

ORIGINAL

1 BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

2 DIRECT TESTIMONY OF

3 SURENDRA SABOO

4 ON BEHALF OF

5 NEUTRAL TANDEM, INC.

6 DOCKET NO. 070127 - TX

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9 **Q. Please state your name and business address.**

10 **A.** My name is Surendra Saboo.

11

12 **Q. By whom are you employed and in what capacity?**

13 **A.** I am employed by Neutral Tandem, Inc. ("Neutral Tandem") as Chief Operating Officer
14 and Executive Vice President.

15

16 **Q. Please briefly describe your educational background and business experience?**

17 **A.** I have over 20 years of executive management experience in the telecommunications
18 industry. I hold a B.S. degree in Mechanical Engineering from the Birla Institute of
19 Technology in India, and a masters in Industrial and Systems Engineering and a Ph.D in
20 Operations Research from Ohio State University. I have also completed the Advanced
21 Management Program at Hawaii University.

22

23 **Q. What is the purpose of your testimony?**

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1 A. The purpose of my testimony is to: (1) explain how continued interconnection between
2 Level 3 and Neutral Tandem is in the public interest; and (2) explain why, in the absence of
3 an interim order to maintain the current interconnections between Level 3 and Neutral
4 Tandem, Neutral Tandem, the third party carriers that utilize Neutral Tandem's service, and
5 those carriers' end-users around the state, will be immediately and irreparably harmed. In
6 particular, I will describe the effect disconnection of the existing interconnection facilities
7 would have on Neutral Tandem, the third party carriers utilizing its tandem transit services
8 and those carriers' end-user customers, and the public switched telephone network
9 ("PSTN") at large.

10

11 **Q. What services are offered by Neutral Tandem?**

12 A. Neutral Tandem is the telecommunications industry's only *independent* tandem-transit-
13 services provider. Neutral Tandem provides third-party carriers with alternative means to
14 interconnect and exchange traffic with each other, without using incumbent LEC tandem
15 transit services.

16

17 **Q. What are "tandem transit services"?**

18 A. "Tandem transit services," also known as "transiting," refers to the intermediary switching
19 of local and other non-access traffic that originates and terminates on the networks of
20 different telecommunications providers within a local calling area or MTA.

21

22 **Q. To whom does Neutral Tandem provide these services?**

1 A. Neutral Tandem offers services to CLECs, wireless carriers, and cable companies
2 throughout Florida and in over 60 LATAs nationwide. In Florida, Neutral Tandem
3 provides tandem transit service to 20 different competitive carriers.

4
5 **Q. From your 20 years of executive management experience in the telecommunications**
6 **industry, are you familiar with the various ways telecommunication carriers**
7 **interconnect with other carriers?**

8 A. Yes.

9
10 **Q. From your experience, how do telecommunication carriers interconnect with other**
11 **carriers?**

12 A. As a general matter, competitive telecommunications carriers interconnect indirectly with
13 other competitive carriers because, as a practical matter, the number of direct connections
14 needed to connect all their switches grows exponentially faster than the number of carriers.
15 Competitive carriers can and do establish direct connections between their switches, but
16 generally that is the exception.

17
18 **Q. Prior to Neutral Tandem's entry into the market, how did carriers establish indirect**
19 **connection between their switches?**

20 A. The only available method of indirect interconnection in virtually all local markets was the
21 tandem switch operated by the incumbent LEC, such as BellSouth. Thus, for example, if a
22 cable telephone provider wished to terminate calls to a wireless carrier, it either had to

1 establish a direct connection to the wireless carrier's switch, or purchase tandem switching
2 and transport from the ILEC or incumbent local exchange company.

3
4 **Q. Did Neutral Tandem's entry into the market impact how carriers interconnected their**
5 **switches?**

6 **A.** Yes. Neutral Tandem's entry provides these carriers a third option, connecting indirectly
7 through Neutral Tandem's services at a competitive price.

8
9 **Q. What benefits does the PSTN receive from this third option?**

10 **A.** Competitive tandem switching inherently builds redundancy into the telecommunications
11 transport and switching infrastructure, which, in turn, provides diversity, redundancy,
12 efficiency, and increased reliability to the PSTN. This allows for faster disaster recovery
13 and provides more robust homeland security.

