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Introduction

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is Gargi Bhattacharya. My business address is 1300 S Evergreen Park Drive SW, Olympia, Washington, 98504. My e-mail address is *gbhattacharya@wutc.wa.gov*.

Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?

A. I am employed by the Washington Utilities and Transportation Commission ("WUTC" or "Commission") as a Telecommunications Analyst. I have been employed by the Commission since August 1999.

Q. WHAT IS YOUR EDUCATIONAL BACKGROUND AND WORK EXPERIENCE?

A. I studied economics and urban policy at Stanford University and graduated with Bachelor of Arts degrees in 1998. Before joining the Commission I worked as a research analyst at the World Bank in Washington D.C. I have provided analyses on two previous cases for the Commission: Docket UT-991358 (U S West and Qwest Merger) and Docket UT-991991 (MCI WorldCom and Sprint Merger).

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

2 A. I am presenting the results of a survey conducted by WUTC staff to assess the market
3 shares of Qwest and the companies identified by Qwest to be its competitors in the
4 business local exchange markets where Qwest is seeking competitive classification.
5 Further analyses of market share information and recommendations using the outcome of
6 this market concentration data are specified in the testimony of staff witness Dr. Glenn
7 Blackmon (Exhibit _____(GB-1T)).
8

9 **Q. IS THERE ANY STATUTORY AUTHORITY THAT SUPPORTS THE USE OF A**
10 **MARKET SHARE CALCULATION IN THE CLASSIFICATION OF**
11 **COMPETITIVE TELECOMMUNICATIONS SERVICES?**

12 A. Yes. The statute that allows for pricing flexibility for competitive services states that the
13 Commission shall consider “. . . indicators of market power, which may include market
14 share . . . ” RCW 80.36.330(d).
15

16 **Q. WHAT ARE MARKET SHARE AND MARKET CONCENTRATION AND HOW**
17 **CAN THEY BE CALCULATED?**

18 A. Market share is a measure of the percentage of the market held by any given firm. One
19 first defines the market then determines the share of revenue or output attributable to the
20 firm in question. Market concentration is a function of the number of firms in a market
21 and their respective market shares. The most commonly used measure of market

1 concentration is the Herfindahl-Hirschman Index (HHI). The HHI is an aid in the
2 interpretation of market data.

3
4 **Process**

5 **Q. WHAT WAS THE METHOD OF INITIAL DATA COLLECTION?**

6 A. After receiving a petition for competitive classification from Qwest, the Commission sent
7 out an informal request to each firm identified by Qwest in its petition to be a competitor.
8 In its letter, the Commission requested data on business services and business service
9 revenues in each of the exchanges where Qwest is seeking competitive classification of
10 its business local exchange service. The letter was accompanied by a verification form.

11
12 **Q. HOW WERE COMPETITIVE LOCAL EXCHANGE COMPANIES (CLECs)**
13 **SELECTED TO COMPLETE THE DATA REQUEST?**

14 A. In the original Qwest petition (June 7, 2000) the Company provided, in Attachment F, a
15 list of the names, addresses and contact information for competitive local exchange
16 carriers providing business telecommunications services in Washington State. The
17 Commission requested data from these companies only. Included in the list of the 31
18 companies are: Advanced Radio Telecom, Advanced Telecom Group, Allegiance
19 Telecom of Washington, American Telephone Technology Inc., AT&T of the Pacific
20 Northwest, Avista Fiber, Connect, Electric Lightwave, Fairpoint Communications, Focal
21 Communications Corp, Fox Communications, Frontier Local Services, Great West

1 Services, GST Lightwave, GST Telecom Oregon, GTE Northwest, ICG Telecom,
2 International, MCI Metro, MFS WorldCom, Metromedia, NEXTLINK, PacWest, PDGT,
3 Rainier Connect, SBC, Sprint, TCG, Telephone Plus, Teligent, and Winstar.

4
5 **Q. DID THE INFORMAL REQUEST YIELD ADEQUATE RESPONSES?**

6 A. No. Many companies did not complete the request for information that was sent out
7 informally on June 22, 2000. As a result, Commission staff requested that the
8 Commission issue a formal Order requiring the disclosure of information by August 11,
9 2000. The Commission issued the Order on July 27, 2000.

10
11 **Q. WHAT INFORMATION WAS REQUESTED IN THE CLEC DATA REQUEST?**

12 A. In its request, staff inquired into the number of access lines provided by both Qwest and
13 its identified competitors for basic business local exchange service, Centrex service, and
14 private branch exchange trunks. Staff additionally sought information concerning the
15 number of access lines provided for small business customers, where small businesses
16 were defined by five or fewer lines at a single location. Finally, staff requested each
17 company to provide the total billed revenue and the revenue billed to small businesses for
18 each of the services. The information requested was for the month of February 2000, and
19 was required to be presented on an exchange level basis. Exhibit _____ (GB-2).

