

MINUTES OF THE HOUSE ENERGY AND UTILITIES COMMITTEE

The meeting was called to order by Chairman Carl Holmes at 9:00 a.m. on March 9, 2010, in Room 785 of the Docking State Office Building.

All members were present except:  
Representative Dan Johnson- excused

Committee staff present:  
Matt Sterling, Office of the Revisor of Statutes  
Mary Torrence, Office of the Revisor of Statutes  
Cindy Lash, Kansas Legislative Research Department  
Iraida Orr, Kansas Legislative Research Department  
Renaë Hansen, Committee Assistant

Conferees appearing before the Committee:  
Christine Aarnes, Kansas Corporation Commission (KCC)

Others attending:  
Twenty-one including the attached list.

Presentation on: Price Deregulation by the Kansas Corporation Commission

Christine Aarnes, KCC, (Attachment 1), spoke to the committee about the required yearly report to the legislature on price deregulation. The report details items pursuant to the statutes. Additionally, the report includes several charts with various current rates compared various other rates. The report also contained recommendations for consideration by the legislature to make possible changes in current statute based on the findings of this data.

Questions were asked and comments made by Representatives: Tom Sloan, Forrest Knox, Joe Seiwert, Vern Swanson, and Tom Moxley.

Christine Aarnes, KCC, (Attachment 2), then spoke to the committee on slamming and cramming.

Questions were asked and comments made by Representative Annie Kuether.

Additionally, Christine Aarnes, KCC, presented (Attachment 3) requested information on Voice over Internet Protocol (VoIP). Additionally attached to this testimony is a glossary of telecommunications terms for the education of the committee members.

Questions continued by Representatives: Vince Wetta, and Joe Seiwert.

Don Low, KCC, was available to help answer questions put forth by the committee members.

Representative Tom Sloan had staff pass out information (Attachment 4) on a Universal Service Fund recommendation in context with issues in the near future.

Representative Richard Proehl introduced Nancy Curry, Marilyn Moore, and his sister Jan Browning all from Missouri.

Representative Vern Swanson introduced Scott Leitzel and Brian Thomas here as part of leadership Clay Center.

The next meeting is scheduled for March 10, 2010.

The meeting was adjourned at 10:19 a.m.

# HOUSE ENERGY AND UTILITIES COMMITTEE GUEST LIST

DATE: March 9, 2010

NAME	REPRESENTING
JUDITH GAGA	CENTURY LINK
TOM DAY	KCC
DON LOW	"
CHRISTINE ANNES	"
STEVE HARRICK	CURB
A GALLAGHER	ATT
B NERY	"
TERRY D CUNY	guest
JAN BREWERING	guest
MARILYN MOORE	"
ADAM JENNISON	CORL
BRIAN THOMAS	
MIKE J WAD	DTT
SCOTT LOITZEL	guest
TROY GRANTNER	DTT
MIKE REEGL	Sprint
DINA FURK	Verizon Wireless
NELSON KNEGER	U.S. Cellular
DAN MURRAY	KCTA

# HOUSE ENERGY AND UTILITIES COMMITTEE GUEST LIST

DATE: March 9, 2010

NAME	REPRESENTING
<i>Michelle Peterson</i>	<i>Capitol Strategies</i>



Mark Parkinson, Governor  
Thomas E. Wright, Chairman  
Michael C. Moffet, Commissioner  
Joseph F. Harkins, Commissioner

To: Governor Mark Parkinson  
2010 Legislature  
Chairman Apple and members of the Senate Utilities Committee  
Chairman Holmes and members of the House Energy and Utilities Committee

Date: February 1, 2010

RE: Report Required by K.S.A 2008 Supp. 66-2005 as amended by SB 350 and HB 2637

The attached report is provided pursuant to the requirements of K.S.A 2008 Supp. 66-2005 as amended by SB 350 and HB 2637 which were enacted by the 2006 and 2008 Legislatures, respectively. This statute, at subsection q, requires that the Commission:

(6) . . . on July 1, 2006, and on each date that any service is deregulated, shall record the rates of each service which has been price deregulated in each exchange.

(7) Prior to January 1, 2007, the commission shall determine the weighted, statewide average rate of nonwireless basic local telecommunications service as of July 1, 2006. Prior to January 1, 2007, and annually thereafter, the commission shall determine the weighted, average rate of nonwireless basic local telecommunications services in exchanges that have been price deregulated pursuant to subsection q(1)(B), (C), or (D). The commission shall report its findings on or before February 1, 2007, and annually thereafter to the governor, the legislature, and each member of the standing committees of the house of representatives and the senate which are assigned telecommunications issues. The commission shall also provide in such annual report any additional information it deems useful in determining the impact of price deregulation on consumers and the competitive environment, including, but not limited to, the rates recorded under paragraph (6) of this subsection, the current rates for service in price deregulated exchanges, changes in service offerings available in price deregulated exchanges and the change in the number of competitors in price deregulated exchanges. If the commission finds that the weighted average rate of nonwireless basic local telecommunications service, in the exchanges that have been price deregulated pursuant to subsection q(1)(B), (C), or (D) in any one year period is greater than the weighted, statewide average rate of nonwireless basic local telecommunications service as of July 1,

HOUSE ENERGY AND UTILITIES

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DATE: 3/9/2010  
ATTACHMENT 1

2008, multiplied by one plus the consumer price index for goods and services for the study periods, or the commission believes that changes in state law are warranted due to the status of competition, the commission shall recommend to the governor, the legislature and each member of the standing committees of the house of representatives and the senate which are assigned telecommunications issues such changes in state law as the commission deems appropriate and the commission shall also send a report of such findings to each member of the legislature.

The attached report provides the required data and analysis. If you have questions regarding this report please contact:

Christine Aarnes, Senior Managing Telecom Analyst

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OR

Janet Buchanan, Deputy Director of Utilities Division

785-271-3293

[j.buchanan@kcc.ks.gov](mailto:j.buchanan@kcc.ks.gov)

Respectfully Submitted,

/s/

Thomas E. Wright, Chairman

# **REPORT ON PRICE DEREGULATION**

**PROVIDED  
PURSUANT TO  
K.S.A. 2008 SUPP. 66-2005**

**Report on Price Deregulation**  
Provided Pursuant to K.S.A. 2008 Supp. 66-2005 as Amended by SB 350 and HB 2637

## Introduction

K.S.A 2008 Supp. 66-2005, at subsection q, requires that the Commission:

(6) . . . on July 1, 2006, and on each date that any service is deregulated, shall record the rates of each service which has been price deregulated in each exchange.

(7) Prior to January 1, 2007, the commission shall determine the weighted, statewide average rate of nonwireless basic local telecommunications service as of July 1, 2006. Prior to January 1, 2007, and annually thereafter, the commission shall determine the weighted, average rate of nonwireless basic local telecommunications services in exchanges that have been price deregulated pursuant to subsection q(1)(B), (C), or (D). The commission shall report its findings on or before February 1, 2007, and annually thereafter to the governor, the legislature, and each member of the standing committees of the house of representatives and the senate which are assigned telecommunications issues. The commission shall also provide in such annual report any additional information it deems useful in determining the impact of price deregulation on consumers and the competitive environment, including, but not limited to, the rates recorded under paragraph (6) of this subsection, the current rates for service in price deregulated exchanges, changes in service offerings available in price deregulated exchanges and the change in the number of competitors in price deregulated exchanges. If the commission finds that the weighted, average rate of nonwireless basic local telecommunications service, in the exchanges that have been price deregulated pursuant to subsection q(1)(B), (C), or (D) in any one year period is greater than the weighted, statewide average rate of nonwireless basic local telecommunications service as of July 1, 2008, multiplied by one plus the consumer price index for goods and services for the study periods, or the commission believes that changes in state law are warranted due to the status of competition, the commission shall recommend to the governor, the legislature and each member of the standing committees of the house of representatives and the senate which are assigned telecommunications issues such changes in state law as the commission deems appropriate and the commission shall also send a report of such findings to each member of the legislature.

This report provides the required data and analysis of the effect of price deregulation on consumers and the status of competition.

## Price Deregulated Exchanges

K.S.A. 2008 Supp. 66-2005(q)(1)(B)(C) and (D) govern the price deregulation of exchanges for price cap carriers. K.S.A. 66-2005(q)(1)(B)(C) and (D) state:

(B) in any exchange in which there are 75,000 or more local exchange access lines served by all providers, rates for all telecommunications services shall be price deregulated;

(C) in any exchange in which there are fewer than 75,000 local exchange access lines served by all providers, the commission shall price deregulate all business telecommunication services upon a demonstration by the requesting local telecommunications carrier that there are two or more nonaffiliated telecommunications carriers or other entities, that are nonaffiliated with the local exchange carrier, providing local telecommunications service to business customers, regardless of whether the entity provides local service in conjunction with other services in that exchange area. One of such nonaffiliated carriers or entities shall be required to be a facilities-based carrier or entity and not more than one of such nonaffiliated carriers or entities shall be a provider of commercial mobile radio services in that exchange;

(D) in any exchange in which there are fewer than 75,000 local exchange access lines served by all providers, the commission shall price deregulate all residential telecommunication services upon a demonstration by the requesting local telecommunications carrier that there are two or more nonaffiliated telecommunications carriers or other entities, that are nonaffiliated with the local exchange carrier, providing local telecommunications service to residential customers, regardless of whether the entity provides local service in conjunction with other services in that exchange area. One of such nonaffiliated carriers or entities shall be required to be a facilities-based carrier or entity and not more than one of such nonaffiliated carriers or entities shall be a provider of commercial mobile radio services in that exchange;

Fifty-five exchanges have been price deregulated under the terms of the statute. All fifty-five exchanges are served by Southwestern Bell Telephone Company d/b/a AT&T Kansas (AT&T). Three exchanges served by AT&T (Kansas City, Topeka, and Wichita) have 75,000 or more access lines and were automatically deemed price deregulated on July 1, 2006, pursuant to K.S.A. 2006 Supp. 66-2005(q)(1)(B). Forty-three exchanges have been price deregulated for



both business and residential services following a demonstration by AT&T that the requirements of K.S.A. 66-2005(q)(1)(C) and (D) had been met for each of the exchanges. Additionally, two exchanges have been price deregulated for only business services following a demonstration by AT&T that the requirements of K.S.A. 66-2005(q)(1)(C) had been met, and seven exchanges have been price deregulated for only residential services following a demonstration by AT&T that the requirements of K.S.A. 66-2005(q)(1)(D) had been met.

To date, the Commission has received eleven applications for price deregulation of exchanges with 75,000 or fewer access lines. The applications were all filed by AT&T and the Docket Numbers are as follows: 08-SWBT-173-PDR (08-173), 08-SWBT-246-PDR (08-246), 08-SWBT-316-PDR (08-316), 08-SWBT-452-PDR (08-452), 08-SWBT-1081-PDR (08-1081), 09-SWBT-434-PDF (09-434), 09-SWBT-435-PDR (09-435), 09-SWBT-936-PDR (09-936), 09-SWBT-937-PDR (09-937), 10-SWBT-018-PDR (10-018), and 10-SWBT-019-PDR (10-019).

In 08-173, AT&T was granted price deregulation for business and residential services in the Smith Center and Colby-Gem exchanges on August 31, 2007. In 08-246, AT&T was granted price deregulation for business and residential services in the Lawrence, Leavenworth-Lansing, Eudora, Tonganoxie, and Basehor exchanges and price deregulation for only business services in the Clinton exchange on September 25, 2007. In 08-316, AT&T was granted price deregulation for business and residential services in the Hays, Phillipsburg/Kirwin, Goodland, Medicine Lodge, Pratt, Almena, and Norton exchanges on October 23, 2007. In 08-452, AT&T was granted price deregulation for business and residential services in the Arkansas City, El Dorado, Hutchinson, Kingman, Manhattan, Newton, Nickerson, Salina, and Towanda exchanges on November 29, 2007. In 08-1081, AT&T was granted price deregulation for residential services in the Dodge City, Garden City, Great Bend, Iola, Larned, Lindsborg, Lyons, Pittsburg, and

Winfield exchanges on June 26, 2008. In 09-434, AT&T was granted price deregulation for residential services in the Humboldt exchange and for business services in the Great Bend, Iola, Lyons, Pittsburg, and Winfield exchanges on December 12, 2008. In 09-435, AT&T was granted price deregulation for residential and business service in the Cheney, Coffeyville, Garden Plain, McPherson, Plainville, Cherryvale, and Halstead exchanges on December 12, 2008. In 09-936, AT&T was granted price deregulation of the Kinsley exchange for business and residential services on June 26, 2009 and the Erie exchange for business services on July 24, 2009. In 09-937, AT&T was granted price deregulation of the Dodge City, Garden City, Humboldt, and Larned exchanges for business services on June 26, 2009 and the Lindsborg exchange for business services on July 24, 2009. In 10-018, AT&T was granted price deregulation in the DeSoto and Oakley exchanges for business and residential exchanges on August 24, 2009. In 10-019, AT&T was granted price deregulation in the Abilene, Chanute, Ellsworth, Emporia, Independence, Neodesha, and Parsons exchanges for residential services on August 26, 2009.

#### **Prices at Date of Price Deregulation Compared to Prices as of January 1, 2010**

As required by K.S.A. 2008 Supp. 66-2005(q)(6), the Commission documented the rates for all services offered by AT&T in the price deregulated exchanges as of the date each exchange was price deregulated.<sup>1</sup> The list of services and accompanying rates is rather lengthy and is not included in this report, but it will be made available upon request. In Tables 1 and 2, we provide the rates for single line business service and residential service, respectively, as of the date each exchange was price deregulated compared to the rates for these services as of January 1, 2010.

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<sup>1</sup> Note that CenturyLink has not requested price deregulation pursuant to K.S.A. 2008 Supp. 66-2005(q)(1)(C) and (D).

It should be noted that K.S.A. 66-2009(q)(1)(F) states that the rate for the initial residential access line and up to four business lines at one location can be priced flexibly and without Commission approval up to the percentage increase in the consumer price index in any one period. To aid in the review of this requirement, the percentage change in the rate since the time of price deregulation is also provided.

