Optimizing Information Management To Connect People To Information and Expertise

Reid Smith and Damon Simmons

Integrating Knowledge & Information Management Summit for E&P
September 27, 2010
Houston, TX

Marathon Statistics at a Glance

- Fortune 50 company
- Established in 1887
- 4th largest US integrated oil & gas company
- 5th largest US refiner
- Market Cap: ~ $20 billion
- 2009 Revenues: $54 billion
- 2009 Net income: $1.46 billion
- 2009 Net Oil & Gas Production Sold: 407,000 BOE/D
- 2009 Net Synthetic Crude Oil Sold: 32,000 BPD
- 2009 Net Proved Reserves: 1.679 billion barrels
- Employees: ~30,000
- Headquartered in Houston, Texas
Marathon’s Business Segments

- Integrated Gas
- Exploration & Production
- Refining, Marketing & Transportation
- Oil Sands Mining

Global Operations

- Exploration
- Production
- Exploration/Production
- Integrated Gas
- Refining
- Oil Sands Mining
Knowledge & Information Management Scope

Information Channels
- Electronic & Physical
- Email
- Instant Message
- Web (Intranet & Internet)
  - Collaboration & Social Media: blog, wiki, discussion, ...
  - Content Types: video, webcast, podcast, RSS, ...
- File Shares / PCs ... "unstructured"
- Applications ... "structured"

Information Types
- Policies & Standards
- Daily Market Assessment
- Jobber Contracts
- Interpreted Log Curves
- Pipe Line Operating Procedures
- Refinery Process Safety Management Documents
- Reserves Estimates
- Reservoir Models
- Trading Deals
- People Profiles
- Best Practices
- Lessons Learned ...

Motivation

Business Drivers
- Productivity
- Decision Quality
- Cycle Time
- Cost
- Consistency
- Collaboration ...

Risk Mitigation
- Operational
- Technical
- Financial
- Safety
- Environmental
- Regulatory
- Legal
- Security ...

Gold Data
Security

- Confidentiality, Integrity, Availability

- Standards
  - NIST
    - Standards for Security Categorization of Federal Information and Information Systems, National Institute of Science and Technology, FIPS PUB 199, February 2004
  - American Petroleum Institute
    - API IT Security Forum, May 2009

- Challenges
  - Balancing the tension between “knowledge sharing” and “need to know”
  - Sustainability as organizations and technologies change

Engaging on multiple fronts

- Scope
  - Policies
  - Roles & Responsibilities
  - Processes
  - Technology
  - Ongoing Support

- Stakeholders
  - Business
  - Law
  - HR
  - Internal Audit
  - Finance
  - Public Affairs
  - IT
  - ...

Engaging on multiple fronts
Examples of Marathon Systems

- MaraView – Enterprise Information & Records Management
- ViewPoint – Data Dashboards
- MIDAS – Well headers
- PWE/Recall – Well Logs
- MaraGIS – Data Mining
- Technical Information Center – Physical Records
**Subsurface Well Data Workflow**

*Future State Facilitates Collaboration Between Disciplines & Within Teams*

Data Enters Marathon → Deposited in Drop Box → Quality Assessed → Stored in Managed Repository → Used in Decision Making

- Interpreted & Reviewed by Subject Matter Experts

---

**MIDAS Well Header Database – Workflow**

Applications Containing Bits of Well Header Data → Sorting, Staging, Matching Process to Identify Unique Wells → Quality Assessed → MIDAS Web Page Allows Anyone to Search Results & Well Info Team Cleans Up Any Data Issues → Well Header Conforms to Industry Standard Formats

- Match Results
- PPDM Standard Model
- Regulatory Group Creates New Wells with Permitted Information

- TCW
- WellView
- Recall
- PRA
- PRS
- Aries

- TeamView

---
PWE/Recall Well Log Database – Workflow

Data Delivered to Marathon Drop Box → Data is Standardized, Formatted, and Stored. Quality is assessed based on requirements of asset / project teams. → Catalog for Data and Transfer the Data to Another Application

- Schlumberger
- Weatherford
- Baker
- Sunburst
- I.H.S.
- Peer Website
- TGS

QA Check

Recall Corporate Database

High Value Interpreted Data

Analysis Completed and Sent to Marathon Drop Box to Be Cataloged

Desktop / Geographix

OpenWorks

GeoInfo
PWE/Recall Well Log Database

- Digital Logs
  - Raw
  - Composited
  - Final interpreted data sets
  - Depth Calibrated
  - Scanned
  - Thin Section Photos

- Drilling Data
  - Mud logs
  - Dipmeter

- Pressure Data
  - Wireline
  - RFT
  - MDT

MARATHON
MaraGIS – Data Mining

MaraGIS is an extension to ESRI ArcGIS that was designed by Marathon and built by IHS Energy. It mines IHS and Marathon proprietary data.

Technical Information Center

IHS Data Management Specialists managing Marathon Physical Petrotechnical Records

Roles and Responsibilities

- Design & implement effective systems for maintenance, protection & disposition of technical records
- Establish filing procedures, and determine standards for data entry
- Store and maintain technical data using established procedures and business rules
- Maintain database integrity through accurate inventories, timely data entry, retrieval and refiling
- Coordinate the transfer and retrieval of technical data to and from offsite storage
- Maintain inventories of data stored in multiple locations with multiple vendors
- Coordinate destruction of records in accordance with Marathon’s records retention schedule
State of Information Management at Marathon

- **Policies, Standards, Procedures**
  - Enterprise Records & Information Management Policy
  - Information Classification Standard

- **Roles & Responsibilities**
  - Executive Sponsors, Information Champions
  - Asset Data Stewards, TeamView Editors, Records Coordinators, IT Analysts

- **Processes**
  - Classification, Migration, Data Handling, Offsite Storage, eDiscovery

- **Technology**
  - Knowledge Connections: people to information and people to people
  - Ongoing performance improvement & system integration
  - Hold Order Management, eDiscovery

- **Ongoing Support**
  - Training, Help Desk, Compliance Readiness Assessments, Physical Records Management

Guiding Principles

- Information must be managed as an asset
- Relevant, up-to-date and trusted information offers maximum value
- Standardized processes and technology offer significant benefits
- Embed legal and regulatory compliance in business processes
- Support spans processes and technology
- Individual ownership and accountability are necessary for success