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## Overview

### The need

TEOCO wanted to analyze 500 TB of data from call detail records and inter-carrier invoices daily to help communication service providers (CSPs) identify cost savings and improve services.

### The solution

TEOCO's assurance and analytics solutions, powered by IBM® PureData™ System for Analytics, powered by Netezza® technology,<sup>1</sup> enable CSPs to access and analyze massive amounts of data to uncover the source of cost and network issues.

### The benefit

Helped one Tier 1 mobile operator save over USD400 million in four years; reduced management costs by decreasing server sprawl; enabled clients to proactively respond to network issues before customer service was affected.

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## TEOCO

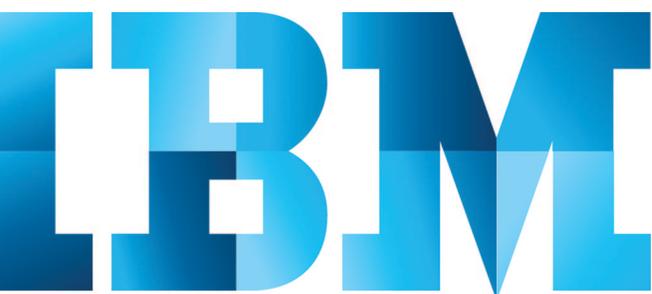
*Helping communication service providers (CSPs) save hundreds of millions of dollars*

When industry experts talk about Big Data, they typically discuss the three “Vs” of data: volume, velocity and variety. But ask Jonjie Sena, Senior Director of Product Management at TEOCO about big data, and his list includes a fourth element: value.

“Value is where we come from,” says Sena. “It’s about making sure that we apply those bits and bytes so companies gain meaningful feedback that solves business issues. Because of this, most of our customers see value in the first 100 days following implementation of our solution.”

TEOCO service assurance, customer analytic and margin assurance systems help international communication service providers (CSPs) better manage their costs, expenses and revenue structures. With TEOCO's solutions, CSPs can quickly identify unnecessary costs, optimize call routing through real-time traffic management, and proactively respond to network issues before they affect customer service. More than 100 of the top CSPs worldwide have selected TEOCO, an IBM Business Partner, to be their analytics and assurance solutions provider. TEOCO's solution is frequently used to identify, and help dispute, millions of dollars in inaccurate billings between telecommunications operators.

“We can view all the network data and can validate it to make sure that our clients' costs are correct and the corresponding revenue is accurate,” says Sena. “And as we analyze the costs, we can also identify and recommend alternate means, alternate partners, and alternate business models that can increase revenue.”



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### Designed for data

By offering its clients an all-in-one assurance and analytics solution, powered by IBM PureData System for Analytics, TEOCO enables communication service providers to access and analyze the massive amounts of data required to see emerging cost issues that are typically not visible at the summary levels.

### Tuned to the task

Consolidating processes on an optimized and integrated appliance helped TEOCO gain greater performance and efficiency for each workload—a move that enables the company to capture, load, enrich, process and analyze 500 TB of data daily for its clients.

### Managed with cloud technologies

The platform's simplicity enables TEOCO to manage approximately 24 racks with only two full-time administrators, enabling IT staff to focus on delivering new business applications instead of database optimization efforts.

### Driving innovation

With the speed, simplicity and scalability of its IT environment, TEOCO can provide its clients a 3 - 5 times return on investment (and greater)—with savings often over USD100 million.

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For example, one large operator uses TEOCO's solution for transaction-level costing and accruals, daily and monthly gross margin forecasting, and analysis by product and partner for all transactions on its network. This enables the operator to react when actuals are trending outside of projections and correct it immediately before it has a negative business (or customer) impact.

Another operator uses TEOCO for M2M (machine-to-machine) and device analytics for its emerging devices such as e-readers, GPS, telematics, and other non-handset devices. By looking at the usage behaviors, TEOCO generates information used for both network planning as well as financial forecasting, and forms the basis of the settlements between many content partners.

A third example: TEOCO's solutions are used to reconcile and forecast usage, revenues and costs of mobile virtual network operator (MVNO) subscribers. MVNOs represent a significant amount of traffic and revenue for this operator, but the available mix of services may be quite different from the operator's direct subscribers. TEOCO's analytics help optimize current and future offers for MVNO customers by helping ensure the offered services remain profitable.

The financial impact is enormous. "As part of the Proof of Concept with this client, we identified a potential USD100 million savings as a direct result of our solution," says Sena. "And this savings was realized in just three months. We helped another client save more than USD400 million in four years and we expect, in the next year, the savings to exceed a half-billion dollars."