**Table 1: Business Service Access Line Rates for Price Deregulated Exchanges**

<b>Exchange</b>	<b>Date Business Service Price Deregulated</b>	<b>Single Line Bus. Rate at Date of Price Dereg.</b>	<b>Single Line Bus. Rate as of 1/1/2010</b>	<b>% Change</b>
Almena	10/23/07	\$27.90	\$28.20	1.08%
Arkansas City	11/29/07	\$27.90	\$28.20	1.08%
Basehor	09/25/07	\$27.90	\$28.20	1.08%
Cheney	12/12/08	\$28.20	\$28.20	0.00%
Cherryvale	12/12/08	\$28.20	\$28.20	0.00%
Clinton	09/25/07	\$27.90	\$28.20	1.08%
Coffeyville	12/12/08	\$28.20	\$28.20	0.00%
Colby-Gem	08/31/07	\$27.90	\$28.20	1.08%
Dodge City	06/26/09	\$28.20	\$28.20	0.00%
El Dorado	11/29/07	\$27.90	\$28.20	1.08%
Eudora	09/25/07	\$27.90	\$28.20	1.08%
Garden City	06/26/09	\$28.20	\$28.20	0.00%
Garden Plain	12/12/08	\$28.20	\$28.20	0.00%
Goodland	10/23/07	\$27.90	\$28.20	1.08%
Great Bend	12/12/08	\$28.20	\$28.20	0.00%
Halstead	12/12/08	\$28.20	\$28.20	0.00%
Hays	10/23/07	\$27.90	\$28.20	1.08%
Humboldt	06/26/09	\$28.20	\$28.20	0.00%
Hutchinson	11/29/07	\$27.90	\$28.20	1.08%
Iola	12/12/08	\$28.20	\$28.20	0.00%
Kansas City	07/01/06	\$30.25	\$32.00	5.79%
Kingman	11/29/07	\$27.90	\$28.20	1.08%
Kinsley	06/26/09	\$28.20	\$28.20	0.00%
Larned	06/26/09	\$28.20	\$28.20	0.00%
Lawrence	09/25/07	\$27.90	\$28.20	1.08%
Leavenworth - Lansing	09/25/07	\$27.90	\$28.20	1.08%
Lyons	12/12/08	\$28.20	\$28.20	0.00%
Manhattan	11/29/07	\$27.90	\$28.20	1.08%
McPherson	12/12/08	\$28.20	\$28.20	0.00%
Medicine Lodge	10/23/07	\$27.90	\$28.20	1.08%
Newton	11/29/07	\$27.90	\$28.20	1.08%
Nickerson	11/29/07	\$27.90	\$28.20	1.08%
Norton	10/23/07	\$27.90	\$28.20	1.08%
Phillipsburg - Kirwin	10/23/07	\$27.90	\$28.20	1.08%
Pittsburg	12/12/08	\$28.20	\$28.20	0.00%
Plainville	12/12/08	\$28.20	\$28.20	0.00%
Pratt	10/23/07	\$27.90	\$28.20	1.08%
Salina	11/29/07	\$27.90	\$28.20	1.08%
Smith Center	08/31/07	\$27.90	\$28.20	1.08%
Tonganoxie	09/25/07	\$27.90	\$28.20	1.08%
Topeka	07/01/06	\$30.25	\$32.00	5.79%
Towanda	11/29/07	\$27.90	\$28.20	1.08%
Wichita	07/01/06	\$30.25	\$32.00	5.79%
Winfield	12/12/08	\$28.20	\$28.20	0.00%

**Table 2: Residential Service Access Line Rates for Price Deregulated Exchanges**

<b>Exchange</b>	<b>Date Res. Price Dereg.</b>	<b>Res. Rate at Date of Dereg.</b>	<b>Res. Rate as of 1/1/2010</b>	<b>% Change</b>
Almena	10/23/2007	\$15.70	\$15.70	0.00%
Arkansas City	11/29/2007	\$15.70	\$15.70	0.00%
Basehor	9/25/2007	\$15.70	\$15.70	0.00%
Cheney	12/12/2008	\$15.70	\$15.70	0.00%
Cherryvale	12/12/2008	\$15.70	\$15.70	0.00%
Coffeyville	12/12/2008	\$15.70	\$15.70	0.00%
Colby-Gem	8/31/2007	\$15.70	\$15.70	0.00%
Dodge City	6/26/2008	\$15.70	\$15.70	0.00%
El Dorado	11/29/2007	\$15.70	\$15.70	0.00%
Eudora	9/25/2007	\$15.70	\$15.70	0.00%
Garden City	6/26/2008	\$15.70	\$15.70	0.00%
Garden Plain	12/12/2008	\$15.70	\$15.70	0.00%
Goodland	10/23/2007	\$15.70	\$15.70	0.00%
Great Bend	6/26/2008	\$15.70	\$15.70	0.00%
Halstead	12/12/2008	\$15.70	\$15.70	0.00%
Hays	10/23/2007	\$15.70	\$15.70	0.00%
Humboldt	12/12/2008	\$15.70	\$15.70	0.00%
Hutchinson	11/29/2007	\$15.70	\$15.70	0.00%
Iola	6/26/2008	\$15.70	\$15.70	0.00%
Kansas City	7/1/2006	\$15.70	\$16.55	5.41%
Kingman	11/29/2007	\$15.70	\$15.70	0.00%
Kinsley	6/26/2009	\$15.70	\$15.70	0.00%
Larned	6/26/2008	\$15.70	\$15.70	0.00%
Lawrence	9/25/2007	\$15.70	\$15.70	0.00%
Leavenworth - Lansing	9/25/2007	\$15.70	\$15.70	0.00%
Lindsborg	6/26/2008	\$15.70	\$15.70	0.00%
Lyons	6/26/2008	\$15.70	\$15.70	0.00%
Manhattan	11/29/2007	\$15.70	\$15.70	0.00%
McPherson	12/12/2008	\$15.70	\$15.70	0.00%
Medicine Lodge	10/23/2007	\$15.70	\$15.70	0.00%
Newton	11/29/2007	\$15.70	\$15.70	0.00%
Nickerson	11/29/2007	\$15.70	\$15.70	0.00%
Norton	10/23/2007	\$15.70	\$15.70	0.00%
Phillipsburg - Kirwin	10/23/2007	\$15.70	\$15.70	0.00%
Pittsburg	6/26/2008	\$15.70	\$15.70	0.00%
Plainville	12/12/2008	\$15.70	\$15.70	0.00%
Pratt	10/23/2007	\$15.70	\$15.70	0.00%
Salina	11/29/2007	\$15.70	\$15.70	0.00%
Smith Center	8/31/2007	\$15.70	\$15.70	0.00%
Tonganoxie	9/25/2007	\$15.70	\$15.70	0.00%
Topeka	7/1/2006	\$15.70	\$16.55	5.41%
Towanda	11/29/2007	\$15.70	\$15.70	0.00%
Wichita	7/1/2006	\$15.70	\$16.55	5.41%
Winfield	6/26/2008	\$15.70	\$15.70	0.00%

It is evident that some of AT&T's rates for local exchange service have increased since the time the exchanges were price deregulated, while others have remained the same. The largest rate increases have been in the Kansas City, Topeka, and Wichita exchanges, with a \$1.75 increase for business lines and a \$.85 increase for residential lines. This represents a 5.79 and 5.41 percent increase, respectively. However, the increase in these rates is no greater than could have occurred if AT&T had increased rates by the change in the consumer price index each year. It is possible that competition has not exerted sufficient pressure to provide AT&T with an incentive to maintain lower rates in the three exchanges that were automatically deemed price deregulated pursuant to K.S.A. 66-2005(q)(1)(B).

Call management services were automatically deemed price deregulated in the Kansas City, Topeka, and Wichita exchanges on July 1, 2006, pursuant to K.S.A. 66-2005(q)(1)(B), and at the date of price deregulation in the exchanges for which AT&T was granted price deregulation pursuant to K.S.A. 66-2005(q)(1)(C) and (D). To date, AT&T has not revised the rates for various call management services for specific exchanges; rather, individual call management service rates remain the same regardless of whether price deregulation has been granted for an exchange. The prices for call management services have not varied from those allowed under price cap regulation. Price cap regulation allows the carrier to adjust prices of individual services within a basket as long as the total revenue received from the basket does not exceed that allowed by the price cap formula. In Table 3 below, we provide a comparison of the rates for some of the more popular call management services as of July 1, 2006 and January 1, 2010.

**Table 3: Call Management Rates**

	<u>7/1/2006</u>	<u>1/1/2010</u>	<u>% Change</u>
Call Waiting (Res.)	\$5.00	\$5.75	15.00%
Call Waiting- ID (Res.)	\$3.50	\$3.50	0.00%
Caller ID- Name (Res.)	\$6.95	\$6.95	0.00%
Caller ID- Number (Res.)	\$6.95	\$6.95	0.00%
Call Forwarding (Res.)	\$4.25	\$4.25	0.00%
Call Waiting (Bus.)	\$8.00	\$8.50	6.25%
Call Waiting- ID (Bus.)	\$5.40	\$5.40	0.00%
Caller ID- Name (Bus.)	\$9.50	\$9.50	0.00%
Caller ID- Number (Bus.)	\$9.50	\$10.00	5.26%
Call Forwarding (Bus.)	\$7.00	\$8.50	21.43%

AT&T offers bundles that include various call management services along with the access line for a set price for all services included in the bundle; however, customers can still order the call management services on an à la carte basis as set forth above.

**Price Changes in Price Deregulated Exchanges**

AT&T made forty-five tariff filings between January 1, 2009 and December 31, 2009. Sixteen of those tariff changes included rate changes, which included fifteen filings for rate increases and one filing included both rate increases and rate reductions. It should be noted that four of the filings that increased rates were either for services that have not been price regulated or were price deregulated prior to the implementation of Senate Bill 350 and House Bill 2637.

The fifteen tariff filings that included rate increases were made in Docket Nos. 09-SWBT-539-TAR (09-539), 09-SWBT-626-TAR (09-626), 09-SWBT-631-TAR (09-631), 09-SWBT-956-TAR (09-956), 09-SWBT-968-TAR (09-968), 10-SWBT-010-TAR (10-010), 10-SWBT-038-TAR (10-038), 10-SWBT-105-TAR (10-105), 10-SWBT-128-TAR (10-128), 10-SWBT-134-TAR (10-134), 10-SWBT-168-TAR (10-168), 10-SWBT-189-TAR (10-189), 10-SWBT-254-TAR (10-254), 10-SWBT-363-TAR (10-363), and 10-SWBT-418-TAR (10-418).

The tariff filing in which AT&T made both increases and rate reductions was 10-SWBT-129-TAR (10-129).

In its 09-539 filing, AT&T increased rates for its Custom BizSaver II Primary Line Bundles and Custom BizSaver II ADL Option 2 for Rate Groups 1 and 2, making the rates for Rate Groups 1 and 2 the same as the other Rate Groups. In 09-956, AT&T increased the term rates for Custom BizSaver II ADL Option 1 for lines that were added on or after June 1, 2009.

In 09-968, AT&T increased the rate for its Business Preferred call management service and in 10-254, AT&T reduced the credit amounts for certain call management service packages, which effectively resulted in a rate increase. The rate increases in 09-968 and 10-254 all effected services that have been grandfathered, meaning the services or packages are only available to customers that subscribed to such service or package prior to a date certain.

In 10-038, AT&T increased the price for the Complete Choice Basic bundle. In 10-134, AT&T increased the price for the Complete Choice Basic bundle for Basehor customers that have Extended Area Service (EAS) into the Kansas City Metropolitan Exchange.

In 10-128, AT&T increased its price for the Caller ID call management service for business customers. In 10-189, AT&T increased certain rates for SelectVideo, SelectData, and SmartTrunk services. In 10-363, AT&T increased the Flat Rate Trunk and Plexar Access Line rates in Rate Groups 1 through 5. In 10-418, AT&T increased the rates for certain Primary Rate ISDN: SmartTrunk, Digital Loop services, DigiLine services and call management services.

In 09-626, 09-631, and 10-105, AT&T increased rates for its Long Distance Message Telecommunications Services (LDMTS) and in 10-010, AT&T increased its rates for sent-paid direct dialed calls to Directory Assistance. LDMTS and Directory Assistance were price deregulated prior to SB350.



Docket 10-129 is the only filing that AT&T made during 2009 in which is decreased some of its rates. In this filing, AT&T increased the rate for the call management service Call Waiting, but decreased the rate for various call management service packages that have been grandfathered, such as The BASICS®, The WORKS®, and the Essentials Plan.<sup>SM</sup>

Again, Staff notes that most of the rate changes filed in 2009 were rate increases. However, the majority of the rate increases were implemented without regard for whether an exchange had been price deregulated. That is, most were implemented for all exchanges served by AT&T, those under price cap provisions and those that have been price deregulated, with a few minor exceptions that are noted above.

#### **Price Deregulation of Bundled Services**

Pursuant to K.S.A 2008 Supp. 66-2005(q), the price for bundled services has been price deregulated statewide for carriers under price cap regulation.<sup>2</sup> According to the statute, bundled services are a combination of local telecommunications service and one or more call management features, long distance service, Internet access, video services, or wireless services offered together at one price. However, a bundle does not include a combination of the local service (one residential line and up to four business lines) and only long distance service.

Since bundles were price deregulated on July 1, 2006, AT&T has made twenty-four tariff filings and United Telephone Companies of Kansas, d/b/a collectively CenturyLink (CenturyLink)<sup>3</sup> has made thirty tariff filings regarding bundled service offerings. Within those

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<sup>2</sup> At this time, AT&T Kansas and CenturyLink are the only two incumbent local exchange carriers that have chosen price cap regulation.

<sup>3</sup> United Telephone Company of Kansas, United Telephone Company of Eastern Kansas, United Telephone Company of Southcentral Kansas, Sprint Missouri, Inc. d/b/a United Telephone Company of Southeastern Kansas (collectively, United Telephone Companies of Kansas d/b/a Embarq) merged with CenturyTel, Inc. on July 1, 2009.

filings, some bundles have been grandfathered (meaning they are not available to new customers), new bundles have been introduced; some bundle rates increased and some have been reduced. Changes in service offering availability and rates were made on a statewide basis. AT&T's rates for some of its bundles are higher in the Basehor exchange than the other exchanges; however, the rate for the access line in this exchange has been historically higher due to the optional extended area service option for Basehor residents wishing to receive and make calls to the Kansas City Metropolitan exchange.

It should be further noted that one CenturyLink bundled service offering, Special Plan – Metro Bundle, is available for \$24.95 in the Gardner exchange and \$29.95 in all other CenturyLink exchanges when the customer also subscribes to CenturyLink Internet, video or wireless services. The Gardner exchange was deemed competitive and placed in a competitive sub-basket pursuant to a different statute, K.S.A. 66-2005(n), on January 27, 2005; after CenturyLink made a showing that it faced considerable competition in the particular exchange. Services in that exchange, other than bundles, remain under price cap. It is likely that the pricing differential for the bundles is explained by the competitive pressures in this exchange relative to other exchanges served by CenturyLink.

The Commission further notes that AT&T and CenturyLink not only offer bundles that include the local access line and various call management services; the carriers also offer bundles that include non-regulated services, such as television programming, internet, and wireless telephone service. AT&T's current offerings include a package for \$69.99 that includes a home telephone access line (U-Verse digital telephone service) and digital television programming; a package for \$94.99 that includes a home telephone access line (U-Verse digital telephone

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The combined company is now known as CenturyLink. In Kansas, the United Telephone Companies of Kansas retained their legal names and have adopted the new d/b/a name of CenturyLink.

service), Internet, and Direct TV programming with a digital video recorder; and a package for \$99.99 that includes a home telephone access line (U-Verse digital telephone service), Internet, and AT&T Nation 450 wireless service. Similarly, CenturyLink's current offerings include a package for \$45 that includes a home telephone access line and Internet service, and a bundle for \$85 that includes a home telephone access line, Internet service, and television programming.

AT&T and CenturyLink are not alone in diversifying their service offerings to include services that are closely related to their core product, landline telecommunications service. Cable companies previously offered cable television programming services exclusively, but are now competing for telecommunications and Internet customers as well. Cable companies that operate in Kansas, such as Time Warner Cable, SureWest, and Cox offer service packages that include Internet, telecommunications, and cable television services. Cox's current bundled offerings start at \$102 per month and include television programming, Internet, and telephone service. Time Warner Cable offers cable television, Internet, and digital telephone service packages starting at \$99.85 per month, and bundles that include digital telephone and Internet for \$59.90 per month. SureWest offers bundles that include the local telephone access line, Internet, and cable television programming for \$85 per month.