14
15 **Q. How specifically are third-party carriers benefited by Neutral Tandem's services?**

16 **A.** Neutral Tandem provides significant benefits to third-party carriers, including lower per
17 minute transit charges, reduced port charges and nonrecurring fees, simpler network
18 configurations, increased network reliability, improved quality of service and traffic
19 transparency. Thus, through its competitive tandem switching and transit services, Neutral
20 Tandem provides the traditional benefits of competition: lower cost, increased service,
21 unique features, and neutrality. The availability of Neutral Tandem's services, especially
22 from a competitively-neutral provider, also helps level the playing field by increasing
23 competitive carriers' leverage with ILECs.

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Q. What is the current relationship between Level 3 and Neutral Tandem?

A. Neutral Tandem and Level 3 have been interconnected for more than two years pursuant to a series of negotiated contracts. Neutral Tandem delivers tandem transit traffic to Level 3 from other carriers, and accepts certain traffic originated by Level 3 for delivery to other carriers, pursuant to a contract dated July 6, 2004. Similarly, Neutral Tandem delivers tandem transit traffic to Level 3's subsidiary Broadwing Communications and accepts traffic from Broadwing pursuant to a February 2, 2004 contract. Pursuant to these contracts, Neutral Tandem and Level 3 currently are interconnected in fourteen states, including Florida. Neutral Tandem currently delivers tandem transit traffic to Level 3 in the Miami, Tampa, and Orlando markets. Neutral Tandem also accepts certain traffic originated by Level 3 for delivery to other carriers pursuant to a contract dated August 18, 2005.

Q. Under the July 6, 2004 contract, did Neutral Tandem provide Level 3 with compensation for accepting certain traffic for termination?

A. Yes. Neutral Tandem did agree to provide Level 3 with a usage-based transport recovery charge on an interim basis. However, that privately-negotiated arrangement was agreed to by Neutral Tandem in consideration of establishing a two-way business relationship with Level 3; the transport recovery fee was to phase down as Level 3's usage of Neutral Tandem's transit service increased. When we initially interconnected with Level 3, they did not have the technical ability to segregate and route local traffic, therefore they were unable to originate transit traffic to Neutral Tandem. Notably, Neutral Tandem's contract

1 with Broadwing did not provide that Neutral Tandem would make any similar payments to
2 Broadwing, and Neutral Tandem does not make any similar payment to any other carrier
3 terminating traffic.
4

5 **Q. Have Neutral Tandem's contracts with Level 3 ever been amended?**

6 A. Neutral Tandem and Level 3 entered into an amendment of the August 2005 Contract on
7 January 31, 2007, in order to provide Level 3 with more advantageous pricing for the traffic
8 Level 3 originated through Neutral Tandem.
9

10 **Q. At any time, did Level 3 terminate either of its existing contracts with Neutral
11 Tandem?**

12 A. Within hours of signing the January 2007 Amendment, Level 3 sent a fax to Neutral
13 Tandem stating its intention to terminate the July 2004 contract effective March 2, 2007.
14

15 **Q. Did Level 3 explain why it was terminating the July 2004 Agreement?**

16 A. No. Level 3's fax was sent by the same Level 3 executive who just hours earlier had signed
17 the January 2007 Amendment, yet the fax offered no explanation for Level 3's decision.
18

19 **Q. Has Level 3 terminated the February 2004 Contract or the August 2005 Contract?**

20 A. On February 14, 2007, Level 3 notified Neutral Tandem that it intended to terminate the
21 February 2004 Contract in addition to the July 2004 Contract. The February 14 letter stated
22 that Level 3 would terminate both contracts effective March 23, 2007. Level 3 has not
23 terminated its August 2005 Contract, which was amended on January 31, 2007, under

1 which Neutral Tandem also accepts certain traffic originated by Level 3 for delivery to
2 other carriers.

