

2. Only LNP-Eligible Carriers Should Implement TBNP

The NPRM questions whether the Commission, in order to maximize the benefits of TBNP, could or should require carriers to implement LNP solely to participate in TBNP.¹⁴⁵ SBC believes that it could not and should not. LNP is extremely expensive to implement, and it should not be required unless it is mandated by the Commission in accordance with the requirements of the Act. However, requiring carriers to incur the costs of implementing *both* LNP and TBNP would be an extremely expensive way to obtain the limited benefits in numbering resource utilization that TBNP would offer, and it would make no sense to require such a large expenditure to address what is potentially a short term problem.

3. TBNP Should Be Implemented Only In The Largest 100 MSAs

SBC supports the Commission's tentative conclusion that any ordered deployment of TBNP should be limited initially to the largest 100 MSAs.¹⁴⁶ The largest 100 MSAs have the highest number of LNP-capable carriers, and the bulk of the current rapid area code relief is concentrated in the largest MSAs, because this is where wireline new entrants are focusing their efforts. In adopting the phased deployment schedule for LNP, the Commission recognized that new entrants likely would choose to first enter the largest 100 MSAs. The Commission found that its phased deployment in the largest 100 MSAs

takes in account the differing levels of local exchange competition that are likely to emerge in the different geographic areas throughout the country. Thus, our deployment schedule is designed to ensure that number portability will be made available

¹⁴⁵ See *NPRM* at ¶ 145.

¹⁴⁶ See *NPRM* at ¶ 144. For area codes that are partially within the largest 100 MSAs, only the rate centers that are in the largest 100 MSAs should be included in TBNP.

in those regions where competing service providers are likely to offer alternative services.¹⁴⁷

As discussed in Section II.A., the highest growth in numbering demand is occurring in the largest 100 MSAs, precisely because these areas have the highest growth in wireline new entrants. In addition to growth, new services requiring numbering resources are usually rolled out in major metropolitan areas. All of these factors result in a higher demand for numbering resources within the larger MSAs.

While some state commission may state that TBNP should be considered outside the largest 100 MSAs, TBNP would provide less benefit in rural areas. SBC is sensitive to the state commissions desire not to order NPA relief, even in rural areas; however, the Commission should address these concerns by modifying its area code relief policies. In most rural areas, well planned area code relief would satisfy numbering demands for many years to come.¹⁴⁸ Thus, SBC urges the Commission to limit TBNP to the largest 100 MSAs at this time.

B. TECHNICAL AND ADMINISTRATIVE IMPLEMENTATION ISSUES

1. Technical Issues: EDR, 1AESS Switches, Rate Centers, And "Process Flows"

(a) The Commission Should Mandate That All Carriers Participating In LNP In A TBNP Area Implement Efficient Data Representation

The most important unresolved issue concerning TBNP implementation is absolutely essential to control the impact of TBNP on the LNP infrastructure. That issue is whether Efficient Data Representation ("EDR") should be mandated for all service providers.

¹⁴⁷ *Telephone Number Portability*, CC Docket No. 95-116, First Report and Order and Further Notice of Proposed Rulemaking, (¶ 82) (July 2, 1996) [*Local Number Portability 1st Report & Order*].

¹⁴⁸ In Texas, for example, the state commission is considering a NPA relief plan for a predominately rural area code that is projected to last *at least* 12 years.

SBC believes that EDR is essential to protect the LNP infrastructure, and it urges the Commission to mandate that all LNP-capable carriers implement EDR as part of TBNP.

TBNP poses two major impacts on the existing LNP infrastructure. The first is the provisioning throughput from the Number Portability Administration Center ("NPAC") in each region to the regional carriers. The second is the strain that TBNP may place on some carriers' network database capacity.

With the existing LNP infrastructure, every telephone number that is "ported" (whether due to a customer changing service providers or TBNP), needs to be placed into the LNP databases – the NPAC and individual carriers' signaling network Serving Control Points ("SCPs") or "Signaling Transfer Points ("STPs"). To get these records into these databases, they must be processed. The current LNP infrastructure requires that every ported telephone number be processed as an individual record.¹⁴⁹

The LNP network was designed to ensure that all carriers are operating with the same LNP records to ensure calls to the same telephone number are terminated at the same location from all carriers. To accomplish this goal, the system requires that all carriers (SCPs/STPs) process all records associated with a service order before the order becomes effective. Because all carriers are restricted from using any numbers in the ported block until every single carrier processes all the records in the order, the transaction actually cannot be completed until the carrier with the *slowest network* completes processing. This is often referred

¹⁴⁹ Although some vendors claim that they support EDR, their form of EDR is limited to porting up to 1,000 consecutive numbers in a single transaction, but the numbers still must be processed as 1,000 individual records.

to as the "slow horse" phenomenon, because the rate of processing of the slowest carrier determines the throughput rate for the entire industry.

