

FIGURE G1: LIST OF CARRIERS SAMPLED VIA CPUC DATA REQUEST

<i>CPUC Data Request</i>	<i>FCC Form 477</i>
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ILECs Included

Citizens Telecommunications Company of California, Inc.
 Pacific Bell
 Roseville Telephone Company
 Verizon California, Inc.(formerly GTE California)

ILECs Included

Citizens Telecommunications Company of California
 Pacific Bell
 Roseville Telephone Company
 Verizon California, Inc.(formerly GTE California)
 Evans Telephone Company
 Kerman Telephone Co.
 Pinnacles Telephone Company
 Sierra Telephone Company
 Volcano Telephone Company

CLECs/ IXC's Included

AT&T Communications of California, Inc.
 Cox California Telecom, LLC
 Pac-West Telecommunications, Inc.
 Sprint Communications Company, L.P.
 Worldcom, Inc.

CLECs Included

AT&T Corp.
 Cox Communications

 Sprint Corporation
 MCI WorldCom, Inc./ WorldCom Inc.
 Adelphia Communications Corporation
 Advanced TelCom, Inc.
 Allegiance Telecom of California, Inc.
 AOL Time Warner/ Time Warner Cable/
 Time Warner Communications
 Broadwing Communications Inc.
 Charter Communications
 Comcast Corporation/ Comcast Cable
 Communications, Inc.
 Focal Communications Corporation of
 California
 GST Telecom, Inc.
 ICG Telecom Group, Inc.
 Intermedia Communications Inc.
 Mediacom California LLC
 MediaOne Group, Inc.
 MGC Communications/ Mpower
 Communications
 Nextlink California, Inc./ XO California,
 Inc.
 Pacific Bell Company/ Pacific Bell
 Services [CLEC]
 RCN Telecom Services of CA, Inc.

Seren Innovations
Siskiyou Cablevision, Inc.
Teligent Services, Inc.
Qwest Interprise America, Inc.
U.S. Telepacific Corp dba Telepacific
Communications
Verizon Media Ventures Inc.
Winstar Communications, Inc.

Wireless Carriers Included

AT&T Wireless Services of California, Inc.
Cingular Wireless
Sprint PCS
Verizon Wireless

Wireless Carriers Included

AT&T Corp. Wireless
Cingular Wireless LLC
Sprint
Verizon Wireless
California RSA No. 4 Limited Partnership
Cal-One Cellular, L.P.
Centennial Communications Corp.
Dobson Cellular Systems
El Dorado Cellular, dba Mountain Cellular
Fresno MSA Limited Partnership
GTE Mobilnet
GTE Wireless
Golden State Cellular
Nextel of California, Inc.
SBC Communications
United States Cellular Corporation and
Subsidiaries
VIA Wireless LLC
Western Wireless Corporation ("WWC")

DLECs Included

Covad Communications Company
Rhythms NetConnections
Sprint ION

DLECs/ Other Carriers Included

Covad Communications Company
Rhythm Links, Inc.
Sprint Corporation
Northpoint Communications
Hughes Network Systems
New Edge Network, Inc.

SBC Advanced Solutions, Inc.
Global Crossing Local Services, Inc.
Global Crossing Telemangement, Inc.
Verizon Select Services Inc.
GTE Communication Corporation

