



Identifying Knowledge Gaps and Tools

Career Advancement Series: *How to Get Ahead* Session 2

Alok Jain





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Mr. Jain is President of Asset Management Solutions, Inc. (AMSI), a company that he formed after taking retirement from ConocoPhillips in late 2003. AMSI is involved in training, advisory and consulting services related to the management of upstream assets. Mr. Jain has over 40 years of experience in various aspects of the oil and gas industry. He is also the Chairman of Global Training Committee for Society of Petroleum Engineers and a member of the SPE's Global Management and Advisory Committee.



Mr. Alok Jain

Mr. Jain served Conoco for over 22 years in technical and leadership roles with specific focus on Asset Management, Project Management, and Reservoir Engineering, in the U.S. and international locations like Nigeria, Norway, and Dubai and has a long history of creating extraordinary value for the companies where he worked.





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Poll Question

Who is your Employer?





Setting the Stage

- 2nd of 4 part series dedicated to promote professionalism
- Professionalism (Conduct/Aim, Knowledge, and Standards)
- This seminar is about identifying and addressing Knowledge gaps using a state of the art tool



Poll Question



What is your main area of Expertise?



Why is it important to identify knowledge gaps?



- To understand that we must take a look at the history of the oil and gas industry



First discovery of Oil.....



Col Edwin Drake's well in Pennsylvania was in 1859

Scouting for Oil ...



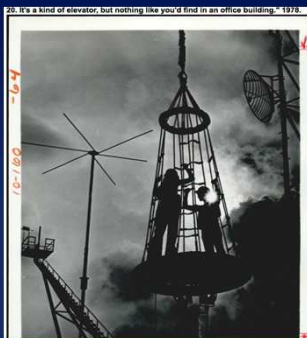
18. "Tulsa - Oil Scout." Date unknown.



An example of Drilling



An Elevator in the Field.....



An example of Transportation.



Knowledge is important



- *To find a job and make a career, and*
- *To keep pace with the changes in the business environment*



Oil and Gas Industry is a risky business..

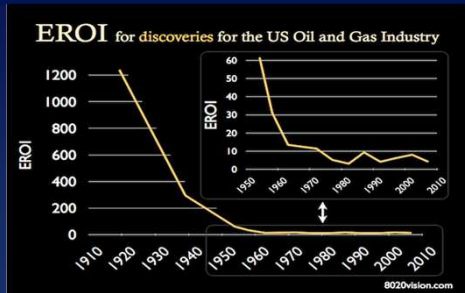


Knowledge was and still is needed in many areas:

- To overcome significant challenges in terms of Technical, Commercial, Health, Safety, and Environmental Risks
- To manage technical risks during Identification, Discovery, Development, Production, Storage phases
- To manage commercial risks in terms of oil/gas quality, Marketing, Transportation, Pricing, and Sales



Commercial Perspective....



EROI stands for Energy Return on Investment

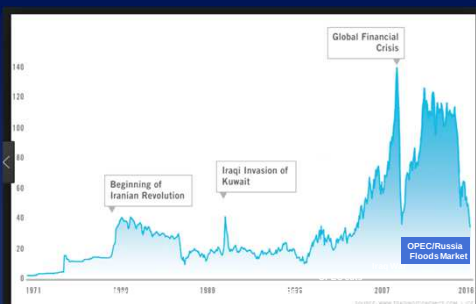
What are the key drivers that have influenced the Industry's direction?



- Reduced profitability
 - Lower Oil Prices
 - Lower Prospectivity
 - Onerous Terms
 - Higher Costs
- Geopolitics



Impact of Geo-Politics on Oil Prices



Key Drivers for the industry



- Supply/Demand Imbalance
 - Geopolitics
 - Global Financial Crisis
- Oil Prices



How did the industry cope with these challenges?

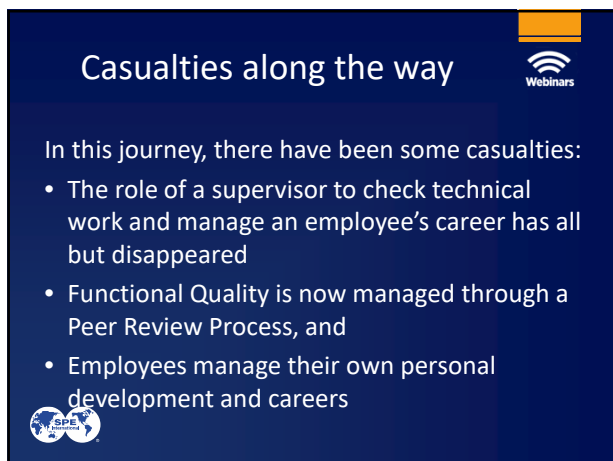


Change in Governance Structures









How is the individual/industry dealing with these challenges?