Just as all carriers must process all records, all carriers must have sufficient capacity in their STPs/SCPs to store *every* record entered into the NPAC for their region. For routing purposes, carriers need to store all ported numbers, not just their own ported numbers. This makes the entire LNP infrastructure vulnerable to its weakest link: if one carrier's SCP/STP reaches capacity, no additional porting transactions are possible for the entire network.

The industry developed EDR to alleviate the problems caused by porting high-volume, consecutive ranges of telephone numbers. Under EDR, a block of 1,000 numbers would be compressed to allow processing and storage in databases as a single record, with one additional record required for each "contaminated" number within that block.¹⁵⁰ However, the industry did not mandate that all carriers implement EDR. The result is that one carrier could upgrade its systems to process and store records efficiently using EDR, and substantially cut down on the amount of storage in its own network. However, if any *one* carrier in that region did not implement EDR, it would require that all telephone numbers in a thousands block be ported individually to that carrier. The carrier that made the investment, and all other carriers in that region, still would be prohibited from using the thousands block until the non-EDR carrier completed processing all the records. Moreover, if any *one* carrier miscalculated its capacity requirements and ran out of capacity, the entire LNP infrastructure could crash, prohibiting any further porting altogether until that carrier installed sufficient additional capacity.

¹⁵⁰ Thus, if a block of 1,000 numbers had ten percent contamination (100 numbers), there would be 101 total number of records processed and stored in the LNP databases – one for the block of 1,000 numbers, and 100 for the "contaminated" numbers.

Obviously, if TBNP is to have any meaningful impact, a large number of thousands blocks would need to be ported. A significant number of blocks porting at 1,000 records reach (due to the refusal by any one carrier to implement EDR) could cause significant processing delays for all carriers in the entire region. All porting transactions would be delayed equally – service orders for competitive porting of working telephone numbers (with increased potential for out-of-service situations) would be as delayed as service orders to port thousands blocks.

Thus, SBC believes it is essential that all carriers be required to implement EDR, and it urges the Commission to mandate EDR for all LNP-capable carriers if it orders number pooling. To ensure that EDR is implemented correctly, the Commission should specify the following requirements for EDR and mandate that all carriers follow these requirements:

- One request to the NPAC with 1,000 consecutive numbers (K-block) ranging from X000-X999 (multiple of these K-blocks could be included in one service order).
- NPAC storage of one record to represent that K-block (compression technique is non-optional).
- NPAC broadcast of the K-block as a “compressed” record (non-optional).

(b) 1AESS Switches Should Be Excluded From TBNP

Lucent Technologies (“Lucent”), the manufacturer of the 1AESS switch, recently announced that it is phasing out its 1AESS product support and plans no further software releases. Lucent has informed SBC that it has issued its last software update (update 1AE13.04) for the 1AESS switch, and that it intends to discontinue support for this software update on January 1, 2000. Further software upgrades would be necessary to make the 1AESS switch TBNP capable, and if Lucent does not provide the necessary upgrade, 1AESS

switches could not be used for number portability. Accordingly, SBC requests that the Commission except 1AESS switches from TBNP requirements.

Excluding 1AESS switches should not be a significant impediment to TBNP in the regions where SBC telephone companies serve as incumbent local exchange carriers. SBC estimates that it would have no more than 64 1AESS switches in operation in the largest 100 MSAs when TBNP would be implemented. SBC currently plans to gradually replace these 1AESS switches over the next several years.

(c) TBNP Should Only Be Permitted in "Incumbent" Rate Centers

Inconsistent rate centers ("IRCs") create tremendous problems with the existing LNP systems and architecture, as SBC explained in its comments on the NANC NRO Report.¹⁵¹ The same problems exist with TBNP, only worse, because every IRC could create another "pool" of numbers, and demand NXX codes to stock those pools. To the extent that the Commission does not make clear that TBNP is prohibited for IRCs, some carriers may attempt to create separate "pools" using IRCs. Out of an abundance of caution, then, SBC encourages the Commission to make clear in its order that TBNP will be implemented only in existing industry standard, or "incumbent," rate centers.

(d) The NANC Should Be Directed To Develop "Process Flows" For TBNP, Using T1S1.6 Requirements, Mandatory EDR, A Maximum Ten Percent Contamination Rate, and Industry Standard Rate Centers

The NANC created "process flows" for LNP, based on technical standards, which became the "bible" for carriers and LNP implementation groups throughout the nation. These process flows were invaluable in resolving many specific implementation issues as they arose,

and they substantially aided the implementation of LNP throughout the country. SBC believes that similar "process flows" could be useful in implementing TBNP. Accordingly, SBC recommends that the Commission direct the NANC to develop TBNP process flows. The process flows should be based on the existing TIS1.6 standards, but should also include mandatory EDR, a "contamination" rate of ten percent or less, and pooling only in industry standard rate centers.

