies certificated to provide service during the period in question is attributable in significant part to the concerns about the confidentiality of data. These concerns, and the Commission's interest, are discussed in Legislative Recommendation No. 2 in Chapter 7 of this report.

differences in the market penetration of CLECs between urban and rural areas of Texas and highlight any differences within Rural Texas.[41] Because Texas is a very diverse state, CLECs will not be entering all markets with the same vigor. The data show that CLECs focused on the Large Metro and Suburban areas of Texas in 1998 and 1999.

Availability of Local Service Competitors

There are a number of perspectives from which to evaluate the availability of competitive providers for local exchange service. Each vantage point has its limits, but together they offer a comprehensive view.

TEXAS: MORE COMPETITORS THAN OTHER STATES

At the end of 1999, Texas tied with only New York to lead the nation in number of providers, according to the FCC report, *Local Telephone Competition in the New Millennium.*[42] The FCC based its analysis on information reported by ILECs and CLECs (only those carriers serving at least 10,000 lines in a state were required to report). The state-by-state comparison is shown in Table 1. Texas and New York had at least 21 CLECs providing service, while most states reported fewer than ten CLECs.

[41] Commission staff designed the categories of data requested to show the level and growth of competition in 69 areas of Texas distinguished by level of population and geographic location. A socioeconomic profile of the various regions of Texas used for the analysis of the data in this report can be found in Appendix I.

[42] *Local Telephone Competition in the New Millennium,* Federal Communications Commission, Common Carrier Bureau, Industry Analysis Division, August 2000.

Table 1 – Number of Reporting Local Exchange Carriers: Year-End 1999

State	ILECs	CLECs	Total
Alabama	9	4	13
Alaska	4	2	6
Arizona	2	8	10
Arkansas	5	1	6
California	9	17	26
Colorado	4	7	11
Connecticut	2	5	7
Delaware	1	1	2
District of Columbia	1	5	6
Florida	8	17	25
Georgia	15	13	28
Hawaii	1	2	3
Idaho	3	0	3
Illinois	6	13	19
Indiana	7	7	14
Iowa	6	3	9
Kansas	5	2	7
Kentucky	12	4	16
Louisiana	5	6	11
Maine	5	2	7
Maryland	1	4	5
Massachusetts	1	9	10
Michigan	6	5	11
Minnesota	17	10	27
Mississippi	4	4	8
Missouri	6	5	11
Montana	7	2	9
Nebraska	6	1	7
Nevada	5	3	8
New Hampshire	5	2	7
New Jersey	3	8	11
New Mexico	3	2	5
New York	9	21	30
North Carolina	14	8	22
North Dakota	7	2	9
Ohio	9	10	19
Oklahoma	9	2	11
Oregon	8	6	14
Pennsylvania	11	13	24
Puerto Rico	1	0	1
Rhode Island	1	1	2
South Carolina	14	1	15
South Dakota	6	2	8
Tennessee	14	7	21
TEXAS	**15**	**21**	**36**
Utah	3	2	5
Vermont	4	1	5
Virginia	7	7	14
Washington	9	9	18
West Virginia	2	1	3
Wisconsin	10	8	18
Wyoming	2	1	3
Nationwide – Total without duplication**	168	81	249

* Each report represents all of a company's operations in a given state. Carriers with both ILEC and CLEC operations in the same state provide separate reports.

**Not column totals; numbers represent total number of carriers nationwide (some operate in more than one state).

NUMBERS OF COMPETITORS BY CITY

The HB 1777 Data Collection Instrument

The Commission has available a new source of data that is precise in comparing the actual number of choices for similar service a customer has in a given locale. These data are that which must be reported by cities on a quarterly basis in order to comply with HB 1777 (relating to a uniform method for compensating municipalities for obtaining right-of-way access).[43] This data set reveals which providers are providing service in a given Texas municipality in the following service category groupings:

- **Residential Services**: analog and/or digital residential switched access lines, including point-to-point private lines, whether residential or non-residential, only to the extent such lines provide burglar alarm or other similar security services.
- **Business Services**: analog and digital non-residential switched access lines.
- **Point-to-point (Data) Services**: all other point-to-point private lines, whether residential or non-residential, that are not otherwise included within the residential service category.

For the purposes of complying with HB 1777, a telecommunications provider must report the number of lines it provides in each of the three categories above in each city it serves. The basis for counting the number of choices customers have in a given city for purposes of creating the maps in Figures 1-3 was to count the number of providers reporting the above data in that city. In other words, a provider reporting that it provides some services in the residential services category to at least some lines in a town is assumed to be one of the total number of providers operating in that town. The data reported from 1,222 cities supply the data points that are used to make each map.

[43] LOC. GOV'T. CODE ANN. §§ 283.001-283.058 (Vernon 1999 and Supp. 2000).

Geographic Distribution of Providers, by Type of Service

Residential Services

In Figure 1, which maps CLECs that offer residential services, note that all small circles, or "zeroes," indicate town locations where there is no choice available for an alternative provider of residential services. The open triangles indicate towns where there is a small range of choices available. The gray shaded areas indicate towns where the number of providers is sufficient to offer a chance of competitive choice. The black circles indicate towns where there is an abundant choice of providers for residential services. As the map indicates, competition has clustered in population centers and in East Texas.

Business Services

An examination of the corresponding data for business in Figure 2 shows that the competition clusters in similar areas, but the providers are not as numerous.