- Competency Matrices
- Competency Management
- Competency Management Tool




SPE
Competency Management Tool



SPE
Competency Management Tool

- Establish Job Standards
- Accelerate Development
- Increase Marketability
- Provide Development Structure
- Support long-term Development



What is Competency?

Knowledge
of facts and theories, procedures and principles.

Skills
both practical and conceptual.

Experience
that contributes to excellent job performance.

The diagram illustrates the Competency Management process as a circular flow: **Assessment** → **Gap Analysis & Planning** → **Learning & Development** → **Process & Evaluation** → **Assessment**. The center of the circle is labeled **COMPETENCY MANAGEMENT**.

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SPE Competency Management Tool (CMT)

Initial launch in October 2014 and expanded in October 2015

Changes for 2015 SPE CMT:

- Expanded Operator Company Jobs
- Added Service Company Jobs
- Expanded HSE jobs
- Added Models for Graduating Engineers
- Added Business and Soft Skills

7 Disciplines
41 Job Competency Models
308 Competency Units
1,200+ Training Resources

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SPE CMT Job Competency Models

Production Engineering and Operations

- Production Manager
- Operations Superintendent
- Senior Production Engineer
- Production Engineer
- Field Operations Engineer
- Well Engineering Manager
- Senior Drilling Engineer
- Senior Completion and Well Intervention Engineer
- Drilling Engineer
- Completion and Well Intervention Engineer

Project and Facilities Engineering

- Projects and Facilities Manager
- Project Manager
- Senior Facilities Engineer
- Facilities Engineer
- Project Engineer

Health, Safety and Environment (HSE)

- HSE Manager
- Senior Health Specialist
- Senior Safety Specialist
- Senior Environmental Specialist
- Health Specialist
- Safety Specialist
- Environmental Specialist

Subsurface

- Subsurface Manager
- Senior Reservoir Engineer
- Senior Geologist
- Senior Geophysicist
- Senior Petrophysicist
- Reservoir Engineer
- Geologist
- Geophysicist
- Petrophysicist

Business Development (Service Companies, Contractors)

- Business Development Manager
- EPC Contractor
- Account Manager
- Drilling Contractor
- Integrated Service Company

Business Development (Operating Companies)

- Business Development Manager
- Business Development Analyst

Supply Chain

- Supply Chain Manager
- Supply Chain Analyst

Entry Level Jobs for Graduates

- Subsurface Engineer
- Facilities and Process Engineer
- Drilling Engineer

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Introducing John Smith



Reservoir Engineer
3 years of experience
SPE Member

- ☐ How do I compare to industry expectations?
- ☐ Where are my competency gaps?
- ☐ Do I need training?
- ☐ What other job titles can I assess myself against?
- ☐ What training is available to me?
- ☐ How do I get started with my development?




Accessing the SPE CMT



Society of Petroleum Engineers

Training Home
Course and Seminar Schedule
SPE Certification
Online Education
Competency Management Tool
Get the Most Out of the CMT
New to the Competency Management Tool?
Frequently Asked Questions
Cancellation Policy

SPE Competency Management ToolSM

SPE Competency Management Tool

The SPE Competency Management Tool is a free online member benefit that allows you to assess your current professional capabilities.

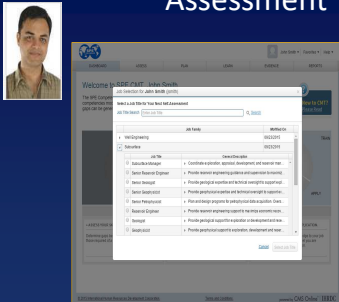
Models cover geosciences, drilling, engineering, production operations, projects and facilities, health, safety & environment, business development, and supply chain function jobs for an operating company. You can also find business development jobs for an EPC contractor, a drilling contractor, an integrated services provider, as well as entry-level jobs for graduating engineers.

You will be asked to log in using your SPE member credentials.