2. Administration Issues: Pooling Administrator Selection And The Guidelines

(a) The Commission Should Accept the NANC's Recommendation Regarding Selection of the Thousands Block Number Pooling Administrator

SBC supports the NANC's recommendation that Lockheed Martin be selected to serve as the thousands block pooling administrator ("TBNPA"). An issues management group of the NANC, which SBC was participated in, extensively reviewed of Lockheed Martin's proposals to serve as the TBNPA, and the working group ultimately recommended that Lockheed Martin be selected as the TBNPA. The NANC adopted the IMG recommendation at its July meeting, and SBC recommends that the Commission adopt the NANC's recommendation.

SBC supports Lockheed Martin serving in this capacity only because it believes that having the same entity serve as NANPA and TBNPA would result in substantially lower TBNPA costs (and, thereby, substantially lower TBNP implementation costs). There are many synergies between CO code administration and TBNP administration, and these synergies should result in substantial cost savings for both administration functions. For example, many support systems and personnel could be the same for both NANPA and TBNPA. Computer storage databases could share the same systems software and storage capacities. The same person could

¹⁵¹ See *SBC NRO Report Comments*, *supra* note 2, at 30-32.

serve the function of assigning NXX codes and thousands blocks in an area, and thereby avoid any problems with assigning NXX codes to replenish pools. Having the same company perform both functions avoids interfaces that otherwise would need to be established between the separate administrators, which can only increase costs and add delays in the assignment of resources.

(b) The Thousand Block Pooling Administration Guidelines

SBC generally supports the Thousands Block Pooling Administration Guidelines developed by the INC.¹⁵² However, there is one provision in these guidelines that can and should be improved. As the NPRM notes, the guidelines currently permit carriers to maintain a nine month inventory of thousands blocks.¹⁵³ SBC believes that nine months is excessive, and it recommends that inventory period be shorted to six months. With that change, the Commission should endorse the Thousand Block Pooling Guidelines. As with the Central Office Code Administration Guidelines, the Commission should promulgate a regulation requiring that all TBNP-carriers comply with the guidelines, to enhance compliance with and improve enforceability of the standards in the guidelines.

*(e) The "Contamination Threshold" for Reclaimed Blocks
Should Not Exceed Ten Percent*

The Commission should not change the ten percent "contamination threshold" established in the INC Thousands Block Number Pooling Administration Guidelines. The NPRM questions whether the contamination threshold for reclaimed thousands blocks should be

¹⁵² *Thousand Block Pooling Guidelines*, *supra* note 97, at § 8.1.

¹⁵³ *See NPRM* at ¶ 192.

changed to 25 percent, or whether different thresholds should be set for different industry segments.¹⁵⁴

As the NPRM notes, the NANC and the INC have recommended the ten percent contamination threshold.¹⁵⁵ They did so for good reasons. With EDR, a ten percent contamination threshold requires 101 porting transactions – one for the block of 1,000 numbers, and 100 for contaminated numbers, or the “exceptions.” With a 25 percent contamination level, that number increases to 251 records – one for the block, and 250 for the exceptions. The result is an increase of 2.5 *times* the number of total porting transactions required – which creates 2.5 *times* the potential for “slow horse” processing problems and 2.5 *times* more capacity that cannot be used to port numbers for competitive purposes. Moreover, the Commission should reject MediaOne’s argument for different contamination thresholds for different industry segments,¹⁵⁶ as different rates for different industry segments would not be competitively neutral.

C. TBNP IMPLEMENTATION TIMETABLE AND DEPLOYMENT ISSUES

1. The TBNP Implementation Period Should Be 12 To 15 Months

The NANC NRO Report estimated that TBNP could be implemented within 10 to 19 months from the date of a regulatory mandate. As the NPRM recognizes, much must be completed in that period – administration guidelines must be finalized;¹⁵⁷ selection of a TBNP administrator (“TBNPA”); development and deployment of TBNPA systems; selection and implementation of a pooling deployment method (in particular, EDR); development,

¹⁵⁴ See NPRM at ¶¶ 187-89.

¹⁵⁵ See *id.* at ¶ 187.

¹⁵⁶ See NPRM at ¶ 189.

implementation, and testing of NPAC Release 3.0; development of carriers' switch requirements and implementation of modifications; development and implementation of modifications to carriers' LSMSs and STPs/SCPs; development and implementation of modifications to service order administration systems; and development and implementation of modifications to carriers' operational support systems.¹⁵⁸

It should be obvious from this list that number pooling implementation will require a tremendous amount of time and effort. In its comments on the NANC NRO Report, SBC stressed that the 10 to 19 month estimate was "extremely aggressive," and the industry might not be able to meet it.¹⁵⁹ However, progress has been made on many items since briefing was held on the NANC NRO report, and, due to these developments, SBC believes that, with appropriate pressure from the Commission on vendors to develop and deploy network and system upgrades, SBC wireline companies could begin rollout of number pooling 12 to 15 months after a regulatory mandate.