The Commission did not include AT&T's or its competitors' bundled package rates and associated access lines in its weighted average rate calculations, as the rates for such bundles that include multiple services that vary by provider would significantly distort the calculations. The Commission, however, believes it is important to recognize that such packages are available to customers.

**Weighted, Statewide Average Rate for Nonwireless Residential and Single Line Business Service**

Pursuant to K.S.A. 2006 Supp. 66-2005(q)(7), the Commission calculated the weighted, statewide average rate for nonwireless residential and single line business service as of July 1, 2006. The Commission sent data requests to all incumbent local exchange carriers and competitive local exchange carriers requesting information regarding rates for basic local service and the corresponding number of access lines served. From this information, the weighted, statewide average rate for nonwireless residential and single line business service as of July 1, 2006 was calculated. That rate is \$15.53 for residential service and \$26.37 for single line business service.

K.S.A. 2006 Supp. 66-2005(q)(7) was modified in 2008 by the passage of House Bill 2637. The new language further requires the Commission to calculate the weighted, statewide average rate of nonwireless basic local telecommunications service as of July 1, 2008. The Commission, again, sent data requests to all incumbent local exchange carriers and competitive local exchange carriers requesting information regarding rates for basic local service and the corresponding number of access lines served. From this information, the weighted, statewide average rate for nonwireless residential and single line business service as of July 1, 2008 was calculated. That rate is \$15.85 for residential service and \$27.74 for single line business service.

**Weighted Average Rate in Price Deregulated Exchanges**

The Commission was further directed to determine the weighted average rate of nonwireless basic local telecommunications services in exchanges that have been price deregulated pursuant to subsection q(1)(B), (C), or (D) on an annual basis. As of July 1, 2009, forty-five exchanges had been price deregulated. Therefore, the Commission calculated such

rates for residential and single line business service in AT&T's Almena, Arkansas City, Basehor, Cheney, Cherryvale, Clinton<sup>4</sup>, Coffeyville, Colby-Gem, Dodge City, El Dorado, Eudora, Garden City, Garden Plain, Goodland, Great Bend, Halstead, Hays, Humboldt, Hutchinson, Iola, Kansas City Metro, Kingman, Kinsley, Larned, Lawrence, Leavenworth-Lansing, Lindsborg, Lyons, Manhattan, McPherson, Medicine Lodge, Newton, Nickerson, Norton, Phillipsburg/Kirwin, Pittsburg, Plainville, Pratt, Salina, Smith Center, Tonganoxie, Topeka Metro, Towanda, Wichita Metro, and Winfield exchanges as of July 1, 2009.

The Kansas City, Topeka, and Wichita exchanges were price deregulated pursuant to K.S.A. 66-2005(q)(1)(B); thus, these were the first three exchanges to be price deregulated and the exchanges for which the Commission has the most years of data. The following are the weighted average rates in the Kansas City, Topeka, and Wichita exchanges since July 1, 2006:

	<u>7/1/2006</u>	<u>7/1/2007</u>	<u>7/1/2008</u>	<u>7/1/2009</u>
Kansas City				
Weighted Average Residential Rate	\$19.62	\$16.03	\$16.29	\$17.54
Weighted Average Business Rate	\$25.00	\$29.85	\$29.86	\$29.32
Topeka				
Weighted Average Residential Rate	\$23.03	\$16.25	\$15.85	\$16.51
Weighted Average Business Rate	\$23.94	\$29.62	\$29.54	\$30.66
Wichita				
Weighted Average Residential Rate	\$22.94	\$15.82	\$15.83	\$16.84
Weighted Average Business Rate	\$24.09	\$29.69	\$28.78	\$29.66

Prior to any price changes occurring as a result of price deregulation in the three exchanges that were automatically deemed price deregulated pursuant to subsection (q)(1)(B), the weighted average rate for residential service in each of the price deregulated exchanges was higher than the statewide, weighted average rate; however, the weighted average rate for business service in each of the price deregulated exchanges was lower than the statewide, weighted average rate. As noted in prior reports, the statewide, weighted average rate for

<sup>4</sup> Staff did not calculate the weighted average rate in the Clinton exchange for residential service because AT&T has been granted price deregulation in the Clinton exchange for only business service.

residential and single line business service includes the rates of the rural independent incumbent local exchange carriers who remain regulated under rate of return regulation. Historically, the residential rates of these carriers have been lower than those of the price cap regulated carriers in the state. The Commission has been adjusting the rates of the rural independent local exchange carriers as required by K.S.A. 66-2005(e)(1)(C). As the rural independent local exchange carriers' rates increase with the affordable rate calculation, the disparity in the weighted average rate calculations for residential service should decrease.

Three years after the exchanges were price deregulated the weighted average residential rate in each of the three exchanges is lower than the rate at the time of initial price deregulation; however it remains higher than the statewide, weighted average rate. It should be noted that the residential weighted average rate for these exchanges did increase between 2008 and 2009. The increase ranged from four to seven percent. Conversely, the weighted average business rate in each of the three exchanges is now higher than the statewide, weighted average rate and is also higher than the weighted average rate at the time of price deregulation.

The decrease in the weighted average residential rate in the three exchanges could possibly have occurred, in part, due to the promulgation of rules by the Federal Communications Commission (FCC) regarding the availability of certain unbundled network elements. Carriers that provided local service via the leasing of the unbundled network element platform typically either included additional call management services in a bundled offering in order to make a profit<sup>5</sup> or targeted credit-challenged customers to which they could charge more for their service. If offering only basic local service, these carriers often had to offer a price very similar to the price of the bundled offering in order to recover costs. Since the unbundled network element

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<sup>5</sup> It should be noted that although carriers that utilized the unbundled network element platform often provided service as a bundled offering, bundled rates are not included in the Commission's weighted average rate calculations.

platform is no longer available, many of these providers have either exited the market or converted to a different provisioning method. Thus, this may have led to the decreasing weighted average residential rate in the three exchanges. Another factor that may have affected this calculation is that more cable companies are now providing telephone service to customers. Cable providers have built facilities whose original purpose was targeted at residential customers for the provisioning of television services; thus, even though it produces lower telephone revenues when compared to the business sector, the residential market is a natural place for a cable provider to serve. Cable providers may be able to charge less for the local access line than other competitors since the cable providers own the facilities used to serve the customer and most of those facilities have been in place for a period of time.

It is also evident that the weighted average rates for business services in the Kansas City, Topeka, and Wichita exchanges have increased since the time of price deregulation. Three years after the exchanges were first price deregulated; the weighted average rate for business service in the Kansas City, Topeka, and Wichita exchanges has increased by 17, 28 and 23 percent, respectively. AT&T's rate for single-line business service in the three exchanges is \$32, which ranges from four to nine percent greater than the weighted average rate in each of the three exchanges. Thus, it does not appear that competitive pressures have kept AT&T's single-line business rates in check in these exchanges.

As discussed, the statute requires the Commission to determine the weighted average rate of nonwireless basic local telecommunications services in the exchanges that have been price deregulated pursuant to subsection q(1)(B), (C), or (D) on an annual basis. Below, in Table 4, is the result of those calculations, including the Kansas City, Topeka, and Wichita exchanges that were discussed previously.

**Table 4: Weighted, Average Rate in the Price Deregulated Exchanges**

<b>Exchange</b>	<b>Weighted, Average Residential Rate</b>	<b>Weighted, Average Business Rate</b>
Almena	\$14.25	\$25.56
Arkansas City	\$16.91	\$29.84
Basehor	\$21.72	\$34.04
Cheney	\$16.11	\$28.64
Cherryvale	\$15.77	\$28.28
Clinton	N/A	\$27.94
Coffeyville	\$16.00	\$28.89
Colby-Gem	\$13.38	\$22.57
Dodge City	\$16.32	\$28.21
El Dorado	\$15.97	\$28.91
Eudora	\$15.85	\$27.93
Garden City	\$16.18	\$28.36
Garden Plain	\$15.80	\$28.90
Goodland	\$13.46	\$22.83
Great Bend	\$15.62	\$27.51
Halstead	\$15.90	\$28.42
Hays	\$14.69	\$26.19
Humboldt	\$15.86	\$28.35
Hutchinson	\$16.18	\$28.72
Iola	\$15.85	\$28.99
Kansas City	\$17.54	\$29.32
Kingman	\$15.95	\$28.54
Kinsley	\$15.83	\$28.14
Larned	\$15.99	\$28.53
Lawrence	\$15.86	\$27.52
Leavenworth-Lansing	\$15.84	\$28.63
Lindsborg	\$15.84	\$28.67
Lyons	\$16.21	\$28.74
Manhattan	\$16.03	\$28.47
McPherson	\$15.90	\$28.08
Medicine Lodge	\$15.97	\$24.35
Newton	\$16.21	\$28.14
Nickerson	\$15.90	\$28.39
Norton	\$14.33	\$25.87
Phillipsburg-Kirwin	\$14.52	\$26.09
Pittsburg	\$15.79	\$28.44
Plainville	\$14.50	\$25.94
Pratt	\$16.11	\$27.18
Salina	\$16.07	\$28.05
Smith Center	\$14.45	\$26.31
Tonganoxie	\$15.79	\$29.29
Topeka	\$16.51	\$30.66
Towanda	\$15.93	\$28.21
Wichita	\$16.84	\$29.66
Winfield	\$16.33	\$28.81



It is evident from Table 4 that the weighted average rates for the price deregulated exchanges are fairly comparable, with the exception of the Basehor exchange. The Basehor exchange is substantially higher than the weighted average rate for the other exchanges. The Basehor exchange is a suburb of Kansas City in which AT&T offers optional extended area service local calling to and from the Kansas City exchange. Due to this added benefit, this exchange has historically higher rates than other exchanges in the state. Competing carriers may also include this extra benefit and charge a higher rate for this exchange as well. Therefore, the Commission does not find cause for concern regarding the difference in the weighted average rate of the Basehor exchange compared to the other price deregulated exchanges.

#### **Weighted, Statewide Average Rate and the Change in the CPI**

K.S.A. 2008 Supp. 66-2005(q)(7) further requires the Commission to calculate the product of the weighted, statewide average rate as of July 1, 2008 multiplied by one plus the change in the consumer price index (CPI) for goods and services for the study period. The change in the CPI for the study period of July 1, 2008 to June 30, 2009 was negative 1.4 percent.<sup>6</sup> The Commission has made the calculation using the statewide, weighted average rate discussed above as adjusted for inflation (or in this case, deflation) from the previous report. The calculations for the new rates adjusted for the change in CPI are below:

Residential	$\$15.85 * (1 + -.014) = \$15.63$
Single Line Business	$\$27.74 * (1 + -.014) = \$27.35$

The Commission is directed to compare this calculation to the weighted, average rate in the price deregulated exchanges. For residential service, the weighted, average rate in the price

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<sup>6</sup> The CPI data was produced by the Bureau of Labor Statistics and is available at: <http://www.bls.gov/cpi/cpid0906.pdf>

deregulated exchanges is higher than the CPI-adjusted calculations in thirty-five of the forty-four exchanges. For business service, the weighted average rate in the price deregulated exchanges is higher than the CPI-adjusted calculations in thirty-five of the forty-five exchanges. When comparing the weighted average rate in the price deregulated exchanges to the statewide, weighted average rate as of July 1, 2008 without applying the change in the CPI for the study period, the rate in twenty-six of the forty-four exchanges for residential service and thirty-three of the forty-five exchanges is still higher than the July 1, 2008 statewide, weighted average rate.

Due to recent changes in the economy, the rate of inflation from July 1, 2008 to June 30, 2009 was much lower than annual inflation rates of the last few years. In fact, the country experienced deflation rather than inflation during the study period. The June-to-June CPI change from 2007 to 2008 was 5.0 and the change in the CPI was 2.7 and 4.5 the two prior years. Thus, the negative 1.4 percent was quite a departure from not only last year, but the past several years. The U.S. Department of Labor's report states that the 25.5 percent decline in the energy index more than offset increases of 2.1 percent in the food index and 1.7 percent in the index for all items less food and energy. Thus, the decline in energy prices is largely responsible for the deflation that occurred over the study period.

That said, if the rate of inflation from July 1, 2008 to June 30, 2009 had been the same as the prior year's change in the CPI (5 percent), the weighted average rate in the price deregulated exchanges still would have exceeded the CPI-adjusted statewide, weighted average rate in four of the price deregulated exchanges for residential service and in six of the price deregulated exchanges for business service.

## Recommended Changes

The Commission is directed to recommend any changes to the statute it believes necessary when the weighted average price in a price deregulated exchange is greater than the statewide, weighted average rate adjusted by the change in the CPI. Presumably, a higher weighted average rate in the price deregulated exchanges would indicate that competition was not sufficiently disciplining the price for telecommunications services. While it is difficult to measure the effectiveness of competition based on a single measure, the Commission recognizes that the Legislature was attempting to arrive at a measure easy to administer and still provide some indication of whether the interest of consumers was being served by price deregulation. With that in mind, the Commission makes the following suggestions for changes to the statute.

As a starting point, the Commission suggests an inflation factor be used that is more closely aligned to the telecommunications market. Within the CPI is an index titled "telephone services." The telephone services index includes three components: local telephone service charges, long distance telephone services, and cellular telephone services. These services are weighted by the relative importance of each in the index. The data are for the U.S. city average of the CPI for all Urban Consumers (CPI-U), and the base period weight for each CPI item group is the average annual out-of-pocket expenditures that households had incurred for that item in 2005-06. While one might argue that the telephone services index is not an accurate indicator of price fluctuations for local service since it includes cellular service, the Commission believes it is a reliable indicator because AT&T competes against wireless service providers and wireless service is increasingly becoming a substitute for local landline service. The index also includes long distance services which are not entirely relevant to the pricing of local service but the index does not place a great deal of weight on this service. The index will reflect changes to local rates

that are the result of regulatory action since many areas covered by the index remain price regulated or can be influenced by changes in access charges ordered by either the FCC or state Commissions.

Even with these shortcomings, the index is certainly more closely aligned with the service for which the reasonableness of price changes is being assessed. If the statute were revised to require the change in the telephone services index within the CPI for the study period be used as the inflation factor, rather than the broad CPI for goods and services, then price changes that are not closely related to the telecommunications market and that may not affect telephone rates (or that would minimally affect telephone rates), would be excluded. As noted previously, the CPI can fluctuate greatly from year to year due to vast fluctuations in the energy market or other items that do not affect telecommunications prices as much as prices for other goods and services. A more closely aligned price index will allow Legislators to have greater confidence in their measure of competition and they would not be forced to make judgments about whether factors that may have greatly influenced the change in the CPI, such as fluctuations in gasoline prices, really would have affected telecommunications prices to the same extent.