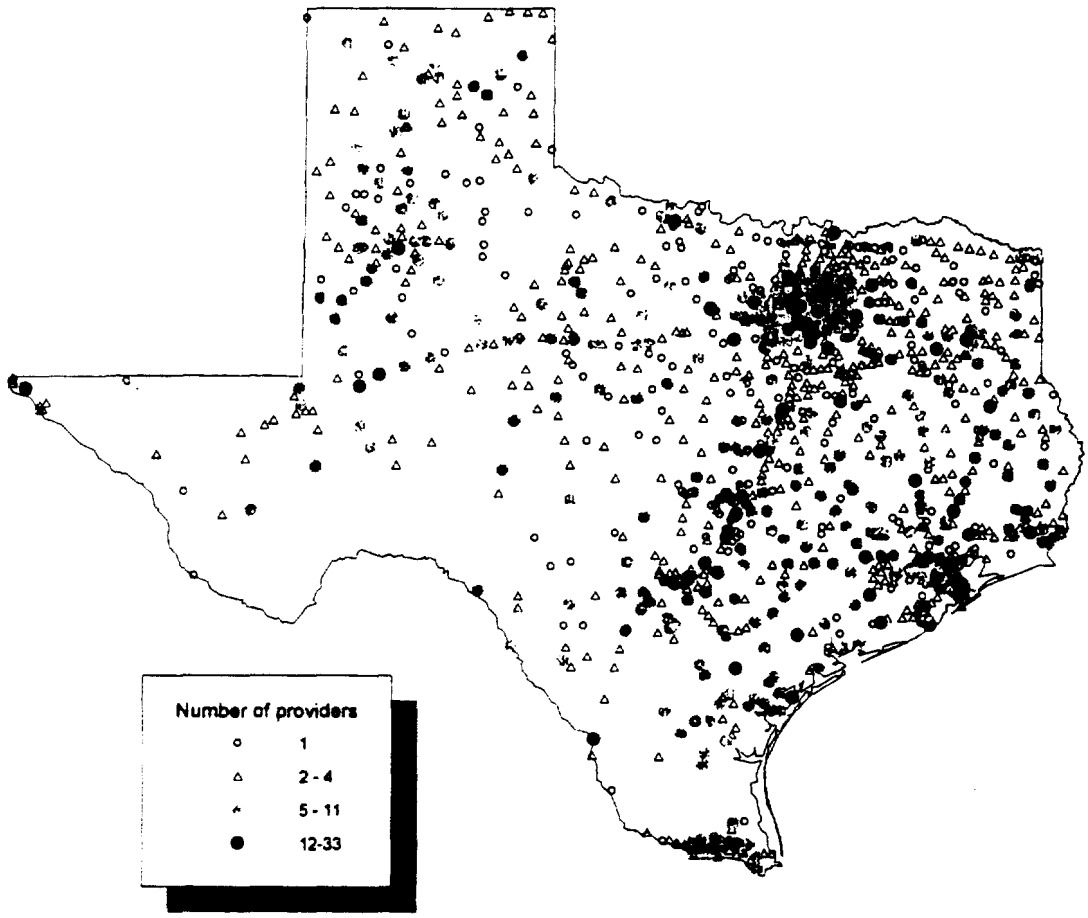
Point-to-Point Services

Data services, though not a big part of the telecommunications market in the past, will be increasingly important to telecommunications providers and customers. According to a study by J. P. Morgan Securities, data services nationwide will grow from $31.4 million in 1999 to a projected $90.9 million in 2005.[44] The demand for data services likely will be centered in high-density, higher income areas of Texas, where many CLECs have focused their efforts in the past two years, as shown in Figure 3.

The results of the HB 1777 data collection instrument show that customers have a good selection of data services providers in Houston, Dallas, Austin, San Antonio and, to a lesser extent, East Texas.

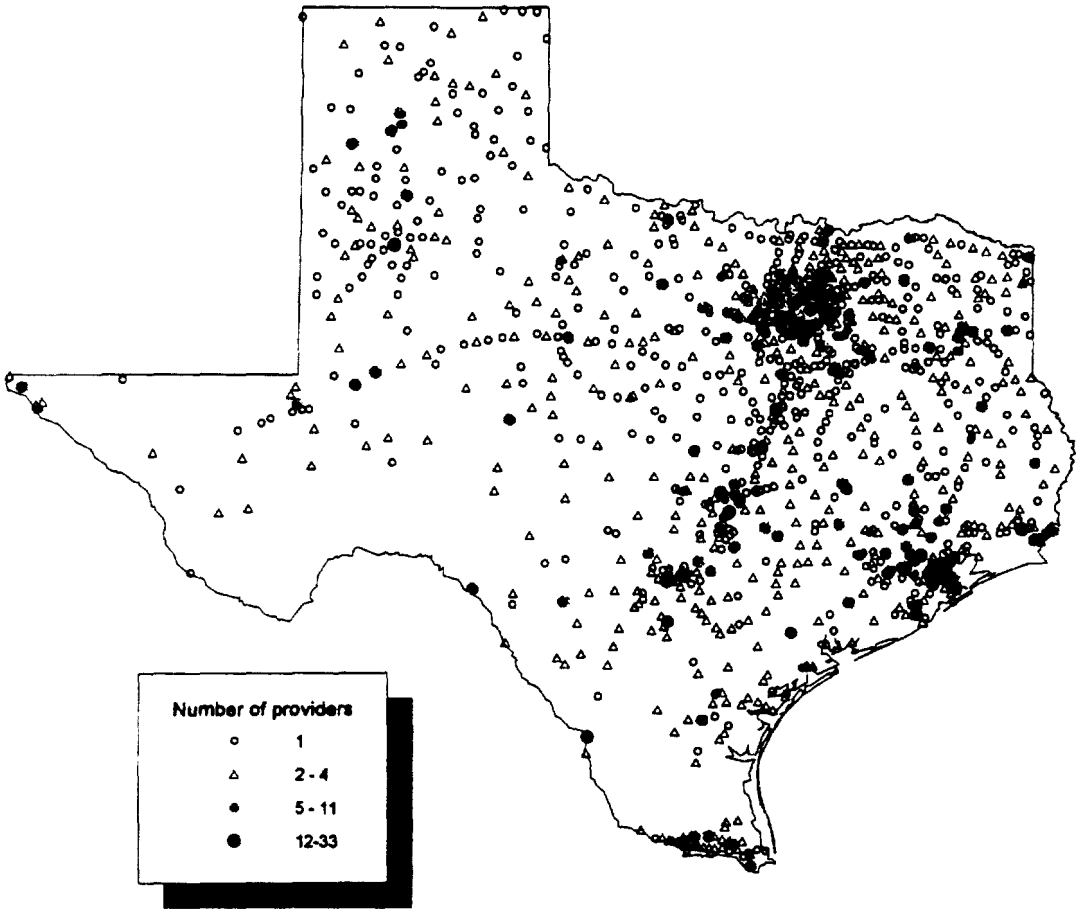
[44] J. P. Morgan Securities, *Industry Analysis: Telecom Services*, at 4 (Sept. 8, 2000).

