

Bursting the data bottleneck

Recent data management advances can help engineering and geoscience professionals capture their critical, repeated procedures and valuable insights. With this industry's countless cutbacks and layoffs of experienced personnel, tools are needed to capture the wisdom being lost and to document it in an easy-to-get-to and organized form.



The HyperEdge Best Practices technique, a concept developed by HyperMedia Corp., documents the "how to" of a work process and appends pertinent knowledge associated with a given process to the document through use of Leading-edge information management (hypermedia) software. The result is a digital record of critical "best practices" that is usable, widely distributable, and continuously maintainable.

Roice Nelson, company co-founder, says "Any company's best practices must be documented and distributed before they can be referred to, applied and improved upon. This enables and encourages continuous improvement." To illustrate the types of processes that can be captured, HyperMedia has begun building a library of time-proven work processes such as:

- 3-D seismic processing
- Reservoir pressure maintenance
- Subsalt exploration-low cost methods
- Petroleum prospect risk analysis
- GIS/Digital information storage
- Role of technical development director
- Completing horizontal wells, and
- Geomechanics of fractured reservoirs.

Broad or narrow, any type of work process can be documented using the technique. One of this industry's greatest assets, the wisdom of its professionals, can thereby be maintained, applied and advanced.

Well information/data management. The P2000 product family soon to be released by Petroleum Information Corp. will inventory, locate, retrieve and integrate exploration and production information relative to prospects or areas being evaluated, reviewed or studied. Components include the Administrator, inventory manager, data entry, MapBuilder, query/report manager, import/export manager, spatial browser and Executive Information System (EIS).

The P2000 software family is based on: a UNIX- or PC-based ORACLE database interface; the industry-standard Public Petroleum Data Model (PPDM); and a meta data model. These systems are linked with a Geographic

Information System (GIS) for spatial browsing and mapping. Currently available Administrator software includes the Petroleum Information Data Model (PIDM) which is derived from PI's own two-decade old system of managing nearly three million wells. PIDM 2.0 is an extended model of PPDM 3.2, which links well and production data, seismic attributes, logs, reservoir and land/lease information.

All information about or linked to individual wells or prospects is entered into the data management system. Queries can be created to locate wells that possess common data ranges, types or characteristics. All data available for wells of interest can be accessed quickly and easily. Data can be selectively located by user-defined category preference. Data associated with individual wells or prospects can be listed in report format or shown directly on maps next to well locations.

The system is a computerized data room consisting of well files residing in a LAN. Data from these computerized well files is accessed or referenced in seconds rather than hours or days spent sifting through file cabinets.

PIDM 2.0 enables P2000 to handle 183 data tables spanning 20 data categories. Some of the categories are:

- Well indicators, agreements, completions, core analysis, pressures, interpretations and tests
- Drilling information, production, fluid analysis, logs, reserves and gas analyses
- Land/lease, locations and directional surveys, and
- Seismic surfaces, lines and data items.

Energy museum. On September 20, 1994, the Houston Museum of Natural Science will open the doors of its new energy wing, the Wiess Energy Hall. This 10,000-sq-ft computer-based exhibit will feature sections on all phases of the energy industry and is designed in a format which can be understood by people as young as junior high level.

The sections begin with the formation of hydrocarbons, and then continue with sections on geology, geography, exploration, drilling and development, reservoir and production, refining, natural gas, pipelines and alternative energy.

Of particular interest is a geovator, which, with someone inside, visually simulates being lowered down a wellbore. Once it reaches the bottom of the well, the formation is perforated and the entry of oil and gas into the wellbore lifts the geovator back to the surface. **wo**