Local Number Portability (LNP) – The Hidden Network Expense

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Abstract:

A decade ago long distance calls were placed mostly between landline phones and were still relatively expensive for many customers. The advent of unlimited long distance plans and the inclusion of “free minutes” in rate plans from wireless, cable, and landline carriers brought frequent long distance calling within the reach of more customers. These carriers now struggle to service cost-effectively trillions of minutes of use (MOUs) per year when revenues for long distance have virtually disappeared.

Despite the many different approaches to LCR, one key component is commonly overlooked and must be incorporated: the ability to perform a location routing number (LRN) dip on 100% of calls.

Due to the highly competitive marketplace and customers’ expectations, the inclusion of “free minutes” in rate plans has become ubiquitous. The usage component of these free minutes now represents a significant variable in carrier interconnection budgets and consumes a greater percentage of operating expenses. For many carriers, interconnection costs are one of their top network operating expenses. In today’s hyper-competitive telecom market, carriers must optimize these expenses to meet required profit margins and operating cash flow. One method of understanding and reducing these expenses is to implement a least cost routing (LCR) solution.

Despite the many different approaches to LCR, one key component is commonly overlooked and must be incorporated: the ability to perform a location routing number (LRN) dip on 100% of calls. This ability is essential to ensuring true least cost routing. Ignoring this key component can cost a company millions of dollars in unnecessary transit and long distance expenses. This paper provides insight into the competitive drivers and the overall impact of LRNs to the bottom line.

Drivers:

ONE RATE PLAN

Several key events in the telecom industry ignited growth in customer usage while simultaneously lowering the average revenue per minute. In May 1998, AT&T Wireless announced a completely new approach to pricing for the wireless customer. This plan, *Digital One Rate*, offered three unique pricing tiers that included bundles of unlimited long distance. Digital One Rate revolutionized the industry forever. Wireless customers could now call from anywhere in the US to anyone else in the US at a defined fixed rate using a set amount of bundled minutes. The price distinction between local and long distance calling ceased to have meaning for the customer.

The competition quickly followed AT&T with the introduction of other one-rate style plans. These large MOU bundled plans and the proliferation of “free nights and weekends” caused usage, especially long distance usage, to grow exponentially. Nearly overnight this transformed the previously high margin long distance business into a cost center.

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WIRELINE REPLACEMENT

New promotions by wireless, cable, and voice over Internet protocol providers (VoIP) have increasingly encouraged customers to abandon their traditional wireline telephones.

In the wireless market, the Tier 1 carriers, including AT&T, Verizon Wireless and Sprint, offer unlimited plans for $100 or less per month. T-Mobile recently introduced a new home phone service called T-Mobile @Home that enables customers to make unlimited nationwide calls from their wireless phone at home for an additional $10 per month. MetroPCS offers family plans with 4 phones with unlimited local and long distance for $100 per month. The list continues to grow.

Cable multiple system operators (MSOs) have also introduced their own unlimited dialing plans utilizing VoIP over the existing broadband cable connection (Voice over Broadband or VoB). They have successfully capitalized on "Triple Play" offerings that provide bundled broadband, voice, and video services at attractive prices.

The introduction of LNP has promoted intense competition for basic voice service. Customers unhappy with their network service or looking for the most competitive prices can now easily and seamlessly port their phone numbers to a new carrier.

The combination of single billing, special pricing, and innovative packaging has given MSOs a significant advantage over the traditional wireline companies. These operators have aggressively leveraged their network infrastructure upgrades to lure customers away from traditional wireline carriers and to their service as an alternative.

Other VoIP/VoB (VoX) providers like Vonage and Skype have also taken market share from the traditional wireline carriers. Today, MSOs and VoX carriers continue to increase their market share in voice services. By 2010, IDC predicts that 44 million US households will be served by VoX.

These aggressive and attractive offerings would not be possible without our next driver – *local number portability.*

LOCAL NUMBER PORTABILITY

Local Number Portability (LNP) accelerated the continued growth of usage and the substantial decline of revenue per user.

In 1997 the FCC ordered local number portability for wireline carriers. In 2002 the wireless industry was also mandated to provide portability. Number portability was expanded in 2003 to include portability between wireline and wireless carriers. Therefore, customers were no longer tied to their traditional wireline carrier by their phone number. They were free to port their traditional landline numbers to either wireless or VoIP carriers.

The introduction of LNP has promoted intense competition for basic voice service. Customers unhappy with their network service or looking for the most competitive prices can now easily and seamlessly port their phone numbers to a new carrier. All carriers now engage in price wars, undercutting each other to lure customers to their networks. The combination of one rate plans, free nights and weekends, large bucket plans, and the bundling of voice, video and broadband services, fosters a hyper-competitive environment, and the strong impact of LNP continues to affect usage, revenue, and, ultimately, service profitability.