Figure 1 – Residential Service Providers



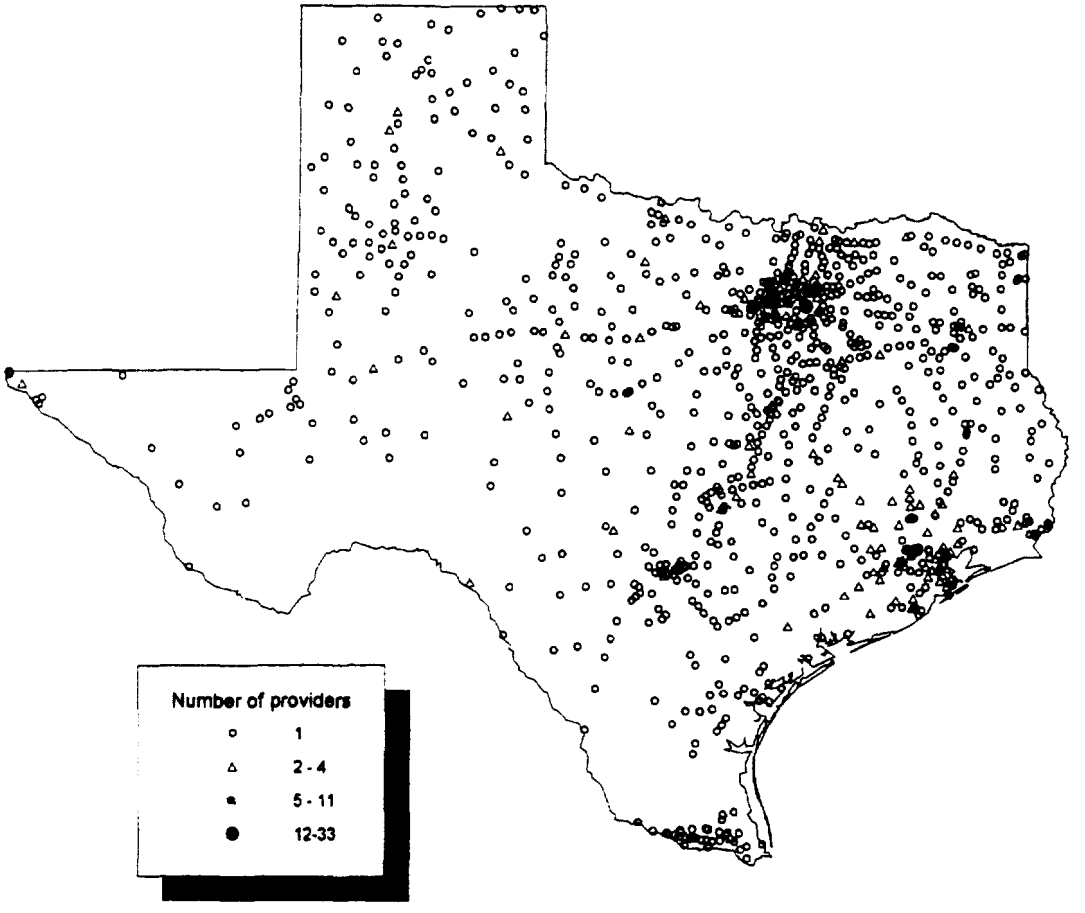
Source: Public Utility Commission HB 1777 Data Collection Instrument

Figure 2 – Business Service Providers



Source: Public Utility Commission HB 1777 Data Collection Instrument

Figure 3 – Data Service Providers



Source: Public Utility Commission HB 1777 Data Collection Instrument

Analysis of the Histogram Data

The histogram data that supported the above figures is shown in the table below and reveals a few more insights.

Table 2 – Number of Providers for Texas Towns

Number of providers in a given town	Number of Texas towns with that many providers, by type of service		
	Residential Services	Business Services	Data Services
1	257	554	843
2	229	273	77
3	178	133	27
4	143	65	3
5	92	43	3
6	58	30	0
7	53	23	3
8	42	8	0
9	30	12	1
10	32	11	0
11	25	7	0
12	18	9	1
13	14	4	1
14	12	1	0
15-19	29	5	0
20 or more	10	5	0

Source: Public Utility Commission of Texas HB 1777 Data Collection Instrument

This data set shows that residents in a good number of cities have a very sizeable number of choices of CLECs. Data show that ten cities have twenty or more CLECs serving residential customers, and residential customers in 130 towns and cities have ten to nineteen CLECs from which to choose. In contrast, residential customers in 257 towns[45] have no CLECs, and another 407 towns have only one or two CLECs from which to choose.

The trend of limited choice in providers for more specialized services can be seen in the point-to-point data. Ninety percent of all municipalities surveyed do not have competition in data services. Residents in 263 cities have no certificated providers of data services.[46] Residents in 843 towns (69 percent of all municipalities surveyed) only have one choice of provider for such services, while residents in 104 towns have a choice of two or three providers for these services.

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[45] This table is based on the same 1222 data points that were the basis for the maps. However, an additional 209 cities reported data to the Commission that did not have the necessary census codes to be included in the map, and therefore are not included in the map data set. Most of them had only ILEC service available and no choice of CLECs for any of the service types.

[46] There may be providers offering point to point data services that are not required to report to the Commission because the reporting requirement is made only of certificated providers, and it is not technically necessary to obtain a certificate from the Commission in order to provision point-to-point services.

CLECs IN TEXAS BY METRO SIZE AND GEOGRAPHIC REGION

Another measure of geographic availability may be seen in the responses of the CLECs that responded to the data request for this report. Table 3 shows the number of competitive local carriers that are providing service to customers in each of the geographic areas.

Factors of population growth, economic growth, and population density appear to be important in the decisions of CLECs to invest in or resell voice telephony facilities in a given area of Texas, as a sizeable number of competitors are available to Texas residents in counties with populations over 100,000. The Large Metropolitan areas, which comprise nearly half of the Texas population and have high population densities, have by far the heaviest concentrations of CLECs. The Suburban and Small and Medium Metro counties have about the same numbers of choices in providers as each other, even though the former group has twice the population.

Even in the smallest Rural counties, the responses show that at least one competitive provider is available to at least one county in that Council of Government. Many Rural areas have two, three, or more CLECs in addition to an ILEC. Some of these Rural competitors, however, may be aimed at customers with poor credit histories and are not vying for the average local customer's business.

