Comcast Corporation

Customer Success Story

Autodesk Map® 3D
Autodesk MapGuide®
Oracle® Spatial

"We've added more than 10,000 basic customers using our Autodesk and Oracle Spatial system. We've identified $8.6 million in new revenue using our own database and $1.5 million with data from an industry group. These are great indicators of the power of Autodesk's tools."

Sean Bristol
Director of Engineering, WA State
Comcast Corporation

GIS Cuts Costs and Generates $10 Million in New Annual Revenue

Award-winning geospatial system uses Autodesk® software to find new customers, decrease costs, and prevent service disruptions.

Project Summary

Comcast Cable Corporation (Comcast), the nation's leading cable, entertainment, and communications provider, serves more than 40 million customers in 36 states. The company's award-winning Seattle system is using Autodesk geospatial software to create best practices that are being tested and rolled out to various Comcast locations. These processes and tools are changing the way cable communications plants are engineered, managed, and monitored.

Using Autodesk Map® 3D and Autodesk MapGuide®, Comcast is able to

- Generate more than $10 million of new, first-year revenue by using geospatial marketing applications
- Save more than $1 million a year by reducing truck visits
- Pinpoint the exact location of homes in relation to network equipment
- Forecast and identify issues in the network that affect customers' service

The Challenge

AT&T purchased the cable television giant TCI in 1998 with the intent to upgrade the TCI cable plants, or the wires and connectors used to tie the regional cable network together. In Seattle, this meant upgrading more than 22,000 miles of cable plant to a state-of-the-art communications plant capable of servicing more than two million homes with video, high speed Internet, and telephone services. Accomplishing this goal required that all 22,000 miles of plant be re-engineered, designed, and constructed to accommodate the newest technology. And, most communications companies had yet to understand the benefits of standards-based CAD drafting in 1998, which meant that the 22,000 miles of cable plant were not in a standards-based CAD platform.

When AT&T built the Seattle plant to serve as the main hub for telecommunications in 1999, before Comcast purchased the company, it used mapping contractors to create design and engineering documentation. AT&T performed quality control (QC) and approved their product, but had no automated tools to perform the task at first.

Autodesk®

"The technology enables us to proactively maintain the networks and plants so that customers are not affected. We test the status of 600,000 cable modems and use the Oracle network model to determine the most common point of failure in the plant. In most cases, problems are fixed before customers experience service interruptions."

Sean Bristol
Director of Engineering, WA State
Comcast Corporation

Without sophisticated QC measures, contractors employed their own standards, using different layers and symbols to represent equipment – dramatically slowing the rate of QC and hindering the company's ability to develop an intelligent geographic information system (GIS) database.

Hundreds of engineers from as many different design firms drafted the original plans and maps, using inconsistent methods for symbolization and cartography - making any effort to extract intelligent data for project management or other tasks extremely difficult.

Acheiving an Object Modeled Network
When dealing with a project of this magnitude, production is king. No excuse or glitch can slow or stop construction. Homes must be activated with new services – based on original timelines – to keep revenue flowing.

Because 22,000 miles of cable plant had to be re-drafted for construction to continue, the Seattle office realized it had a one-time opportunity to capture structured data in CAD, allowing for the creation of an intelligent object modeled network. AT&T worked to develop a multiple-step process that did not slow construction while migrating to a secure standards-based CAD model that could later be migrated to an intelligent object modeled database.

While building the plant, engineers realized they needed to geospatially enable their drawings. They outlined goals for their new system, including the ability to pinpoint the exact location of homes in relation to Comcast's facilities and quickly identify issues inside a facility or in the field that affect customer service.

These goals led to one conclusion: build a single-source, object modeled database capable of producing visual representations of their data. Sean Bristol, now Comcast's Engineering Director for Washington State, spearheaded AT&T's project. "From the start, we wanted to build intelligence into our designs, to link precision CAD with intelligent GIS – ensuring they worked together as a system without using proprietary software or licensing."

The Solution

Since AT&T was already using AutoCAD, Bristol's team turned to Autodesk for a complete geospatial solution. Together with Autodesk reseller Kanotech Information Systems and database specialists, the team created a CAD-based, standard drafting tool. AT&T's tool, @ MApp, was the foundation for what is now one of the most comprehensive data structures in the communications industry. Creating and implementing the standard was an important first step to building the intelligent data model to support the analysis and advanced applications that the team envisioned for the company.

