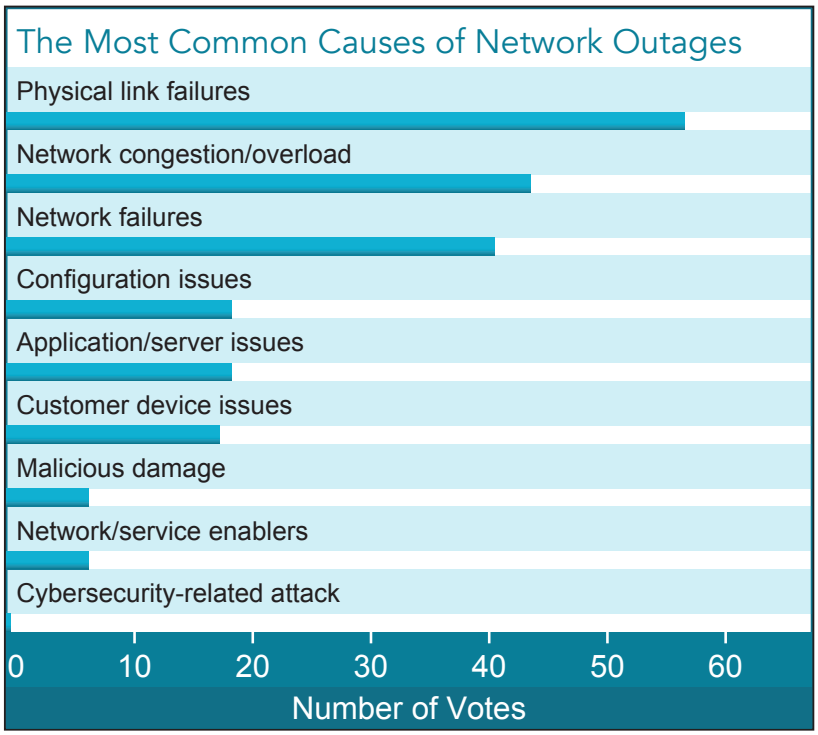
Unplanned Network Downtime Costs Carriers $15 Billion Per Year — Address Data Integrity Issues to Minimize MTTR and Outage Costs

As traditional telecommunications carriers evolve into full-fledged Internet service providers (ISPs) to meet today's market demands, customers expect even higher standards of service quality and reliability. Yet at the same time, network operations are becoming more complex, from the challenges of Long Term Evolution (LTE) network rollouts, to the management of massive amounts of ubiquitous data.

These challenges have taken their toll, as evidenced in recent years by high-profile outages and service degradations affecting some of the world's largest mobile networks, including AT&T, NTT Docomo, Sprint Nextel, T-Mobile USA and Verizon Wireless. Not only do these network issues aggravate and alienate subscribers, they are costing the world's mobile operators around $15 billion a year, or an average of 1.5 percent of their annual revenues, according to a report from telecom research firm Heavy Reading.[1]

The report also finds that carriers suffer from an average of five network outages each year, with the most common cause attributed to physical link failures. Specific causes ranged from chip failures to thunderstorms, which means that most were both unforeseen and unavoidable.

When outages do occur, every second counts in the race to restore service. The direct impact on the carrier or service provider ranges from lost profits and lost customers, to damaged credibility, employee overtime and penalties for not meeting service level agreements (SLAs). Furthermore, when factoring in the indirect costs to customers and downstream businesses, it's been estimated the cost of unplanned downtime can range as high as $11,000 per minute per server, for example, when dealing with critical enterprise data.[2]



Mobile Network Survey, Heavy Reading, 2013 [3]

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Minimize MTTR to Maximize Savings

Given that most unplanned network outages occur without warning, the key to minimizing the costs and consequences to your business is to minimize Mean Time to Repair (MTTR) before something happens. Ensuring proper data integrity in your network can drastically improve your ability to restore service quickly.

Data integrity problems occur for a number of reasons, with a leading cause being the joining of disparate networks during during mergers or acquisitions. Issues result from different legacy databases, processes or software versions being patched together in an effort to quickly merge infrastructure and resources.

Likewise, rush jobs or emergency troubleshooting activity can lead to poor process flow and human error, resulting in poor data integrity or even loss of data. These existing errors are then compounded in the event of an outage, multiplying the amount of time and manpower needed to locate the root cause and restore service.