[Get Started](#)




Assess: Start the Self-Assessment



John selects from 41 job competency models
He chooses, Reservoir Engineer, the job title that closely matches his own




Reservoir Engineer

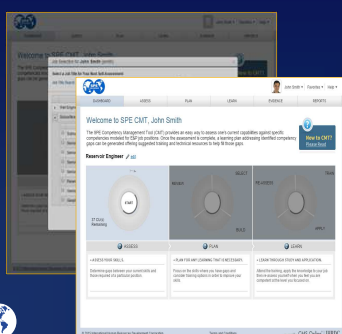


Provide reservoir engineering support to maximize economic recovery of hydrocarbon resources from assigned subsurface assets.

- Participate in efforts to optimize economic recovery
- Perform economic analyses of proposed projects
- Participate in determining data requirements for integrated reservoir studies and assist in preparing subsurface data gathering programs
- Work with geoscience specialists to integrate reservoir engineering parameters with geological, geophysical and petrophysical data.....



Assess: Start the Self-Assessment



John then starts the self-assessment by clicking the "Start" button in the Assess tile



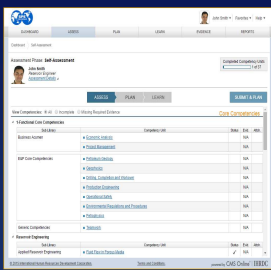
37 Competency Units for a Reservoir Engineer



Core Competencies	Competency Units	Core Competencies	Competency Units
Functional Core Competencies		Reservoir Management	Reservoir Surveillance Field Development Planning Gas Field Reservoir Management Oil Field Reservoir Management Productivity & Operations Forecasting & Managing Resources Subsurface Integration
Business Acumen	Economic Analysis Project Management	Production Engineering	Applied Production Engineering Field Surveillance
EXP Core Competencies	Petroleum Geology Geophysics Petrophysics Drilling, Completion & Workover Production Engineering Operational Safety Environmental Regulations and Procedures Teamwork	Support Competencies	Commercial General Business & Operations Support Business Management Contracts & Contractors Department Objectives & KPIs Contractor Management & Supervision Contractor Selection & Contract Award
General Competencies		HSE Competencies	Asset Development Process Company HSE Policy
Reservoir Engineering		Behavioral & Soft Skills	Leadership Communication Problem Solving
Applied Reservoir Engineering	Fluid Flow in Porous Media Material Balance Analysis Oil and Gas Reserve Estimation Pressure Transient Testing & Analysis Risk Properties Horizontal & Multilateral Wells Enhanced Oil Recovery Methods Waterflooding	Task Related Skills	
Improved Oil Recovery			
Reservoir Characterization and Modeling	Data Acquisition Reservoir Simulation		

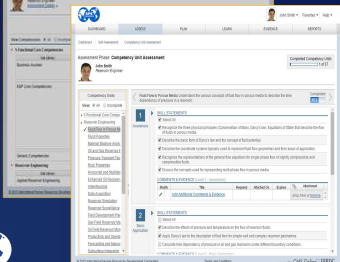


Assess: Complete the Self-Assessment



John sees the list of competency units and clicks on one to start his self assessment

Assess: Complete the Self-Assessment

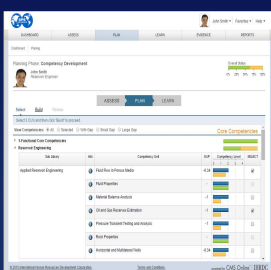


John then assesses his skills against each competency unit. He checks each box that he knows or is able to perform after reading the skills definition. Evidence or work products can also be uploaded to support assessment results.

A peek into the assessment process

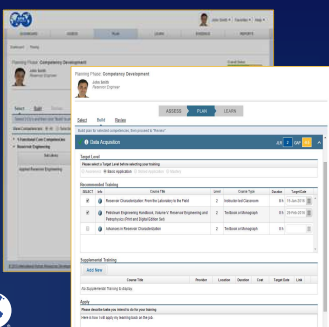
	Level 1 Awareness	Level 2 Basic Application	Level 3 Skilled Application	Level 4 Mastery
Field Development Planning Plan and implement a reservoir exploitation strategy based on technical considerations and business objectives	List the different phases involved in developing an oil and gas field from appraisal to abandonment	Contribute to the formulation of development alternatives based on reservoir characteristics and	Develop guidelines for formulating reservoir exploitation strategies in accordance with static and dynamic modeling results	Supervise a comprehensive asset management program for a reservoir or a field
Problem Solving Know how to define problems, analyze & implement appropriate solutions	List the steps in the problem solving process	Describe when & how the problem solving process is used	Explain the impact of each step in the problem solving process	Ensure consistent & effective use of problem solving process across the organization

