AT&T Broadband

AT&T Broadband Sets the Standard

AT&T Broadband is the largest provider of video and broadband data services in the United States. In addition to providing traditional cable television services to more than 14 million subscribers nationwide, the company delivers a variety of advanced broadband services. With the purchase of cable companies TCI and MediaOne, AT&T has developed new ways to manage the newly acquired equipment and networks, streamline operations, and serve customers faster and more efficiently.

Using the company's Washington region as a case study, AT&T Broadband has brought the best practices of AT&T's existing operations to the cable and broadband industry. The Washington team is introducing new ideas to streamline business workflow and improve customer service by setting up a new computer-aided design system—built on Autodesk® software—to design and map all the hybrid fiber optic and coaxial cable networks at the company. The computerized design and mapping system using Autodesk Map™ software is integrated with the central corporate databases offering decision support, work management, and customer relationship management (CRM) applications that dwarf previous efforts. Information once limited to a few dozen experts in a few departments is now available to employees throughout the organization.

Design Tradition

Traditionally, cable companies created and maintained libraries of detailed network and equipment drawings. "Use of the system beyond drafting was limited," explains AT&T Broadband's Sean Bristol, the Washington State regional manager of engineering. "Our industry was not making the most of the data stored on engineering documentation, instead merely using the technology to create a picture."

AT&T Broadband Upgrades

When the Seattle telephony plant was built beginning in 1999, AT&T Broadband had a turnkey contractor responsible for the creation of design and engineering documentation. AT&T Broadband's role was to perform quality control (QC) and approve their product, but the company had no automated tools to perform the task.

Beyond the sheer volume of physical design documents, other factors were slowing AT&T Broadband's rate of QC. The primary contractor was using many subcontractors to do the work. Although the data might be accurate, each company employed its own standards, using different layers and symbols to represent the equipment. This variation hindered QC.

"From the start, we wanted to build intelligence into the designs and ensure that they worked together as a system without the use of proprietary software or licensing," notes Bristol.

Engineering data captured for the telephony plant needed to

- Pinpoint the exact location of the home in relation to every element of the plant

- Define the relationships of homes to things like Public Service Answering Points (PSAP), Rate Center, and MSAG

- Quickly identify issues in the plant that affect critical customer services

All these elements led to the desire for a "one source" query-capable database that could produce a visual answer. Such a tool was a drastic change from the traditional cable industry paradigm of knowledge kept in an engineer's head or stashed under the seat of a maintenance vehicle.

AT&T Broadband's intranet system provides maps and other reports to thousands of employees

Initially, AT&T Broadband was concerned about keeping startup and maintenance costs in line, accessing source code for future enhancements, and ensuring that they would realize the benefits of these efforts before competitors. Building on Autodesk software tools helped them achieve this goal.

Building on Standards

The Washington market engineering team first had to convert the existing records into an intelligent database. When digital files were available, the contractor performing the conversion applied a quality-control process to ensure that the cables were logically connected and didn't simply appear to connect graphically. Paper maps were converted into digital format from scratch. When no record existed in digital or paper form, the team gave field engineers land parcel maps and sent them on "walkouts" to sketch and redline existing facilities.

The engineering team discovered that building a standard and enforcing it with automated drafting and quality-control applications significantly reduced the cost of capturing information. "We no longer require hundreds of employees to manually inspect and approve the submissions," says Bristol.

The IS group in Washington worked with Autodesk reseller Kanotech Information Systems LTD., a Canadian CAD and GIS development company, to create standards for intelligent mapping.

"The engineers created designs and maps using the basic software product required—Autodesk Map—but often the results did not meet our new standard," says Bristol. "We worked with Kanotech to build an automated drafting and quality-control application to help contract engineers perform the QA tests themselves and see immediately if they adhered to our standard."

The Web Changes Everything

What was once considered purely engineering data is now available to the marketing department, sales staff, customer service, field crews, and finance office. In fact, most AT&T Broadband employees can access this information. This compares favorably with the few dozen staff that previously had direct access to digital design data using expensive proprietary software licenses.

"Our business depends on the careful management of our assets, and this network is spread across thousands of miles of cable and equipment," says Bristol. "Our direction with this project is to assist all business groups to more effectively manage, query, report, and update the company's network information. And that is just what we have done."

Millions in Savings

Within engineering alone, the savings are huge. Tasks traditionally performed by proprietary design software are being tied into the drafting and design system. "In a startup situation, we're looking at $2.8 million in savings the first year based on reduced software and resource costs," notes Bristol. "On top of this, we eliminated most of our annual maintenance costs because we own these applications outright. Fewer contracted engineers, lower software costs, it all adds up."

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