Talent Challenges: Labor Market Perspective

Mohammed Al Sellemi, Director of Human Resources, December 2014
Outline

- Global HR Model
- Emerging Challenges
- Current Strategies
- Strategic Recommendations
Global HR Model
A Holistic View
Petro-technical Professionals (PTP)*: is a term which includes geoscientists (geologists, geophysicists, petro-physicists) and petroleum engineers (reservoir, drilling, completion, production engineers)
Global HR Model*

Corporate Workforce Analytics and Planning

Corporate Vision, Mission, & Goals
Corporate Competencies (B & O Plans)

Continuous Learning & Development

Performance Planning
Continuous Improvement
Achievement
Advancement & Recognition

Succession Planning

Engagement
Retirement

Job Rotation
Counseling
Coaching
Mentoring
Supervisory Input
Evaluation

Compensation
Benefits
Labor Markets
Corporate Culture - DNA

*Sellemi’s HR Model
Criticality Classification

Identifying PTP Talent

Critical A
- Plant, equipment and/or technology specific.
- Not widely available.

Critical B
- Industry specific.
- Available within O&G.

Critical C
- Non-industry specific.
- Available within energy and industrial sectors.
Emerging Challenges
Current and Future States of the PTP Market
PTP talent acquisition is no longer limited to Oil & Gas.
At a global level, supply exceeds demand of graduates.

There is, and will continue to be, a deficit in the number of experienced PTPs (Mid-Career).

As a result, there will be a very high demand resulting in extreme industry competition for talent.
Emerging Challenges in Oil & Gas

Global Demand for Graduates

PTP Graduate Global Recruitment Targets
2005 - estimated 2018

Source: SBC
Emerging Challenges in Oil & Gas

Global Supply of Graduates
2012, Number of Graduating Students (Excluding China)

North America
- Geology/Geophysics: 849
- Petroleum Engineering: 2127

Latin America
- Geology/Geophysics: 1217
- Petroleum Engineering: 1547

Sub-Saharan Africa
- Geology/Geophysics: 633
- Petroleum Engineering: 167

Europe
- Geology/Geophysics: 1900
- Petroleum Engineering: 2141

Middle East & N. Africa
- Geology/Geophysics: 1087
- Petroleum Engineering: 1225

Russia & Caspian
- Geology/Geophysics: 1589
- Petroleum Engineering: 2195

S. Asia & Australia
- Geology/Geophysics: 2245
- Petroleum Engineering: 2224

N.E. Asia
- Geology/Geophysics: 5766
- Petroleum Engineering: 7862
Emerging Challenges in Oil & Gas

Graduate Willingness to Enter the E&P Industry
2012, % of Graduating Students

North America
- 35% Geology/Geophysics
- 85% Petroleum Engineering

Latin America
- 46% Geology/Geophysics
- 71% Petroleum Engineering

Europe
- 55% Geology/Geophysics
- 62% Petroleum Engineering

Sub-Saharan Africa
- 65% Geology/Geophysics
- 90% Petroleum Engineering

Middle East & N. Africa
- 65% Geology/Geophysics
- 90% Petroleum Engineering

Russia & Caspian
- 66% Geology/Geophysics
- 71% Petroleum Engineering

N.E. Asia
- 52% Geology/Geophysics
- 59% Petroleum Engineering

S. Asia & Australia
- 65% Geology/Geophysics
- 85% Petroleum Engineering

Graduate Willingness to Enter the E&P Industry
2012, % of Graduating Students

Geology/Geophysics
Petroleum Engineering
Emerging Challenges in Oil & Gas

Net Supply of Graduates vs. Vacancies
2012, Number of Net Supply of Graduate Students (Excluding China)

North America
- Net graduate supply: 895
- Vacancies: 18
- Shortage: (250) (1065)

Europe
- Net graduate supply: 875
- Vacancies: 680
- Shortage: (220) (500)

Russia & Caspian
- Net graduate supply: 725
- Vacancies: 875
- Shortage: (225) (695)

Latin America
- Net graduate supply: 480
- Vacancies: 645
- Shortage: (100) (465)

Sub-Saharan Africa
- Net graduate supply: 840
- Vacancies: 1025
- Shortage: (100) (465)

Middle East & N. Africa
- Net graduate supply: 130
- Vacancies: 275
- Shortage: (275) (580)

AsiaPac
- Net graduate supply: 575
- Vacancies: 125
- Shortage: (510) (1045)

- Regions with Shortages
- Net graduate supply Petroleum Engineers
- Net graduate supply Geoscientists
- Ongoing vacancies Petroleum Engineers
- Ongoing vacancies Geoscientists
Emerging Challenges in Oil & Gas

Petro-tech Drilldown

40% of Petroleum Engineers are Production Engineers

79,700 Production Engineers

215,500* Petroleum Engineer

4,300 Project Engineer

32,300 Completions Engineers

43,100 Reserves Engineers

56,000 Drilling/Well Engineers

*Estimated based on a 2013 sample of 215,500 PEs out of 1.6mm oil and gas workers.