Table 3 – CLECs in Texas by Size and Region

Regional Group	Population Category	Number of CLECs (1999)
Large Metro (Group 1)	Over 600,000	40
Suburban (Group 2)	Near Metros	22
Small and Medium Metro (Group3)	Other Over 100,000	23
Alamo Area Council of Governments	20,001-100,000	10
Ark-Tex Council of Governments	20,001-100,000	7
Brazos Valley Council of Governments	20,001-100,000	8
Capital Area Planning Council	20,001-100,000	7
Central Texas Council of Governments	20,001-100,000	8
Coastal Bend Council of Governments	20,001-100,000	6
Deep East Texas Council of Governments	20,001-100,000	7
East Texas Council of Governments	20,001-100,000	7
Golden Crescent Regional Planning Commission	20,001-100,000	7
Heart of Texas Council of Governments	20,001-100,000	6
Houston-Galveston Area Council	20,001-100,000	10
Middle Rio Grande Development Council	20,001-100,000	7
North Central Texas Council of Governments	20,001-100,000	10
Panhandle Regional Planning Commission	20,001-100,000	6
Permian Basin Regional Planning Commission	20,001-100,000	5
South Plains Association of Governments	20,001-100,000	6
South Texas Development Council	20,001-100,000	4
Texoma Council of Governments	20,001-100,000	7
West Central Texas Council of Governments	20,001-100,000	5
Alamo Area Council of Governments	5,001-20,000	6
Ark-Tex Council of Governments	5,001-20,000	4
Brazos Valley Council of Governments	5,001-20,000	5
Capital Area Planning Council	5,001-20,000	5
Central Texas Council of Governments	5,001-20,000	6
Coastal Bend Council of Governments	5,001-20,000	7
Concho Valley Council of Governments	5,001-20,000	4
Deep East Texas Council of Governments	5,001-20,000	7
East Texas Council of Governments	5,001-20,000	6
Golden Crescent Regional Planning Commission	5,001-20,000	7
Heart of Texas Council of Governments	5,001-20,000	8
Houston-Galveston Area Council	5,001-20,000	8
Middle Rio Grande Development Council	5,001-20,000	4
North Central Texas Council of Governments	5,001-20,000	6
North Texas Regional Planning Commission	5,001-20,000	7
Panhandle Regional Planning Commission	5,001-20,000	7
Permian Basin Regional Planning Commission	5,001-20,000	7
Rio Grande Council of Governments	5,001-20,000	3
South Plains Association of Governments	5,001-20,000	6
South Texas Development Council	5,001-20,000	5
West Central Texas Council of Governments	5,001-20,000	8
Ark-Tex Council of Governments	1-5,000	3
Central Texas Council of Governments	1-5,000	4
Coastal Bend Council of Governments	1-5,000	3
Concho Valley Council of Governments	1-5,000	7
Middle Rio Grande Development Council	1-5,000	6
North Texas Regional Planning Commission	1-5,000	6
Panhandle Regional Planning Commission	1-5,000	9
Permian Basin Regional Planning Commission	1-5,000	5
Rio Grande Council of Governments	1-5,000	4
South Plains Association of Governments	1-5,000	5
South Texas Development Council	1-5,000	2
West Central Texas Council of Governments	1-5,000	6

Source: Public Utility Commission Data Request 2000 Responses

NUMBERING CODE INDICATORS OF COMPETITORS

One measure of competitive availability can be found in the numbering prefixes (NXX codes) acquired by competitive carriers. Numbering codes are used to route and rate the switched telephone traffic within the nationwide network and ensure that a call is delivered to the telephone switch serving the customer being called. According to FCC data, Texas had 80 local service competitors holding numbering codes in mid-2000, up from 32 local service competitors in mid-1999. Those codes were geographically dispersed within Texas LATAs, as shown in Table 4.

Table 4 – Local Service Competitors by LATA

LATA	4th Qtr 1997	4th Qtr 1998	2nd Qtr 1999	3rd Qtr 2000
Abilene	0	1	1	6
Amarillo	2	4	4	10
Austin	9	13	13	29
Beaumont	0	1	2	8
Brownsville	0	1	1	7
Corpus Christi	2	4	5	8
Dallas	14	25	24	48
El Paso	1	3	3	5
Hearne	0	1	1	4
Houston	13	19	19	43
Longview	1	2	3	9
Lubbock	0	3	4	8
Midland	0	1	1	4
San Angelo	0	1	1	3
San Antonio	8	11	11	28
Waco	1	3	3	8
Wichita Falls	0	1	1	6

Sources: *Local Competition: August 1999*, Federal Communications Commission, Industry Analysis Division, Common Carrier Bureau; Analysis of Local Exchange Routing Guide.

The largest four metro areas in Texas have been the favorite destinations of CLECs. Dallas and Houston had between 40 and 50 CLECs in their markets, and Austin and San Antonio had about almost 30 CLECs in their markets. El Paso, despite being a Large Metro area, had only five CLECs in its market, fewer than cities such as Beaumont, Longview, or Waco, which have a fraction of El Paso's population. Lower *per capita* income and mediocre business prospects might be responsible for this lack of interest in El Paso. The data indicate that a large number of CLECs burst onto the scene in 1998 and again in the first half of 2000.

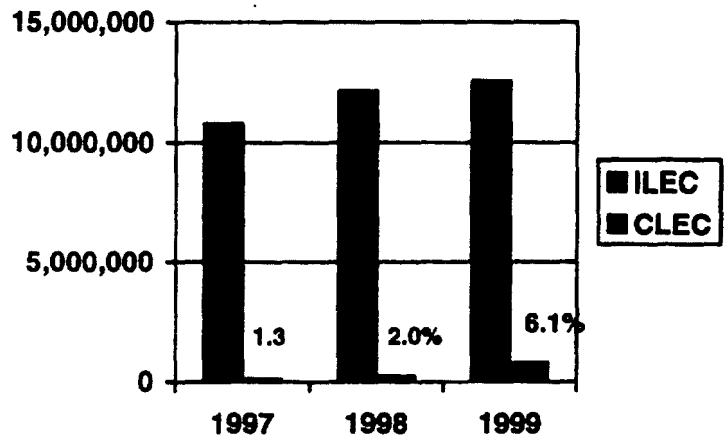
Market Penetration by Competitive Providers

Fifty-nine ILECs responded to the Commission's data request. Out of the 311 CLECs certificated to provide service in Texas during at least some part of the 1998-1999 calendar period, 128 responded to the Commission's data request. Of the CLECs responding, 36 indicated that they were not providing any local exchange services during the period in question. The data in this analysis therefore represent the reporting of 92 CLECs providing local exchange services in Texas at year-end 1999. Not all of these carriers provided services in 1998.[47]

CLEC Access Lines and Revenues

Texas has seen the beginnings of competition in local exchange service, shown by the growth in the number of lines and the revenues for CLECs. Starting from a very low level, CLECs have been increasing market share in Texas in the past three years. Market share of CLECs for access lines rose from 1.3 percent in 1997 to 6.1 percent in 1999, and in revenues the market share for CLECs rose from 1.6 percent to 9.0 percent.

Figure 4 – Number of Lines Provided by ILECs and CLECs



[47] It should be noted that while the CLEC data are good for illustrative purposes in this report, they do not appear to be precise. In some instances, it is clear that the CLECs provided incomplete or incorrect information in their geographic reporting. Secondly, the method of aggregating the data may lead to an invalid conclusion concerning competition throughout the entire aggregated region, and any analysis must recognize that telephone exchanges were merged into counties, and counties into larger groupings, based on size and region. As for the number of CLECs reporting, however, the data set does achieve critical mass. While 183 of the 311 CLECs certificated for at least part of the data period did not report, 65 of those do not have interconnection agreements and can therefore be assumed to not have sizeable operations, if any. Forty-two more of those did not get their interconnection agreement until after June 1999, and can therefore be assumed to not have had sizeable operations before the end of the data period. That leaves 76 CLECs failing to report that potentially had operations in the data period, based on their certification and interconnection agreement dates, while 92 CLECs with operations in the data period did report. Within the data set of 128 CLECs that did respond, 43 CLECs had both their certificates and interconnection agreements in order by end of 3rd quarter 1998, while a total of 76 CLECs had these items in order by 3rd quarter 1999.