It would be imprudent to attempt to implement TBNP in a shorter period. As SBC explained in its comments on the NANC NRO Report, the requirements for mandatory EDR have not yet been completed, which switch and system vendors require in order to develop upgrades. Moreover, the current Statement of Work for NPAC Release 3.0 does not include mandatory EDR, and that would need to be modified as well. Thus, SBC recommends that the Commission adopt a 12 to 15 month implementation period.

¹⁵⁷ The *NPRM* correctly notes that the guidelines are "largely completed." *NPRM* at ¶ 156. However, several issues raised in this proceeding would require modifications to the guidelines, and these modifications would have to be completed before rollout of TBNP.

¹⁵⁸ See *NPRM* at ¶¶ 157-58.

¹⁵⁹ *SBC NRO Report Comments, supra* note 2, at 13.

With respect to wireless carriers, the NANC LNPA working group extensively studied possible timetables for wireless participation in TBNP. This group concluded that wireless TBNP could not be implemented in any meaningful fashion before November, 2002. The Commission should accept the NANC recommendation, and, to the extent that it orders wireless carriers to participate in number pooling, it should not require that they do so before November, 2002.

2. The Commission Should Order States To Implement Area Code Relief During TBNP Implementation And Rollout

It is critical that during the implementation and rollout phases of TBNP that the Commission and state commissions continue to ensure an adequate supply of telephone numbers. As the NPRM recognizes, the consideration and adoption of national numbering optimization policies “does not eliminate the need for states to continue to implement area code relief in those areas that are approaching depletion.”¹⁶⁰ However, the mere *issuance* of the NPRM already has led a couple of states to consider delaying area code relief in the hopes that relief might be delayed by the Commission’s actions in this proceeding. There thus is a risk that some state commissions could delay area code relief until TBNP is implemented and deployed. This, in turn, could cause serious and substantial constraints on the ability of carriers to enter new markets and provide competing services.

Adopting the changes in area code relief policies proposed in Section VI below would make it easier for state commissions to make these difficult area code relief decisions. However, there still may be situations where a state commission attempts to delay relief. Accordingly, SBC recommends that the Commission direct state commissions to implement area

¹⁶⁰ *NPRM* at ¶ 12.

code relief before the exhaust date set in the 1999 COCUS for all area codes that are projected to exhaust before implementation and deployment of TBNP. Any carrier should be permitted to petition the Commission to reassume responsibility for ordering relief in a specific area code, if the state commission did not provide relief in the required timeframe.

3. All TBNP-Eligible Carriers Should Implement Sequential Number Assignment

The NPRM correctly recognizes that sequential number assignment might serve a useful purpose, given the substantial period of time to implement and deploy TBNP.¹⁶¹ Sequential number assignment would protect a maximum number of thousands blocks from undue contamination, and therefore, if implemented by all carriers participating in TBNP, could increase the number of thousands blocks donated to TBNP and increase TBNP benefits.

Accordingly, SBC recommends that the Commission require sequential number assignment in a manner similar to the plan developed by an industry group and filed with the Missouri Public Utility Commission.¹⁶² The Missouri plan requires carriers to completely assign use thousands blocks before they assign numbers out of additional thousands blocks. The Missouri plan recommends that carriers use the 0, 1, 8 and 9 blocks for residential services, and the 2, 3, 4, 5, 6 and 7 blocks for business services, which represents a fair and equitable balance between optimization needs and market demands. SBC recommends that INC expeditiously develop a sequential number assignment plan similar to the Missouri plan, which would serve as the national sequential number assignment standard.

¹⁶¹ See NPRM at ¶¶ 190-91.

¹⁶² *In the Matter of the Implementation of Number Conservation Methods in the St. Louis, Missouri Area*, Report on Sequential Number Assignment, Case No. TO-99-14 (filed Oct. 22, 1998).

The Commission should order that all TBNP-eligible carriers comply with this sequential number assignment requirement as soon as the INC has completed developing its industry standard. After utilization surveys determine which carriers would be required to implement TBNP, only TBNP-participating carriers should be required to continue to comply with the sequential number assignment requirement.

4. Utilization Surveys For TBNP Participation Should Be Conducted Within 60 Days After The Commission's Decision

In order to use a utilization threshold to determine which carriers would be required to implement TBNP, the Commission needs to determine when those surveys would be conducted. The surveys need to be held in a manner so that they do not delay implementation of TBNP, thus they should be completed before carriers have to make the decision to purchase necessary operational support systems and switch upgrades. SBC recommends that the utilization surveys be conducted within 60 days after the Commission issues its order. Carriers are on notice that the Commission is considering a utilization threshold, and they have the incentive to act now to improve their utilization.

5. State Commissions Should Be Delegated Authority To Select The Areas Within The Largest 100 MSAs Where TBNP Will Be Implemented, Consistent With The Criteria Adopted In The NANC NRO Report

The NPRM seeks comment on the appropriate deployment methodology for TBNP.¹⁶³ SBC recommends that the Commission establish a phased TBNP deployment schedule beginning with the largest MSAs, as it did with LNP deployment.¹⁶⁴ Because TBNP relies on the

¹⁶³ See *NPRM* at ¶ 154.