If the Commission were to use the telephone services expenditure category of the CPI as the inflation factor, which was 1.5 percent for the same study period, the inflation-adjusted statewide average rate would be \$16.09 for residential service and \$28.16 for business service. Using this new benchmark, the weighted average rate for thirteen exchanges for residential service and twenty-seven exchanges for business service exceed the inflation-adjusted statewide, weighted average weight. While the data is still concerning, the Commission is confident that

this inflation factor gives a better picture of how the rates in the price deregulated exchanges stack up compared to the statewide, weighted average rate.

Further, the Commission finds it concerning that this is the second year in a row that the weighted average rate in several of the price deregulated exchanges is higher than the statewide, weighted average rate plus the change in the CPI for the study period. The data indicate that even when adjusting for the anomalous CPI, the weighted average rates for business and residential service in price deregulated exchanges is higher than the statewide, weighted average rate. As mentioned above, a single measure of competition may not be reflective of the effectiveness of competition. But, given the parameters set out in statute, one may be concerned that competition is not disciplining the pricing behavior of AT&T.

While in some instances the rates of AT&T are below the weighted average rate for the price deregulated exchanges, it is not in all instances and the company does not appear to be pressured by competitors to keep its rates lower. In reviewing additional data, the Commission looked to the provisions of K.S.A. 66-2005(q)(1)(F) which was amended by House Bill 2637 and effective July 1, 2008. As mentioned previously, this portion of the statute states:

up to and continuing until July 1, 2008, rates for the initial residential local exchange access line and up to four business local exchange access lines at one location shall remain subject to price cap regulation. On and after July 1, 2008, the local exchange carrier shall be authorized to adjust such rates without commission approval by not more than the percentage increase in the consumer price index for all urban consumers, as officially reported by the bureau of labor statistics of the United States department of labor, or its successor index, in any one year period and such rates shall not be adjusted below the price floor established in subsection (k). Such rates shall not be affected by purchase of one or more of the following: Call management services, intraLATA long distance service or interLATA long distance service. . .

AT&T's rates are consistent with this requirement.

Below, in Table 5, the Commission provides AT&T's rates adjusted by inflation compared to the rate increases that have been filed by AT&T. Since the pricing provision of K.S.A. 66-2005(q)(1)(F) went into effect on July 1, 2008, AT&T has only increased its residential and business rates for the local exchange access line in the Kansas City, Topeka, and Wichita exchanges. Therefore, Table 5 reflects rates for only those exchanges.

**Table 5: Rate Increases Compared to Inflation**

Exchange	AT&T's July 1, 2006 Rate	CPI Change 2006-2007	Inflation-adjusted	CPI Change 2007- 2008	Inflation-adjusted	CPI Change 2008-2009	Inflation-adjusted	Weighted Average Rate for Exchange as of 7/1/09	AT&T's Rate as of 7/1/09
Kansas City - Bus	\$30.25	2.7%	\$31.07	5.0%	\$32.62	-1.4%	\$32.16	\$29.32	\$32.00
Topeka - Bus	\$30.25	2.7%	\$31.07	5.0%	\$32.62	-1.4%	\$32.16	\$30.66	\$32.00
Wichita - Bus	\$30.25	2.7%	\$31.07	5.0%	\$32.62	-1.4%	\$32.16	\$29.66	\$32.00
Kansas City - Res	\$15.70	2.7%	\$16.12	5.0%	\$16.93	-1.4%	\$16.69	\$17.54	\$16.55
Topeka - Res	\$15.70	2.7%	\$16.12	5.0%	\$16.93	-1.4%	\$16.69	\$16.51	\$16.55
Wichita - Res	\$15.70	2.7%	\$16.12	5.0%	\$16.93	-1.4%	\$16.69	\$16.84	\$16.55

The initial residential access line and up to four business lines at one location remained under price cap regulation until July 1, 2008. On November 5, 2008, AT&T increased its business rate to \$32 and its residential rate to \$16.55 in the Kansas City, Topeka and Wichita exchanges. Table 5 demonstrates that although AT&T's rates have increased, the rates are in line with inflation.

Since the Commission suggests utilizing the telephone services index within the CPI rather than the CPI for goods and services; it also calculated the inflation-adjusted rates using the telephone services index inflation rates, as illustrated in Table 6 below. In this case, using the telephone services index as the inflation factor would actually have allowed greater latitude in

pricing; however, this may not always be the case. The change in the telephone services index was 1.5 percent from 2008 to 2009, and 2.2 and 3.2 the two prior years.

**Table 6: Rate Increases Compared to Inflation Using Telephone Services Index**

Exchange	AT&T's July 1, 2006 Rate	Telephone Services Index Change 2006-2007	Inflation-adjusted	Telephone Services Index Change 2007-2008	Inflation-adjusted	Telephone Services Index Change 2008-2009	Inflation-adjusted	Weighted Average Rate for Exchange as of 7/1/09	AT&T's Rate as of 7/1/09
Kansas City - Bus	\$30.25	3.2%	\$31.22	2.2%	\$31.90	1.5%	\$32.38	\$29.32	\$32.00
Topeka - Bus	\$30.25	3.2%	\$31.22	2.2%	\$31.90	1.5%	\$32.38	\$30.66	\$32.00
Wichita - Bus	\$30.25	3.2%	\$31.22	2.2%	\$31.90	1.5%	\$32.38	\$29.66	\$32.00
Kansas City - Res	\$15.70	3.2%	\$16.20	2.2%	\$16.56	1.5%	\$16.81	\$17.54	\$16.55
Topeka - Res	\$15.70	3.2%	\$16.20	2.2%	\$16.56	1.5%	\$16.81	\$16.51	\$16.55
Wichita - Res	\$15.70	3.2%	\$16.20	2.2%	\$16.56	1.5%	\$16.81	\$16.84	\$16.55

Since the data indicates that the effects of competition envisioned by the legislation have not occurred, the Commission suggests that the Legislature consider remedial steps. There are probably many viable alternatives but one straight forward possibility is to resume price cap regulation. Thus, the Legislature could require a carrier to resume price cap regulation if the statewide, weighted average rate is lower than the weighted average rate for the price deregulated exchange for a specified period, unless the carrier has rates in price deregulated exchanges that have increased by an amount equal to or less than the change in the CPI or CPI for telecommunications services. Thus, the legislature could determine that price cap regulation should be resumed after two, three, or four consecutive years of such pricing behavior.

**Other Data**

K.S.A. 2008 Supp. 66-2005 also requests other data regarding the status of competition.

Below, are three Tables with information regarding changes that have occurred in the competitive environment. In considering whether to make changes to the statute, the Legislature may wish to also consider this data.

As noted previously, the FCC promulgated new rules regarding the availability of certain unbundled network elements. These rule changes have affected the manner in which many competitive carriers provide service in Kansas. It appears that these rules have also affected the profitability of providing service by carriers that have not provisioned their own switching equipment.

Table 7 reflects the most recent data from the FCC utilized to examine the change in access lines served by competitive carriers and incumbent carriers in Kansas. While these data are for the entire state, most competitive carriers provided service in the area served by AT&T. Nationwide data are also provided for comparison. The data indicate that by June 30, 2008, CLECs served 28 percent of the local market in Kansas compared with 19 percent nationwide. It is evident that the number of lines served by CLECs has rebounded the past few years from its lowest point in 2005. The number of CLEC lines decreased from June 30, 2005 to December 31, 2005, but surpassed the June 30, 2005 level by December 31, 2006.

**Table 7: Number of Access Lines Served by Incumbent Local Exchange Carriers (ILECs) and Competitive Local Exchange Carriers (CLECs) in Kansas**

	12/31/02	6/30/03	12/31/03	6/30/04	12/31/04	6/30/05	12/31/05	6/30/06	12/31/06	12/31/07	6/30/2008
ILEC	1,236,051	1,186,953	1,149,527	1,102,696	1,067,801	1,110,300	1,122,549	1,100,313	1,073,934	1,012,435	977,368
CLEC	258,312	318,862	310,032	316,946	335,946	362,494	302,249	346,533	369,187	358,278	375,357
Total	1,494,363	1,505,815	1,459,559	1,419,642	1,403,747	1,480,202	1,424,798	1,446,846	1,443,121	1,370,713	1,352,725
% ILEC	83%	79%	79%	78%	76%	75%	79%	76%	74%	74%	72%
% CLEC	17%	21%	21%	22%	24%	25%	21%	24%	26%	26%	28%
% Nationwide	13%	15%	16%	18%	18%	19%	18%	17%	17%	18%	19%
% CLEC											

Data gathered from Table 7 of the FCC's report, "Local Telephone Competition," which is compiled by the Industry Analysis and Technology Division, Wireline Competition Bureau, published semi-annually.



It is likely that the competitive carrier resurgence has been caused by the market penetration of cable providers in the telecommunications market. Nationwide, the percentage of lines provided over coaxial cable has increased from 3.8 percent in December 1999 to 31.1 percent in June 2008.<sup>7</sup> Nationwide, about 9.4 million end-user switched access lines were provided by competitive providers over coaxial cable connections, which represent about 71 percent of the 13.1 million end-user switched access lines that competitors reported providing over their own local loop facilities and about 31 percent of all end-user switched access lines that CLECs reported. Telecommunications, especially to residential customers, is a natural place for a cable provider to serve since cable providers have already built facilities. Also, cable customers may find telecommunications service from the cable carrier attractive because the customers are already familiar with the company and customers may desire one-stop shopping. With the change in rules regarding provisioning of unbundled network elements, it is likely that cable providers' share of lines that are provided by competitive carriers will continue to increase.

FCC data further indicate the leasing of incumbent carriers' unbundled network elements is on the decline. Table 8 illustrates the percentages of competitive carriers' lines that were provisioned via resale, unbundled network elements, or the carriers' own facilities.

**Table 8: Method of Provisioning Service by Competitive Local Exchange Carriers (CLECs) in Kansas**

	6/30/05	12/31/2005	6/30/06	12/31/06	6/30/07	12/31/07	6/30/2008
Resold Lines	6.18%	5.94%	8.21%	3.68%	4.03%	3.97%	7.70%
UNEs	54.68%	50.05%	42.19%	37.64%	36.54%	33.28%	28.12%
CLEC-Owned	39.13%	44.00%	49.60%	58.69%	59.43%	62.75%	64.18%
Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

Data gathered from Table 11 of the FCC's report, "Local Telephone Competition," which is compiled by the Industry Analysis and Technology Division, Wireline Competition Bureau, published semi-annually.

<sup>7</sup> Local Telephone Competition: Status as of June 30, 2008, Industry Analysis and Technology Division, Wireline Competition Bureau, Federal Communications Commission, Released July 2009, Table 5.

From Table 8, it is evident that Kansas providers continue to shift from leasing unbundled network elements from the incumbent carrier to providing telecommunications services via the carriers' own facilities.

As of October 30, 2009, the Commission has authorized 129 competitive local exchange carriers to provide local telephone service in the exchanges of AT&T and CenturyLink. The number of CLECs has been larger in prior years; however, as conditions for entry into the local market have changed, many CLECs have exited the market. For those that remain, Annual Reports filed with the Commission indicate that approximately 64 CLECs were actually serving customers in Kansas. Of those CLECs, 12 were facilities-based providers providing service entirely over their own facilities, 25 resold the services of the incumbent local exchange carrier, eleven were providers utilizing a commercial agreement, and another 16 provided service via a combination of resale, facilities-based modes of provisioning, and commercial agreements. Of the ten CLECs serving the most lines in Kansas, seven are facilities-based providers.

Table 9 demonstrates the percentage change in access line counts for ten of the largest competitive carriers in Kansas, as well as for AT&T, for each year from 2004 to 2008. Data regarding access line counts for 2009 will not be available until May 2010.

**Table 9: Percentage Change in Access Line Count**

Carrier Name	2004	2005	2006	2007	2008
AT&T / TCG* (CLEC)	19.73%	-13.67%	-15.89%	-19.25%	12.71%
Birch	-29.56%	-22.47%	-37.97%	-21.16%	-17.05%
Cox	165.49%	105.64%	40.29%	70.84%	19.62%
SureWest (formerly Everest)	26.49%	4.04%	11.82%	6.15%	21.90%
MCI	-10.17%	-18.89%	-4.27%	-19.26%	-17.29%
Nex-Tech	29.74%	5.35%	1.06%	5.06%	0.49%
NuVox	-7.76%	-27.53%	-1.03%	21.97%	11.67%
Sage	-12.59%	-19.80%	-11.25%	-26.08%	-25.72%
Time Warner Cable	No Data <sup>1</sup>	131.36%	46.94%	28.11%	7.11%
WorldNet, LLC	No Data	No Data	18.13%	2.17%	2.60%
<b>SWBT (AT&amp;T)</b>	<b>-7.11%</b>	<b>-4.00%</b>	<b>-4.94%</b>	<b>-5.84%</b>	<b>-9.01%</b>

<sup>1</sup> The carrier did not provide service in the prior year to enable a calculation to be made.

\* AT&T & TCG merged with SWBT

The data in Table 9 indicate that seven of the ten largest carriers have experienced increases in access lines from 2007 to 2008, and four of those carriers are cable-based providers. In fact, the four cable-based providers, Cox, Everest, Time Warner Cable, and WorldNet experienced access line growth in each of the last five years in which each was operating, while Nex-Tech is the only competitive carrier that is not a cable-based provider that achieved access line growth for all five years. It is possible that the access line decreases experienced by the carriers that are not cable-based providers are the result of rigorous competition with AT&T, but it is also possible that the trend is a result of policy changes implemented by the FCC and other trends in the telecommunications market.

Another trend in the telecommunications market and possible reason for access line losses may be due to the significant growth in mobile wireless telephone subscribership. According to the FCC, there are over 2 million subscribers to wireless service in Kansas. FCC data reveal that wireless subscribers have increased by 9% from June 2007 and by 158% since June 2001.<sup>8</sup>

Kansas Wireless Subscribers<sup>9</sup>

June 2001	June 2002	June 2003	June 2004	June 2005	June 2006	June 2007	June 2008
901,225	1,061,171	1,195,230	1,345,160	1,659,662	1,905,342	2,133,399	2,326,444

It should be further noted that wireless service is increasingly becoming a substitute for landline voice service. Thus, many customers are not only subscribing to wireless service, they are dropping their traditional landlines to do so. A recent study by the Centers for Disease

<sup>8</sup> Id., Table 14.

<sup>9</sup> Id., Table 14.

Control (CDC) indicates that approximately 21% of households use only wireless service.<sup>10</sup>

Other data on wireless usage from the CDC indicate:

Two in five adults renting their home (40.9%) had only wireless telephones. Adults renting their home were more likely than adults owning their home (12.8%) to be living in households with only wireless telephones.

Nearly half of adults aged 25-29 years (45.8%) lived in households with only wireless telephones. More than one-third of adults aged 18-24 (37.6%) and approximately one-third of adults aged 30-34 (33.5%) lived in households with only wireless telephones.

As age increased from 35 years, the percentage of adults living in households with only wireless telephones decreased: 21.5% for adults aged 35-44; 12.8% for adults aged 45-64; and 5.4% for adults aged 65 and over. However, [ ] the percentage of wireless-only adults within each age group has increased over time.<sup>11</sup>

Another possible reason for the decline in access lines may be due to the emergence of Voice over Internet Protocol (VoIP) technology. VoIP is a packet-based technology that allows customers to make voice calls using a broadband Internet connection instead of a regular (or analog) phone line. Some VoIP services only work over a computer or a special VoIP phone, other services use a traditional phone connected to a VoIP adapter. Some customers may have dropped their landline to switch to a VoIP provider, such as Vonage or Skype. In addition, AT&T now offers a telephony service, U-Verse, which is provisioned via VoIP; therefore, some of AT&T's line losses may not actually be losses, the customers may have converted from AT&T's legacy telecommunications service to AT&T's U-Verse service.