APPENDIX H: TELECOMMUNICATIONS GLOSSARY

3G	<i>Third Generation:</i> Intended to be the next great wireless technology, wideband mobile services and applications offering users faster access to the Web.
ADSL	<i>Asymmetric Digital Subscriber Line:</i> DSL service with a larger portion of the capacity devoted to downstream communications, less to upstream. Typically thought of as a residential service.
Advanced Services	Advanced services enable users to send and receive large amounts of information. The FCC defines advanced services as “high-speed, switched, broadband telecommunications that enable users to originate and receive high-quality voice, data, graphics, and video using any technology.”
Bandwidth	The amount of data transmitted in a given amount of time; usually measured in bits per second, kilobits per second, and megabits per second.
Bit	A single unit of data, either a one or a zero. In the world of broadband, bits are used to refer to the amount of transmitted data. A kilobit (kb) is approximately 1000 bits. A megabit (Mb) is approximately 1,000,000 bits.
Broadband	A descriptive term for evolving digital technologies that provide consumers with integrated access to voice, high-speed data service, video-demand services, and interactive delivery services. (e.g. DSL, Cable Internet)
Cellular	A mobile communications system that uses a combination of radio transmission and conventional telephone switching to permit telephone communication to and from mobile users within a specified area.
Central Office (CO)	A circuit switch where the phone lines in a geographical area come together, usually housed in a small building.
CLEC	<i>Competitive Local Exchange Carrier:</i> Wireline service provider that is authorized under state and federal rules to compete with ILECs to provide local telephone service. CLECs provide telephone services in one of three ways or a combination thereof: a) by building or rebuilding telecommunications facilities of their own, b) by leasing capacity from another local telephone company (typically an ILEC) and reselling it and c) by leasing discrete parts of the ILEC network referred to as UNEs.

Competitive Access Provider (CAP)	(CAP, or "Bypass Carrier") A company that provides network links between the customer and the Inter-Exchange Carrier or even directly to the Internet Service Provider. CAPs operate private networks independent of Local Exchange Carriers.
Copper Wire CPCN	<i>Certificate of Public Convenience and Necessity:</i> Authorization given by the CPUC to telecommunications carriers in order to provide service in the state of California.
CPUC	<i>California Public Utilities Commission</i>
Customer Share	Customer share is the portion of all customers a company has. It is measured by subscribership, lines and/or telephone numbers.
DLEC	<i>Data Local Exchange Carrier;</i> DLECs deliver high-speed access to the Internet, not voice. DLECs include Covad, NorthPoint and Rhythms.
Downstream	Data flowing from the Internet to a computer (Surfing the net, getting E-mail, downloading a file).
DSL	<i>Digital Subscriber Line:</i> The use of a copper telephone lines to deliver "always on" broadband internet service.
DSL lite	Also known as G.lite, this is a version of ADSL that uploads and downloads at speeds that are among the slower of the implementations.
FCC	<i>Federal Communications Commission</i>
GSM	<i>Global System for Mobile Communication.</i> This is the current radiotelephone standard in Europe and many other countries except Japan and the United States.
ILEC	<i>Incumbent Local Exchange Carrier.</i> The traditional wireline telephone service providers within defined geographic areas. Prior to 1996, ILECs operated as monopolies having the exclusive right and responsibility for providing local and local toll telephone service within LATAs. ILECs include regional Bell operating companies such as Pacific Bell/ SBC and non-Bell affiliated companies such as Roseville Telephone Company, both in California.
InterLATA	Between local access and transport areas (LATAs). Services, revenues, and functions associated with telecommunications that originate in one LATA and that terminate in another one or that terminate outside of that LATA. InterLATA services are often thought of as long distance services.
IntraLATA	Within the boundaries of a local access and transport area (LATA). IntraLATA services typically include local and local toll services.

ISDN	<i>Integrated Services Digital Network:</i> An alternative method to simultaneously carry voice, data and other traffic, using the switched telephone network.
ISP	<i>Internet Service Provider:</i> A company providing Internet access to consumers and businesses, acting as a bridge between customer (end-user) and infrastructure owners for dial-up, cable modem and DSL services.
IXC	<i>Inter-Exchange Carrier:</i> Typically defined as a long-distance telephone company. IXCs provide long distance services to customers between LATAs by using their own facilities or by reselling to their customers the long distance services they have purchased from another carrier.
Kbps	<i>Kilobits per second:</i> 1000 bits per second. A measure of how fast data can be transmitted.
LATA	<i>Local Access and Transport Area:</i> A geographical area within which a divested Regional Bell Operating Company (RBOC) is permitted to offer exchange telecommunications and exchange access services.
Local loop	A generic term for the connection between the customer's premises (home, office, etc.) and the provider's serving central office. Historically, this has been a wire connection; however, wireless options are increasingly available for local loop capacity.
Mbps	<i>Megabits per second:</i> 1,000,000 bits per second. . A measure of how fast data can be transmitted.
Number Porting	Number porting allows customers to switch between telephone service providers while retaining their original telephone number. Also called Local Number Portability (LNP).
Paging	A one-way communications service from a base station to mobile or fixed receivers that provide signaling or information transfer by such means as tone, tone-voice, tactile, and optical readout. Two-way paging allows the user to send data as well as receive it. In some cases, a two-way pager can serve as an alternative to a cellular telephone.
PCS	<i>Personal Communications Service:</i> A low-powered, high frequency (1.9 GHz) alternative to traditional cellular service, including CDMA and GSM.
POTS	<i>"Plain Old Telephone Service:"</i> Basic telephone service, including dial tone, the ability to place and receive voice/data calls over the same basic lines.