¹⁶⁴ See *Local Number Portability 1st Report & Order*, at ¶ 82.

LNP infrastructure, TBNP deployment, like LNP deployment, should be at the rate center/switch level.

However, TBNP may not be particularly effective or efficient in all rate centers and switches within the largest 100 MSAs. As suggested in the NANC NRO Report, TBNP would not be as effective in these areas due to the low volume of competitive entry.¹⁶⁵ Not all rate centers will have sufficient competitive entry to justify TBNP. For example, the El Paso and Tulsa MSAs, which are within the top 100 MSAs, have only two and three competitive local exchange carriers, respectively, in those markets.¹⁶⁶ Even area codes that have a substantial number of competitors are likely to have some rate centers that have little, or no, competitive entry and that therefore would not be cost-effective locations to deploy TBNP. In addition, TBNP should not be implemented in rate centers served by 1AESS switches, due to switch limitations and vendor concerns.¹⁶⁷ In other areas, area code exhaust may be so imminent that TBNP would not provide much value in delaying the life of the existing area code. Thus, TBNP cannot and should not be required in all rate centers or switches within the largest 100 MSAs.

SBC thus recommends that state commissions select the rate centers/switches within the top 100 MSAs where TBNP is to be deployed. State commissions have greater exposure and knowledge of local conditions and can probably better decide the individual rate centers and switches where TBNP should be implemented.¹⁶⁸ States should be directed to select only those rate centers/switches where the benefits of TBNP exceed the costs, under detailed

¹⁶⁵ *NANC NRO Report*, at ¶ 5.10.2.

¹⁶⁶ *See* Section II.A, *supra*.

¹⁶⁷ *See* Section V.B.1, *supra*.

¹⁶⁸ *See NPRM* at ¶ 147.

criteria established by the Commission, and the Commission should develop its criteria based on the criteria set forth in the NANC NRO Report.¹⁶⁹

SBC believes that this approach represents a sound and reasoned method to implement TBNP, one that is consistent with the deployment of LNP. With LNP, the Commission recognized not all switches needed to be converted to LNP, and it required that competitive carriers request that LNP be implemented in individual switches.¹⁷⁰ This approach fostered efficient deployment of LNP, reduced overall societal costs and lessened demands on switch vendors. With TBNP, carriers may not have the same incentive to request implementation that they had with LNP, and therefore this decision should be made by state commissions. However, the basic premise underlying the decision – examination and selection of deployment by rate center and switch – should also be used in determining where to deploy TBNP in order to minimize societal costs.

D. THE COMMISSION SHOULD PERMIT FULL RECOVERY OF TBNP IMPLEMENTATION COSTS

Because TBNP is such an expensive option to implement, it is absolutely essential that the Commission provide an adequate method to all carriers to recover all of the implementation costs associated with TBNP. Of the cost recovery issues raised in the NPRM, three deserve particular attention.¹⁷¹

¹⁶⁹ See NPRM at ¶ 148 & n. 263, citing NANC NRO Report, at ¶ 5.10.2.

¹⁷⁰ Telephone Number Portability, First Memorandum Opinion and Order on Reconsideration, CC Docket 95-116 (released March 6, 1997).

¹⁷¹ See generally NPRM at ¶¶ 193-210.

First, SBC agrees with the NPRM's tentative conclusions regarding the categories of costs to be recovered.¹⁷² However, the Commission should permit full recovery of costs in these categories, and the categories should be the exclusive standards for recoverable costs. The Commission should not attempt to limit cost recovery at some later date by imposing additional, more restrictive standards for recoverable costs (as it did in adding the "but for" and "directly in the provisioning of" standards for recovery of LNP costs).¹⁷³

Second, the Commission should reconsider its tentative conclusion that TBNP costs should not be recovered through an end user charge.¹⁷⁴ SBC recognizes customers' sensitivity to the LNP surcharge and it agrees that a new charge should not be imposed on end users for TBNP. But there is a simple means to recover TBNP implementation costs, and that is through an extension of the existing LNP charge. The charge would need to be extended for a sufficient period of time to cover the all TBNP costs plus a reasonable compensation for the time value of money, since the costs would be incurred far in advance of recovery. However, it is possible that the extension would need to last only for a short period of time.

Finally, the NRPM seeks comment on whether tying cost recovery for TBNP to the quantity of numbers held by carriers would provide an economic incentive for efficient number utilization.¹⁷⁵ SBC believes that such a policy would be confiscatory and unwise. The adoption of a "carrier choice" utilization threshold and other initiatives recommended by SBC should be sufficient to give all carriers incentives to use numbering resources efficiently.

¹⁷² See *NPRM* at ¶ 197.