3

4 **Q. How did Neutral Tandem respond to the notices of termination?**

5 A. Neutral Tandem has attempted to negotiate with Level 3 to maintain the current
6 interconnection.

7

8 **Q. What efforts did Neutral Tandem take to resolve the dispute with Level 3 informally?**

9 A. On February 19, 2007, Neutral Tandem responded to Level 3's letters. Neutral Tandem
10 reiterated its desire to work with Level 3 to arrive at mutually acceptable terms and
11 conditions for interconnection. However, Neutral Tandem also reminded Level 3 that it
12 was obligated to interconnect with Neutral Tandem pursuant to the law of Florida and
13 several other states. Neutral Tandem notified Level 3 that any refusal by Level 3 to
14 interconnect with Neutral Tandem would violate these interconnection obligations. In
15 addition, Neutral Tandem has met with representatives from Level 3 on multiple occasions
16 in an attempt to resolve these disputes. Several senior executives from Neutral Tandem
17 traveled to Level 3's Colorado headquarters for an in-person meeting on February 16, 2007.
18 Neutral Tandem also has met with Level 3 by telephone on February 14 and 21, 2007 to try
19 to negotiate mutually agreeable interconnection terms. However, the parties have been
20 unable to reach an agreement.

21

22 **Q. How did Level 3 respond?**

1 A. On February 22, 2007, Level 3 responded to Neutral Tandem's request for interconnection
2 under Florida law. Level 3 denied it was required under Florida law to interconnect with
3 Neutral Tandem for the purpose of receiving traffic Neutral Tandem transited from other
4 carriers' networks. Level 3 also reiterated its threat to effectuate the termination of the
5 parties' existing interconnections as of March 23, 2007.

6

7 **Q. Who would be affected by Level 3's refusal to accept traffic delivered by Neutral
8 Tandem on behalf of other carriers?**

9 A. If Level 3 is permitted to block traffic delivered by Neutral Tandem on behalf of other
10 carriers, the service disruption will cause irreparable injury to Neutral Tandem, to third-
11 party carriers and those carriers' end-users, and to the PSTN at large.

12

13 **Q. How would Level 3's refusal to accept traffic delivered by Neutral Tandem on behalf
14 of other carriers impact third-party carriers?**

15 A. The disruption of the successfully operating direct connections already in place between
16 Neutral Tandem and Level 3 will have the effect of blocking traffic terminating with Level
17 3 from Neutral Tandem in the affected markets. Moreover, the disruption will significantly
18 disrupt the operations of the third-party carriers.

19

20 **Q. How many third-party carriers in Florida would be impacted by the disruption?**

21 A. Twenty third-party carriers utilize Neutral Tandem's service in the Florida market, many
22 utilizing multiple switches, each of which routes traffic to Level 3. The largest market is
23 Miami, with over 16 third party carriers routing from 33 unique switches over 50 million

1 minutes of terminating traffic to Level 3 per month. In Orlando, 9 third party carriers are
2 routing from 10 unique switches over 5 terminating minutes to Level 3 per month. And in
3 Tampa, 12 third party carriers are routing from 15 unique switches over 3.5 million
4 terminating minutes per months to Level 3. Thus, 20 unique third party carriers are routing
5 transit traffic through Neutral Tandem from 58 individual switches terminating to Level 3.

6
7 **Q. Why would Level 3's refusal have the effect of blocking traffic?**

8 **A.** If these direct connections to Level 3 are removed, third party carriers would have to
9 augment their interconnection trunks with the ILEC in order to seek to terminate this traffic
10 indirectly to Level 3. These alternative routes do not necessarily have sufficient capacity to
11 send all of the blocked traffic. This capacity shortage could result in the blockage of traffic
12 destined for termination to Level 3 end-users. In other words, some calls to Level 3 end-
13 users from third-party carriers may be blocked and receive a fast busy signal due to lack of
14 trunk capacity. This could potentially cascade into call blocking for BellSouth end-users
15 attempting to reach Level 3 end-users through the BellSouth tandems.

16
17 **Q. Why could the disruption not be avoided if Neutral Transit and/or the third-party
18 carriers augmented their trunk capacities?**

19 **A.** There is no assurance that tandem capacity will be available in the serving ILEC tandems
20 for Neutral Tandem or for the numerous carriers using its services to compensate for this
21 lost capacity. In addition, even if Neutral Tandem were able to augment its trunk capacity,
22 Level 3 may not have sufficient capacity to the ILEC tandem to receive the traffic by that
23 route. Tandem exhaustion is a recurring problem in numerous tandem offices throughout

1 Florida and in other markets. Even now, several carriers have asked Neutral Tandem to
2 accept overflow traffic to and from the LECs because many LEC tandems are exhausted,
3 and the carriers already cannot obtain sufficient trunk capacity to the tandem designated in
4 the LERG. Thus, third-party carriers are also unlikely to have the necessary excess
5 capacity to absorb additional Level 3 traffic.