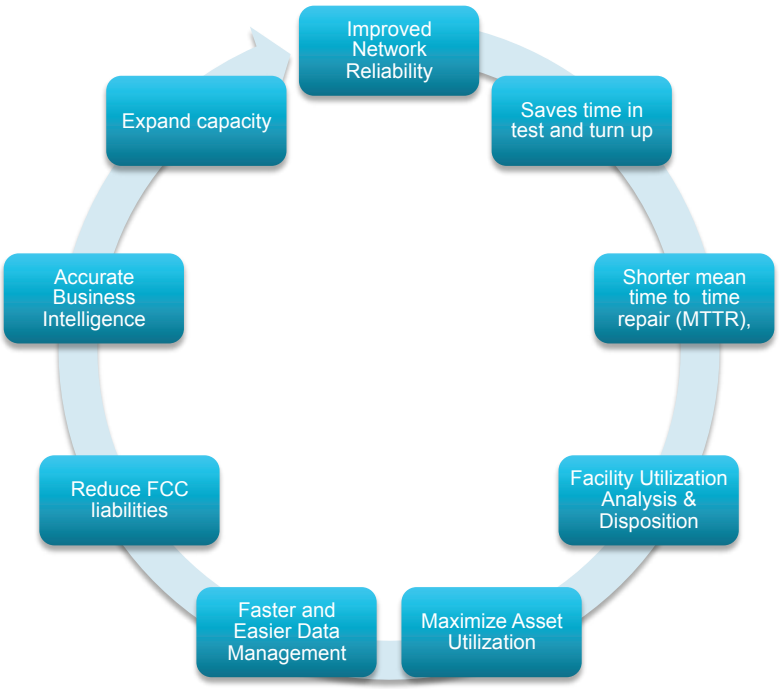
Accurate data integrity enables MTTR to be drastically reduced; often from hours to minutes. Not only does this save a considerable amount of time and money in the event of an outage, regular validation of data integrity also facilitates billing reconciliation, capacity management, asset accountability, forecasting and expansion planning.

Axcent Networks specializes in data integrity services, applying custom data analytics to discover root causes of operational process issues, preventing further discrepancies. By helping customers gain greater visibility into equipment usage and overall network health and capacity, Axcent Networks quickly pinpoints and corrects billing discrepancies, while improving the robustness of the network to minimize MTTR in the event of an emergency.

A Perfect Storm

In August 2005 when Hurricane Katrina made landfall along the Gulf Coast, a customer of Axcent Networks had recently completed a merger of two networks. Although the two companies used a similar network inventory management system, their processes to account for inventory assets were different. In addition, the larger carrier did not have their network inventoried properly before the merger, which means the combined network had less than 70 percent data accuracy.

When Hurricane Katrina hit New Orleans, company computers were destroyed, including some inventory spreadsheets and a majority of network assets from the merger. In an attempt to restore services knocked out by the storm, the decision was made to reroute services. However, as reports came in that circuits were down, the call center was not able to find pertinent data records because they were never accurately represented in the database.



The carrier was forced to go into network discovery mode during a time of outage, in the middle of an epic natural disaster. The potential costs were two-fold. First and foremost, flooding in the aftermath of the hurricane created life-threatening situations throughout the entire area, and residents needed phone service to call for help. Secondly, typical MTTR agreements require 99.9 percent up time, so the longer the outage, the more expensive the fees; particularly when dealing with larger, high-capacity circuits that take longer to restore.

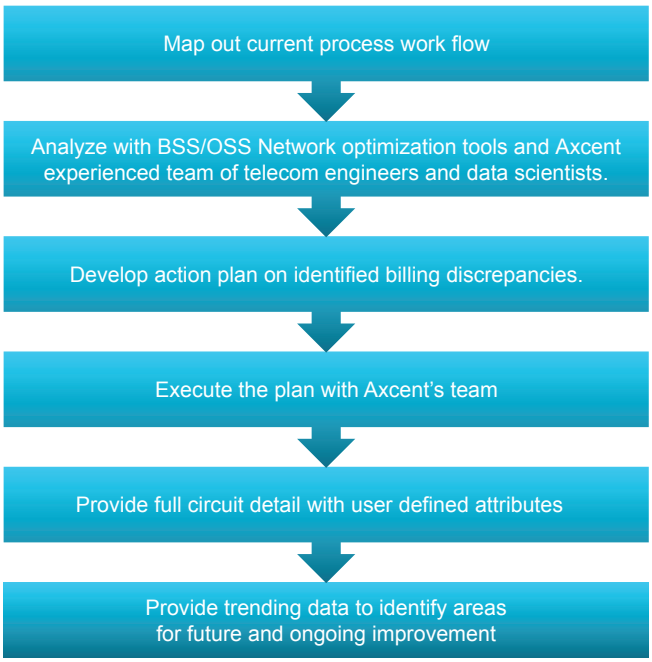
Fortunately, the company had already contracted Axcent Networks to begin performing a network audit to identify circuit connectivity. The Vice President of Network Engineering quickly realized the need to establish an entirely new process for greater visibility into the combined networks.

