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February 26, 1997

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Mr. William F. Caton
Acting Secretary
Federal Communications Commission
1919 M Street, N. W., Room 222
Washington, D. C. 20554

Re: CC Docket No. 95-116, Telephone Number Portability

Dear Mr. Caton:

On February 19, 1997, SBC Communications, Inc. filed with the Commission a Bellcore study it commissioned which purports to calculate the increased risk of a network failure in the Houston Metropolitan Statistical Area ("MSA") if SBC implements local number portability ("LNP") in a manner consistent with the Commission's June 1996 Order. This study recommends that the Commission's deadline for introduction of LNP in the Houston MSA be extended by three months, that LNP be introduced in an MSA smaller than Houston, and that SBC be permitted to deploy their proposed LNP architecture, Query On Release ("QOR"), rather than a methodology permitted by the LNP Order. For the reasons outlined below, AT&T believes the SBC study is fatally flawed and urges the Commission to reaffirm the findings of its June 1996 Order.

As an initial matter, the differences the study purports to find between LRN and QOR can be attributed entirely to differences in its assumptions concerning the performance of the LNP databases in the Houston MSA. In every other category the study finds that the theoretical performance of the Houston MSA network immediately after LRN is deployed and immediately after QOR is deployed are identical. If the SBC study's deeply flawed assumptions surrounding LNP database performance are corrected, AT&T believes that it will show that the Houston MSA network will perform with the same predicted reliability using either LRN or QOR.

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The LNP Database

As stated above, only the "LNP Database" section of the SBC study purports to find differences in predicted network reliability. However, even a cursory examination of the calculations underlying these findings reveals the untenable lengths to which Bellcore and SBC were forced to go in order to produce any sort of ostensible differentials.

First, the study describes a highly improbable scenario in which all LNP SCPs in the Houston MSA[1] fail. This study then ventures still further into the realm of improbability by assuming not only that all 4 databases fail, but that they fail simultaneously. The dubious nature of this assumption is revealed in a footnote which makes clear that such an event has never before occurred.[2] In order to produce a difference in the predicted reliability of LRN and QOR in the Houston network, Bellcore found it necessary to model a component failure so speculative that it simply has never been observed. The study then compounds this improbability by urging that, despite the absence of a single real-world example of an individual dual failure of mated SCPs, the Commission should reconsider its June 1996 Order based on a theoretical calculation of multiple, simultaneous dual failures within the Houston MSA. This incredible assumption is in itself sufficient grounds to discredit the study as nothing more than an exercise in statistical gamesmanship

Nevertheless, in order to produce data that appear to cast doubt on LRN, SBC was forced to stretch statistical credibility further still. The study assumes that there is a 90% probability that if the first mated SCP pair fails, the second mated SCP pair will also fail at the same time. Using this assumption, for which Bellcore provides no data to support, at page 22, the SBC study calculates the expected frequency that all 4 SCPs in the Houston MSA will fail as 0.00144. On the very next page the study calculates the expected frequency that a single SCP pair will fail at 0.00080. Thus, the study predicts that the probability of 2 mated SCP pairs failing simultaneously is 1.8 times higher than the probability that just 1 SCP pair will fail. If the logic of the SBC study is to be credited, then the probability of 10 mated SCP pairs failing simultaneously is 3.87 times higher than a single pair failing simultaneously. This result is inherently illogical, and flies in the face of the industry's experience operating SCP databases.[3] For example,

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[1] Bellcore states that the implementation of LRN in Houston will require 4 SCPs configured as 2 mated pairs; whereas QOR would initially require 2 SCPs configured as one mated pair.

[2] "As of February 10, 1997 there have been no dual failures of Bellcore ISCPs (which will be used as LNP databases by SWB in Houston)." (SBC Study, page [6]. n.[4]).

[3] If the failure of subsequent SCP pairs is not related to the failure of the first SCP pair, the study admits that the chance of simultaneous failure of all SCP pairs is "microscopic." Indeed, AT&T calculates the probability that both SCP pairs will fail simultaneously is 3.81×10^{-18}. To put this infinitesimally small chance into perspective, it is 600 times more likely that a person could to buy two randomly generated lottery tickets that have the same six numbers, and that those six numbers turn out to be the winning combination.

Bellcore, the entity which performed the study on SBC's behalf, touts the reliability of their ISCPs by advertising they have processed 50 billion 800-service calls per year with zero downtime over the last 5 years. Here, again, the Commission should find this flaw in the study's logic sufficient to dismiss the results as inaccurate.

The third fundamentally incorrect assumption the study employs is that the use of switch-based software fault factors increases the likelihood that components other than the switch will fail. There are two obvious flaws in this logic. First, the study assumes that a factor derived from the total number of software faults, many of which produce only minor errors, is an accurate predictor of software faults that will produce a catastrophic network failure. In reality, the majority of software faults produce only minor deviations from the expected performance of a program, and do not necessarily impact service to customers in any respect. For instance, if a program produces a maintenance report which does not conform to the specifications outlined prior to implementing the program, this error would be considered a "software fault," although it could in no way be deemed the cause of a network failure. Second, notwithstanding this fact, the SBC study applies its flawed switch-based software factors to predict a purported increase in the probabilities of a network failure in other signaling system components (*i.e.*,STPs and SCPs). Bellcore concedes it has no data on the software failure history for common channel signaling ("CCS"), Advanced Intelligent Network ("AIN") or 800-databases to support its supposition. Its conclusions therefore simply cannot be credited.

Other Considerations

The Commission should note that the Bellcore study specifically refutes often-repeated claims by incumbent local exchange carriers that the increase in load on the signaling network introduced by the deployment of LRN will cause a degradation in network reliability. Table 2 of the study states that the probabilities of STP and SCP failure due to signaling overload are both "negligible." Also, the Bellcore study continues the ILECs' longstanding practice of ignoring the impact on the network of the increased number of call attempts under the QOR routing architecture, as well as the substantial risks associated with requiring ILEC engineers to somehow predict the percentage of customers porting to competitors of the ILEC in an MSA so as to correctly engineer their signaling network.

If SBC believes that it requires additional time to deploy LNP in the Houston MSA, then it should request a waiver of the implementation schedule from the Chief, Common Carrier Bureau, as provided by the Commission's June 1996 Order. It is plain, however, that SBC's February 19, 1997 study provides wholly inadequate support for such a request.

Sincerely,