¹⁷³ See *Telephone Number Portability Cost Classification Proceeding*, CC Docket No. 95-116, Memorandum Opinion and Order (DA 98-2534), at ¶ 10 (released Dec. 14, 1998).

¹⁷⁴ See *NPRM* at ¶ 204.

¹⁷⁵ See *NPRM* at ¶ 207.

E. TRANSITION ISSUES: THE COMMISSION SHOULD NOT PERMIT ITN OR UNP

1. Individual Telephone Number Pooling (“ITN”)

The NPRM correctly decides not to pursue ITN pooling at this time.¹⁷⁶ However, it does seek comment on the possibility of migrating from a TBNP regime to an ITN pooling regime.¹⁷⁷ SBC submits that the architecture to support ITN has not been adequately defined to properly respond to the questions raised in the NPRM.

It is unclear at this time what would be required to migrate from TBNP to ITN. At this time, it is not even clear what architecture could be used to implement ITN. ITN would cause a tremendous drain on the current national LRN architecture, which was not designed to have every assigned telephone number loaded in the NPAC and downstream systems. Furthermore, it is possible that the capacity of the STP/SCPs and other network components cannot be made to handle the *millions* of individual records that an ITN regime would require. Although EDR is designed to allow the LRN technology to handle the level of network demands for TBNP, EDR is not possible with ITN. Thus, it is reasonable to assume that a new architecture would need to be developed to implement ITN.

Finally, ITN would make individual numbers a commodity, and thereby very likely would encourage carriers to demand “premium” numbers. This is precisely what occurred with toll free numbers, where the introduction of ITN substantially increased demand for additional resources and led to the assignment of the 888 and 887 NPAs in a very short period of time. If the same situation occurred with telephone numbers, it would exacerbate numbering

¹⁷⁶ See NPRM at ¶ 141.

¹⁷⁷ See NPRM at ¶ 212.

shortages. Thus, the Commission should not look to migrate from TBNP to ITN any time in the foreseeable future.

2. Unassigned Number Porting (“UNP”)

The NPRM questions whether it should allow carriers to port unassigned numbers among themselves.¹⁷⁸ However, for capacity and throughput reasons, discussed in Section VI. above concerning EDR, the Commission should not allow UNP even on a voluntary basis.

If permitted, UNP would compete for limited capacity in carriers’ STPs/SCPs. This capacity is needed for porting and for TBNP. Each range of unassigned ported numbers would have to be stored using database capacity that could be used for LNP or TBNP. Voluntary UNP would impose further limitations on the number of thousands blocks that could be pooled and the number of telephone numbers that could be ported.¹⁷⁹

Voluntary UNP also raises a host of number assignment and administration issues. First, UNP would be inconsistent with the Commission’s established “disconnect number snap-back procedures” adopted in the *Local Number Portability Second Report & Order*.¹⁸⁰ The disconnect number snap-back procedure is designed to ensure that NXX assignees are accountable for the numbers assigned to them. UNP destroys this responsibility, allowing a carrier who is not assigned a numbering resource to control that resource. Finally, UNP, like

¹⁷⁸ See NPRM at ¶ 142.

¹⁷⁹ The principle proponent of UNP, MCI Worldcom, has admitted that UNP is not a number optimization measure. D. Dowd, MCI WorldCom, “Unassigned Number Porting Contribution,” Texas Number Conservation Industry Team, at 1 (dated Dec. 3, 1998), *attached to SBC NRO Report Comments, supra* note 2, at Attachment A. The Commission should not permit the allocation of SCP/STP storage capacity for a proposal that has no number optimization benefits associated with it, and it certainly should not do so in a proceeding that is established to address numbering optimization.

ITN, could lead to telephone numbers becoming commodities, which, as with ITN, could exacerbate numbering shortages and increase, not decrease, numbering resource demand and increase, not decrease, the pace of area code relief.

In short, UNP is a bad idea, whether done on a voluntary basis or done as part of a structured system. The Commission should not authorize carriers to port unassigned numbers, even on a voluntary basis.¹⁸¹

VI. THE COMMISSION SHOULD MODIFY ITS POLICIES TO MINIMIZE THE COSTS AND INCONVENIENCE TO CONSUMERS CAUSED BY AREA CODE RELIEF

SBC applauds the Commission for raising the issue of whether it should change its area code relief policies.¹⁸² The most direct means available to minimize the cost of rapid area code relief on consumers and society is to modify area code relief policies in order to permit overlay area codes without ten-digit dialing. According to the 1999 COCUS, 33 area codes will need relief in the next 18 months, and an additional 59 area codes will need relief in the following 18 months. The most immediate, cost-effective, and direct means to reduce the cost and inconvenience to customers caused by these relief projects is to modify its policies to increase the use of overlay area codes, including eliminating the mandatory ten-digit dialing

¹⁸⁰ See generally *Local Number Portability*, CC Docket No. 95-116, Second Report & Order (released August 18, 1997).