To restore data integrity and service reliability, Axcent Networks completed a network audit of multiple legacy networks, compiling all the assets into one single-source network inventory management system (NIMS). The Axcent team validated the data, established a new process standard for modeling equipment, created the data entry templates and trained the network personnel to maintain the system.

Benefits of Maintaining Data Integrity

Hurricane Katrina impacted every sector of the communications industry throughout the entire Gulf Coast Region, cutting phone service to more than 3 million customers, and knocking out public safety networks as well as thirty-eight 911 call centers. According to an independent FCC report, more than 1,000 cellular base station sites were impacted, only 80 percent of which were restored within a week.[4]

In the case of any outage or catastrophic event, regardless of the cause, poor data integrity only prolongs the outage and complicates your ability to restore service. Without accurate data integrity, crews trying to restore services are severely hampered in an outage situation. Personnel are unable to troubleshoot the problem if they don't know where the circuits are located and how they're connected.



Maintaining proper data reconciliation allows network data to be quickly routed, completely and efficiently, to significantly reduce MTTR. Data integrity not only shortens downtime, it also allows your network to run more effectively and facilitates planning for disaster recovery, expansion planning, staffing and capacity management.

In an effort to restore data integrity, some companies offer auto discovery tools that rely on IP addresses to identify network elements. However, these tools cannot reliably model all the various assets in the network. A hands-on approach, with knowledge of network elements and circuitry, is also needed to ensure accuracy and to create a well-defined standard for best practices.

Axcent Networks brings a thorough understanding of network elements, circuits and data ports as well as inventory management system tools to your project. This expertise allows teams to identify all elements of the network, reliably tracing circuits end to end. Therefore the database accurately mirrors the physical network. Axcent Networks' hands-on approach does not just apply a quick-fix in the heat of an outage, but also enables new, better-defined standards and processes to be put in place for a more robust, reliable network for the future.

To learn more about how to maximize data integrity in your network, contact Axcent Networks at www.axcentnetworks.com/#contact.

About Axcent Networks

For over a decade, Axcent Networks has engineered, designed and optimized state-of-the-art telecommunications networks. An independently owned network engineering firm, Axcent Networks offers a range of end-to-end network solutions, including telecom managed services, turnkey project management and staffing. Our subject matter experts are highly experienced in traditional TDM, 2G, 3G, and 4G/LTE technologies.

At Axcent Networks, our emphasis is on connecting people with technology. Reflecting our commitment to quality, we have achieved and continue to maintain our TL 9000 Certification from the International Standards Organization. For more information, visit: www.axcentnetworks.com.

[1] "Mobile Broadband Brings High-Profile Outages, Heavy Reading Finds" Light Reading Magazine, October 2013: http://www.lightreading.com/services-apps/broadband-services/mobile-broadband-brings-high-profile-outages-heavy-reading-finds/d/d-id/706202

[2] "What's the Real Cost of Network Downtime" Light Reading Magazine, September 2014: http://www.lightreading.com/data-center/data-center-infrastructure/whats-the-real-cost-of-network-downtime/a/d-id/710595

[3] "Mobile Network Outages & Service Degradations" Heavy Reading Survey, October 2013: http://www.heavyreading.com/spit/details.asp?sku_id=3144&skuitem_itemid=1545&promo_code=&aff_code=&next_url=%2Fsearch%2Easp%3F

[4] "Independent Panel Review of the Impact of Hurricane Katrina on Communications Networks" June 2006: http://transition.fcc.gov/pshs/docs/advisory/hkip/karrp.pdf