How IT Enables the Digital Oil Field

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Imagine: SimOILField

“Optimize asset value by applying a Process Control Approach to Reservoir Management”

9/15/2009 “Transforming How We Operate....”
i-field, i.e. the integrated field, is an operational transformation methodology driving enhanced and optimized operating processes, with common attributes:

- Manage by exception (focus on highest value)
- Improve collaboration across distance and across functions
- Standardize and centralize analysis and decision-making
- Use relevant-time data in decision-making
- Reduce exposure to safety and environmental risks
An integrated field promotes collaboration across disciplines and locations, offering relevant-time information and visualization to support decision-making.

**Operations**

- Employees In the Field
  - Manage by exception
  - Supported with prioritized work
  - Collaborate with SBU office, others

**Experts – Other Locations**

- Assist with problem-solving virtually
- View relevant-time data

**Engineers and Management in an SBU’s Main Office**

- Optimize across processes through new solutions
- Reliably execute processes
- Collaborate across disciplines, and with the field
Innovative Tools

Handheld Computing Capabilities

Mobile Communications Capabilities

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Visualization Tools

Exception-Based Reporting

Integrated Real-Time Data Management
Centralized Decision Making

SJV Steam Generator Decision Support Center

CUE i-field: i-DE Integrated Decision Environments
Asset Decision Environments (ADEs) offer advanced facilities for event-driven collaboration by multiple disciplines, or dedicated monitoring and optimization of processes.

- Cross-functional collaboration
- Connect different locations virtually, e.g. a BU office, field offices, offshore
- Offer streamlined access to data

- Provide relevant-time data, audio & visual communications & visualization
- Allow efficient use of limited expertise
Field Operations Network and First Mile Connectivity

RF – Radio Frequency
EFM – Electronic Flow Meter
AWT – Automatic Well Test
LAN – Local Area Network
WAN – Wide Area Network
MAN – Metropolitan Area Network
Real-time Operations: if we can do this...
...why not this?
Typical Agbami IWC...

- **Field level**: 2 separation trains, complex network of 8 sub-sea manifolds & risers (prod/inj)
- **At the reservoir level**: multiple lobes within the same reservoir
- **At the well level**: 2 valves for zonal control plus a number of measurement devices- (6) P,T,Q

**ZONAL / WELL SURVEILLANCE & MONITORING**
**Sensors:** much smaller, much cheaper and more intelligent

Measurement, computing, wireless networking and power integration

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The SERIP standard process is supported by integrating MSV into the framework.
DSC processes that include Well Surveillance and AWT Monitoring support SFO by integrating into the framework.
The WSA&O standard process is supported by integrating PET into the framework.
Delivering the right information to make the best decisions at the right time in an environment that promotes collaboration will transform Chevron operations.
Energyville

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http://www.willyoujoinus.com/