¹⁸¹ SBC opposes any consideration of separating routing and rating functions at this time, such as the Colorado Task Force's proposal to using out of band signaling to rate calls. See *NPRM* at ¶ 119. Such proposals appear to involve all of the potential issues of Geographic Number Portability, plus potentially other network impacts. Substantial design and study would need to be done as to the network implications and the potential costs before these proposals could even be considered by the Commission. Even when considered by the Commission at this later date, it would be likely that any solution that would be ultimately developed would take *years* to implement.

¹⁸² See *NPRM* at ¶¶ 246-61.

requirement. The Commission should not eliminate its prohibition against technology- or service-specific overlays, as this would not increase numbering resource utilization, and it need not further pursue the issue of “D digit” expansion, in light of the other numbering resource optimization policies it is considering in this proceeding. These points are addressed in turn below.

A. THE COMMISSION SHOULD ADOPT A PRESUMPTION IN FAVOR OF USING OVERLAY AREA CODES TO PROVIDE RELIEF IN THE LARGEST 100 MSAS, AND IT SHOULD REQUIRE OVERLAYS WHERE GEOGRAPHIC SPLITS HAVE FAILED OR WILL FAIL TO PROVIDE SUFFICIENT RELIEF

Overlay area codes are vastly superior to geographic splits as an area code relief method, minimizing the cost and inconvenience to consumers and society associated with area code relief and optimizing the efficient use of area codes. Overlays can be implemented without requiring *a single customer* to change his or her telephone number, thus substantially minimizing customer costs and inconvenience. Overlays also maximize the use of resources within an area code (whether assigned as NXX codes or blocks of 1000 numbers), because they allow resources to “go where the demand is” throughout the area receiving area code relief. Overlays are also quicker and cheaper to implement than splits. “Reverse” overlays, where a dividing line from a previous geographic split is erased and made an overlay, can provide area code relief without using another area code. In short, overlay area codes provide the Commission with an important means to provide a greater and more efficient use of existing numbering resources through cost effective methods.

The comparative advantages of overlays and geographic splits are addressed below, and they are overwhelmingly in favor of area code overlays. SBC thus urges the Commission to adopt a presumption in favor of overlay area code relief method in the largest 100

MSAs. In addition, to ensure that relief efforts keep pace with demand, SBC recommends that the Commission require the use of overlays where either (a) the exhausting area code has failed to last for the recommended interval in the INC's NPA Relief Planning Guidelines,¹⁸³ or (b) the new area code is projected to last less than the recommended interval in those guidelines.

1. Overlays Minimize Costs And Disruption To Consumers

Geographic splits are the most costly and disruptive means of providing area code relief, and these costs are borne in large part by consumers. Because a geographic split requires a significant number of existing customers to change their telephone numbers, splits impose substantial societal costs for *every* area code relief project. Businesses have to endure the costs of new stationary, business cards, and (potentially) lost business and goodwill from those customers who have difficulty finding them after the split; consumers have to endure the harm of not receiving calls and the costs inherent in learning, often on a "call by call" basis, those telephone numbers that have been changed to the new area code. Carriers have to endure high costs of switch reprogramming, because many switches have to be reprogrammed for the changed NXX codes. In many situations, ten-digit dialing increases, as some of the telephone numbers that used to dialable by seven digits become ten-digit dialed calls. Subsequent area code relief in areas that have suffered a geographic split are more frequent and increasingly more costly and more harmful to consumers, because the geography of the area code continues to shrink, the incidence of ten-digit dialing increases, and customer cost and confusion mounts.

¹⁸³ See ATIS/INC, NPA Code Relief Planning & Notification Guidelines, INC 97-0404-016, at § 5.0 (rev. Jan. 27, 1999) <<http://www.atis.org/atis/clc/inc/incdocs.htm>> [hereinafter *NPA Relief Guidelines*].

In comparison, with an overlay area code, *not one customer is forced to change his or her telephone number*, and the societal costs are a fraction of those imposed by a geographic split. Businesses avoid the expense of reprinting stationary and business cards, and they do not lose any business opportunities or goodwill due to missed calls. Callers do not have to go through the lengthy and tedious process of learning which local telephone numbers have changed on a “call by call” basis. Subsequent relief occurs later than with a geographic split, because of the increased efficiency in use of numbering resources provided by overlay area codes. When the overlay area code ultimately needs relief, future overlays are practically “seamless” to customers. Customers do not have to change telephone numbers, they do not have endure any dialing changes – they only have to be informed that a new area code is being introduced in the area. The overlay relief method is the only method that, once implemented, totally eliminates societal costs or inconvenience associated with subsequent exhaust and introduction of new area codes.

The primary detraction from all of these consumer benefits is the Commission’s ten-digit dialing requirement for overlays. However, as discussed in more detail in Section VI.B below, whatever value this requirement may have had is passed, and now it only stands as an impediment to efficient area code relief. It should be eliminated.