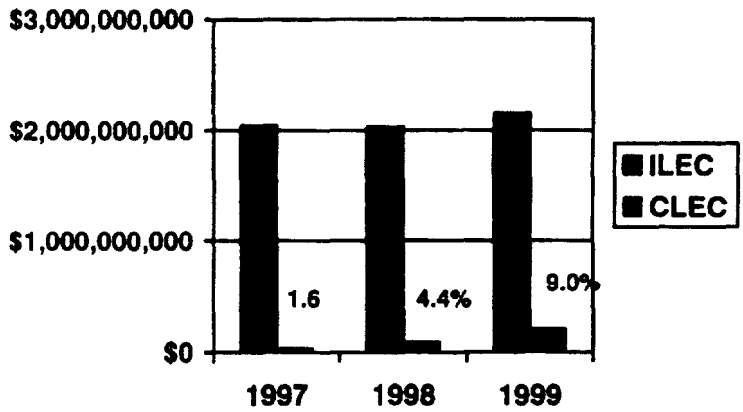
Table 5 – Comparison of ILEC and CLEC Lines and Revenues

	1997	1998	1999
ILEC Access Lines	10,767,173	12,135,113	12,532,003
CLEC Access Lines	146,185	248,166	810,259
Total Access Lines	10,913,358	12,383,279	13,305,884
CLEC Percentage of Lines	1.3%	2.0%	6.1%
ILEC Local Revenues	$2,044,664,321	$2,160,771,998	$2,287,287,649
CLEC Local Revenues	32,735,793	99,364,239	227,326,666
Total Local Revenues	$2,077,400,114	$2,260,136,236	$2,514,614,315
CLEC Percentage of Revenues	1.6%	4.4%	9.0%

Source: 1999 Scope of Competition Report; Data Request 2000 Responses

Similarly, the CLEC share of revenues has more than doubled in 97-98, and doubled again by year-end 1999, as shown in Figure 5.

Figure 5 – Comparison of ILEC and CLEC Local Revenues



Displayed in Table 6 are the number of residential and business lines provided by CLECs, categorized by geography and county size. In terms of lines in 1999, CLECs captured 8.2 percent of the Large Metro market, 11.4 percent of the Suburban market, and 5.3 percent of the market in Medium and Small Metro areas. This table clearly reveals the emergence of local exchange competition, first in the Large Metropolitan areas in 1998, followed by the beginnings of competition in counties with under 100,000 population.

Table 6 – CLEC Lines

County Size	1998		1999	
	CLEC Lines	% of Total State Market	CLEC Lines	% of Total State Market
Large Metro (Group 1)	179,921	3.0	530,393	8.2
Suburban (Group 2)	27,136	3.1	115,644	11.4
Small/Medium Metro (Group 3)	25,491	1.4	102,685	5.3
Rural; 20,001 – 100,000	10,015	0.3	36,359	1.2
Rural; 5,001 – 20,000	3,712	0.5	14,864	1.9
Rural; 1 – 5,000	1,891	1.5	10,314	7.6
Total CLEC	248,166	2.0	810,259	6.1

Source: Public Utility Commission of Texas Data Request 2000 Responses

While the four largest ILECs in Texas – SWBT, Verizon, Sprint/Centel and Sprint/United – have signed significant numbers of interconnection agreements with competitive carriers under the FTA, the remaining ILECs have entered into relatively few agreements. The agreements involving the smaller ILECs, which would be predominately in Rural areas, are strictly resale agreements, usually with no wholesale discounts. The limited number and extent of these agreements results from two factors: (1) relatively little interest on the part of other carriers to compete in less urbanized areas, and (2) the partial exemption of rural telephone companies from the interconnection requirements of FTA § 251(c).

Table 7 displays the revenues from residential and business customers by ILECs and CLECs, categorized by geography and county size. (For a breakdown of each of the 69 areas listed in the data collection instrument, see Appendix J.) CLECs appeared to be providing higher-value local service in the Large Metro and Suburban areas of Texas than in the state as a whole. In terms of revenues in 1999, CLECs captured 11.7 percent of the Large Metro market, 15.4 percent of the Suburban market, and 5 percent of the market in Medium and Small Metro areas. CLEC revenues comprise less than 4 percent of all revenues by local exchanges in Rural areas.

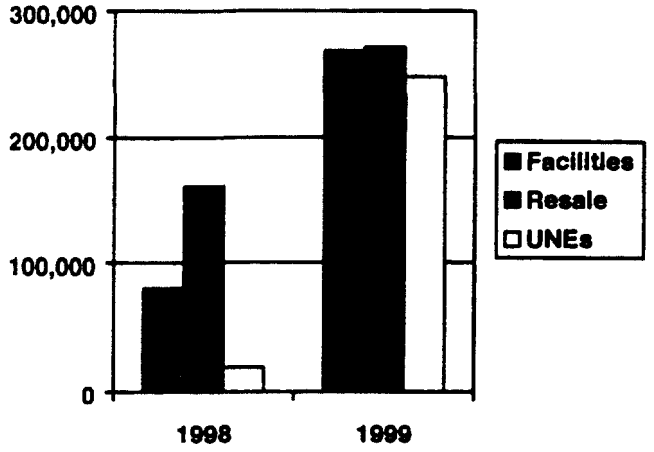
Table 7 – CLEC Revenues

County Size	1998		1999	
	CLEC Revenue	% of Total State Market	CLEC Revenue	% of Total State Market
Large Metro (Group 1)	56,098,286	4.7	156,742,378	11.7
Suburban (Group 2)	13,636,940	8.9	27,280,185	15.4
Small/Med. Metro (Gr. 3)	10,539,058	3.3	17,779,206	5.0
Rural; 20,001 – 100,000	17,925,710	3.8	22,833,530	4.4
Rural; 5,001 – 20,000	1,106,643	1.1	2,332,361	2.2
Rural; 1 – 5,000	57,602	0.4	359,007	2.4
Total CLEC	99,364,239	4.4	227,326,666	9.0

Source: Public Utility Commission Data Request 2000 Responses

The FTA envisioned the entry of local exchange competitors through three avenues: facility-based, resale, and the purchase of unbundled network elements (UNEs). Figure 6 shows the manner in which CLECs provided service in Texas in 1998 and 1999. In 1999, CLECs appeared to use each of the three methods of entry in equal proportions.