Source: Mercer
Emerging Challenges in Oil & Gas

Total Global PTP Population in Upstream

- **Discipline**
  - Petroleum Engineering: 62%
  - Geosciences: 38%

- **Age**
  - Below 35: 43%
  - Over 35: 57% Experienced

138,400 PTPs

Source: SBC
Emerging Challenges in Oil & Gas

- In 2018, the global pool of experienced PTPs will decrease by **4%**
- While global recruitment plans require **40%** more...
Emerging Challenges in Oil & Gas

Upstream Anticipated Talent Gaps by Job

- Petroleum Engineers: 65% Experienced, 50% New, 15% Both
- Plant/Operations Eng.: 61% Experienced, 53% New, 16% Both
- Plant/Operations managers: 55% Experienced, 50% New, 15% Both
- Plant/Operations technicians: 53% Experienced, 49% New, 18% Both
- Geoscientists: 50% Experienced, 42% New, 18% Both
- Upstream project managers: 49% Experienced, 32% New, 18% Both
- Upstream technicians: 42% Experienced, 31% New, 18% Both
- Finance managers: 32% Experienced, 31% New, 18% Both
- Sales and traders: 31% Experienced, 18% New, 18% Both
- Shipping/Maritime leaders: 18% Experienced, 18% New, 18% Both

Source: Mercer
## Emerging Challenges in Oil & Gas

### Drilling Jobs at Risk of Shortage

<table>
<thead>
<tr>
<th>Job Position</th>
<th>Risk of Shortage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Senior Drilling Engineer – office based</td>
<td>77%</td>
</tr>
<tr>
<td>Senior Completion Engineer – office based</td>
<td>69%</td>
</tr>
<tr>
<td>Drilling Supervisor (‘company man’)</td>
<td>69%</td>
</tr>
<tr>
<td>Drilling Superintendent</td>
<td>50%</td>
</tr>
<tr>
<td>Senior Drilling Engineer – rig based</td>
<td>46%</td>
</tr>
<tr>
<td>Senior Completion Engineer – rig based</td>
<td>38%</td>
</tr>
<tr>
<td>Drilling Manager</td>
<td>38%</td>
</tr>
<tr>
<td>Subsea Engineer</td>
<td>35%</td>
</tr>
<tr>
<td>Junior Drilling Engineer – rig based</td>
<td>23%</td>
</tr>
<tr>
<td>Drilling Fluid Engineer</td>
<td>23%</td>
</tr>
<tr>
<td>Junior Drilling Engineer – office based</td>
<td>19%</td>
</tr>
<tr>
<td>Junior Completion Engineer – rig based</td>
<td>15%</td>
</tr>
<tr>
<td>Junior Completion Engineer – office based</td>
<td>15%</td>
</tr>
<tr>
<td>Cement Engineer</td>
<td>15%</td>
</tr>
<tr>
<td>Drilling Fluid Technician</td>
<td>12%</td>
</tr>
<tr>
<td>Subsea Technician</td>
<td>8%</td>
</tr>
<tr>
<td>Cement Technician</td>
<td>8%</td>
</tr>
</tbody>
</table>

Source: SBC
Emerging Challenges in Oil & Gas

Local Content in Drilling Positions Among Majors

Source: Mercer
Current Strategies

A View of the Industry’s HR Strategies and Practices
### Current Strategies

#### Midcareer Average Duration of Recruitment

<table>
<thead>
<tr>
<th>Region</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>North America</td>
<td>2.5</td>
<td>2.5</td>
<td>2.5</td>
</tr>
<tr>
<td></td>
<td>2.8</td>
<td>4.7</td>
<td>4.0</td>
</tr>
<tr>
<td>Midcareer Nationals</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Midcareer Expatriates</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Europe</td>
<td>3.3</td>
<td>3.3</td>
<td>4.0</td>
</tr>
<tr>
<td></td>
<td>2.9</td>
<td>3.9</td>
<td>3.6</td>
</tr>
<tr>
<td>Midcareer Nationals</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Midcareer Expatriates</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sub-Saharan Africa</td>
<td>2.5</td>
<td>4.7</td>
<td>6.0</td>
</tr>
<tr>
<td></td>
<td>2.3</td>
<td>3.0</td>
<td>5.0</td>
</tr>
<tr>
<td>Midcareer Nationals</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Midcareer Expatriates</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Middle East &amp; N. Africa</td>
<td>4.0</td>
<td>4.0</td>
<td>5.0</td>
</tr>
<tr>
<td></td>
<td>3.5</td>
<td>5.0</td>
<td>5.0</td>
</tr>
<tr>
<td>Midcareer Nationals</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Midcareer Expatriates</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Asia (without China)</td>
<td>3.0</td>
<td>3.2</td>
<td>3.4</td>
</tr>
<tr>
<td></td>
<td>3.7</td>
<td>3.8</td>
<td>4.0</td>
</tr>
<tr>
<td>Midcareer Nationals</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Midcareer Expatriates</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Current Strategies