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<sup>10</sup>Blumberg SJ, Luke JV. Wireless substitution: Early release of estimates from the National Health Interview Survey, January-June 2009. National Center for Health Statistics. December 2009. Available from: <http://www.cdc.gov/nchs/data/nhis/earlyrelease/wireless200912.pdf>

<sup>11</sup> *Id.*

## Conclusion

While many competitive carriers have experienced a decline in the number of access lines they serve, that decline is likely to have been the result of policy changes implemented by the FCC regarding the availability of certain unbundled network elements and also due to increasing competition from cable, wireless, and VoIP providers.

Given the current data, the Commission recommends the legislature consider revising the statute to require the Commission to use the telephone services index within the CPI index, rather than the CPI for all goods and services. The Commission further suggests that the Legislature consider remedial steps for exchanges that exceed the statewide, weighted average rate adjusted for inflation comparison. There are probably many viable alternatives but one straight forward possibility is to resume price cap regulation. The Legislature could require a carrier to resume price cap regulation if the inflation-adjusted statewide, weighted average rate is lower than the weighted average rate for the price deregulated exchange for a specified period, unless the carrier has rates in price deregulated exchanges that have increased by an amount equal to or less than the change in the CPI or CPI for telecommunications services. Thus, the legislature could determine that price cap regulation should be resumed after two, three, or four consecutive years of such pricing behavior.

Briefing on Slamming and Cramming  
Before the House Energy and Utilities Committee  
March 9, 2010  
Christine Aarnes, Senior Managing Telecom Analyst  
On behalf of the Kansas Corporation Commission

Chairman Holmes and members of the House Energy and Utilities Committee:

Thank you for the opportunity to discuss slamming and cramming issues with you. The following is a brief overview of slamming and cramming; however, I would be happy to respond to any further questions you might have.

**Slamming**

Competition in long distance and local service has provided consumers with a wide variety of choices and rate plans for local service and toll calls. Consumers are able to change carriers through their LEC or through a telecommunications carrier solicitation by telemarketing, mail, or over the Internet.

An unintended consequence of this has been "slamming." The FCC defined slamming as "changing a subscriber's (or consumer's) carrier selection without that subscriber's knowledge or explicit authorization." The FCC adopted rules and regulations to curb slamming and impose penalties on telecommunications carriers who commit slams.

The Commission has elected to administer these rules for Kansas subscribers. During Fiscal Year 2009, the KCC received 104 slamming complaints, either directly from consumers or referrals from the FCC. Staff investigates each complaint by asking for a copy of any billing received by the subscriber, requesting account information from the LEC or CLEC, and sending a request for verification of the switch to the alleged slamming carrier. Verification may be in the form of a recording of the telemarketing call, a signed Letter of Authorization (LOA), or an internet form. Most verification requires a unique identifier such as the last four digits of a social security number or date of birth.

Upon investigation of the complaints received during the period, three of the 104 slamming complaints were designated as violations of the FCC's rules. Slamming complaints received by the Commission decreased significantly after the national Do Not Call registry was established in 2003. The number of slamming complaints filed with the Commission continues to decrease.

For calendar years 2007, 2008 and 2009, the Commission received 138, 126 and 70 slamming complaints, respectively.

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ATTACHMENT 2-1

Confirmed slamming complaints result in the following remedies for consumers:

If the consumer has not paid the charges, the consumer is entitled to absolution from the charges incurred during the first 30 days after the slam occurred. Neither the slamming company nor the authorized carrier may collect these charges. Any charges after the initial 30 days are re-rated to the consumer's preferred carrier rate.

If the consumer has already paid the charges, the slamming carrier forwards to the authorized carrier:

- 1) An amount equal to 150% of all of the charges paid by the consumer in the first 30 days and,
- 2) copies of any telephone bills issued by the slamming carrier after the initial 30 days for re-rating of charges to the preferred carrier's rate.

### **Cramming**

"Cramming" is the practice of placing unauthorized, misleading, or deceptive charges on your telephone bill. Crammers rely on confusing telephone bills in an attempt to trick consumers into paying for services they did not authorize or receive, or that cost more than the consumer was led to believe.

For calendar years 2007, 2008 and 2009, the Commission received 13, 27, 47 cramming complaints, respectively.

The FCC's Truth-in-Billing rules require telephone companies to provide clear, non-misleading, plain language in describing services for which you are being billed. Because one telephone company, usually your local telephone company, may include charges you incurred for another company's service on your bill, the company sending you the bill must identify the service provider associated with each charge. If a bill contains charges in addition to basic local service, it must distinguish between charges for which non-payment will result in disconnection of basic, local service and charge for which non-payment will result in disconnection of basic, local service, and charges for which non-payment will not result in disconnection. Telephone companies must also display on each bill, one or more toll-free numbers that you can call to ask about or dispute any charge on the bill.



Mark Parkinson, Governor  
Thomas E. Wright, Chairman  
Joseph F. Harkins, Commissioner

March 5, 2010

House Energy and Utilities Committee  
Docking State Office Building  
915 SW Harrison, Rm. 785  
Topeka, KS 66612

Chairman Holmes and members of the House Energy and Utilities Committee:

During our discussion on March 3, 2010, Chairman Holmes requested further information regarding Voice over Internet Protocol (VoIP) providers, a list of the carriers that have been deemed competitive eligible telecommunications carriers (ETCs) in Kansas, and a glossary of telecommunications acronyms.

Attached to this letter is a list of the ETCs along with the type of universal service support the carrier is eligible to receive. A printed glossary of telecommunications terms is also attached. For your convenience, I am also including two links to online telecom glossaries that may be helpful. <http://cbdd.wsu.edu/telework/terms.html> and <http://www.its.bldrdoc.gov/fs-1037/> are both useful resources.

Four attachments regarding VoIP providers are also attached. Attachment V1 lists VoIP providers that are registered with the Kansas Universal Service Fund (KUSF) administrator and reporting Kansas revenues. Attachment V2 lists VoIP providers that are registered with the Federal Communications Commission but are not registered with the KUSF administrator. Attachment V3 lists VoIP providers that have registered with the KUSF administrator but report no revenues for the state of Kansas. Lastly, Attachment V4 lists other carriers that have reported VoIP revenues to the KUSF administrator.

Please let me know if you have additional questions on this matter. I can be contacted at (785) 271-3132 or at [c.arnes@kcc.ks.gov](mailto:c.arnes@kcc.ks.gov).

Sincerely,

Christine Aarnes  
Senior Managing Telecommunications Analyst  
Kansas Corporation Commission

HOUSE ENERGY AND UTILITIES

DATE: 3/9/2010

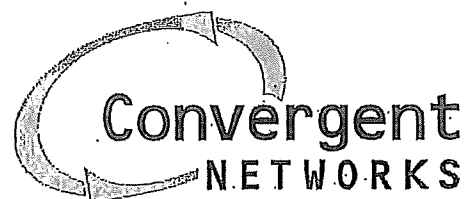
ATTACHMENT 3-1



## Competitive ETCs in the state of Kansas

Company Name	Dates		FUSF, KUSF or both
	Filing	KCC Approval	
Alltel Kansas LP	09/19/04	09/24/04	FUSF
Big River Telephone Company, LLC	08/27/09	10/28/09	FUSF & KUSF
Cellular Network Partnership d/b/a Pioneer Cellular	03/20/06	11/21/06	FUSF
dPi Teleconnect, LLC	01/28/08	05/30/08	FUSF- Lifeline only
Epic Touch Co.	11/01/04	04/19/05	FUSF & KUSF
H&B Cable Service, Inc	06/15/04	10/25/04	FUSF & KUSF
Lifeconnex Telecom, LLC	09/14/09	01/06/10	FUSF-Lifeline only
Nex-Tech Inc.	06/06/03	11/14/03	FUSF & KUSF
Nex-Tech Wireless, LLC	07/15/05	12/12/05	FUSF & KUSF
Nexus Communications, Inc.	12/15/05	04/06/07	FUSF
RCC Minnesota, Inc.	10/10/03	09/30/04	FUSF
Sage Telecom, Inc.	04/15/03	10/09/03	FUSF & KUSF
Sprint Spectrum L.P. dba Sprint PCS	09/04/98	01/18/00	FUSF & KUSF
United Wireless Communications, Inc.	9/8/2005	1/17/2006	FUSF & KUSF
USCOC of Nebraska/Kansas LLC	11/4/2005	2/10/2006	FUSF
WestLink Communications, LLC	6/28/2007	11/21/2007	FUSF
Wildflower Telecommunications, LLC	6/12/2007	11/2/2007	FUSF & KUSF
YourTel America, Inc.	11/04/02	04/07/03	FUSF-Lifeline only

# **GLOSSARY of Telecommunications Terms**



## **List of Abbreviations for Telecommunications Terms**

**AAL** – ATM Adaptation Layer

**ADPCM** – Adaptive Differential Pulse Code Modulation

**ADSL** – Asymmetric Digital Subscriber Line

**AIN** – Advanced Intelligent Network

**ALI** – Automatic Location Information

**AMA** - Automatic Message Accounting

**ANI** – Automatic Number Identification

**ANSI** – American National Standards Institute

**API** – Applications Programming Interface

**ATM** – Asynchronous Transfer Mode

**BHCA** – Busy Hour Call Attempts

**BHCC** – Busy Hour Call Completions

**B-ISDN** – Broadband Integrated Services Digital Network

**B-ISUP** – Broadband ISDN User's Part

**BLV** – Busy Line Verification

**BNS** – Billed Number Screening

**BRI** – Basic Rate Interface

**CAC** – Carrier Access Code

**CCS** – Centi Call Seconds

**CCV** – Calling Card Validation

**CDR** – Call Detail Record

**CIC** – Circuit Identification Code

**CLASS** – Custom Local Area Signaling

**CLEC** – Competitive Local Exchange Carrier

**CO** – Central Office

**CPE** – Customer Provided/Premise Equipment  
**CPN** – Called Party Number  
**CTI** – Computer Telephony Intergration  
**DLC** – Digital Loop Carrier System  
**DN** – Directory Number  
**DSL** – Digital Subscriber Line  
**DSLAM** – Digital Subscriber Line Access Multiplexer  
**DSP** – Digital Signal Processor  
**DTMF** – Dual Tone Multi-Frequency  
**ESS** – Electronic Switching System  
**ETSI** - European Telecommunications Standards Institute  
**GAP** – Generic Address Parameter  
**GT** – Global Title  
**GTT** – Global Title Translations  
**HFC** – Hybrid Fiber Coax  
**IAD** – Integrated Access Device  
**IAM** – Initial Address Message  
**ICP** – Integrated Communications Provider  
**ILEC** – Incumbent Local Exchange Carrier  
**IMT** – Inter-Machine Trunk  
**IN** – Intelligent Network  
**IP** – Internet Protocol  
**ISDN** – Integrated Services Digital Network  
**ISP** – Internet Service Provider  
**ISTP** – Internet Signaling Transport Protocol

**ISUP** – ISDN User Part

**IXC** – Inter-Exchange Carriers

**LAN** – Local Area Network

**LATA** – Local Access Transport Area

**LCR** – Least Cost Routing

**LEC** – Local Exchange Carrier

**LERG** – Local Exchange Routing Guide

**LES** – Loop Emulation Service

**LIDB** – Line Identification Database

**LNP** – Local Number Portability

**LRN** – Local Routing Number

**MF** – Multi Frequency

**MFJ** – Modified Final Judgement

**MGCP** – Media Gateway Control Protocol

**MMF** – Multi-Mode Fiber

**MTP** – Message Transfer Part

**NANP** – North American Numbering Plan

**NEBS** – Network Equipment Building Standards

**NFAS** – Non-Facility Associated Signalling

**N-ISDN** – Narrowband Intergrated Services Digital Network

**NP** – Number Portability

**OAM** – Operations, Administration, and Maintenance

**OLNS** – Originating Line Number Screening

**OSI** – Open Systems Interconnection Model

**OSS** - Operations Support System

**PBX** – Private Branch Exchange

**PCM** – Pulse Code Modulation

**PODP** –Public Office Dialing Plan

**POI** – Point of Interface

**POP** – Point of Presence

**POTS** – Plain Old Telephone Service

**PRI** – Primary Rate Interface

**PSTN** – Public Switched Telephone Network

**PVC** – Permanent Virtual Circuit

**RBOC** – Regional Bell Operating Company

**SAC** – Service Access Code

**SAM** – Service Access Multiplexer

**SCCP** – Signaling Connection Control Part

**SCE** – Service Creation Environment

**SCP** – Service Control Point

**SDH** – Synchronous Digital Hierarchy

**SIBB** – Service Independent Building Block

**SIP** – Session Initiation Protocol

**SLEE** – Service Logic Execution Environment

**SMF** – Single Mode Fiber

**SMS** – Service Management System

**SONET** – Synchronous Optical Network

**SS7** – Signaling System 7

**SSP** – Service Switching Point

**STM** – Synchronous Transport Mode

**STP** – Signal Transfer Point

**SVC** – Switched Virtual Circuit

**TCAP** – Transaction Capability Application Part

**TDM** – Time Division Multiplexing

**UM** – Unified Messaging

**VC** – Virtual Circuit

**VoATM** – Voice over ATM

**VoDSL** – Voice over DSL

**VoIP** – Voice over IP

**VoP** – Voice over Packet

## Glossary of Telecommunications Terms

**4ESS** - Class 4 toll switch made by Lucent

**5ESS** - End Office switch made by Lucent

**AAL** – ATM Adaptation Layer. Protocol used on top of ATM to support high-level service requirements, converting non-ATM bit streams into ATM cells.

**AAL2** - ATM Adaptation Layer 2. Used for carrying both CBR traffic and VBR traffic simultaneously, usually in support of voice over ATM.

**AAL5** – ATM Adaptation Layer 5. AAL functions in support of VBR, delay-tolerant connection-oriented traffic requiring minimal sequencing or error detection support.

**Access Tandem** - A tandem switch that is used to interconnect between carriers for equal access. Typically, this used to interconnect ILECs with IXC's, but now also includes CLECs.

**Adaptive Differential Pulse Code Modulation (ADPCM)** – A ITU-TS standard technique for voice encoding and compression. It allows analog traffic to be carried within a 32Kbps digital channel.

**Advanced Intelligent Network (AIN)** - An evolving, service-independent architecture that allows a carrier to quickly and economically create and modify telecommunication services for its customers.

**A-Link** - In the SS7 world, an A-link is a signaling link that connects a STP to a SSP or SCP. A-links operate at a transmission speed of 56 Kbps.

**American National Standards Institute (ANSI)** - A non-government organization which develops and distributes standards for transmission codes, protocols and high-level languages for suggested use in the U.S.