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Impact to the Industry

The incorporation of these marketing plans and local number portability has resulted in explosive MOU growth for the industry. These variable expenses account for a substantial share of the total expenses within interconnection budgets and are rapidly growing year over year. To maintain a competitive edge and have the highest margins, carriers must implement an efficient and effective least cost routing suite of tools. Simply using Telcordia's Local Exchange Routing Guide (LERG™) is no longer sufficient as the telecommunications industry has evolved. **Independent LRN dips must be performed on every call to obtain the most efficient path and ultimate terminating location of a call for routing and auditing functions.**

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LEAST COST ROUTING

Prior to local number portability (LNP), least cost routing solutions could simply compare individual switch dial plans to the current LERG™ and focus on the "A" block of every code. Combining this simplistic look-up function with customer-defined rule sets provides the users with discrepancy reports where dial plan changes allow routing on the lowest cost trunk group. This method of routing analysis does not account for any of the porting growth discussed above or for the impact of LRNs

LOCATION ROUTING NUMBERS (LRNS)

Local number portability changes all the rules. When customers take their telephone number with them when they change carriers a location routing number (LRN) is assigned to ensure proper routing. Blindly associating an NPA-NXX with a particular carrier and switch per the LERG™ is no longer sufficient for routing or audits. It may even introduce expensive errors that cost the operator millions of dollars in unnecessary transit and long distance expenses.

An extensive processing of over 2 billion domestic long distance call detail records (CDRs) revealed the following statistics:

- **Nearly <u>30%</u> of the records were impacted by local routing numbers.** In these cases the original dial digits were replaced by an LRN due to porting or pooling. This 30% could result in millions of dollars in lost opportunity if analyzing with traditional solutions.
- As predicted the majority of the LRNs terminate onto either wireless, PCS or CLEC operators. Traditional LCR solutions could be misrouting traffic to the LECs or LD providers when the ultimate terminating location could be a wireless or CLEC end office.

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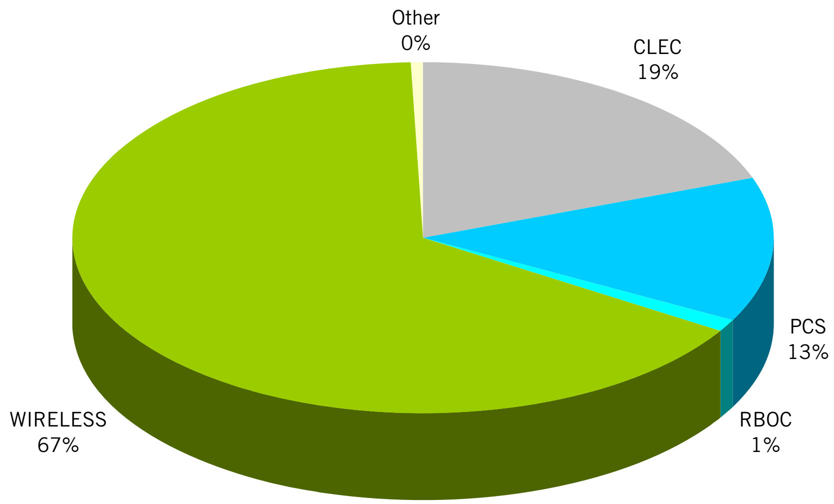
Breakdown of LRNs by LERG Category

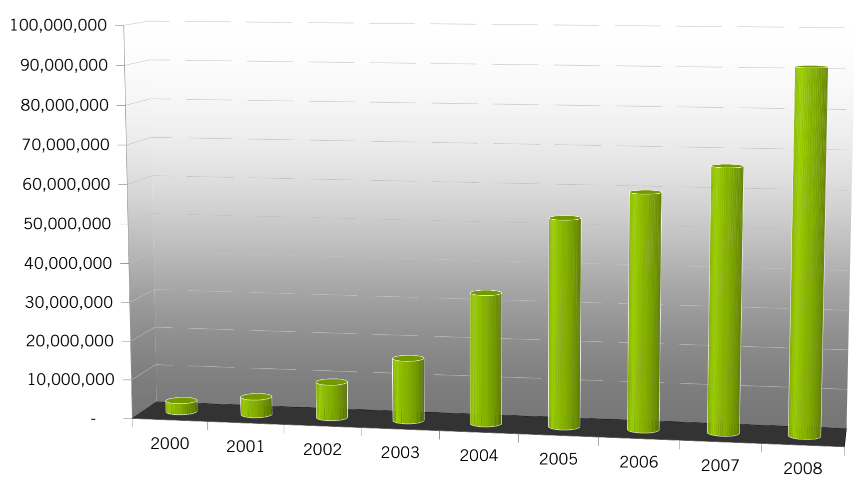


Only a 100% independent LRN audit at the call detail record (CDR) level would provide the maximum benefits to ensure LCR objectives are met.

