

WHITE PAPER  
**Past, Present, and Future:  
Inventory Management**

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Famed management thinker Peter Drucker told us that “you can’t manage what you can’t measure.”

But what can’t be measured? The most certain answer is that you cannot measure what you don’t know exists, or what you’ve lost track of. If you don’t know about it you can’t measure it, so you can’t possibly manage it.

Those tasked with managing telecommunications services and related equipment are very familiar with this. The telecom industry has long been challenged by many factors which make it difficult if not impossible to keep track of all the equipment, services, contracts, and other elements that make up their area of responsibility.

- User equipment is constantly being added, uninstalled, changed, re-assigned, and otherwise moved around. Often these changes go undocumented resulting in the device being lost.
- Many services that were badly needed at a moment in time are eventually quietly abandoned as that need ends. Abandoned, but not canceled so billing continues for services no longer in use.
- Large groups of users are subscribed to service levels that only a few of them need or can put to use. The rest would be well served with lower levels of service at much lower cost.

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what you can’t  
measure”

Each of these easily becomes a hidden cost, invisible, unmeasured, ignored, and often very costly. They’re not being measured, so they cannot be managed.

# Telecom Inventory Management

This is where the entire concept of Telecom Expense Management (TEM) began. Recognizing that they were losing track of many telecom investments, managers began tasking people and teams with auditing their holdings, in an effort to find the mistakes that had been made which caused units and services to disappear.

Then came the realization that one method for identifying missing entities would be to examine invoices coming in from telecom providers to determine if they knew the whereabouts of every line item being invoiced. This process became a regular function of processing incoming invoices on a monthly basis.

Soon another level of sophistication was added as the cost of each item was matched against the item itself to assure that everything was being correctly identified. This added the benefit of tying the invoicing directly to the inventory. This inventory was not limited to tangible hardware items. It also included services that were contracted, which were regularly checked to assure they were still in use. Now cancellation of those idle services occurred far sooner removing them from billing and thus reducing operating costs.

# More Pivots Followed

Recognizing that the best way to make a large challenge simpler is to break it down into smaller parts, the telecom auditors began to assess the inventory by location. This enabled faster search-and-locate processes for invoiced items that could not be matched up. That which could be located was then confirmed as being included in the inventory. Items which could not be located were written off the inventory far sooner resolving asset misstatements in the balance sheet.

As telecom estates grew enormous one major challenge still stood in the way of extracting maximum value out of telecom inventory management; the entire process was still completely manual. Invoices were periodically provided to auditors printed on paper as they were received from the carriers. Some documentation had to be requested, often in writing.

These pages upon pages each had to be manually read and evaluated. Between the delay in receiving the invoices and other documentation from the carriers and the extensive time required to carefully pore over them, telecom inventory analysis could take weeks and months to provide.

The next pivot took the process from manual to automated using networking to digitally deliver what had previously been provided on paper.

Networking delivered needed information far more quickly than ever before by simply transporting it via the internet to auditors who could then deliver reporting in a fraction of the time previously required. In the late 1990s through the early 2000s the earliest online inventory information delivery services leveraged newly emerging virtual desktop interface (VDI) technology over leased data lines since the Internet would not begin to proliferate for a few more years. This allowed carriers to provide needed reporting without ever allowing the actual

data to leave their data center. Customers and auditors could receive the reporting they needed very quickly and efficiently, with the data having already been processed for them.

As networks began to proliferate and telecom services became more and more integrated into IP-based data networks, the next pivot turned focus on the existence of the inventory as component parts of the overall network. This required the addition of significantly more information including application addresses, types of services, shared resources to support those services, circuit costs, and more infrastructure.

# Telecom Inventory Management Goes Proactive

Now that executive management had far more comprehensive visibility of their telecom estate far more quickly than ever before they naturally wanted more. New requirements emerged, including:

- Based on the inventory build, identify saving opportunities
- Identify obsolete services
- Which aging or outdated services can be replaced with more cost-effective new services?
- What functions can be moved from old wireline services to new internet-based voice services?
- What equipment is reaching end-of-life that will soon require refresh?
- What further opportunities can be identified and taken advantage of based on what is already being paid for?
- Which new developments, such as the internet-of-things and 5G should we be paying attention to and planning to integrate?

# Increasing Immediacy

Starting in 2005 the Internet entered the public's consciousness with companies like 800-Flowers and Pizza Hut offering primitive online ordering capabilities. As the internet explosion proceeded carriers took the opportunity to leverage it to deliver billing and invoicing information to customers and their auditors to the point where customers themselves could access whatever billing data they desired using a self-service portal. Increasing the immediacy of the availability of data can often have a downside in that users may simply pull down data points themselves and consult them for quick, short answers without performing the analysis required to deliver the most value. The digital automation of data delivery created wonderful new economies for customers. Environments that used to require five full-time employees (FTE) to analyze their data could now get it all done with one. This also matured the role of the telecom analyst, who was no longer involved in basic processes like data collection and focused more on the analysis that produces cost savings, new economies, increased efficiency, and the removal of unnecessary burdens and obstacles.

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# Cloud-Like Convenience Emerges

Telecom inventory management has come a long way from long waits to receive limited insight and make incremental improvements to a time when services can be requested, received, and released as needed matching billing not only to specific contracts to down to specific consumption and utilization. Telecom expense managers readily demonstrate that all contracts are being properly tracked and matched prior to payment so that everything that should be paid for is being paid for and everything that's being paid for is currently in use.

This ability to request and release entire contracts introduces cloud-like elasticity into telecom services, giving the customer real control over their expenses based on utilization. Users themselves are enjoying the availability of cloud-like self-service portals. Just as virtualized servers actually shut down virtual and physical servers when they're not in use, telecom services that are no longer in use can be removed from the contract quickly putting an end to unnecessary billing.

As voice continues to become “just another data type” these capabilities expand to encompass all data types; text, voice, video, and more.

# The Future

The telecom industry long ago started making telecom work. Over the years they have clearly made telecom work better and better. By migrating everything to digital delivery we find many ways to make it all work less expensively. Ultimately telecom services are managed in real-time without the many delays so common in earlier days.

And its not a moment too soon. Today's communications environment is enabled not only by copper and fiber-optic cable, it's also carried over wireless connections that also become more and more sophisticated and complex as they become faster. Just as wireline gives way to more and more wireless, 3G service gives way to 4G LTE with 5G heading toward us now. The role of the telecom analyst evolves into one of far more value than ever before.

With the burden of data collection removed, the telecom analyst focuses more on how to make the network work better, delivering more value than ever before. Rightsizing service plans to each user provides incredibly granular cost control. Even more rapid identification of unused contracts, lines, services, and more leverages the time-value of money to increase savings dramatically.

To a great extent this also transforms the role of the telecom analyst from a fundamentally technology-biased one to an almost purely financial one. In this role the job becomes increasing customer success by improving management to identify and leverage new functionalities quickly while also identifying and making changes based on every opportunity to drive out costs.

No longer is it as much about improving phones as it is about increasing funds.

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