**Applications Programming Interface (API)** - Software that an application program uses to request and carry out lower level services performed by the computers or a telephone systems operating system. For Windows, the API also helps applications manage windows, menus, icons and other GUI elements. In short, an API is a "hook" into software. An API is a set of standard software interrupts, calls and data formats that applications programs use to initiate contact with network services, mainframe communications programs, telephone equipment or program-to-program communications. For example, applications use APIs to call services that transport data across a network. Standardization of APIs at various layers of a communications protocol stack provides a uniform way to write applications. NetBIOS is an early example of a network API. Applications use APIs to call services that transport data across a network.

**Asymmetric Digital Subscriber Line (ADSL)** – Technology using digital filtering to remove noise from twisted-pair copper lines, enabling broadband transmission. There are several varieties of ADSL using varying hardware, modulation software and compression techniques. ADSL-2 can deliver up to four VCR-quality video signals but has limited upstream response.



ADSL can only work over distances of less than 12,000 feet, a requirement 60% of U.S. homes meet.

**Asynchronous Transfer Mode (ATM)** - An international standard for high-speed broadband packet-switched networks operating at broadband digital transmission speeds. The technology is based on fixed-length, 53-byte cells. ATM includes protocols that specify how diverse kinds of traffic are transformed into standardized packets whose transport can be managed uniformly within the network.

**Automatic Location Identifier (ALI)** – A feature of E911 systems that provides information such as name, phone number, address, nearest cross street, to agents answering E911 calls.

**Automatic Message Accounting (AMA)** – The network functionality that measures, collects, formats, and outputs subscriber network-usage data to upstream billing and other operating systems.

**Automatic Number Identification (ANI)** – More colloquially called Caller ID. A service provided by local exchange carriers in which the telephone number of a caller is sent to the called-party's telephone between the first and second ring. This is one of several CLASS services, all of which require SS7 interoffice signalling.

**Backbone** – Part of a network used to connect smaller segments of networks together.

**Bandwidth** - The relative range of frequencies that can be passed by a transmission medium. Greater bandwidths mean a higher information carrying capacity of the transmission circuit. Usually measured in Hertz, bandwidth is assessed as the number of bits that can be transferred per second.

**Basic Rate Interface (BRI)** - The ISDN interface standard for single-line ISDN service. This standard provides for two message-bearing 64 Kbps B channels for speech and data, plus a 16 Kbps D channel for network signaling and data.

**B channel** - Message-bearing 64 Kbps digital channel used for digital transmission of high speed data and video.

**Billed Number Screening (BNS)** – When consumers decide who can and who cannot charge a call to their phone based on an agreement with their local telephone company to screen calls.

**Bit Rate** – The number of bits transmitted over a telephone line per second.

**B-Links, D-Links and B/D Links** - Links interconnecting two mated pairs of STPs are referred to as B-links, D-links or B/D links.

**Broadband** - A term used to describe a channel with more bandwidth than a standards voice grade channel. Broadband channels are used to carry multiple high-speed voice and data transmissions on a common communications path.

**Broadband Integrated Services Digital Network (B-ISDN)** - An evolving standard for the second generation of integrated services digital networks. Broadband ISDN services employ packet switching to integrate voice and data services over a high-speed, packet-based infrastructure.

**Broadband ISDN User's Part (B-ISUP)** - An SS7 protocol defining the signaling messages to control connections and services.

**Bursty** - Data transmitted in short, uneven bursts with relatively long, silent intervals between.

**Busy Hour** - An uninterrupted 60-minute period during which the average volume of telecommunications traffic is at its maximum.

**Busy Hour Call Attempts (BHCA)** - A measure of dynamic traffic calls that can be attempted in an average Busy Hour.

**Busy Hour Call Completion (BHCC)** - A measure of dynamic traffic calls that can be completed in an average Busy Hour.

**Busy Line Verification (BLV)** - A feature that allows an attendant to verify the busy or idle state of telephone lines and to break into the conversation.

**Call Detail Record (CDR)** - A billing feature of a telephone system which allows the system to collect and record information on outgoing and incoming phone calls such as who made/received them, where they went, what time, how long, etc.

**Called Party Number (CPN)** - When a call is set up over an ISDN network, SS7 send an initial address message which contains the as part of the ISUP protocol

**Calling Card Validation (CCV)** - Process of verifying that a calling card is valid and then processing a call to be billed to that account.

**Carrier Access Code (CAC)** - The sequence that an end user dials in order to access the carrier's switch service. The codes are composed of 7 digits in the form of 101xxxx, where xxxx is the CAC.

**Centi Call Seconds (CCS)** - In telecommunications traffic engineering terminology, CCS represents (centi call seconds) one hundred call seconds or one hundred seconds of telephone conversation. One hour of telephone traffic is equal to 36 CCS ( $60 \times 60 = 3600$  divided by  $100 = 36$ ) which is equal to one erlang. CCS are used in network optimization. CCS can also mean Cumulative call seconds which is measure of trunk occupancy.

**Central Office (CO)** - The facility of a telecommunications common carrier where subscribers' lines are joined to switching equipment for connecting other subscribers to each other, locally and long distance.

**Centrex** - A type of phone service offered by local exchange carriers that provide PBX like functions to a group of users without the need for a PBX. Despite having individual phones connected to the central office, users are able to dial each other by extensions, transfer calls, etc.

**Circuit Identification Code (CIC)** - An SS7 term used to identify a particular circuit within a trunk group.

**Circuit Switch** – A switching system that establishes a dedicated physical connection between end points, in a network, for the duration of the communication session.

**Class 4 Office** - A switching center for toll calls. A class 4 office switches toll traffic originating at class 5 offices to other class 4 offices, or offices of a higher class. In addition, a class 4 office relays toll traffic from class 4 toll offices to the class 5 end office serving the destination address.

**Class 5 Office** - The lowest level in a hierarchy of central offices. Class 5 offices serve as the network entry point for user access lines and are a switching center for local calls.

**C-Links:** Links that interconnect mated STPs. They are used to enhance the reliability of the signaling network in cases where one or multiple links are unavailable.

**Competitive Local Exchange Carrier (CLEC)** - These are new local carriers, typically formed after the US Telecommunications Act of 1996, to compete with the incumbent RBOCs.

**Compression** – Reducing the size of the data, image, voice or video file sent over a telephone line, lessening the bandwidth needed to transmit the file.

**Computer Telephony Integration (CTI)** - The combining of data with voice systems in order to enhance telephone service. Examples include the delivery of Caller ID information via a PC, and the ability to access mail via the PC.

**Custom Local Area Signaling Services (CLASS)** - A grouping of optional features to basic local exchange telephone service or enhanced telephony services that utilize the signaling system 7 (SS7) channel to carry data about a call. CLASS provides subscribers with the ability to screen and selectively reject, forward, trace, and redial incoming call—Caller ID is one example.

**Customer Premise Equipment (CPE)** – Equipment which resides on the customer's premise, such as a PBX or IAD.

**Default Routing** – The ability of the switch to continue the call based on the dialed number when the SCP cannot be accessed due to abnormal circumstances.

**Digital Signal Processor (DSP)** – A digital microprocessor that calculates digitized signals that were originally analog (e.g. voice) and then sends the results on. DSPs are used in telecommunications for tasks such as echo cancellation, call progress monitoring, voice processing and for compression.

**Directory Number (DN)** – A unique complement of digits associated with the name of a subscriber in a telephone directory. Your phone number.

**Digital Loop Carrier (DLC)** - An access provisioning system by which a telephone switch is able to remotely deploy telephony interfaces to customers. Typically, the connection between the switch and DLC is via a digital or fibre connection, and user interfaces such as POTS lines are deployed out of the DLC to customers.

**Digital Subscriber Line (DSL)** - DSL is the technology that is employed between a customer location and the carrier's network that enables more bandwidth to be provided by using as much of the existing network infrastructure as possible.

**Digital Subscriber Line Access Multiplexer (DSLAM)** - A network device at a telephone company central office that receives signals from multiple customer DSL connections and puts the signals on a high-speed backbone line using multiplexing techniques.

**DMS 100** - Class 5 end office switch made by Nortel.

**DMS 250** - Access tandem switch made by Nortel.

**DMS 500** - Class 5 end office switch made by Nortel.

**Donor Exchange** - The switch the Directory Number was initially ported from.

**DS-0** - Digital signal level zero. A single digital 64 Kbps, pulse code modulated, transmission channel which represents the starting point for a digital multiplexing hierarchy.

**DS-1** - Digital signal level one. A 1.544 Mbps digital signal comprised of 24 multiplexed 64 Kbps DS-0 digital channels.

**DS-3** - Digital signal level three. A 44.6 Mbps digital signal comprised of 28 multiplexed DS-1 signals that is carried over a T-3 facility.

**Dual Tone Multi-Frequency (DTMF)** - A term used to describe push button or touchtone dialing.

**E-1** - The European equivalent of a T-1, however an E-1 line can support 32 64kbps channels, versus 24 64kbps of a T-1.

**E-3** - The European standard for T-3.

**E911** - Enhanced emergency reporting service. 911 service becomes enhanced 911 when there is a minimum of two special features added to it - Automatic Number Identification (ANI) and Automatic Location Information (ALI).

**Echo cancellation** - A technique that allows for the isolation and filtering of unwanted signals caused by echoes from the main transmitted signal.

**E-links**: Links that provide backup connectivity to the SS7 network in the event that the 'home' STPs are unreachable using the A-links.

**End Office** - The location where carriers place telecom equipment closest to the customer. Typically, this is where customers are provisioned. Class 5 switches are typically located here.

**Equal Access** - A condition where the local exchange access service offered by a carrier is made available in equal kind, quality, and price to all long distance companies.

**Electronic Switching System (ESS)** - One type of AT&T/Lucent's family of stored, program-controlled central office switches, including the 4ESS and 5ESS switches.

**European Telecommunications Standards Institute (ETSI)** - The European counterpart of ANSI, tasked with paving the way for telecommunications integration in the European

community as part of the single European market program. ETSI's main goal is the unrestricted communication between all the member states by provisioning European standards.

**EWSD** - Switching system made by Siemens.

**Exchange** – Another term for switch.

**F-links** – A link used to connect two SS7 signaling points.

**Facilities Based Service Provider** – Identifies owners of switches and infrastructure—a reseller of switched services is not a facility based service provider.

**Feature Group** - In switched access tariffs, a Feature Group denotes a specific and uniform type and quality of local exchange access available to inter-exchange carriers and other types of telecommunications companies.

**Feature Group A** - A line-side switched access connection for originating and terminating traffic. Customers of a long distance company that use Feature Group A for originating access must dial a seven-digit local number to reach an inter-exchange carrier, and then use a touch tone phone or tone dialer to dial an identification code plus the phone number they want to reach. In areas where equal access is not available, Feature Group A is provided at discounted rates.

**Feature Group B** - A trunk-side switched access connection for originating and terminating traffic. Transmission quality is superior to that of Feature Group A. Customers of a long distance company using Feature Group B for originating access must dial "950" followed by a "1" or a "0" and the three-digit carrier identification code of their chosen company. Mostly superseded by Feature Group D.

**Feature Group C** - A trunk-side switched access connection that directly links local phone company end offices with the long distance network of AT&T. Only AT&T has Feature Group C access connections, which offer the highest transmission quality and a complete array of access features for originating and terminating long distance traffic.

**Feature Group D** - The equal access connection; a trunk-side switched access connection equal in quality, features, and price to the Feature Group C connection of AT&T. Customers in exchanges where Feature Group D is available can pre-subscribe to any one long distance company. They can reach their chosen company by dialing "1" plus the phone number they want to reach. Customers in an equal access area can use other long distance companies by dialing "1" and "0" and the five-digit carrier identification code of the carrier they want.

**Frame Relay** – A packet-switched method of data communications provided by telecommunications carriers and Internet service providers. Frame relay can provide guaranteed bandwidth at no additional charge if the lines are open during periods of low traffic.

**Fully Associated Link (F-links)** – A link which is used to connect two SS7 signaling points when there is a high community of interest between them and it is economical to link them.

**Global Title (GT)** – An address such as customer-dialed digits that does not contain information that would allow the SS7 network to route it.

**Global Title Translations (GTT)** – The process of translating a GT from dialed digits to a point code address and application address by means of a STP.

**GR-303** – A set of technical specifications from Bellcore that define the interface between the DLC and a Class 5 switch.

**G-Recommendations** – A series of standards defined by the ITU-T covering transmission facilities. Including, but not limited to:

**H.323** – A framework of protocols for inter-working voice, video and data across an IP network.

**Hot Swappable** – The ability of a component to be added to or removed from a piece of equipment without powering down the device, providing maximum uptime.

**Hunt Group** – A series of telephone lines organized so that if the first line is busy the next line is hunted and so on until a free line is found.

**Hybrid Fiber Coax (HFC)** – An access infrastructure typically used by cable companies and multiple system operators (MSOs) to deliver services to their customers. Most of the access infrastructure is via fiber, with the last portion (street to home) being coaxial cable.

**In-Band Signaling** – A method of controlling information in a telecommunications network by using tones or other signals carried within the same band or channel as the information being carried. For example, in a telephone call, tones can be used to control the transmission, receipt and disconnection of the call.

**Initial Address Message (IAM)** – A SS7 signaling message that contains the address and routing information required to establish a point-to-point telephone connection.

**Integrated Access Device (IAD)** – An access device located on the customer premises that can handle both voice and data services.

**Integrated Communications Provider (ICP)** – A company that provides bundled communications services, including voice and data services.

**Interexchange Carrier (IXC)** – Long distance companies that sell toll-free 800, international and outgoing telephone service on an interstate basis.

**Incumbent Local Exchange Carrier (ILEC)** – This is the incumbent local phone company which owns most of the local loops and facilities in a serving area; frequently an RBOC.

**Integrated Services Digital Network (ISDN)** – A switched network providing end-to-end digital connectivity for simultaneous transmission of voice and/or data over multiple multiplexed communications channels and employing transmission and out-of-band signaling protocols that conform to internationally-defined standards.

**Intelligent Network (IN)** - A telecommunications network architecture in which processing capabilities for call control and related functions are distributed among specialized network nodes rather than concentrated in a switching system. The SS7 network forms part of the IN infrastructure.

**Inter-Machine Trunk (IMT)** – These are switch-to-switch trunks that are used to carry calls between carriers. Signaling is not performed in-band on these trunks; instead, they are coordinated via the overlaid SS7 network.

**Inter-Exchange Carrier (IXC)** – A carrier that is allowed to carry traffic from one LATA to another, typically long distance inter-state traffic, but can also include intra-state toll traffic.

**Intermediate Exchange** – A tandem switch.

**Internet Protocol (IP)** – A network layer (Layer 3) standard for data transmission that performs the addressing function and contains some control information to allow packets to be routed through networks.

**Internet Signaling Transport Protocol (ISTP)** – A standard used to provide signaling interconnection between packet networks and the PSTN.

**Internet Service Provider (ISP)** – An ISP connects end-users to the Internet via telephone lines.

**Intra-LATA** – Telecommunications services that originate and terminate in the same Local Access and Transport Area.

**ISDN User Part (ISUP)** – The portion of SS7 that handles call control for ISDN-type calls.

**ITU-T** – The Telecommunication Standardization Sector of the International Telecommunications Union .

**Local Area Network (LAN)** – A geographically localized network located on an individual organization's premise. A LAN enables computer devices to communicate with each other as well as share and have access to peripherals such as printers, fax services, modem services and centralized databases.