Figure 6 – CLEC Method of Service Provision (Number of Loops)



Competitive Entry into Texas Markets

While CLECs have increased market share statewide, the data showed that CLECs were more successful in gaining market share in Large Metropolitan areas than in small metro or Rural areas. The comparison of the business and residential markets below indicates that CLECs penetrated business markets faster than residential markets in 1998 and 1999.

Business/Residential Comparisons

CLECs have been much more aggressive in gaining market share in local service for businesses than for residential customers. CLECs have twice the number of business lines than residential lines, as shown in Figure 7. While CLECs showed strong growth rates in both markets, by 1999 CLECs had ten percent of the lines that served business customers compared to only three percent of lines that served residential customers, as can be seen in Table 8 and Table 9. CLECs had a six percent market share of residential revenues, indicating that their revenues per residential line were much higher than that of ILECs, as shown in Table 10 and Table 11.

Figure 7 – Comparison of Residential and Business Telephony Services in Texas by Local Access Lines

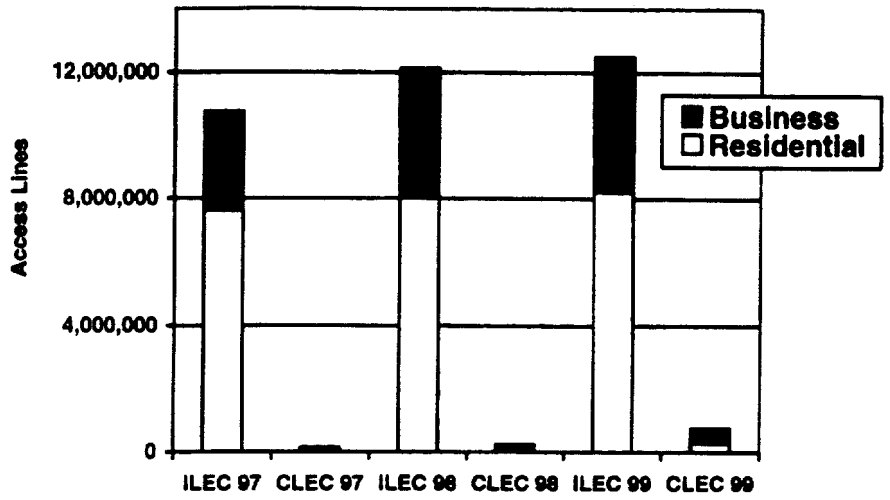


Table 8 – Residential Lines

	1997		1998		1999	
	Lines	%	Lines	%	Lines	%
ILEC	7,619,269	98.4	8,009,450	99.0	8,216,074	96.7
CLEC	122,450	1.6	79,114	1.0	280,826	3.3
Total	7,741,719		8,088,564		8,496,900	

Source: Public Utility Commission Data Request 2000 Responses

Table 9 – Business Lines

	1997		1998		1999	
	Lines	%	Lines	%	Lines	%
ILEC	3,147,904	99.3	4,125,663	96.1	4,315,929	89.7
CLEC	23,735	0.7	169,052	3.9	493,055	10.3
Total	3,171,639		4,294,715		4,808,984	

Source: Public Utility Commission Data Request 2000 Responses

Figure 8 – Comparison of Residential and Business Telephony Services in Texas by Revenues

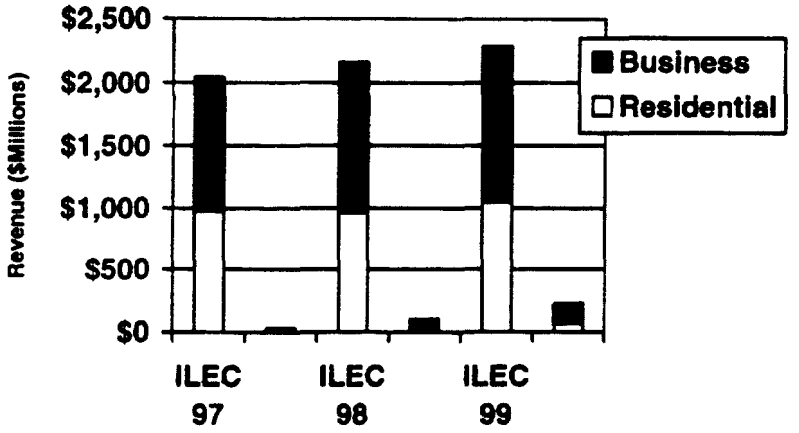


Table 10 – Residential Revenues

	1997		1998		1999	
	Revenue	%	Revenue	%	Revenue	%
ILEC	976,178,035	98.5	962,972,235	96.6	1,048,862,155	93.9
CLEC	14,375,823	1.5	34,019,358	3.4	67,632,535	6.1
Total	990,553,858		996,991,593		1,116,494,691	

Source: Public Utility Commission Data Request 2000 Responses

Table 11 – Business Revenues

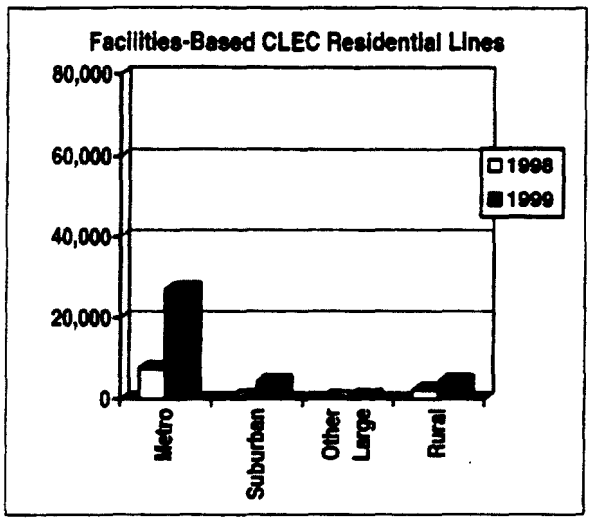
	1997		1998		1999	
	Revenue	%	Revenue	%	Revenue	%
ILEC	1,068,486,286	98.3	1,197,799,762	94.8	1,238,425,494	88.6
CLEC	18,359,970	1.7	65,344,881	5.2	159,694,131	11.4
Total	1,086,846,256		1,263,144,643		1,398,119,624	