1 **Q. WHY WAS THIS INFORMATION REQUESTED ON AN EXCHANGE LEVEL**
2 **BASIS RATHER THAN BY WIRE CENTER?**

3 A. Qwest is the only company able to provide information on a wire center basis. A series of
4 Qwest wire centers makes up an exchange. CLECs keep information by exchange, if at
5 all. Therefore, by requesting information on an exchange basis, staff was better able to
6 compare and analyze the data received from Qwest and from the CLECs.

7

8 **Q. SINCE QWEST MAINTAINS ITS INFORMATION ON A WIRE CENTER BASIS**
9 **AND HAS REQUESTED COMPETITIVE CLASSIFICATION ONLY IN**
10 **PARTICULAR WIRE CENTERS WITHIN AN EXCHANGE AREA, IS THERE A**
11 **SIGNIFICANT DISCREPANCY IN THE MARKET SHARE DATA?**

12 A. No. The discrepancy in market share data is not significant. The line count information
13 provided to the Commission by Qwest includes all of the wire centers located within each
14 exchange. However, the Qwest petition for competitive classification does not include all
15 of the wire centers within an exchange. Therefore if only those wire centers indicated in
16 the petition were to be included in the market share calculation, the Qwest market share
17 percentage would marginally fall. Additionally, the Qwest data does not include Home
18 Business Lines, DSL Mega Business Lines, DSS trunks, or ISDN lines.

19

20 **Q. WHY WERE CENTREX LINES AND PBX TRUNKS INCLUDED IN THE**
21 **MARKET SHARE CALCULATION?**

1 A. Centrex lines and PBX trunks were included in the market share calculation because
2 Qwest has requested competitive classification of these services. It would have been
3 preferable to evaluate the market shares separately for basic business service, Centrex
4 service and PBX trunk service, but the CLECs were unable to separate their data among
5 these three services.

6

7 **Q. ALTHOUGH STAFF REQUESTED REVENUE NUMBERS, STAFF'S MARKET**
8 **CONCENTRATION CALCULATIONS WERE BASED ON THE NUMBER OF**
9 **ACCESS LINES, NOT REVENUE FIGURES. PLEASE EXPLAIN.**

10 A. Although revenue numbers are often used to determine market concentration, revenue is
11 not the only meaningful measurement which can be used in this calculation. Staff
12 requested revenue numbers but most CLECs were unable to provide that information to
13 the Commission. Because the information was not available to the Commission on an
14 exchange level basis, market share could not be adequately determined by revenues.
15 Therefore, access lines were used.

16

17

Results

18 **Q. PLEASE DESCRIBE THE RESPONSES STAFF RECEIVED TO THE CLEC**
19 **DATA REQUEST.**

20 A. Eventually all 31 of the companies identified by Qwest as its competitors provided
21 responses to the Commission data request. Of those, fifteen companies reported

1 providing customers with either business local exchange service, centrex service or
2 private branch exchange trunks in one or more of the specified exchanges. Based on the
3 reported number of access lines for these companies, aggregate market concentration
4 calculations for each of the nine exchanges were performed.

5
6 **Q. HOW IS THE HERFINDAHL-HIRSCHMAN INDEX (HHI) CALCULATED?**

7 A. The HHI is calculated by summing the squares of the individual market shares of all the
8 firms in a given market. Exhibit _____ (GB-3) shows the calculated HHI for Qwest and
9 for the aggregate number of CLECs through the month of February 2000, based on the
10 number of business access lines. The HHI reflects both the distribution of the market
11 shares of the top firms and the composition of the market outside the top firms. It gives
12 proportionally greater weight to the market share of the large firms in accordance with
13 their relative importance in competitive interactions.

14
15 **Q. WHAT DO HHI CALCULATION FIGURES REPRESENT?**

16 A. The HHI can range from zero in a perfectly competitive market to 10,000 in a perfect
17 monopoly market. The HHI would equal 1,667 in a market with six firms of equal size,
18 2,000 in a market with five firms of equal size, 2,500 with four firms of equal size, 3,333
19 with three firms of equal size, and 5,000 with two firms of equal size. The formula for
20 these calculations is $n*(100*1/n)^2$, where n is the number of firms in the market.

1 **Q. ARE THERE FACTORS WHICH AFFECT THE SIGNIFICANCE OF MARKET**
2 **SHARE AND MARKET CONCENTRATION?**

3 A. Yes. In some instances market share and market concentration may either understate or
4 overstate the likely future competitiveness of a firm in the market. Market share is only
5 one of the factors that should be considered in determining whether a market is subject to
6 effective competition.

7

8 **Q. DOES THIS CONCLUDE YOUR TESTIMONY?**

9 A. Yes.

10