Project Background and Purpose

In mid 1999 NTG clarity undertook a project required by major Telecom Company in Canada to merge and convert the databases and business practices of two other acquired Telecom companies into a master database. This was complex and challenging undertaking. The basic business to be converted was network design and circuit provisioning functionality. The databases used for this purpose, by the companies being converted, were out of date and many fields and structures had been corrupted due to wrong design and business practice. The problem was further compounded by the fact that the databases were not of the same architecture and their table structures and fields, even if used for the same business application, did not always match. In many cases manual intervention had been applied to change the meaning of fields or just not use them at all. New standards for sites, equipment, facilities and circuits had to be developed and conform to Bellcore standards. Customer records had to be amalgamated and reconciled among the three companies. The conversion, cleanup and consolidation work involved several million records and had to be done to a very high degree of accuracy. The project involved a significant expenditure of telecom engineering and information technology personnel and lasted over six months. Research showed that previous attempts to do this work by competitive vendors consisted primarily of database mapping of tables and fields from the source to target database. This resulted in a very poor conversion statistics of about 20% of the records of a large database. This left clients with very serious manual data cleanup and verification problems.

Main Activities:

NTG Clarity set up standards required by the major Telecom customer for equipment (NE's), sites, facilities and circuits to conform to Bellcore standard nomenclature. Customer information was amalgamated and resolved among the three companies for the proper identification of circuits. As in many telecommunications companies at that time, many circuits and facilities represented on the database were not in sync with the As Built configuration in the field. NTG Clarity performed physical or logical audits when needed to resolve facilities and circuits to ensure that the equipment and connection paths were correct and represented properly on the database. A particular challenge was to create a set of conversion tools that would facilitate the conversion process to the target company database. This complex task required the development of numerous database conversion programs and created a number of necessary partly automated data cleanup and verification activities to successfully complete the entire conversion effort. Research showed that previous attempts to do this work by competitive vendors consisted primarily of database mapping of tables and fields from the source to target database. This resulted in a very poor conversion statistics of about 20% of the records of a large database. This left clients with very serious manual data cleanup and verification problems.

The NTG approach was to develop advanced software to extract network and circuit data form the source database to an intermediate database for modeling and manipulation. The next activity was to simulate all required circuit types to an intermediate form using specially developed smart algorithms to automate the process of changing them to the required target form to minimize future data cleanup and verification. Then perform the mapping from the intermediate model database to the import the results to the target database. The approach was a new and innovative methodology at that time.
This was an onerous task. The amount of data was typically large, on the order of a several million records. A very high accuracy was required to minimize manual data cleanup and verification. Processing efficiency was also critical because limited time was allowed for conversion, typically a weekend. The source and target systems were real time production systems.

Accomplishments and Results:

The eventual conversion effort and software that was developed provided better than 99% successful conversion of the database records. This was a very significant improvement over previous methods.
The circuit types to be supported included:

- Private lines (DS0, DS1, DS3 and SONET OC3, OC12, OC48)
- Frame Relay
- ATM PVC's
- T-Lan server
- Ethernet (10baseT, 100baseT)

There were also significant savings due to improved efficiency in future network design and circuit provisioning due to the improved accuracy of the database. There were also realized savings in engineering staff.