

**BEFORE THE WASHINGTON UTILITIES
AND TRANSPORTATION COMMISSION**

WASHINGTON EXCHANGE
CARRIER ASSOCIATION, et al.

Complainants,

v.

LOCALDIAL CORPORATION, an
Oregon corporation,

Respondent.

DOCKET NO. UT-031472

DIRECT TESTIMONY OF

TERRENCE A. MARTIN

ON BEHALF OF

WASHINGTON EXCHANGE CARRIER ASSOCIATION

February 27, 2004

1 IDENTIFICATION OF WITNESS

2

3 **Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.**

4 A. My name is Terry A. Martin. My business address is 8050 SW Warm Springs
5 Road, Tualatin, OR 97062.

6

7 **Q. COULD YOU BRIEFLY SUMMARIZE YOUR BACKGROUND IN THE**
8 **TELECOMMUNICATIONS INDUSTRY?**

9 A. I am currently a Senior Consultant with GVNW Consulting, Inc. I have over 20
10 years of telecommunications experience. For the past 10 years, I have been
11 providing voice, data, radio and video communication system design and network
12 integration consulting services. Prior to that, I managed and maintained voice,
13 data and radio systems, including microwave systems, for the United States
14 Department of the Interior and United States Forest Service, Department of
15 Agriculture. I am a member of the Internet Engineering Task Force (“IETF”)
16 Benchmark committee and the International Telecommunications Union (“ITU”)
17 T1A1 committee. My resume is attached as Exhibit No. ____ (TAM-2).

18

19 **Q. HAVE YOU PREVIOUSLY APPEARED AS A WITNESS IN A PUBLIC**
20 **UTILITY COMMISSION PROCEEDING?**

21 A. No, I have not.

1 PURPOSE OF TESTIMONY

2

3 **Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?**

4 A. The purpose of my testimony is to provide clarification as to the nature and
5 functionality of LocalDial’s network design and operations.

6

7 **Q. PLEASE EXPLAIN THE OPERATION OF THE PUBLIC SWITCHED
8 TELEPHONE NETWORK.**

9 A. The basic concept of how the Public Switched Telephone Network (“PSTN”)
10 operates is a hierarchy of exchanges that facilitates the completion of calls
11 between different subscribers over a large geographic area. This is made up of a
12 lower exchange level, which processes calls over shorter distances and connects
13 subscribers into the network and a higher exchange level that processes calls
14 between lower level exchanges over a longer distance, providing improved
15 facility efficiencies.

16 The communications between different subscribers in different locations are a
17 simple process of call control, call routing and call transporting. This process has
18 been around for a long time. The following explains how this process works:

19 1. When a subscriber picks up a phone and dials a number, the signal is sent
20 to a local (lower level) switch in the PSTN network. Numbers are
21 assigned according to the North American Numbering Plan. Based on the
22 number dialed, the switch determines the correct way to route the call to
23 its destination. This could be another subscriber on that local switch or it
24 could be a subscriber a hundred miles away.

25 2. When a call is routed over the PSTN network, it must be converted to a
26 digital signal and put onto a transport mechanism, along with several other

1 conversions; it is then sent to another switch on the PSTN network over a
2 physical connection. This method of transport is called Time Division
3 Multiplexing (“TDM”). There are many ways to interface information
4 onto a TDM connection. The most common in use today are the T1
5 interface and the Integrated Services Digital Network (“ISDN”) Primary
6 Rate Interface (“PRI”). Both use the same method of converting an
7 analog signal into a digital format and putting that information into a TDM
8 frame to be sent from one switch to another switch. For a technical
9 reference, ANSI T1.403 defines the electrical specification for “T1”
10 telecommunication lines used in North America (and other territories
11 operating networks using T1 lines) for services including, ISDN PRI.

- 12 3. The encoding process used to convert an analog voice signal into a digital
13 signal uses the Pulse Code Modulation (“PCM”) process. The process
14 samples the voice signal 8,000 times per second and converts the signal
15 into an 8-bit digital word (8 bit and 8,000 times per second = 64 kilobits
16 per second or a DS0 line) which is then placed into one of the TDM
17 channels or frames and is sent to the other side every 60 μ seconds.
- 18 4. The TDM T1 connection can support up to 24 channels of user
19 information. The ISDN PRI interface can support up to 23 channels of
20 user information.
- 21 5. Once the information is on the other side, it is converted back to an analog
22 signal and routed to its final destination.