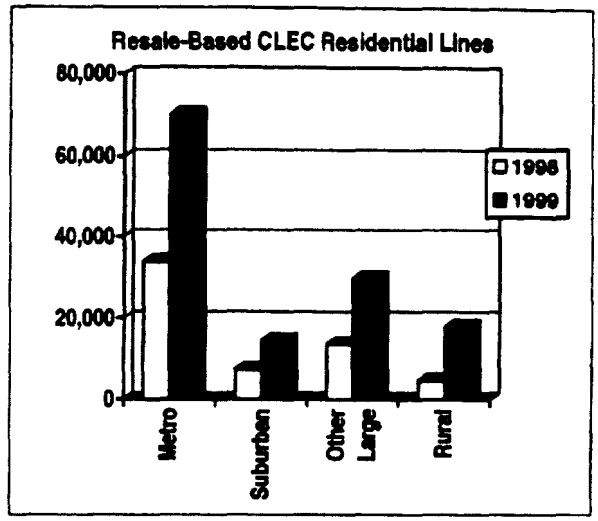
Source: Public Utility Commission Data Request 2000 Responses

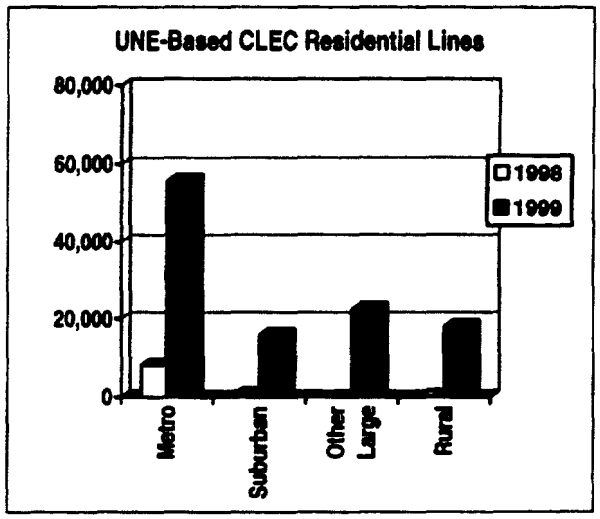
Facilities-based CLEC lines were almost exclusively in Large Metro areas. Eighty percent of all facilities-based CLEC lines in Texas served business customers in Large Metro areas, with another 10 percent serving Large Metro residential customers. Resale and UNEs were both popular outside Large Metro areas and with residential customers. See the charts and tables in Figure 9 and Figure 10.

The mix of business and residential customers varies significantly by population of a region. In Large Metro and Suburban areas, CLECs had 70 percent of their lines serving business customers and 30 percent of their lines serving residential customers. Medium and Small Metro areas of Texas saw a roughly 50-50 mix between business and residential lines. In Rural areas, CLECs served only 40,148 customers, with 30 percent of these being business customers and 70 percent being residential customers.

Figure 9 – CLEC Residential Lines by Provision Type and Region



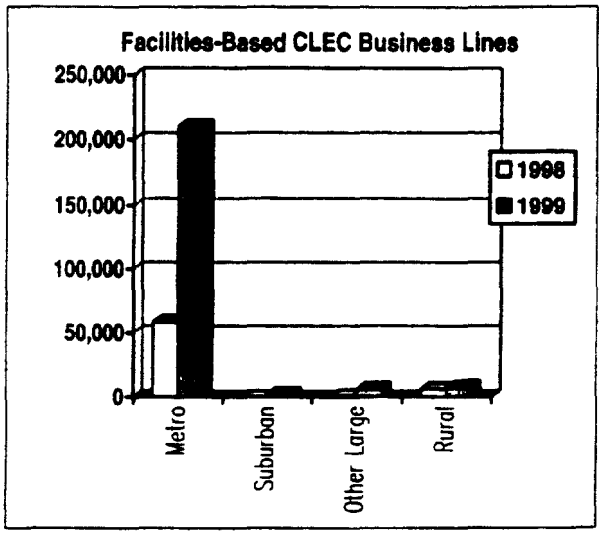


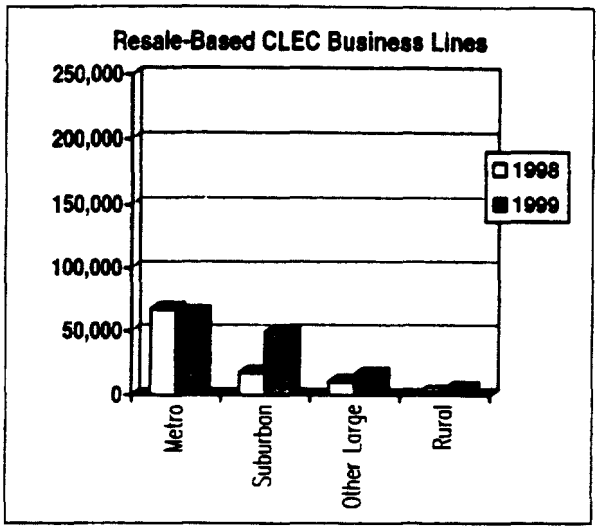


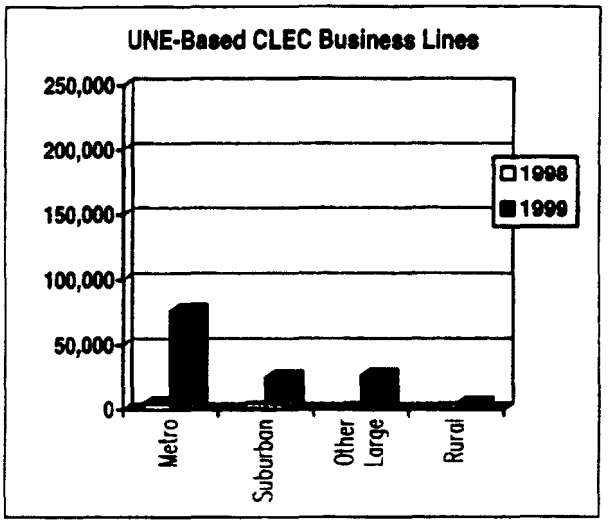
	Facilities		Resale		UNEs		Total	
	1998	1999	1998	1999	1998	1999	1998	1999
Residential – Lines								
Large Metro (Group 1)	7,509	27,052	33,822	70,101	8,067	55,737	49,398	152,890
Suburban (Group 2)	658	4,309	7,240	14,549	713	15,837	8,611	34,695
Small and Medium Metro (Group3)	480	750	13,604	29,758	6	22,585	14,090	53,093
Rural	2,216	4,267	4,600	17,899	199	17,982	7,015	40,148
Total	10,863	36,378	59,266	132,307	8,985	112,141	79,114	280,826

Source: Public Utility Commission Data Request 2000 Responses

Figure 10 – CLEC Business Lines by Provision Type and Region







	Facilities		Resale		UNEs		Total	
	1998	1999	1998	1999	1998	1999	1998	1999
Business - Lines								
Large Metro (Group 1)	58,303	209,837	67,427	64,324	4,793	76,290	130,523	350,451
Suburban (Group 2)	32	2,537	17,560	49,306	933	24,797	18,525	76,640
Small and Medium Metro (Group3)	1,020	6,252	10,377	16,239	4	26,351	11,401	48,842
Rural	6,108	7,403	2,281	5,155	214	4,564	8,603	17,122
Total	65,463	226,029	97,645	135,024	5,944	132,002	169,052	493,055

Source: Public Utility Commission Data Request 2000 Responses

Retail Prices and Cross Subsidies

In 1998 and 1999, the business sector attracted telecommunications competition at a far greater rate than the residential sector. Entrants, seeking the larger revenue streams, flocked into high subscriber-density areas rather than into low-density areas. This phenomenon, described by incumbents as "cream-skimming," is hardly surprising given the economics and the status of current telecommunications regulation.