2. Overlays Provide Numbering Resource Efficiency

When an area code is geographically split into two area codes, the INC’s NPA Relief Planning Guidelines require that the split provide a substantially longer life for customers receiving the “new” area code (a minimum of eight to ten years) compared to the area that retains

the existing code (a minimum of five years).¹⁸⁴ This requirement is designed to minimize disruption to the customers that are forced to change their telephone numbers, but it *guarantees* that any geographic split is designed to provide an *inefficient* use of numbering resources because it must be designed to provide unbalanced and uneven relief. This bias ensures that one side of the split will exhaust sooner than the other side. Splits inherently result in inefficient use of NPA resources, potentially having carriers stand in line for essential resources on one side of the geographic split line while resources sit, unused and unusable, on the other. Splits also can interfere with other numbering optimization measures, such as splitting of rate center boundaries.¹⁸⁵

Overlay area codes not only do not have any such designed inefficiency. In fact, overlays are perfectly *efficient* for the geographic area in which they are located. Overlays permit all NXX codes to “go to where the demand is” throughout the area, without the artificial constraint of a geographic split line. All NXX codes in each NPA involved in the overlay are available for assignment to providers, and further area code relief is not necessary until *all* assignable NXX codes in *both* area codes are assigned – thus ensuring 100 percent efficiency in the use of NXX codes.

With subsequent relief, geographic splits also use more area codes for the same geographic area. After a two-way geographic split in an area, subsequent relief throughout the area requires two additional area codes (one for each side of the split line). The next round of

¹⁸⁴ *Id.*

¹⁸⁵ See *The Local Competition Provisions of the Telecommunications Act of 1996*, CC Docket 96-98, Emergency Joint Petition of ALTS, ELI, GST, MCI WorldCom, and Winstar for Suspension of Phoenix Area Code Relief Plan, or, in the Alternative, Other Relief (filed April 1, 1999).

relief requires four new area codes to serve the same area, and the following round requires *eight* new area codes to serve the same area.

Once again, overlays are substantially more efficient than geographic splits. Every time relief is necessary, only one new area code is needed to provide relief to the entire area. Thus, in the example above, only *four* area codes would be needed to satisfy the same number of relief projects, as opposed to the *eight* area codes created by geographic splits.¹⁸⁶

3. “Reverse” Overlays Can Provide Substantial New Resources For Some Exhausting Area Codes, Without Assigning A New NPA

The Commission seeks comments on the potential benefits of the “reverse” overlay area code relief alternative. A “reverse overlay” eliminates a geographic split line between adjacent codes in order to allow NXX codes “stranded” on one side of the split line, which is not facing exhaust, to be used on the other, which is facing exhaust. Reverse overlays have all of the advantages of overlay area codes, and they also eliminate inefficiencies created by the previous, erased geographic split line. But most importantly, *reverse overlays allow relief entirely by using existing resources more efficiently* – no new area code needs to be assigned in the area.

The reverse overlay implemented in Dallas may help illustrate the point. In the fall of 1996, after a contentious relief planning process that caused an uproar throughout the greater Dallas area, the 214 area code was split into the 214 (central Dallas) and 972 (Plano and North Dallas) area codes. As is the case with most splits, the location of the split boundary was a

¹⁸⁶ Of course, because there are five more area codes in the geographic split example, there are more total numbering resources available served by geographic splits. However, the eight different split lines creates tremendous inefficiencies, as resources are “stranded” across each of the geographic split lines.

hotly contested issue. Once implemented, demand increased substantially and unexpectedly in the 972 area code. Only seven months after it was introduced, the 972 area code went into jeopardy and the industry began planning relief. At that time, only 120 NXXs remained in the newly created 972 NPA, but 370 NXXs were available in the 214 area code on the other side of the newly created geographic split line.

Ultimately, the industry and the Public Utilities Commission of Texas adopted a relief plan that erased the existing split line and allowed the 370 NXX codes in the 214 area code to be used to satisfy the demand for NXX codes in the 972 area code. Relief was provided to the Plano/North Dallas area *without the assignment of a new area code*.

The “reverse” overlay immediately reversed the trend toward growing shortages of numbers that had been developing in the Dallas area. The “reverse” overlay helped avert a crisis and provided time for planned area code relief. As of the beginning of this month, 182 NXX codes were available in the 214 and 972 area codes. In addition, this month another new area code – 469 – was laid over the 214/972 area codes. Now, instead of facing shortages and rationing, the Dallas/Plano area has more than 900 NXX codes available. The introduction of the 469 overlay was practically a non-event for customers, who already had adjusted to ten-digit dialing.

Of course, reverse overlays will not work in all situations. They are most effective when a substantial number of NXX codes are available in an adjacent NPA. Metropolitan areas where area code splits have been ordered are prime candidates for this type of overlay relief. Overlays optimize the NPA resource and reverse overlays allow for the maximum reclamation of unused numbering resource.