



CASE STUDY: Cable and Telecommunications

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ALTOSOFT CASE STUDY – CABLE AND TELECOMMUNICATIONS

As part of its strategy to maximizing customer satisfaction and enhance overall service levels, a major cable communications company needed to enhance its technology infrastructure. With a large but limited budget for capital improvements, the cable company needed find a way to effectively prioritize target geographies for capital improvement in order to maximize customer satisfaction and respond effectively to a competitive market situation. The data required for this analysis was contained in a variety of databases; due to operational considerations and the massive volume of data a traditional data warehouse-based solution was impossible. Based on its Insight product, Altosoft delivered a solution that provided the cable company with the required analytics in a matter of days, without the need for a data warehouse.

Challenge

As part of a company focus on maximizing customer satisfaction, value, and service levels, a major cable communications company initiated a campaign to maximize satisfaction of existing customers by minimizing service delivery issues to customers in key targeted geographies. In order to do this, the company would make new investments in technology infrastructure. These infrastructure investments needed to be targeted regionally based on a variety of factors, including performance of the existing infrastructure, customer value, competitive environment, and other measures of overall customer satisfaction.

Optimization of new capital investments needed to take into account answers to questions such as:

- What is the average revenue per customer in a given area?
- What was the penetration rate of the various services offered by the cable company (including TV, high speed internet, phone, video-on-demand, etc.) for geographic areas and other demographic segmentations?
- What were the error rates or issue rates for existing services in areas where the new competitive solution was available? For example, how often was there a delivery problem if a customer ordered an on-demand movie from the cable company?

The cable company faced significant problems bringing together this data for analysis. First, since the company had experienced significant growth through acquisition, relevant data existed in multiple systems and databases. For example, the billing and customer information system for Massachusetts was a completely separate system from the system that supported Virginia.

Second, relevant information was contained in many types of operational systems. In addition to having separate systems for each geographic area, every geographic area itself maintained multiple operational systems for various elements of the business. Customer billing information was typically maintained in a completely separate system than information relating to customer trouble tickets, which described individual delivery failures, outages, and other issues. Additionally, each individual type of service (cable TV, high speed internet, phone, movies-on-demand, etc.) was managed by separate operational systems, where information relating to infrastructure, system performance and outages at the various geographic “nodes” was maintained.

Finally, each of these data sources contained millions of records. And since they were live, operational systems, it was imperative that any analysis performed against them should not impact business operations by slowing down system performance.

The problem was daunting. In order to prioritize capital investment across the entire organization, the cable company needed to be able to relate customer information, including location and billing, to service delivery performance at those geographic locations, or “nodes.” This analysis needed to take into account all the various services offered by the cable company. The results could then be compared across various geographic areas were the highest priority for infrastructure improvements.

A traditional approach to this problem would start with the construction of a separate data warehouse. Data warehouse projects typically take many months and require investment in significant amounts of hardware and storage. In addition, a data warehouse project requires that all the potential dimensions of analysis and paths for analytical drill-down be defined in advance. For example, in this case, the cable

company would need to pre-determine analysis by, say, region, and then by service, customer trouble ticket frequency, etc. If a dimension were neglected or needed to be added later, the entire cube would have to be re-dimensioned and redeployed.

In addition to time and complexity, certain additional factors made a traditional data warehouse approach impossible in this situation.

- There were a large number of operational data stores containing different types of required data, physically located in a number of different data centers. Each database contained millions of records, with very high daily transaction volumes.
- The nature of this particular data analysis would have required complex and extremely inefficient outer joins across these various large databases. A daily batch update of a data warehouse would have taken hours to complete, which was not acceptable to the company since the various data stores, tied to mission-critical operational systems, simply could not be burdened by that analysis on an ongoing basis.

Altosoft's Approach

Rather than replicate data from operational systems into a rigid (but optimized) data warehouse, Altosoft's approach is to leave the data in place in existing operational systems. Altosoft analyzed the data in the cable company's operational systems, using its own highly optimized calculation engine to perform the analysis. Altosoft relied on the operational databases to simply do what they do best – retrieve data. Unlike traditional warehouse approaches, Altosoft does not use SQL to perform operations for which it was not optimally intended. SQL is restricted to record selection and fetching mechanisms (including the outer joins discussed above, as well as additional calculations).

As a result, the daily update that would have required hours of processing time for calculation of a data cube took Altosoft only a matter of minutes. The load placed on the cable company's operational data stores was reduced to a minimum.

Using this approach, Altosoft was able to demonstrate a solution to the cable company in a matter of days. Cable company executives were able to access the information they needed to conduct their capital improvements analysis via Altosoft's easy-to-use dashboard reporting system. Unlike a traditional data warehouse/cube approach, the Altosoft analytics system does not limit analysis to pre-defined dimensions or drill down paths. If the cable company needs to modify or change its analytical framework, it can do so without time-consuming and burdensome recalculation of data cubes.

Conclusions

Using Altosoft Insight, the cable company now has the visibility to optimize its schedule of capital and infrastructure improvements to maximize customer satisfaction in a competitive market. In a matter of days, Altosoft was able to deliver analytics to the cable company that were previously impossible to generate. Implementation of Altosoft avoided the complexity of a typical data warehousing project and eliminated the need for purchase of expensive hardware and storage to support a warehouse approach. Finally, the Altosoft system places a minimal burden on operational data stores, so the cable company's critical systems are not impacted by the project.



About Altosoft

Altosoft Corporation provides Operational Business Intelligence solutions that enable private and public sector organizations to optimize their operational business processes. Unlike traditional approaches, Altosoft's Insight™ software automatically and continuously monitors and analyzes business processes, so that any issue that requires attention is immediately routed to a decision maker who can use that information to respond immediately to business opportunities or challenges.

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