RBOC	<i>Regional Bell Operating Company:</i> A telecommunications carrier created to provide local service after the divestiture of AT&T in 1984. While there were initially 7 RBOCs created 1984, due to mergers there are now four: BellSouth, SBC, US West/Qwest, Verizon.
Resale	The practice of carriers purchasing of telecommunications services from another carrier at wholesale rates and, then, reselling those services to their own customers at retail rates.
RTU	<i>Remote Terminal Unit:</i> The location at which there is a transition between a telecommunications carrier facility and the local lines serving the individual customers
Section 271	Section 271 of the 1996 Telecommunications Act allows certain Regional Bell Operating Companies (RBOCs ¹) to enter the long distance market after they each prove that they have opened their respective local markets to competition.
Subscribership	Subscribership is how many customers have subscribed for a particular telecommunications service.
Switched Network	A domestic telecommunications network usually accessed by telephones, key telephone systems, private branch exchange trunks, and data arrangements. (Also PSTN – Public Switched Telephone Network)
TA '96	<i>The Telecommunications Act of 1996:</i> TA '96 gives the FCC general rulemaking authority to set the ground rules and policies for local competition. It also assigns states the responsibility for implementing many of the statutory and federal regulatory requirements of the Act, either jointly with the FCC or on their own.
TD	<i>The Telecommunications Division</i> of the California Public Utilities Commission
Unbundling	The term used to describe the access provided by local exchange carriers so that other service providers can buy or lease portions of its network elements, such as interconnection loops, to serve subscribers.
UNE	<i>Unbundled Network Elements:</i> Leased portions of a carrier's (typically an ILEC's) network used by another carrier to provide service to customers.
Upstream	Data flowing from your computer to the Internet (sending E-mail, uploading a file).

¹ The RBOCs are those ILECs created in 1984 with the divestiture of AT&T. The RBOCs are sometimes referred to as the "Baby Bells".

Wireless	Telephone service transmitted via cellular, PCS, satellite, or other technologies that do not require the telephone to be connected to a land-based line.
Wireless Internet	1) Internet applications and access using mobile devices such as cell phones and palm devices. 2) Broadband Internet service provided via wireless connection, such as satellite or tower transmitters. (Also <i>Wireless Broadband</i>)
Wireline	Service based on infrastructure on or near the ground, such as copper telephone wires or coaxial cable underground or on telephone poles.

Sources include the FCC website

Figure J1: California Public Utilities Commission Steps to Increase Telecommunications Competition (1984-2002)