23
24 **Q. PLEASE DESCRIBE THE LOCALDIAL NETWORK.**

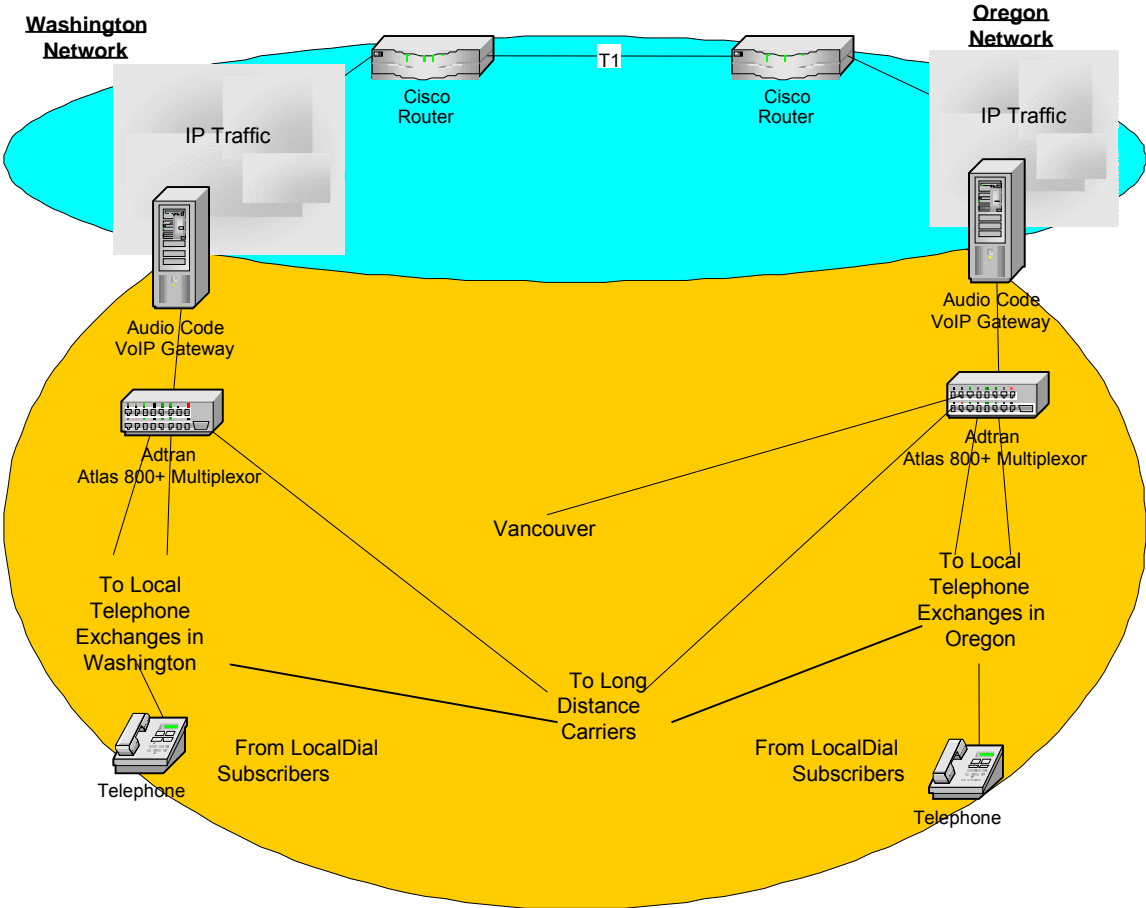
25 A. A review of the August 12, 2003 deposition of James T. Carden, President and
26 Chief Executive Officer for LocalDial, is very instructive. The deposition is
27 attached as Exhibit No. ____ (TAM-3). The confidential portion of this

1 deposition is attached as Exhibit No. ____ (TAM-4C). The following steps were
2 outlined by Mr. Carden; these steps define how a call is processed over the
3 LocalDial network:

- 4 1. A LocalDial subscriber will use their local phone, provided and
5 maintained by the Incumbent Local Exchange Carrier (“ILEC”), and will
6 dial an access number provided by LocalDial for that exchange.
- 7 2. The call is transported via a PRI, from that local exchange to one of
8 LocalDial’s collocation facilities (either in Seattle, Washington or
9 Portland, Oregon).
- 10 3. A server located at one of the collocation sites will answer. Using caller
11 ID, the server will verify if the subscriber is a registered LocalDial
12 subscriber in the company’s database.
- 13 4. If the caller ID number corresponds to that of a recognized subscriber,
14 then LocalDial’s automated response system plays a message asking the
15 caller to “Enter the destination number.”
- 16 5. The subscriber enters the destination number.
- 17 6. In conceptual terms, the call information is then converted to Internet
18 Protocol (“IP”) at one of the VoIP gateways. This gateway can be referred
19 to as the Source Gateway.
- 20 7. The Source Gateway then determines which available Destination
21 Gateway can complete the call.
- 22 8. The call is sent over IP to the Destination Gateway (in either Seattle or
23 Portland); and the call is converted from IP to TDM and either delivered
24 to a PRI, which is sent over the PSTN network to the ILEC or delivered to
25 a long distance carrier for completion of the call over the PSTN.

26

1 To further understand how traffic flows over the LocalDial network, the following
2 diagram depicts the LocalDial network, as described by Mr. Carden’s August 12,
3 2003 and February 9, 2004 depositions (the February 9, 2004 deposition is
4 attached as Exhibit No. ____ (TAM-5):
5



6
7

8 **Q. DOES LOCALDIAL USE ANY INTERNET PROTOCOL IN ITS**
9 **NETWORK?**

10 A. For a brief time, yes. The traffic, in the above drawing, is converted to IP or
11 “packetized,” and concentrated within the collocation space in Washington. The
12 sole purpose of the conversion is to provide the management and control of a

1 telecommunications service. This was confirmed by the July 16, 2003 deposition
2 of Donald E. Crawford, Vice President of Operations and Chief Operating
3 Officer. In his deposition, which is Exhibit No. ____ (TAM-6), Mr. Crawford
4 stated LocalDial does not provide dial-up Internet service; the Internet is used
5 only in providing voice services. The confidential portion of Mr. Crawford's
6 deposition is attached as Exhibit No. ____ (TAM-7C). He went on to explain that
7 LocalDial is not offering its subscribers access the World Wide Web, which is
8 commonly referred to as the "Public Internet." This should not be confused with
9 the Internet Protocol, which is a communication protocol designed to interconnect
10 packet-switched communication systems. The call arrives at the LocalDial
11 collocation space as voice and leaves as voice.

12

13 **Q. BASED ON YOUR REVIEW OF LOCALDIAL'S SERVICE, FROM A**
14 **NATIONAL PERSPECTIVE, IS THE SERVICE A**
15 **TELECOMMUNICATIONS SERVICE?**

16 A. Yes. The depositions of Mssrs. Carden and Crawford both indicated the service
17 LocalDial offers its subscribers is a telephone service and does not include any
18 sort of data service over the LocalDial network. Clearly, the service uses
19 telephone handsets, not modems or any other adaption devices. The service relies
20 on the use of numbers issued under the North American Numbering Plan. The
21 service relies on and uses the PSTN for origination and termination of the calls.
22 The service uses the PSTN for most, if not all, of the transport of the call.

23

1 **Q. DOES THE RECENT CHANGE FOR TRANSPORT BETWEEN**
2 **PORTLAND AND SEATTLE FROM DEDICATED FACILITIES TO AN**
3 **INTERNET BASED FORM OF TRANSPORT CHANGE YOUR**
4 **OPINION?**

5 A. No. By far most of the transport is still undertaken through point to point
6 connections like PRIs and T1's, which is a common form of communication over
7 the PSTN. What this change does is underscore the idea that using an Internet
8 link in the middle of what was otherwise a PSTN call is simply choosing one
9 transport technology over another. LocalDial used dedicated PSTN facilities for
10 this transport link in the past. Simply moving that link to an Internet based link
11 does not change the call control mechanisms or the content of the call. It is still a
12 voice call when it originates and a voice call when it terminates. Further,
13 LocalDial need not route the calls from the Longview or Vancouver areas back to
14 Portland to start with. It could obtain dedicated facilities, PRIs, from those areas
15 directly to its equipment in its collocation space in Seattle. It may be that it is
16 cheaper to route the calls through Portland, even when using dedicated facilities,
17 but there is no network constraint that requires the traffic from Southwest
18 Washington to go first to Portland.

19
20 **Q. WHAT IS YOUR CONCLUSION?**

21 A. In my professional judgment, LocalDial is offering a telecommunication service
22 to its subscribers as a common carrier.