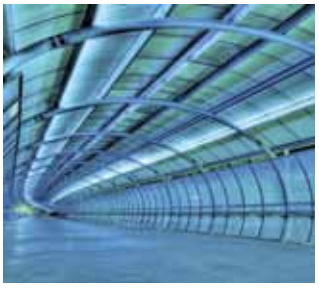
modelogix

Customer Case Study

Puget Sound Energy

Puget Sound Energy (PSE) is a regional utility in the Pacific Northwest serving more than one-million electric-power customers and 750,000 natural-gas customers. The company owns fossil-fuel, hydroelectric, and wind-power plants with more than 2,400 megawatts (MW) of capacity. It has a service area of over 6,000 square miles, incorporating both metropolitan and rural areas ranging from rolling farmland and parkland to the rugged Cascade foothills. It recently changed from public to private ownership.



Issue

Many of the major projects undertaken by PSE's Transmission and Distribution Group can be considered, to a degree, similar in scope and just varying in size. Yet each time, at the start of a project when budgets were established, a bottom-up estimate was provided when a top-down application was more appropriate. Therefore, there was no simple reference point to be used for developing initial budgets. In addition, PSE's core accounting system is geared toward meeting the needs of plant accounting and the constraints of the Federal Energy Regulatory Committee (FERC) rather than a robust project-management methodology.

The Solution

PSE's project-management group has established a simple work-breakdown structure (WBS) which reflects the functional effort required in a PSE project. This includes project management, engineering, real estate and right-of-way, permitting, material and construction. In order to align costs taken from the accounting system (with the standard categories of labor, materials and outside services of consultants and contractors) within the project WBS, a type of

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semi-automatic "decoder ring" was built. Using this tool, a library of typical projects from the prior four or five years was compiled, with each project being classified as a particular type of project in the vein of:

- a new substation
- a substation maintenance project (such as breaker or transformer replacement)
- a new HP gas main, categorized by pipe size
- a gas-regulator station categorized by regulator size
- a new transmission (230 kV) high-voltage distribution (115 kV) line
- upgrading existing high-voltage distribution line
- electric distribution (55 kV and lower)

"Our search for a less labor-intensive and more flexible solution led us to Modelogix, by WinEst. Prior to the availability of Modelogix, these example sets were run through a Monte Carlo simulation to provide a weighted average cost, and then entered into an MS Access database, from which reports were printed in PDF format and published to the PSE Intranet. Although meeting a need, this process was very labor-intensive and relatively inflexible, and could not account for any escalation factors."

"Modelogix provided a far better, more flexible and responsive modeling capacity and also included the capability of adding an escalation factor. It also allowed better reporting of typical labor requirements for each type of project. The same library, comprising 550 examples, was transferred into databases for each discipline. The categories were revised and established as a hierarchical set of smart categories. Queries on each database could then be run in-line with the smart categories, from which the model is generated."

"It is easy to delete outliers, or group for specific situations (such as geographic location, rural/urban etc.). Once satisfied with the result, the model—along with supporting examples—can be saved in Modelogix. Our next step is to create an Excel workbook with a summary table and a hyperlink to the details sheet, which is then published to the PSE Intranet for all staff to refer."

Bottom-Line Results

Much of PSE's "institutional knowledge" is now on display for all to use. This new standard basic reference is improving efficiency and encouraging those responsible for generating conceptual or order-of-magnitude estimates to start at an appropriate level.

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