

### Documentum: Internet-Based Document Storage and Management System

The innovation consists of an internet-based project document control system. This system permits users in diverse locations and organizations to store any type of project document or information in a single electronic "filing cabinet" and to retrieve that information from any location. The innovation is significant because it eliminates the problems of prior paper-based and e-mail-based systems: multiple filing systems in multiple locations, excessive paper duplication of information, project delays due to shipping time for paper documents, incomplete sets of project documents in *any* given location, project participants not using the latest revision of documents, and documents not available to all project participants who need them.

This innovation consists of three parts. Each of three entities making this nomination provided one part of the innovation: Detroit Edison promoted the innovation through its unique contracting process for its NO<sub>x</sub>-reduction program, Washington Group identified the systems required to fulfill Detroit Edison's requirements and developed them for the specific application, and Documentum developed the document management software upon which the system is based. This is described in more detail below:

1. In 1999 Detroit Edison initiated a multi-year program to reduce nitrogen oxide emissions at its power plants. This program involves engineering and construction projects at almost all of the Detroit Edison power plants, and makes use of Detroit Edison personnel at other geographically diverse locations. Detroit Edison has contracted with its NO<sub>x</sub>-alliance partners, Washington Group International and Babcock Borsig Power, to implement this program for them.  
  
Detroit Edison's contribution to the innovation was to require innovation as a part of the bidding process for the NO<sub>x</sub> alliance. That requirement has carried over into the implementation of the program and has resulted in a number of highly innovative processes being implemented. In particular for this innovation, Detroit Edison required that all project documents (drawings, specifications, correspondence, vendor and construction progress photographs, etc.) be managed on an internet-based document control system and that the drawings be available to all project participants regardless of their physical location.
2. Washington Group International was the successful bidder for the architect-engineer portion of the NO<sub>x</sub> alliance. (Babcock Borsig Power is the major equipment supplier.) Washington Group identified the appropriate software for the application, established the computer network required to operate the system, identified the particular requirements of the system to meet Detroit Edison's needs, programmed the software to accomplish those requirements, implemented the system at the different geographic locations involved in the program, provided training for project participants, does the bulk of document entry to the system, and manages both the system hardware and software.
3. Documentum Corp developed the document control software, also called Documentum, that is the platform on which the Detroit Edison system is built. Documentum is a program that stores, files, retrieves, and prints computer-based documents. This can consist of any type of computer file: letters, graphic documents, photographs, video clips, CAD files, scanned drawings, spreadsheets, databases, etc. The program is very versatile and can be customized for any organization. Release 4i, which is the one being used for the Detroit Edison program, is internet based. It permits any project participant at any location to enter documents into the system and to view and print any project document. Documentum also permits automated routing and processing of documents to speed work flow, and provides a variety of document security measures.

The advantages of this system for Detroit Edison system are that:

- Communication of documents among all project participants, particularly between engineering and construction, is instantaneous. This provides project time and cost savings by eliminating project shipping delays and idle time at the job site.
- Project participants all have access to the most current revision of information. This reduces construction rework and provides time and cost savings.
- All project participants have access to complete project information at any time.
- Clerical costs are reduced by maintaining only a single project filing system.
- Only those project participants who need hard copies print them out. On a large project such as the NO<sub>x</sub> program, this can save hundreds of thousands of dollars in reproduction costs.
- At the end of the project, the system itself provides CD-based copies of all project documents. Also, the entire database of all project documentation can be part of the turn-over package to the owner, for ease of retrieval of all project documentation. This enables the architect/engineer to provide a complete turn-over package to the owner at a great cost savings. It also assists the owner and the architect/engineer to more easily reference the project documents when similar work is performed on future projects.

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