Laying the Foundation
Originally, the contractors' work resulted in a cluttered system of computer-aided design (CAD) drawing files without a set of consistent graphic or attribute standards. AT&T built and implemented an automated drafting and QC application, based on the engineering GIS software, Autodesk Map 3D, and published to the web through Autodesk MapGuide. This helped the contract engineers test their work, determining immediately if they adhered to the company standard. By building a standard and enforcing it with a custom application, the cost of capturing the information fell significantly. The team no longer required hundreds of employees to manually inspect and approve the submissions.

One of the project's original goals was to create a database that could be moved into a relational database management system (RDBMS) when Oracle® Spatial was available. Now, Comcast has implemented Oracle Spatial and has a central, seamless GIS database, reducing costs and errors associated with file management. "Our geospatial system requires no middleware. We have direct

> "Being named System of the Year, coupled with the new revenue and cost savings tied directly to our mapping system, prompted other Comcast systems and divisions to take notice."
>
> Sean Bristol
> Director of Engineering, WA State
> Comcast Corporation

access to our data, whenever or wherever we need it," says Bristol. "Not only does this reduce costs, but also removes a step in our workflows – saving significant time."

Customer Satisfaction

One of the main keys to success in the communications industry is keeping customers satisfied. Using Oracle Spatial and Autodesk MapGuide applications, Comcast monitors active devices to determine the overall health of its networks. "The technology enables us to proactively maintain the networks and plants so that customers are not affected," says Bristol. "For example, we test the status of 600,000 cable modems and use the Oracle network model to determine the most common point of failure in the plant. In most cases, problems are fixed before customers experience service interruptions."

Bristol adds, "Satisfied customers are more likely to upgrade their services, adding Internet subscriptions or premium channels to their cable service. This additional revenue further increases our profits – keeping our shareholders satisfied in the process.

Best Practices Win Awards

Comcast's Seattle market recently won Comcast's System of the Year Award, part of the company's Circle of Success Program. The award recognizes the Seattle market for its ability to reduce costs, attract new customers, and outperform more than 30 Comcast systems throughout the country in revenue.

In addition, the Seattle system was named System of the Year by communications industry groups SCTE (Society of Telecommunications Engineers) and CT Magazine. These groups recognized that Comcast's Seattle region had the best metrics, performance, and customer service of all cable systems in the country based in part on its Autodesk and Oracle solution.

The Result

Although the basic workflows have remained the same, Comcast's acquisition of AT&T has brought improved processes and enabled the company to get more value from its geospatial data. For example, Comcast generated $10 million in new revenue – in one year – by using its GIS for marketing purposes.

Comparing marketing address data with the existing billing system linked to its GIS, Comcast quickly determined which residents are not already customers and of those, which are not receiving marketing materials. After geocoding the prospective customers according to proximity to a service center, Comcast creates targeted marketing campaigns to qualified leads. "We've

Comcast Corporation

Customer Success Story

"Satisfied customers are more likely to upgrade their services, adding Internet subscriptions or premium channels to their cable service. This additional revenue further increases our profits – keeping our shareholders satisfied in the process."

Sean Bristol
Director of Engineering, WA State
Comcast Corporation

added more than 10,000 basic customers using our Autodesk and Oracle Spatial system. We've identified $8.6 million in new revenue using our own database and $1.5 million with data from an industry group. These are great indicators of the power of Autodesk's tools."

Comcast points to additional savings as a direct result of using the system. Before implementing the geospatial system, if a potential customer called requesting new service, Comcast sent a truck to the physical address to verify that the residence was serviceable according to its location. Comcast incurred an average cost of $65 each time it sent a truck on one of these calls.

Through Comcast's geospatial efforts, most addresses are already in the system as existing or potential customers. By using back-office, web-based MapGuide applications, the company can determine if the new customer is located near the network. Without spending $65 to send a truck to the residence, the company adds the home to its customer base. Bristol estimates that this process saves more than $91,000 each month in his region while enabling truck operators to focus their time on other tasks.

Moving Forward

Comcast management is impressed with the success of the Seattle market and recently set a goal to roll out the Seattle market's tools to the rest of the division. "Being named System of the Year, coupled with the new revenue and cost savings tied directly to our mapping system, prompted other Comcast systems and divisions to take notice.

For More Information

To learn more about how Autodesk Map 3D and Autodesk MapGuide enable real-time network and equipment management, visit **www.autodesk.com/map3d** or **www.autodesk.com/mapguide**.

Autodesk®

Autodesk, Autodesk Map and Autodesk MapGuide are registered trademarks or trademarks of Autodesk, Inc., in the USA and/or other countries. All other brand names, product names, or trademarks belong to their respective holders. Autodesk reserves the right to alter product offerings and specifications at any time without notice, and is not responsible for typographical or graphical errors that may appear in this document.
00000000000117634
© 2007 Autodesk, Inc. All rights reserved