- 1984** AT&T divests local telephone companies to implement DOJ consent decree. Pacific Bell becomes a California local exchange carrier. Long distance competition begins in California.
- 1985** CPUC report "Charting a Sustainable Regulatory course in Telecommunications" concludes that competition is workable in several segments of the intraLATA market and commits to investigate models that benefit California ratepayers and economy.
- 1987** The CPUC holds en banc hearings to consider alternatives to cost-of-service regulation for local exchange carriers.
- 1988** CPUC initiates pricing flexibility and individual customer contracts for high speed data services, private line and Centrex services in response to evidence of emerging competition by Competitive Access Providers and PBX equipment vendors.
- 1989** CPUC adopts principles of unbundling, nondiscriminatory access, affirming that all requesting telecommunications carriers may purchase functional parts of the incumbent's local network.
- 1990** CPUC replaces cost of service regulation with price cap regulation for Pacific Bell and Verizon (then GTE). Prices are indexed to inflation and productivity gains. Excess profits are required to be shared with ratepayers as a safeguard against flaws in the price cap mechanism.
Based on degree of competitive alternatives and technology potential, telecommunications services are defined in three categories (I – monopoly services, II – partially competitive services and III – fully competitive services).
- 1993** CPUC issues "Infrastructure Report", detailing proposed steps for opening telecommunications markets in California to competition.
- 1994** The California Legislature amends Public Utilities Code 709 to declare specific telecommunications policies for California and to direct the CPUC to "fully authorize open competition for intrastate interexchange telecommunications service."
IntraLATA toll competition is introduced.
CPUC adopts cost based rates for 150 services offered by Pacific Bell and Verizon. Price floors adopted for many services to permit price flexibility in an increasingly competitive environment. Toll rates decline up to 40 percent; customers can chose alternative toll providers who offer better price or packaging. Access rates to long distance companies are reduced by \$300 million/year. CPUC streamlines customer contracting rules and downward price flexibility opportunities for Pacific and Verizon.
- 1995** CPUC adopts rules for how to determine the costs of unbundled network elements (UNEs) of the networks of incumbent local carriers.
CPUC opens generic local competition Investigation and Rulemaking proceeding.
CPUC adopts interim rules requiring the interconnection of competing local networks.
CPUC adopts consumer protection rules to govern new competitive local carriers.
31 facilities-based competitive local carriers receive authority to operate in California--entries are effective January 1, 1996

- 1996** CPUC authorizes CLECs to provide local service through the resale of ILEC facilities.
CPUC adopts rules and guidelines for rationing scarce numbering resources and for the general administration of NXX and NPAs in California.
CPUC adopts competitively neutral universal service policies to encourage competitors to provide a choice of services for low-income Californians. CPUC creates a new competitively neutral High Cost Fund to support affordable telephone service in areas of the state where costs of providing service are high.
CPUC approves first voluntary interconnection agreements between incumbent local carriers and new competitive local carriers.
- 1997** CPUC initiates the Operation Support Systems (OSS) Rulemaking and Investigation proceeding to determine whether competitive local carriers receive parity access to Pacific Bell and Verizon's back office systems as necessary to be able to order and install local telephone service in a timely manner.
CPUC arbitrates first disputed interconnection agreements between incumbent local carriers and new competitive local carriers
- 1998** CPUC conduct a Full Panel Hearing to review the State of Local Competition in California.
Commission outlines deficiencies in the Pacific Bell 271 application for entry in long distance markets.
CPUC adopts dispute resolution procedures for the physical collocation of competitive carriers' equipment in incumbent carriers' facilities.
- 1999** Presubscription for local toll service is implemented in California.
CPUC adopts performance measurement plans for Pacific Bell and GTE which will impose financial payments on the incumbent carriers in the event that they do not provide service to their competitors that is comparable to what incumbents provide their own affiliates and subsidiaries.

CPUC adopts final rates for Pacific Bell's unbundled network elements (UNEs) that competitors can lease in order to provide local telephone service. These rates replace those adopted in earlier interconnection agreements.
CPUC embarks on an 18-month examination of Pacific Bell's Operations Support System to assess if competitors receive parity levels of service.
CPUC adopts a process to ensure that changes to Pacific Bell's operations support systems are implemented in a manner that is fair to all parties.
- 2000** CPUC issues a Rulemaking regarding appropriate policies for compensating carriers for telephone traffic transmitted to ISP modems.
CPUC adopts interim line sharing rules whereby competitive DSL providers may offer to provide data transmission service to customers on the same phone line that the customer receives voice service from an ILEC. CPUC launches a proceeding to establish permanent rates and rules for DSL line sharing.
- 2001** The CPUC adopts an Interim Performance Incentives decision establishing a framework for determining when Pacific Bell is not providing fair access to competing carriers to its Operations and Support Systems.
- 2002** Final Performance Incentives decision is issued establishing monetary payments to be charged Pacific Bell if it provides inadequate Operations Support Systems performance.
CPUC adopts deaveraged UNE rates for Pacific Bell, which provides varying rates for unbundled loops in three different geographic zones in the state.
CPUC adopts reduced unbundled network element rates for Pacific Bell.