**Local Access Transport Area (LATA)** – A geographical area within which a divested RBOC is permitted to offer regional toll and access services.

**Local Exchange** - Geographic area determined by the appropriate state regulatory authority in which calls generally are transmitted without toll charges to the calling or called party. Several local exchanges may exist within a LATA.

**Least Cost Routing (LCR)** - A telephone system feature that automatically chooses the lowest cost phone line to the destination. The "lowest cost" is determined by algorithms, equations and decision trees programmed into a PBX.

**Line Identification Database (LIDB)** – Database developed by RBOCs and all local telephone companies that contain all the valid telephone and calling card numbers in their regions, and have the necessary information to perform billing validation.

**Line Served by Switch** – Any Directory Number that is connected to the switch or subtends the switch. The DN may be a physical subscriber port or a virtual DN.

**Local Number Portability (LNP)** – The ability of telephone subscribers to maintain their phone numbers when they change local telephone companies. Dependent on SS7 in order to implement.

**Local Exchange Carrier (LEC)** – Any company authorized by the state public utility commission to sell local telephone service.

**Local Exchange Routing Guide (LERG)** – A Bellcore document which lists all North American Class 5 central offices or end offices and describes their relationship to Class 4 tandem offices. It is often used by carriers for network design.

**Local Loop** – The local loop is the telephone line that runs from the local telephone company's end office switch to the end user's premise.

**Location Routing Number (LRN)** – A 10 digit number used to uniquely identify a switch that has ported numbers.

**Loop Emulation Service (LES)** – An ATM Forum specification designed to emulate a customer's local loop using ATM by extending class 5 services capabilities, along with high-speed data services, to customers.

**Media Gateway** – Communications switch equipment operating at the edge of multi-service packet networks.

**Modified Final Judgment (MFJ)** – The 1984 US Department of Justice ruling that resulted in the divestiture of the Bell Operating Companies from AT&T.

**Media Gateway Control Protocol (MGCP)** - An IETF draft standard for a protocol that allows Voice Gateways to control external call control elements. MGCP assumes a call control architecture where the call control 'intelligence' is outside the gateways and handled by external call control elements.

**Message Transfer Part (MTP)** – Level 1 through 3 protocols of the SS7 protocol stack. It provides functions for the basic routing of signaling messages between signaling points.

**Multi-Frequency (MF)** – Inband, analog trunk signaling.

**Multi-Mode Fiber (MMF)** – Fiber in which the ultrapure glass that forms the core transmission medium is between 50 and 62.5 microns. This fiber has less carrying capacity than single-mode fiber.

**Multiplexing** - A process that concentrates traffic by combining a large number of lower-speed transmission lines into one high-speed line by splitting the total available bandwidth of the high-speed line into narrower bands (frequency division), or by allotting a common channel to several different transmitting devices, one at a time in sequence (time division).

**MUX** – A multiplexing device.

**Narrowband Integrated Services Digital Network (N-ISDN)** – Standards-based voice and data network that operate over today's TDM-based switches and provides 144K and 1.544 Mbps interfaces.



**Network Equipment Building Standards (NEBS)** – NEBS defines a set of performance, quality, environmental and safety requirements for carrier class telecommunications equipment. NEBS compliance is usually required by telecommunications service providers for equipment installed in their switching offices. Level 3 represents the highest ranking.

**Next Generation (Next Gen)** – Used to describe emerging technologies.

**Non-Facility Associated Signalling (NFAS)** – Out of band signaling which allows signaling to be completed without using up excessive bandwidth.

**North American Numbering Plan (NANP)** - The numbering architecture in which every station in an NANP area is identified by a unique 10-digit address consisting of a three-digit area code, a three-digit central office code, and a four-digit subscriber number.

**Number Portability (NP)** – The ability for end-users to retain their telephone number when they change service providers, location or their service.

**OC-1:** Optical Carrier One. Bit rate of 51.84 Mbps and capacity of 28 DS-1s.

**OC-3:** Optical Carrier Three. Bit rate of 155.52 Mbps and capacity of 84 DS-1s.

**OC-12:** Optical Carrier Twelve. Bit rate of 622.08 Mbps and capacity of 336 DS-1s.

**Open Standard** - A computer or communications standard whose technical specifications are readily available to equipment manufacturers and other parties that want to incorporate the standard into their products or systems.

**Open Systems Interconnection Model (OSI)** – An international set of rules for computer networking that creates open standards to allow a computer on any network to share information with any other computer on that network or a connected network.

**Operations, Administration, and Maintenance (OAM)** – A group of network management functions that provide information and specifics to manage a system or network such as performance information, network fault indications, and data and diagnosis functions.

**Operations Support System (OSS)** – Methods and procedures that support the daily operation of a carrier's infrastructure, including order processing, equipment assignment, etc.

**Packet Switching** – The technique by which a stream of data is broken into standardized “packets,” each of which contains address, sequence, control, size, and error checking information, in addition to the user data. Packet switches operate on this added information to move the packets to their destination in the proper sequence and again present them in the correct continuous stream.

**Permanent Virtual Circuit (PVC)** – This is a connection between end points that is defined in advance and requires little if any setup time, and end points are normally defined for the carrier, by the customer, in advance.

**Point of Interface (POI)** – The point in a network at which carriers interface with one another.

**Point Code** - A network address used within the SS7 network to represent a Service Switching Point (SSP) for routing purposes. Typically, each SSP switch within an SS7 network has at least one point code.

**Point of Presence (POP)** - A long distance company's switch that is connected to the local telephone company's central office. The POP is the point at which telephone and data calls are handed off between local telephone companies and long distance telephone companies.

**Port** - An interface location that provides a point of access for peripheral equipment, such as central office lines.

**Plain Old Telephone Service (POTS)** - The traditional telephone service for the transmission of speech across the telephone network.

**Primary Inter-LATA Carrier Code (PIC)** - This code is associated with the customer profile of every phone subscriber, and is used to route to the customer's pre-selected long distance carrier.

**Primary Rate Interface (PRI)** - This is the narrowband ISDN interface standard for high-speed ISDN service. Within the US, this provides 23 channels of data and/or voice traffic.

**Private Branch Exchange (PBX)** - Equipment used to switch telephone calls within a business or closed environment and also for that environment to outside lines.

**Public Switched Telephone Network (PSTN)** - The current narrowband-based telephone network that was designed for voice traffic.

**Pulse-Code Modulation (PCM)** - An analog to digital conversion technique. It is used to convert voice for transmission over digital facilities. It is also used to convert voice analog data to digital data for transmission in a multiplexed voice and data stream over T1 or other digital circuit.

**Q.2931** - An ITU standard for basic call control/connection across an ATM network.

**Reciprocal Billing** - A process by which the carrier who locally terminates a call to a customer gets compensated by the carrier who delivered the call for termination.

**Redundancy** - Having back-up systems available to provide uninterrupted continuous service in the case of a failure in the main system.

**Regional Bell Operating Company (RBOC)** - Regional companies formed after the divestiture of AT&T in 1984. At the time of the divestiture, there were seven companies, but now that number has been reduced to four. In today's competitive environment, they are typically referred to as Incumbent Local Exchange Carriers (ILECs).

**Scripting Language:** Simplest form of computer programming using nearly plain English commands. A high-level programming language which uses a language that is recognizable as something like natural language. JavaScript, developed jointly by SUN and Netscape for writing Web applets, is an example of a scripting language, as is Hypertalk and Supertalk.

**Service Access Code (SAC)** – These are the special codes that replace the area code and are used for special network services. (Examples include 500, 700, 800, 888, 877, and 900.)

**Service Access Multiplexer (SAM)** - Generic name for a central office located multiplexer that aggregates multiple customers via lower speed line to a higher speed trunk connection.

**Service Control Point (SCP)** - A remote computer database within the SS7 network that receives queries from SSPs in order to process applications such as 800 and LNP number lookups and calling card verification.

**Service Creation Environment (SCE)** – Supports the creation, management, and execution of various test cases that allow a user to verify and maintain IN services.

**Service Independent Building Block (SIBB)** – Software modules that can be combined together to allow new computer telephony services to be developed.

**Service Logic Execution Environment (SLEE)** - A functional group residing in an signal control point or adjunct that contains the service logic and control, information management automatic message accounting and operations functional entity.

**Service Management System (SMS)** – Allows provision and updating of information on subscribers and services in near real time for billing and administrative purposes.

**Service Switching Point (SSP)** – Within the SS7 network, an SSP is a telephone central office switch that inter-works with the network.

**Session Initiation Protocol (SIP)** – A protocol for transporting call setup, routing, authentication and other feature messages to endpoints within the IP domain, whether those messages originate from outside the IP cloud over PSTN resources or within the cloud.

**Signaling Connection Control Part (SCCP)** - Part of the ITU-T signaling protocol and of the SS7 protocol. It provides routing and management functions for the transfer of messages other than call set-up between signaling points. It typically supports the MTP.

**Signaling System 7 (SS7)** – The SS7 network allows call control and transaction messages from the integrated voice and data network to be transferred on communications paths that are separate from the voice and data connections. It delivers out-of-band signaling that provides fast call setup by means of high-speed, circuit-switched connections and transaction capabilities which deal with remote database interactions. SS7 makes such enhanced telephony features as caller ID, call forwarding, and call waiting widely available. SS7 also plays an integral role in the deployment of ISDN. The SS7 protocol consists of four basic sub-protocols:

**Message Transfer Part (MTP)**, which provides functions for basic routing of signaling messages between signaling points;

**Signaling Connection Control Part (SCCP)**, which provides additional routing and management functions for transfer of messages other than call setup between signaling points;

**Integrated Services Digital Network User Part (ISUP)**, which provides for transfer of call setup signaling information between signaling points;

**Transaction Capabilities Application Part (TCAP)**, which provides for transfer of non-circuit related information between signaling points.

**Signaling Transfer Point (STP)** – An STP is a packet switch within the SS7 network that routes network call information among other circuit switches and between SSPs and SCPs.

**SIGTRAN Standards** – Standards to define an architecture and related protocols to support transport and interworking of signaling over IP.

**Single-Mode Fiber (SMF)** – Fiber in which the ultrapure glass that forms the core transmission medium is between 8–10 microns. This fiber makes up the majority of today's long distance network. Only one ray or mode can travel down the strand, making a simpler job of regenerating the signal at points along the span.

**Softswitch** – As defined by the International Softswitch Consortium, a softswitch (a.k.a. call agent, call server or media gateway controller) is a device that provides, at a minimum: Intelligence that controls connection services for a media gateway, and/or native IP endpoints. It has the ability to select processes that can be applied to a call. It can provide routing for a call within the network based on signaling and customer database information. It has the ability to transfer control of the call to another network element. It provides interfaces to and supports management functions such as provisioning, fault, billing, etc.

**Switched Virtual Circuit (SVC)** – A temporary connection between end points. Connections last only as long as necessary and are disconnected when the session is complete.

**Synchronous Digital Hierarchy (SDH)** – Term used by the International Telegraph and Telephone Consultative Committee to refer to SONET.

**Synchronous Optical Network (SONET)** – The ANSI standard that allows interworking of transmission protocols from multiple vendors. SONET is the ANSI standard for transmitting digital information over optical networks.

**Synchronous Transport Mode (STM)** – The synchronous transmission capability of a system that is capable of both synchronous and asynchronous capabilities of B-ISDN service.

**T-1** - A digital transmission link capable of handling 1.544 Mega bits per second.

**T-3** - 28 T-1 lines.

**Tandem Network** - An arrangement of voice switches that enables calls to be routed through two or more switching centers in tandem fashion, such that each end office switch does not need to be directly connected to each other.

**Tandem Switch** - A voice switch that is designed primarily with trunk interfaces rather than subscriber interfaces.

**Telephony-Grade** - 99.9994% uptime or the higher reliability standard circuit switches require (translating into 3 minutes of downtime a year), as opposed to the "carrier-class" reliability standard of 99.999% (called "five-nines").

**Time Division Multiplexing (TDM)** – A multiplexing scheme in which numerous signals are combined for transmission on a single communications line or channel. Each signal is broken up into many segments, each having a very short duration and specific time slots within the channel. The slots are assigned whether or not any signals are available for transmission.

**TR-303** – A Bellcore standard for communication between telephony switches and Digital Loop Carrier systems.

**Transaction Capabilities Application Part (TCAP)** – The portion of the SS7 protocol that is used to make database queries to SCPs. It is used to support services such as 800 and LNP number translation, as well as other functions.

**Trunk** - The line of communication between switching systems.

**Unbundling** – 1. As part of telecom deregulation, ILECs were required to unbundle their network elements and lease them at wholesale rates to CLECs, in order to be allowed into the long distance market. 2. Removing the service intelligence from the switching function.

**Unified Messaging (UM)** – Voice, fax, electronic mail, image and video all on one platform available to consumers via a local area network.

**V5** – A standard approved by ETSI for the interface between the access network and the carrier switch to provide basic telephony, ISDN and semi-permanent leased lines. The European equivalent of GR.303.

**Virtual Circuit (VC)** – A link between two or more end stations on a packet switched mesh network. It provides a temporary or dedicated connection-oriented session between two end points. The defining characteristic is a predefined path through a network that has many paths.

**Voice Over ATM (VoATM)** – The process of transmitting voice traffic across an ATM-based packet network.

**Voice Over DSL (VoDSL)** – The process of transmitting voice traffic across a DSL-based packet network. Using a greater range of frequencies over the existing copper line makes this increase in bandwidth possible.

**Voice Over IP (VoIP)** – The process of transmitting voice traffic across an IP-based packet network.

**Voice Over Packet (VoP)** – The process of transmitting voice traffic across any kind of packet network.

###

**VoIP Providers Registered with KUSF  
Reporting Revenue to the KUSF**

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- 1 8 X 8 Inc [a]
- 2 Allegiance Communications Inc
- 3 Aptela Inc
- 4 Fionda VoIP
- 5 Kosmaz Technologies LLC
- 6 L1 Services, LLC - [b]
- 7 Light Edge Solutions, Inc.
- 8 MCC Telephony of the Midwest
- 9 Netlogic Inc dba Voxitas
- 10 Shoutpoint Inc.
- 11 Sightspeed, Inc [b]
- 12 Smoothstone IP Communications
- 13 Speakeasy Broadband Services, LLC
- 14 Telesphere Networks LTD
- 15 VoIPStreet, Inc.
- 16 Voitel Telecommunications Inc

Notes:

[a] The company has ceased reporting revenue to the KUSF, subject to resolution of the Nebraska and Kansas Commissions' petition pending before the Federal Communications Commission.

[b] The account has been closed as a result of the company no longer operating in Kansas or now reporting revenues under another entity.