Regulation tends to encourage "cream-skimming" by imposing cross-subsidies. The current retail rate structure contains implicit subsidies designed to achieve universal service. To subsidize basic services, regulators allow the telecommunications industry to assess a high mark-up on vertical services.[48] Business services typically have tariffed retail rates set at a much higher level than their costs to subsidize residential services. Urban customers tend to pay rates that are above cost, while rural customers tend to pay rates that are below cost.[49]

The practice of imposing cross-subsidies is incompatible with the goal of promoting fair competition (*i.e.*, based on real economic costs) via the construction of new facilities by new competitors. Cross subsidies also are inconsistent with fair competition via the purchase of UNEs, especially when the TELRIC-based pricing for UNEs is based on regional differences, rather than by customer class. Specifically, cross-subsidy regulation imposing retail prices inconsistent with the associated UNE rates encourages competitors into UNE-based "cream skimming" for services with overly high retail prices, and unduly discourages competitors from UNE-based provision for services that are under-priced.

In Texas, competitors can, under certain circumstances, take advantage of cross-subsidy regulation to offer service to business customers in high-density areas for a better rate than the ILEC can offer. The sum of TELRIC-based UNE rates for business services in urban areas is often less than the tariffed retail prices charged by the ILEC, which contain implicit subsidies for residential telephone service. Therefore, if a competitor's retailing costs plus the sum of UNE rates owed to the ILEC is below the ILEC's tariffed retail price, the competitor can turn a profit by purchasing a business phone's underlying UNEs, allowing it to offer various optional calling features at a total rate below the ILEC's retail price.[50] This opportunity is reinforced when the targeted customers spend relatively large amounts on long distance and other optional services without causing the competitor to incur substantial additional costs.

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[48] Actually, it is the flat-rated *access* to the telephone network (and hence to all services) via the customer's "local loop" that tends to be subsidized.

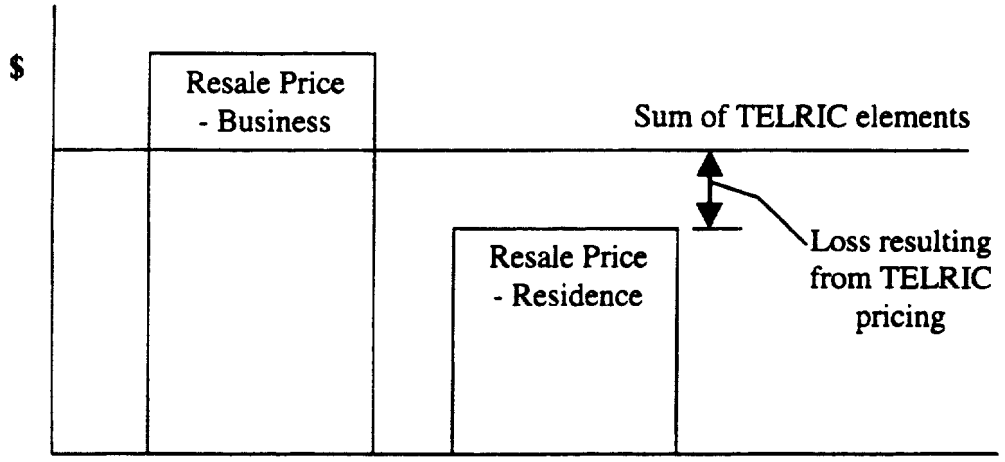
[49] Some of these cross-subsidies were diminished in the Commission's universal-service project (*Compliance Proceeding for Implementation of the Texas High Cost Universal Service Plan*, Project No. 18515), which provided for larger-scale, more systematic subsidies to providers serving customers in high-cost areas by means of a substantially increased Texas Universal Service Fund surcharge assessed on all taxable telecommunications receipts.

[50] David Sibley, Declaration for SWBT in *Interim Process for New Services and Promotional Offerings, and Pricing and Packaging Flexibility Tariffs, Pursuant to PURA Chapters 52, 58, and 59*, Project 20956, (Oct. 21, 1999).

On the other hand, providing services using UNEs to residential customers (at least those who use long-distance sparingly and purchase few if any optional services) may not be profitable for competitors because the revenue the competitors can recover from the retail rate could be below the sum of the UNE rates needed to provide such service. Consequently, competitors are much less likely to provide UNE-based service to such residential customers.[51]

This inconsistency of retail rates and UNE rates for residential and business is illustrated below.[52]

Figure 11 – TELRIC-based UNE Rates vs. Retail Rates



Long Distance Competition

Although Texans enjoyed a wide selection of long distance carriers (also known as interexchange carriers, or IXCs) at the end of 1999,[53] the long distance market continued to be dominated by three carriers: AT&T, WorldCom (which merged with MCI in September 1998), and Sprint. Economists refer to this phenomenon as a "tight oligopoly," meaning that the dominant competitors possess a level of market power that enables them to use significant discretion in setting prices. A market may be considered a "tight oligopoly'" if its four largest firms serve at least 60% of the market. In 1999, the

[51] The ability to resell the ILEC's services at a discount offers an additional avenue for competitors to provide service. The availability of universal-service subsidies for providing facilities- or UNE-based service to customers in high-cost areas also provides an incentive for competitors to serve some customers in less urbanized areas.

[52] David Sibley, Declaration for SWBT in *Interim Process for New Services and Promotional Offerings, and Pricing and Packaging Flexibility Tariffs, Pursuant to PURA Chapters 52, 58, and 59,* Project 20956, at 6 (Oct. 21, 1999).

[53] As of September 2000, 1550 long-distance carriers were registered with the Public Utility Commission of Texas. The commission's list of registered long-distance carriers can be found at http//www.puc.state.tx.us/telecomm/directories/ixc.xls.