

# Rational Virtualisation In E&P Focuses On Data And Applications Hubs

Landmark Graphics Corp.

The Summer 2003 edition of Cambridge Energy Research Associates (CERA) *Digital E & P Strategies Watch* contains an article by Richard Ward titled 'The E&P Virtual Enterprise Evolves.' In this article, virtualisation is defined as "using Internet-based tools and applications to perform E&P activities with a diminishing regard for geographic and organisational boundaries."

At the core of successful virtualisation is a data and applications hub. The hub consists of a physical computing centre, data management infrastructure, high-end visualisation software and virtual team members, collaborating in real-time analyses through the use of Web-based tools. Landmark software and services being successfully deployed in this model include: real-time drilling operations, prospect generation, exploration in mature basins and production management of these fields.

## Data and Applications Hubs

Data and applications hubs can be deployed internally or externally to a company's firewall. The most commonly used hub today, as shown in the following figure, utilises a hybrid method; i.e., portions of the data and applications infrastructure are outsourced and managed by an external services provider. Data, information and knowledge are accessed through the Web, regardless of their physical location or where the data exist in the E&P lifecycle.

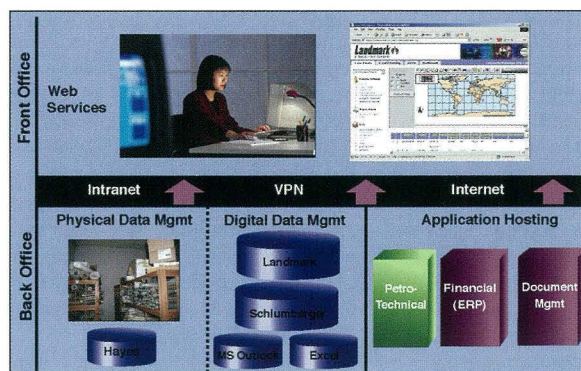
As a service for E&P companies, data from commercial data vendors, real-time field operations and bulk data are being more commonly hosted at a hub. Bulk data

includes large volumes of prestack and poststack seismic, well log and production data. Well location, well header, lease and seismic data are often stored behind a company's firewall; however, project data, where the day-to-day analysis and interpretation work is performed, may or may not be hosted behind a company's firewall. This holistic approach to information results in users having the ability to access information of known quality in context, bringing together disparate information and systems through a single, intuitive Web-based interface.

The ultimate goal of leveraging these data and applications hubs is to reduce storage and infrastructure costs while improving both asset team performance as well as financial performance. Using this rational approach to virtualisation, E&P companies have increased personnel productivity by over 100% and reduced drilling and production costs by 10–20%.

## Business-Practice Innovations

An article by John Seely Brown and John Hagel III titled, 'Does IT Matter?' published in the June 2003 issue of *Harvard Business Review* treats the types of business practice innovations occurring in the E&P industry that result from adopting a longer-term strategic approach to information technology. "IT is inherently strategic because of its indirect effects—it creates possibilities and options that did not exist before. In fact, many opportunities for



A common data and applications hub.

business-practice innovations extend beyond the walls of enterprise to include relationships with other companies."

From a data and applications hub methodology, joint venture opportunities are perfect examples of business-practice innovations that extend beyond the E&P enterprise walls. Instead of evaluating these opportunities in the 'old-fashioned' way; i.e., securing separate office space and computer equipment, they are now evaluated remotely in which the participating companies share the same data, applications and computing infrastructure provided by an external services provider. The asset team members from the joint venture companies can log in remotely through the Web and access all relevant information and data needed to evaluate the prospect. Cycle times are drastically reduced and collaboration amongst all parties is greatly improved.

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### **Incremental Innovations in the Future**

Short-term initiatives (12 months maximum) are ideal for testing specific incremental business practice innovations that result from implementing new IT and data management infrastructures. Distributed Web services are excellent examples of short-term business practice improvements in E&P because they can lead to better integration of commercial vendor data with the interpretation environment. For instance, Landmark and

A2D are using Web services to improve integrating of A2D's commercial log library with Landmark's OpenWorks® projects. This technology detects when newer log data are available from A2D's log library, making it more readily available for the customer's use at the right time.

The rapid change in information accessibility and IT advancements can be somewhat daunting. In the August 2–8, 2003 issue of *The Economist*, an article titled, 'Holographic Data Storage: Light on the Horizon', states that holographic data storage will be available

commercially next year in which one terabyte (1,000 Gb) of data can be stored on a CD. Holographic data storage will be particularly useful for archiving of data. Innovations such as holographic data storage will someday deliver enormous benefits for the energy industry because it is so data and information intensive. Given the industry's past experience with irrational exuberance, it is wise to focus in the near term on incremental innovations in business practices and take a more rational approach to the virtualisation of the E&P industry. ■