

Building a Reservoir Information Management System (RIMS) with
hypermedia Technology

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The Real Problems:

- 90% of time is spent trying to find the data.
- Re-interpretation instead of enhanced interpretation
- Billions spent on re-engineering (who and how) without a map, i.e. an Activity Model, of what and why
- Strapped for resources with layoffs and early retirements
- Pursuing scientifically interesting challenges (incremental improvements in a migration algorithm) instead of order of magnitude business challenges: documentation, activity links/handoffs, Best Practices, and continuous improvement (beyond ISO-9000 compliance)

Definitions:

- Documentation
- Good Documentation
- Accessible Documentation
- Exploration Exploitation Production
- Geotechnical Knowledge
- hypermedia technology (chart highlighting different flavors of software)
 - multi-media: "the variety of forms in which data and information can be communicated" graphical images, video clips, sounds, words, numbers similar to a book, with a linear sequence of multimedia objects forming a story or other presentation
 - hypermedia: derived from "hyper" meaning "transending"
A superset of multimedia, Rather than merely stringing the multi-media objects together like a strand of pearls, a hypermedia object links them together in a multidimensional web. Hypermedia technology is associative rather than sequential.
Why is this important? It relateds closely to the way humans learn and remember. All of what we call "knowledge" is itself a hypermedia construct. Knowledge, and specifically "Geotechnical Knowledge," is the progressive gathering of bits of experience, along with links which associate these disparate parts into a unified whole.
- The Road to Wisdom
- RIMS
 - Regional
 - Play Fairway
 - Prospect
 - Field
 - Reservoir
 - Production
 - Transportation
 - "Just-in-time-production"

very good!

The Process:

- Real-Time documentation and Interpretation of Stratton 3-D seismic survey.

Quotes:

- NASA: ". . . JSC/ILIAD is one of NASA's HPCC K-12 initiatives. ILIAD is a knowledge robot which organizes the Internet by the Dewey Decimal Classification (DDC) Schedules, receives queries by email, maps the query into the DDC, and directs the query to the servers most likely to provide relevant documents. . . . Documents which survive both filters are mailed back to the requestors. . . . We at JSC/ILIAD know that we can filter images and texts by preferences.

Too far afield

We've succeeded in doing it experimentally. . . . one of our technology transfer partners [HyperMedia Corporation will participate in] . . . our collaboration [enabling students to investigate the Earth System]." email from Dr. Mark E. Rorvig, Principal Investigator, Internet Library Information Assembly Database, Lyndon B. Johnson Space Center, Clear Lake City, Texas, 18 November 1994 to Larry Carver and Terrance Smith at the University of California at Santa Barbara.

-Aramco: "Two or three weeks ago at our regular quarterly review a HyperMedia demo was presented. It was the first meeting in the big conference room to use two big Sony projectors. Before there had only been a viewgraph machine. [Tom Psuedoname], a skilled HyperMedia navigator, brought up the [Hyper]Journal and GeoQuest time-slice movies. Twenty minutes later the senior management had seen all the developments in the [secret] field. The Senior Vice-President said, 'I now see the value of having a workstation on every desk. Twenty years ago you requested this and I see that it has effectively been accomplished. But this is the first time in twenty years that we have not been shown the same kinds of output.' Now Senior Management [complains] when they are shown paper wall displays. And they have not even started talking about our own productivity, which is worth a lot." Notes on a phone conversation with Dan Berard, General Manager of EASD (Exploration Application Services Division), Dahrahan, Saudi Arabia, 04 August 1993.

shorten
← if
to be
used in
talk

-GBRN: Get a quote from Jeff Nunn about embedded documentation and distributed reserach

-Fletcher Challenge Petroleum: "When we encounter a problem, it is not unusual for us to access HyperMedia's resources and knowledge to add value to our internal evaluation. What they have readily available within their network saves considerable time, effort and cost. The advantage in using HyperMedia is the ability to tap into the right industry resources 7,000 miles away without leaving our desks." Keith Rawlinson, Director of Technology, Fletcher Challenge Petroleum, Auckland, New Zealand, 07 October 1994

• Links
• Non-linear
Thinking
• Map, log
article, etc.

-Unocal?

The Solution:

- Power of a digital RIMS storage of Geotechnical Knowledge
- Stored within the Activity Model Framework

Cost:

- Documentation Time
- Software: Evaluation and Purchase
- Activity Models
- Training in HyperMedia and Best Practices

Benefits:

- Digital Corporate Memory
- every increasingly expanding Knowledge base,

Acknowledgements:

- The Bureau of Economic Geology
- Interpretation Cubed
- HyperMedia Corporation
- Landmark Management

Follow-Up:

- Tour on way to Open House
- Free Dynamic Pamphlet, with your company logo on every page
- Text to paper was posted this morning on the sci.geo.petroleum newsgroup.
- INTERNET review of full paper with selected slides

~~Corporate~~
organizational learning
through response learned
by past failures
(the "true" learning org.)

more Knowledge = more assoc.
more associations =
more Knowledge