6
7 **Q. In your experience, has tandem exhaustion ever led to the blocking of traffic?**

8 **A.** Yes. For example, in the second quarter of 2006, Level 3 ran out of capacity to the ILEC
9 tandem in the Chicago Market. Level 3 was unable to handle traffic from AT&T after SBC
10 bought AT&T and moved AT&T's traffic to the SBC (Ameritech) tandem. As a result,
11 traffic to Level 3 effectively was blocked. Neutral Tandem worked with AT&T to move
12 the traffic back to our tandem until Level 3 had the time to augment their trunks with SBC.

13
14 **Q. How will the disconnection of the direct connections between Neutral Tandem and**
15 **Level 3 impact the PSTN?**

16 **A.** Disconnecting the parties' existing interconnections would have the effect of disrupting the
17 communications of the PSTN, including all carriers and their subscribers that use Neutral
18 Tandem to terminate traffic to Level 3 customers in these markets. Moreover, as discussed
19 earlier, disconnection of the direct connections between Neutral Tandem and Level 3 will
20 increase traffic to those tandems by millions, or in some cases tens of millions, of minutes
21 per month. As such, exhaustion in the above-referenced tandems will be significantly
22 exacerbated by the disconnection of Neutral Tandem's direct connections with Level 3,
23 potentially triggering call blocking by end-users utilizing BellSouth's tandems.

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Q. How will the disconnection of the direct connections between Neutral Tandem and Level 3 affect third-party carriers?

A. Should disconnection of the existing direct connections occur, third-party carriers utilizing Neutral Tandem's network will be required to rearrange their network routing in order to adjust for the loss of the affected direct connections. This will cause these carriers, as well as Neutral Tandem, significant time and resources.

Q. In your experience, how long would it take third-party carriers to rearrange their network routing?

A. In my experience, the 20 third-party carriers could require up to six months to rearrange the additional transport capacity needed and to make the individual switch programming changes required in their 58 individual switches for routing traffic through the BellSouth tandems.

Q. Why would the third-party carriers require six months to re-configure their networks?

A. The third-party carriers might need six months just to coordinate a complete move of all Level 3 traffic. The bulk of this time would be spent augmenting capacity of both the third-party carriers and Level 3 with the ILECs. Indeed, Level 3 must first augment its capacity with the ILEC, before any of the carriers can route their traffic through the ILEC tandem. After these changes have been made, the third-party carriers then may implement routing changes, so as to direct their traffic to the ILEC tandem. This would

1 necessitate that every switch of the 20 third-party carriers would have to be carefully re-
2 programmed to update its internal routing translations tables for re-configurations to the
3 multiple BellSouth and other ILEC tandems. Moreover, for the volumes of traffic
4 involved here, a co-location alternative point of termination (“APOT”) augment likely is
5 required. This quantity of trunks will require a project status by the ILEC. One ILEC
6 standard for these types of projects is seven T1s per month. Given the number of T1s
7 Neutral Tandem would need to carry the terminating traffic of end-users, establishing the
8 necessary trunks could take months. In Miami alone, Neutral Tandem’s transport and
9 termination took over 22 months to establish. Upon current information and belief, many
10 third-party carriers are currently operating their ILEC tandem trunk groups at higher
11 utilization rates than Neutral Tandem. In fact, as noted above, some carriers have
12 requested that Neutral Tandem receive overflow traffic destined to the ILEC in situations
13 where their tandem trunk groups are full. As such, third-party carriers currently using
14 Neutral Tandem’s transit services will be significantly disrupted if the facilities between
15 Neutral Tandem and Level 3, used to terminate the traffic of the third-party carriers, were
16 shut down.

17
18 **Q. How else will the blocking of traffic effect third-party carriers?**

19 **A.** Overall, if the traffic of third-party carriers is blocked by Level 3’s actions, the carriers will
20 face economic hardship. The carriers will have to spend time and effort to re-program their
21 switches and to secure additional capacity from the ILECs. The carriers also will be forced
22 to pay higher rates to the ILECs for terminating traffic to Level 3 via the ILECs’ tandem
23 switches. Increases in operating costs are inevitably passed on to those carriers end-users.

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Q. In your experience, how would a disruption of Neutral Transit’s service impact third-party carriers and their end-users?