Barriers to Reducing Time to Autonomy

2 = Highly Critical, 1 = Critical, 0 = Not Critical

- Lack of structured development program
- Lack of coaches
- Senior PTP mindest
- Lack of job rotation opportunities
- Difficulty planning job rotations
- Lack knowledge management/transfer
- Lack of senior management guidance

Source: SBC
Current Strategies

-current employees from other oil and gas companies: 47%
-experienced hires from outside oil and gas industry: 22%
-contractors/temporary workers/outsource function: 13%
-colleges/universities: 9%

-expected to increase:
  - current employees from other oil and gas companies
  - experienced hires from outside oil and gas industry

-expected to remain unchanged:
  - contractors/temporary workers/outsource function
  - colleges/universities

-retirees from other oil and gas companies: 6%
-retirees from your organization: 3%

Source: Mercer
Current Strategies

Strategies for Filling Open, Experienced Positions

<table>
<thead>
<tr>
<th>Year</th>
<th>Build</th>
<th>Buy</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006</td>
<td>44%</td>
<td>56%</td>
</tr>
<tr>
<td>2013</td>
<td>33%</td>
<td>67%</td>
</tr>
<tr>
<td>2014</td>
<td>28%</td>
<td>72%</td>
</tr>
</tbody>
</table>

**Build** – promote, train, or transfer existing employees

**Buy** – hire workers from outside your organization
### Current Strategies

**Main Attraction and Selection Strategies Adopted by The Industry**

<table>
<thead>
<tr>
<th>Percentage</th>
<th>Strategy Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>84%</td>
<td>Expanding recruiting channels (online, career fairs, social media, etc.)</td>
</tr>
<tr>
<td>61%</td>
<td>Improving competitiveness of employment package (higher compensation, benefits, etc.)</td>
</tr>
<tr>
<td>56%</td>
<td>Online job boards</td>
</tr>
<tr>
<td>41%</td>
<td>Using a recruitment process outsourcing provider</td>
</tr>
<tr>
<td>33%</td>
<td>Changing perceptions of company or industry via marketing and public relations</td>
</tr>
<tr>
<td>22%</td>
<td>Increasing recruitment efforts across other countries</td>
</tr>
<tr>
<td>18%</td>
<td>Expanding contract recruiting</td>
</tr>
<tr>
<td>7%</td>
<td>Other</td>
</tr>
</tbody>
</table>
Current Strategies

- Targeting T&D plan to individual needs: 76%
- Expanding training and educational instruction available to the workforce: 64%
- Developing alternative career paths or expanding options: 46%
- Developing IT systems for knowledge transfer/management: 43%
- Mentorship for new employees: 36%
- Peer best practices sharing: 29%
Current Strategies

Retention Strategies by Industry

- Improving job quality: 63%
- Developing more flexible work schedules: 45%
- Implementing retention bonuses: 38%
- Offering dual career paths — technical/nontechnical: 34%
- Re-engaging retirees on a non-full-time basis: 23%
- Prolonging time to retirement: 16%
- Rehiring retirees as full-time employees: 14%
Strategic Recommendations
Transforming Challenges to Opportunities
Strategic Recommendations

1. Collaborative Model Establishment

Industry collaboration among peers

- **Talent Sharing:** Retain talents within industry.
- Industry Practices and case sharing (e.g., HSSE).

Industry collaboration with educational institutions

- **Curriculum Design:** Strategically align educational content with professional and managerial applications by incorporating practical and realistic curriculum elements (e.g., field work, visiting instructors, etc...).
2 Strategic HR Focus

- Robust Workforce Planning
- Time to Autonomy Acceleration
- Hiring Standards Leveling for Graduates

- Quality Input Data
- Proactive and Intelligent Planning

- HRD (e.g., Mentorship)
- Collaboration with universities

- Moving away from high-GPA and top school based evaluations to competency based.
Saudi Aramco: Public

Strategic Recommendations

3 Complementary Technologies

- Automation where applicable.
- Eliminate non-productivity due to talent shortage.
- Increase accuracy and minimize errors.
At a global level, supply exceeds demand of graduates.

There is, and will continue to be, a deficit in the number of experienced PTPs (Mid-Career) which requires increasing the pool of talents and improving *Time-To-Autonomy*.

Retaining talents within the industry is critical for long term success (reduce turnover rate in systematic and proactive fashion).

There is a need to work collaboratively at regional level among peers, academia and training institutes.
Thank You