Self-Assessment Results and plan to close gaps



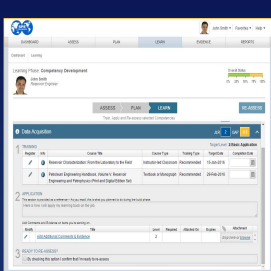
- John can build a competency development plan to close gaps
- He selects up to three competency gaps to add to his plan

Plan: Build Competency Development Plan



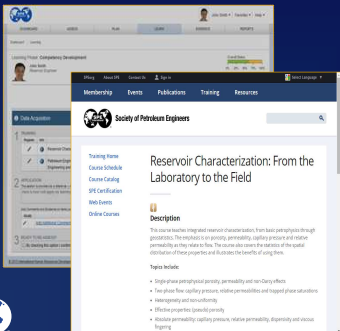
- John then selects the training resources matched to that competency he wants to include to bridge the gap
- John can also enter supplemental training and how he will apply the learning when back at the job

Learn: Start Learning and Record Activities



- John can now start the learning process by taking the training and recording his development activities

Learn: Start Learning and Record Activities



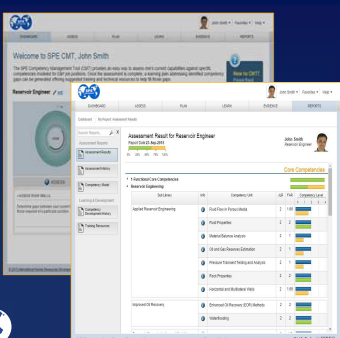
- Learning resources are hyperlinked to actual courses
- Leverages SPE training resources, books, monographs
- John can register from within the SPE site

Review: View Progress



- Throughout the assessment and learning process, the CMT provides John an up-to-date status of his progress

CMT Reports



- SPE CMT Reports provide access to all John's information including:
 - Assessment results and history
 - Competency model
 - Learning history
 - Training matched to gaps



SPE Competency Management Tool





I now know....

- ✓ How do I compare to industry expectations?
- ✓ Where are my competency gaps?
- ✓ Do I need training?
- ✓ What other job titles can I assess myself against?
- ✓ What training is available to me?
- ✓ How do I get started with my development?



Confidentiality



- All user data in the SPE CMT is treated confidentially.
 - Self Assessment Results and Competency Development Plans are confidential
 - The profile built using the CMT is yours; and will not be shared with any third parties including your employer



SPE Competency Management Tool



Take the first step and visit:
www.spe.org/training/cmt

CMT's Value Proposition



CMT offers benefits to all users whether they are Students, Young Professionals, Mid Career and Senior Professionals, or Companies

- **Students:** Choosing a career path and improving marketability
- **Young Professionals:**
 - Broaden horizon by getting additional ideas for the current job
 - Improve performance by assessing and addressing competency gaps
 - Preparing for the next job up the career ladder
 - Planning for a more challenging role
- **Mid-Career and Senior Professionals:**
 - Prepare for a more challenging role in the industry e.g. a Line Manager's role
 - Build a credible portfolio for pursuing future job opportunities
 - Become a more effective mentor for guiding development of the younger staff
- **Companies:**
 - Leverage internal resources by using the CMT and training provided by SPE
 - Building competent and productive work force



Key Take Away....



- A key driver in influencing the industry has been Supply/Demand imbalance caused by Geo-Politics and Global Financial crisis resulting in wild swings in the oil prices
- To survive in this environment, the industry had to adjust by examining organizational structures, innovations in Technology, standardization in designs, introduction of lean manufacturing concepts, aligning functional and business interests, deferring discretionary spending, implementing hiring freezes, and re-organizing adnauseam
- Supply/Demand imbalances will continue and may create significant challenges for the industry to meet energy demand in the future without a competent work force



Key Take-Away



- As compared to the past, cost to find, develop, and produce hydrocarbons is high resulting in very low profit margins
- Industry will be challenged by the combined effect of "Crew change", downsizing and lower enrollment in the universities, to fill its needs for knowledge workers in the foreseeable future
- Responsibility for managing careers has shifted from the Companies to the individuals
- CMT provides a state of the art tool to assess and manage competencies for SPE members in this challenging environment



A situation we want to avoid at all costs