A. In addition to the economic costs described above, even a temporary disruption of Neutral Transit’s service creates an unnecessary risk of service interruptions for third-party carriers and its end-users. As mentioned previously, from an engineering perspective, carriers contend with numerous difficulties in order to route traffic via alternative routes for any period of time, including coordinating the efforts of numerous individuals. If the disruption is only temporary, the third-party carriers face the risk of service interruptions twice: first, while temporarily routing its traffic over an alternative route; and second, while re-routing its traffic back via Neutral Tandem’s tandem switch. End-users face the real risk of experiencing call blocking related to the increased tandem congestion triggered by Level 3’s actions.

Q. How will Level 3’s actions impact competition in the State of Florida?

A. The disconnection of Neutral Tandem’s direct connections with Level 3 will harm the development of the only viable tandem competitor in the United States: Neutral Tandem. Neutral Tandem’s loss in its ability to provide its unique service offering will mean that ILECs will once again be the monopoly providers of tandem service. This will result in higher tandem service rates among all communications service providers, which will reduce competitive options to all carriers as well as the ability of carriers to establish simpler network configurations.

1 **Q. Will Level 3's actions have any other impact on telecommunications infrastructure in**
2 **the State of Florida?**

3 **A.** The FCC recently issued a report regarding the impact Hurricane Katrina had on various
4 types of telecommunications networks. The FCC found that Hurricane Katrina highlighted
5 the dependence within our nation's telecommunications infrastructure on tandem switches,
6 as well as the need for diversity of call routing and the avoidance of strict reliance on any
7 single network routing solution. The loss of network redundancy that could result from
8 Level 3's disconnection of its existing interconnections with Neutral Tandem thus could
9 have a particularly severe impact in a coastal state like Florida.

10

11 **Q. Will the service disruptions have any other impact on competition?**

12 **A.** Disruption to Neutral Tandem's ability to operate in the market will result in higher per
13 minute transit charges, higher port charges and recurring fees. It will also lead to a loss of
14 network redundancy resulting in tandem exhaustion and short-term call blocking, increased
15 homeland security risk through the loss of network redundancy; and reduced network
16 reliability. The economic losses that would result from the exclusion of Neutral Tandem as
17 a viable tandem services competitor to the ILEC are so difficult to estimate that it would be
18 impracticable for us to seek monetary compensation for them, even if there were a legal
19 remedy by which we could do so. Of course, when Neutral Tandem suffers such harm, it
20 affects the PSTN at large as a loss of a strong, viable competitor to ILEC tandem services.
21 As such, Neutral Tandem's customers and the PSTN would also suffer irreparable harm.

22

23 **Q. How will Level 3's actions affect Neutral Tandem's business operation?**

1 A. Disruption of the connections already established between Level 3 and Neutral Tandem will
2 undoubtedly lead the carriers using its services to question Neutral Tandem's viability in
3 the market. Removal of termination capability to Level 3 will clearly harm other third-
4 party carriers, and will undoubtedly cause the loss of goodwill they have for Neutral
5 Tandem. Carriers using our transit services who have their service disrupted, including the
6 need to re-arrange facilities because of the loss of terminations to Level 3, and, worse yet,
7 the blocking of traffic, will certainly blame Neutral Tandem, not Level 3, for the
8 inconvenience and expense they suffer from having their traffic destined for Level 3
9 disrupted. These third-party carriers will perceive Neutral Tandem as unreliable and will
10 undoubtedly share these opinions with other carriers and acquaintances in the
11 telecommunications industry. This will impair Neutral Tandem's ability to attract new
12 customers and retain its existing ones — even those who were not disrupted.

13

14 **Q. In your experience, could Neutral Tandem recover from the damage to its reputation?**

15 A. The resentment toward Neutral Tandem felt by carriers using its services will not likely
16 dissipate, even after the Commission's final decision on the principal issues in the above-
17 captioned case. Rather, the perception created by the disruptions caused by Level 3's
18 disconnection of these facilities will linger in the market long after the legality of Level 3's
19 actions has been adjudicated. It is highly unlikely that Neutral Tandem will later be able to
20 convince third-party carriers to re-route traffic to Neutral Tandem's service as some future
21 time after disconnection occurs. Carriers disrupted by the loss of these connections will
22 most likely believe that Neutral Tandem is an unreliable service provider due to their
23 experience.

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2 **Q. Does this conclude your testimony?**

3 **A. Yes, it does.**

4