**VoIP Providers Registered with the Federal Communications Commission  
Not Registered with KUSF Administrator [a]**

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- |    |   |    |                                 |
|----|---|----|---------------------------------|
| 1  | 3rd Echelon Corp.                           | 33 | Logisip, LLC                    |
| 2  | Access Fiber Solutions                      | 34 | M & A Technology                |
| 3  | A&N Telecom LLC                             | 35 | Mix Networks, Inc.              |
| 4  | Aeon, Inc.                                  | 36 | Next Focus, Inc.                |
| 5  | Akabis, Inc.                                | 37 | Nextiva Inc.                    |
| 6  | Apptix, Inc.                                | 38 | OOMA, Inc.                      |
| 7  | Aspen Communications, Inc.                  | 39 | PBXRing                         |
| 8  | Artisan Communications, Inc.                | 40 | Phone Power, LLC                |
| 9  | Bandtel                                     | 41 | Phone.com                       |
| 10 | BB Telsys, LLC [b]                          | 42 | QuaesTel, Inc.                  |
| 11 | Benga Networks, LLC                         | 43 | RCN Digital Services, LLC       |
| 12 | Cable One, Inc. [b]                         | 44 | Ring Central, Inc.              |
| 13 | Cadre Industries Corporation                | 45 | Saving Call, LLC dba Viet Elite |
| 14 | CBX Technologies, Inc.                      | 46 | Serve Global, LLC               |
| 15 | Center One                                  | 47 | SipMedia Enterprises            |
| 16 | Cequel Communications, LLC                  | 48 | Six Squares                     |
| 17 | Convergence Systems, Inc.                   | 49 | Spencer Telecom, LLC            |
| 18 | Deltathree, Inc.                            | 50 | Star2Star Communications, LLC   |
| 19 | ECR Voice, LLC                              | 51 | TA Broadcasting                 |
| 20 | Frontier Informatics, LLC                   | 52 | Talkbug.com                     |
| 21 | Fuzecore, LLC                               | 53 | TeleBlend, LLC                  |
| 22 | I Piphany LLC                               | 54 | Telehispanic Services, Inc.     |
| 23 | I2 Telecom International                    | 55 | Thinking Phone Networks, LLC    |
| 24 | IBN Intertelecom, Inc. [c]                  | 56 | TNE Global                      |
| 25 | iCall, Inc.                                 | 57 | US LEC iTel, LLC                |
| 26 | IDN Communications, LLC                     | 58 | Vocalocity                      |
| 27 | InfoTelis Corporation                       | 59 | Vonage Holdings, Corp. [b]      |
| 28 | Inphonex.com LLC                            | 60 | Vox Communications Corp.        |
| 29 | iTalk Global Communications                 | 61 | Warrior Hill                    |
| 30 | Jajah Inc.                                  | 62 | Whaleback Systems               |
| 31 | Ken's Computer's d/b/a Sweet Voice National | 63 | XCast Labs                      |
| 32 | Keyon Communications                        |    |                                 |

Notes:

[a] When the company registered with the FCC, it identified Kansas as a state in which it may offer services.

[a] KCC Staff and/or the KUSF administrator have confirmed the Company is offering service in Kansas.

[b] Company registered as "Any Distance" provider with the FCC, a term that was used prior to the more common use of the term "VoIP". FCC Staff has advised KCC Staff that this category will be eliminated.

**VoIP Providers Registered with KUSF  
Not Providing Service in Kansas**

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- |    |  |    |                                  |
|----|--|----|----------------------------------|
| 1  | 321 Communications                           | 31 | Nortel Networks Inc.             |
| 2  | 5linx Enterprises, Inc                       | 32 | PosTrack Technologies, Inc.      |
| 3  | ABA Net, LLC                                 | 33 | PRO OnCall Technologies LLC      |
| 4  | Alteva LLC                                   | 34 | Proximiti Technologies           |
| 5  | Arrival Telecom, Inc.                        | 35 | Razorline LLC                    |
| 6  | Broadvox LLC                                 | 36 | Ready Comm, Inc.                 |
| 7  | Callfinity Inc.                              | 37 | SecondVoice Inc.                 |
| 8  | Callverse LLC                                | 38 | SinglePipe Communications        |
| 9  | CallWithUs LLC                               | 39 | Snapvox                          |
| 10 | Citrix Online Audio Services Group, LLC      | 40 | Spectrum Networks LLC            |
| 11 | Citrix Online Conference Services Group, LLC | 41 | Teliax Inc                       |
| 12 | Clear VoIP Calling, LLC                      | 42 | True Broadband Networks          |
| 13 | Comcast IP Phone LLC                         | 43 | Via Talk LLC                     |
| 14 | Contact Conference Service Service, Inc.     | 44 | Vitelity Voice Inc.              |
| 15 | Eagle Communications                         | 45 | Voice Ring Inc                   |
| 16 | Earthlink Inc                                | 46 | Volocall LLC                     |
| 17 | Equinox Inc.                                 | 47 | Wind Currents Communications Inc |
| 18 | eVolve Business Solutions, LLC               | 48 | Zip Conferencing, Inc.           |
| 19 | Federated Communications                     |    |                                  |
| 20 | Fractel LLC                                  |    |                                  |
| 21 | Full Spectrum Communications, Inc.           |    |                                  |
| 22 | Global Digitec, LLC                          |    |                                  |
| 23 | Intercel Telecoms Group                      |    |                                  |
| 24 | Interface Security System Holdings           |    |                                  |
| 25 | International Information Systems Group      |    |                                  |
| 26 | mindSHIFT Technologies, Inc                  |    |                                  |
| 27 | Momentum Telecom Wholesale, LLC              |    |                                  |
| 28 | Monstertel, Inc.                             |    |                                  |
| 29 | Nectar Services Corp                         |    |                                  |
| 30 | Net Talk.com Inc                             |    |                                  |



**Other Companies Reporting VoIP Revenue  
to KUSF for Current KUSF Year**

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- |  |   |
|--|---|
| 1 ACN Digital Phone Service, LLC             | 19 Lightyear Network Solutions LLC            |
| 2 Allvoi, Inc.                               | 20 MCI Communication Services Inc             |
| 3 American Fiber Network Inc                 | 21 Navigator Telecommunications LLC           |
| 4 Appia Communications, Inc. (Part of Qwest) | 22 Nuvox Communication of Kansas              |
| 5 Applewood Communications Corp              | 23 P.A. Dominguez Inc. [a]                    |
| 6 AT&T Communications of the Southwest Inc   | 24 PaeTec Communications                      |
| 7 Big River Telephone Company LLC            | 25 Qwest Communications Company LLC           |
| 8 Bullseye Telecom                           | 26 Southwestern Bell Telephone Company        |
| 9 Cincinnati Bell Any Distance               | 27 Time Warner Cable Information Services LLC |
| 10 Comcast Phone of KS                       | 28 TWC Digital Phone LLC                      |
| 11 Comtech 21 LLC                            | 29 Verizon Long Distance LLC                  |
| 12 Comtel Telecom Assets LP                  |   |
| 13 CordiaIP Corp.                            |   |
| 14 Cox Communications                        |   |
| 15 Dieca Communications Inc (dba Covad)      |   |
| 16 Fiberlink Communications Corp             |   |
| 17 GatherWorks, Inc                          |   |
| 18 IP Networked Services Inc                 |   |

**USF update**

White, Walter William [walter.w.white@verizon.com]

**Sent:** Monday, March 08, 2010 4:31 PM**Importance:** High**Attachments:** USF 030810.pdf (37 KB)

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**Walter White  
Verizon Communications****USF update**

- The Federal Communications Commission's (FCC) Broadband Taskforce has provided a preview of the recommendations concerning reform of both the Universal Service Fund (USF) and intercarrier compensation (ICC) that will be included in the National Broadband Plan (Plan) that will be provided to Congress by March 17<sup>th</sup>. The goal is to provide access to broadband for 99% of U.S. households by 2020. Today roughly 7 million households are unserved, which is about 5% of U.S. households.
- The recommendations would refocus USF from voice to broadband, and from on-going support to capex. ICC reform would also phase out per-minute access charges. Both processes would be done over a ten-year three-stage process.

**Description of Plan:**

- The USF today consists of four parts. The FCC's projections for fiscal 2010 are: High-Cost at \$4.6 billion, Low-Income at \$1.2 billion, e-rate (Schools and Libraries) capped at \$2.25 billion but projected at \$2.7 billion (possible because of rollovers from prior years), and Rural Health Care capped at \$400 million but projected at \$200 million, for a total of \$8.7 billion. The focus of the Plan's recommendations is the High Cost piece of USF.
- The High Cost Fund (HC) is currently designed to compensate providers of voice communications in high-cost areas for the amount by which their costs exceed a national benchmark. The HC originally only paid incumbent telcos (ILECs), but in 2001 began to compensate competitive carriers (CETCs) based on the cost of the incumbent in whose territory they compete. ILECs are divided between companies regulated based on rate-of-return (RoR) and those regulated on price caps. The ILEC portion of HC has been at around \$3 billion during that timeframe, but the CETC portion (which goes almost entirely to wireless carriers) has risen from \$47 million in 2002 to \$1.3 billion in 2009, after peaking at \$1.5 billion in 2008, when it became subject to an interim cap. Today, multiple CETCs can and do receive payment in the same geographic area.

*HOUSE ENERGY AND UTILITIES*

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ATTACHMENT 4-1

- **The Plan would transition the HC over ten years to a combination of two new funds, ConnectAmerica (CAF) and Mobility (MF), while keeping the total amount spent at the same \$4.6 billion (in real, i.e. 2010, dollars). Funding would transition primarily to cover capital expenditures rather than the current mix of capital (capex) and operating (opex) expenses, with only very limited areas receiving support for opex. Funding from CAF would be provided only for areas where no business case can be made for private investment. Funding under CAF would go to only one provider per geographic area, on a technology neutral basis, so that the solution could be wired, fixed wireless, or satellite. Funding would go to the lowest-cost technology. The Plan recommends that the provider receiving support be selected via a market-based mechanism, but does not specify what that mechanism should be. Funding under the MF would go to wireless providers in states where 3G coverage is lagging below the national average.**
- **The rollout of the Plan would take ten years and be done in three phases.**
  - **In the first stage--in 2010-2011—the FCC would set out the basic parameters, by doing the necessary rulemakings, modeling of costs and revenues related to broadband access, and mapping (mapping with NTIA). In that process, the FCC would determine the trajectory for shifting funds from the current HC to the new CAF and MF. The first stage would design the phasing out of legacy CETC funding, retargeting funding of price-cap ILECs to broadband, and freezing support of RoR ILECs to allow them to recoup investment in broadband that has already occurred and providing them additional funding for broadband buildout.**
  - **The second stage—2012-2016—is reform implementation: phase-down of CETC funding, freezing of legacy support levels, beginning to provide funds from CAF. Funding from CAF would go first to “low-hanging fruit”, i.e., areas where the cost of extending broadband buildout would be relatively low (given that these are high-cost areas). The initial CAF areas are expected to need only capex support, while the highest-cost areas that are tackled later may get on-going opex support as well.**
  - **The third stage—2017-2020—would migrate the remaining legacy programs into CAF and MF. During this stage all funding would cease for voice-only networks. The FCC would determine at that time how to deal with the few highest cost households that have not yet been provided broadband access.**
- **ICC would also be done over ten years. The Plan recognizes that ICC presents a significant revenue stream to some carriers, and will recommend solutions for adequate compensation.**
  - **Stage one—2010-2011—would lay out the vision for the reform and establish the rules, as well as adopt interim solutions to deal with arbitrage.**
  - **In stage two—2012-2016—the FCC would establish a method to take per-minute intrastate access charges down to the level of interstate access charges.**
  - **Stage three—2017-2020—would take access charges from per minute rates to the type of negotiated agreements (such as peering) that prevail in the IP world.**
- **The Low-income Fund provides support for low-income families via the Lifeline and Link-up programs. The Plan recommends transitioning from support for voice to support for**

broadband plus voice in three stages, but the total timeframe is less than the ten years required to phase out HC and ICC.

- Stage one looks at current eligibility and certification requirements, with the FCC working in cooperation with the states to make sure it's a tight process.
- Stage two would include some pilot programs for broadband.
- Stage three would implement on a broad scale.
- The Plan has no recommendations concerning a contribution methodology, but recognizes that there is a need to broaden and stabilize the contribution base. The record built toward the Plan included filings that recommend a numbers and/or connections based methodology as well as other filings that would base contribution on revenues. The contribution issue will be addressed via an NPRM (notice of proposed rulemaking).
- The intent is for the USF in total not to grow beyond current projections, which allow for inflation and organic growth. The new CAF and MF will be accommodated within the \$4.6 billion that is the current level for the HC fund (but there may be increase to allow for inflation). The Low-income fund is subject to organic growth as more eligible consumers sign up for it, but it has a natural cap in that there is a limit to the households eligible for support.
- All of the above would be done without an additional Congressional appropriation. The Plan does point out, however, that an additional appropriation of \$9 billion, to be distributed via the CAF over three years at a rate of \$3 billion per year, would help accelerate the process of bringing broadband access to unserved areas and smooth the transition for fund recipients.
- The Plan indicates that there is a middle-mile problem that needs to be solved.

#### Discussion:

- Attempts at USF reform have been made for most of the past decade, and the issue is reaching crisis stage. The Universal Service Fund (USF) contribution factor is likely to rise to about 15.2% in the second quarter of 2010, as a result of both a shrinking revenue base and increased demand. For perspective, the contribution factor was consistently below 11.4% until the third quarter of 2009, when it rose to 12.8%. The revenue base of \$16.6 billion in Q2'10 is more than \$2 billion lower than it was in the second quarter of 2009. Demand for funds is up by nearly \$300 million, of which the Low-income portion of the USF accounts for an increase of \$185 million. The Fund, which totaled \$7.4 billion in 2009, is likely to increase to over \$8.5 billion in 2010, with most of the increase coming from the Low-income portion of the Fund.
- One topic that did not arise in the discussion of USF and ICC reform is "carrier of last resort" (COLR). The Plan appears to target USF support to the highest-cost areas, and to provide only capex in most cases, and to provide support to the lowest cost provider, not necessarily to the incumbent who is providing carrier-of-last-resort universal voice coverage today. The Plan also phases out ICC, presumably relying on higher local rates and higher subscriber line charges (SLC) to make up the revenue shortfall, since it is not increasing the USF to compensate for the disappearing ICC revenues. However, once broadband is introduced into an area, the provider's voice revenues become vulnerable to competition from

VOIP providers who have no network cost and can offer free or nearly free voice service. That eliminates the potential for the incumbent to charge higher—or any—rates for voice service and eliminates SLC. It is not at all clear that an incumbent who relies today on a combination of voice revenues, USF that provides opex as well as capex support, and ICC will be able to survive on broadband revenues alone, even if some capex has been provided to enable the rollout of the broadband services. That is a risk to both investors and consumers, as well as to competitors who rely on the incumbent's network for backhaul.

- Given that the CAF will be provider- and technology-neutral, it is not clear what useful role the MF plays. If wireless is the best solution in an area, it ought to be funded via CAF. If it is not the most economic solution, it's not clear why it should be funded at all. A separately funded MF will siphon away USF funds that might be more efficiently spent via the CAF and will create artificial competition that will raise the COLR's cost per subscriber and make it more difficult for the COLR to survive.
- USF and ICC reform have proven to be intractable problems for quite a few years now, and the Broadband Taskforce is to be commended for taking them on. Having said that, the Plan represents a risky experiment: it would require rural ILECs to do more with less—i.e., to deploy broadband, which potentially threatens some of their voice revenues, while accepting less ICC and in some cases less USF.

*Please see the attached note for the full discussion and for our required disclosures.*

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