FUTURE IMPACT OF LNP

As of December 2008, there were over 330 million active telephone numbers (TNs) within the domestic LNP database. The migration of customers and technologies amplifies the impact of LNP and will continue to do so in the future. The number of active TNs added to the database per year is growing rapidly; in 2000, only 3 million were added, whereas over 90 million were added in 2008. This increase in 2008 represents nearly 27% of all the active TNs in the domestic LNP database (see chart below). Based on current projections, there could be nearly 800 million active TNs by 2014.

Distributions of Active TNs for 2000-2008



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Conclusion:

The combination of fierce industry competition, new market entrants and local number portability has resulted in soaring usage growth and variable expenses for the telecom industry. Traditional methods of performing routing or audits are no longer effective due to the impact of location routing numbers (LRNs). The only way to ensure your LCR plan is being implemented correctly is to incorporate an independent audit of LRN dips.

There are numerous examples of carriers who lost millions in savings because LRN dips did not occur on all calls. One of these is detailed in the following case study.

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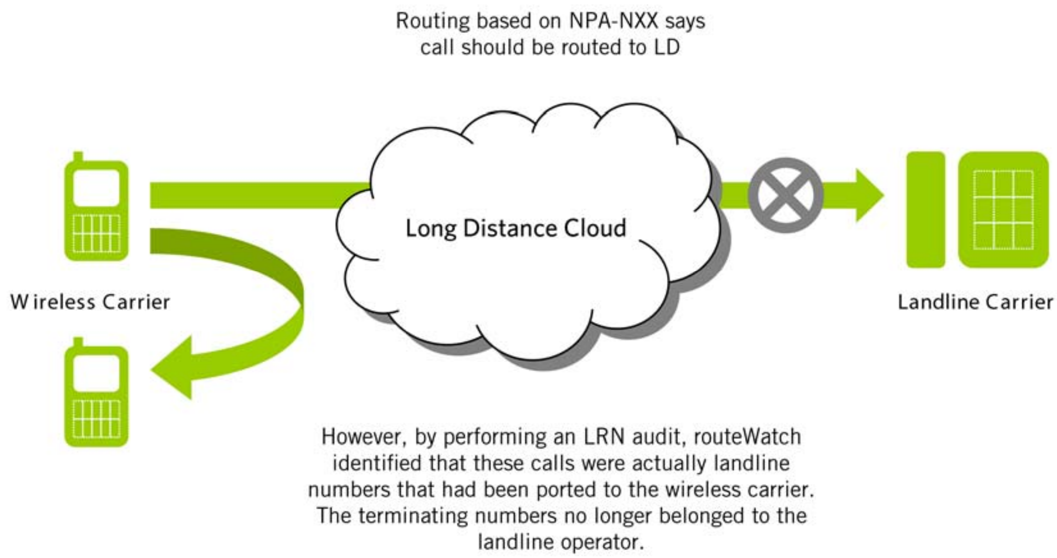
CASE STUDY: ONE CARRIER'S DISCOVERY OF HIDDEN COST USING AN INDUSTRY LEADING SOLUTION

A wireless carrier was routing traffic to a small wireline carrier via their long distance trunks. Based on the NPA-NXX, the apparent least cost route was to route the call via the IXC to avoid high LEC transit rates. The calls were completing successfully; therefore, from the wireless operator's perspective, routing worked as planned. However, the utilization of an industry-leading solution that provides independent LRN analyses of all calls led to the discovery of a significant and costly oversight.

A traditional LCR solution would have just identified the small wireline carrier as the "A" block holder of the specific dialed NPA-NXX. Fortunately this wireless carrier's solution applied a 100% independent LRN audit on all its LD records. The carrier had visibility into the ultimate terminating location which happened to be the same originating switch.



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In actuality, the least cost route was to keep these calls within the carrier's own switch, not routing it to the LEC or to the IXC. Monthly expenditures for this single code quickly escalated and exceeded $35,000 (or $420,000 annually). Small "errors" in translations like this can be virtually undetectable without tools that are able to review all LRNs.

The only way to ensure your LCR plan is being implemented correctly is to incorporate an independent audit of LRN dips.

Using this information the client quickly discovered that its LRN dip list was not up to date. Because of this oversight, traffic referenced the dial plan with "dialed digits" and routed according to their current LCR plan. After inserting the missed NPA-NXX the charges were quickly eliminated, thus resulting in the true lowest cost routing.

Connectiv Solutions offers an industry leading suite of products that addresses these issues, routeWATCH for long distance and cdrWATCH for local calling. Both products perform LRN dips on 100% of calls and have identified many cases where more cost effective routing could be implemented to improve the bottom line.

About Connectiv Solutions, Inc.

Connectiv Solutions, the network efficiency experts, delivers unparalleled visibility and management of telecommunications network usage expenses. Telecom carriers representing more than 120 million customers rely on Connectiv Solutions to reduce operational costs and maintain a competitive advantage. For more information, visit www.connectiv-solutions.com.

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