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### Solution components

- IBM PureData System for Analytics, powered by Netezza technology
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—Jonjie Sena, Senior Director,  
Product Management, TEOCO

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### Analyzing big data

To accurately identify the real cost savings within any network, operators need a 360-degree view of their network-to-bill lifecycle with several months of usage history at their fingertips. Gaining this view requires processing and analyzing a staggering amount of data from usage detail records and complex settlement invoices from ecosystem partners.

“Typically, we’re analyzing approximately 500 terabytes of data from call detail records daily,” says Sena. “You make a phone call, you get a record; you send a text message, you get a record; you click on a web page; you get a record. As those calls are set up, you get additional records. And each of these actions generates some type of network event as well. We’re looking at all this data to help them not only make sense of it, but take action based on it.”

According to Sena, processing this data in a traditional data warehousing environment would not be possible. TEOCO offers its clients an all-in-one appliance, powered by PureData System for Analytics, that makes it possible for CSPs to access and analyze the massive amounts of data required to see cost issues that are typically not visible at the summary levels offered by TEOCO’s competitors.

“We delivered our applications on the very first PureData System,” says Sena. “It provides us with the speed, parallel processing and scalability we need to deliver these business benefits to our clients. We have a billion records coming in each day, but because we have to present it in many ways, we may be processing 10 billion records daily.”

Essential for making this possible is the platform’s ability to support in-database analytics, relieving the need to move data back and forth between a database and separate analytics applications.

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*“IBM PureData System for Analytics has helped us gain greater performance and efficiency for each workload and simplified our lives.”*

—Jonjie Sena

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“In traditional systems, you get the data, you transform it, you load it, you pull it out, you analyze it, and then you stick it back in,” says Sena. “With the PureData System for Analytics, we can perform in-database analytics and in-database processing, which means that all the work happens within the box itself. This gives us the ability to process billions of records multiple times per customer, per device, per network, per region, and so on. One of the questions I am usually asked is ‘how much faster is this over alternative approaches?’ From our perspective, this may not be possible with other approaches because of the volume of data and the number of in-depth domain processes that we have to apply to each record.”

### **Keeping infrastructure costs low**

According to Sena, using a traditional data warehousing approach to process tens of billions of records daily also would have resulted in considerable “server sprawl”—a huge concern for any company.

“Traditionally, you had a lot of servers, a lot of discs eating up storage area, which would drive costs up,” says Sena. “PureData System for Analytics has solved that challenge. It has helped us gain greater performance and efficiency for each workload and simplified our lives. We have approximately 24 racks [of IBM equipment] in our environment and we only need two full-time people to manage the environment. For the kind of data volumes we’re processing, that’s just not possible using traditional database methodologies.”

### **About IBM PureData System for Analytics**

The IBM PureData System for Analytics, powered by Netezza technology, integrates database, server and storage into a single, easy-to-manage appliance that requires minimal setup and ongoing administration while producing faster and more consistent analytic performance. The IBM PureData System for Analytics simplifies business analytics dramatically by consolidating all analytic activity in the appliance, right where the data resides, for industry-leading performance. Visit: [ibm.com/PureData](http://ibm.com/PureData) to see how our family of expert integrated systems eliminates complexity at every step and helps you drive true business value for your organization.

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—Jonjie Sena

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## **About IBM Data Warehousing and Analytics Solutions**

IBM provides the broadest and most comprehensive portfolio of data warehousing, information management and business analytic software, hardware and solutions to help customers maximize the value of their information assets and discover new insights to make better and faster decisions and optimize their business outcomes.

### **For more information**

Help IT make the shift to the strategic center of your business, and leverage proven expertise to take the lead. To learn more about the PureSystems(tm) family and the PureData System for Analytics, contact your IBM representative or IBM Business Partner, or visit the following websites: [ibm.com/PureSystems/PureData](http://ibm.com/PureSystems/PureData) or <http://www-01.ibm.com/software/data/puredata/analytics/>.

For more information about TEOCO, visit: [www.teoco.com](http://www.teoco.com)



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Software Group  
Route 100  
Somers, NY 10589 U.S.A.

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Actual available storage capacity may be reported for both uncompressed and compressed data and will vary and may be less than stated.

<sup>1</sup> Client quotes are based on the Netezza 1000 product. The Netezza 1000 has been upgraded and replaced by IBM PureData System for Analytics, powered by Netezza technology.



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