The people behind digitisation: Identifying competencies to make it work

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Employee engagement

“A company’s employees are its greatest asset and your people are your product” – Richard Branson

“People are not your most important asset. The right people are” – Jim Collins, (author of Good to Great)

Employer Focus Areas

- Recruitment
- Succession planning
- Benchmarking of skills
- Retention
Current Climate – Common Issues

Too costly to retain, too old to hire

Retrenchment in Singapore.
• Nearly two-thirds were aged 40 and above
• 71% were professionals, managers, executives and technicians
• Older workers targeted since their skills may be outdated and more costly to employers.

Singapore


Malaysia


400,000 unemployed in M’sia, mostly graduates
May 13, 2015

Minister says 161,000 graduates or 8.8 per cent of youths, aged between 20 and 24 years, had yet to find a job.

The main reason given by the firms for this is that the applicants did not have the required basic skills or the right technical skills needed to carry out the jobs in question.” – World Bank, as quoted in OECD report
Competence Framework - Rationale

- Organisational competitiveness: “our staff are our greatest asset”
- Ensuring the “right” people are in the “right” job – succession planning, recruitment, retention strategy etc
- Provides greater clarity of a role, responsibilities and expectations
- Provides flexibility to organisations
- Developing a life long learning plan
- Keeps an ageing workforce relevant
- Assists with the demand for qualified workers
- Government requirements (in many countries)
Defining Competencies

Consists of underpinning knowledge, skill, behaviour, attitude & ability to successfully perform a task

Identifying what constitutes a “task” is very important as is its work place “context”

- Too broad a scope means it will be difficult to measure effectively
- Too narrow a scope implies too many competences per job and less transferability. This is hard to manage

Effective measurement/evaluation is critical. This is a major pitfall.

- There is little point having competences set that cannot be measured effectively
- How is it measured, what is the benchmark, who is qualified to do the measurement?
Framework for O&G

OCCUPATIONAL ANALYSIS
OIL & GAS INDUSTRY
(identify critical roles)

Extract:
- Competency Areas
- Role requirements

Our focus is currently on
ICT/Security

Look at those competencies in wide demand across industry.
This will keep your staff relevant & be able to transfer roles more easily

Define:
- Grouping of competencies
- Transferable competencies
Measuring Competence

• Welding: Can demonstrate the use of an arc welder
  - (considerations: standards, environment, materials etc)

• Computer Networking: Is able to answer multiple choice questions

• Security: Is able to answer multiple choice questions

• Microsoft®: Is able to answer multiple choice questions

In the 1990s something fast & easy was needed and is still used. Is it adequate now? Is it meeting our needs/measuring effectively?
Methodology

• Start with an area that has transferability across the industry
• “Adapt and Adopt” from other frameworks where appropriate

• Course of Action:
  - Target IT to define skills requirements for digitisation of the Oil & Gas industry
  - Leverage on work already done by the Communications Convergence Professional Society (CCPS)
Example Competency Framework: The Professional Competence Framework (PCF)

Each block of the PCF identifies a competence area. Competence development programs ‘map’ to these and must also develop confidence, analysis & problem-solving skills.

Adopted & adapted by Telecoms industry already. O&G can do the same. E.g. Instrumentation & Control etc.
The PCF is an **enabler** for organisations, educational & training institutes and individuals

Human Resource teams & Technical Teams need to work closely together to manage “people: our greatest asset”

The PCF is a **common language** between HR & technical teams that facilitates this dialogue

Descriptors are the **dictionary**

**Key points:**
1. **Industry support**
2. **Government support**
3. **Working**
4. **Can adapt quickly**
### Name: Information Security Practitioner

**PSF Code:** <TBD>

**Version Number:** v1.0

**Issue date:** 20 February 2014

**Synopsis:** Builds technical competences to enhance the security requirements of an organisation related to computers/devices, services and network security. Personnel will be expected to configure security parameters on equipment, monitor networks, identify and class security risks, review equipment logs, patch equipment and audit the organisation’s equipment and services. The person in this role will bring information security practices and tasks to their day to day work, even if not directly related to security.

**Target Job Roles:**
- Technical staff including: Telecoms Engineers/Technicians, IT Professionals, Datacommunications Engineers, Security Professionals, Software Engineers & Testers

**Industry Segments:**
- Applicable to a range of industry segments including telecoms, ICT, banking & finance, O&G, government, broadcasting, etc.

**Identified competences:**
1. Explain issues related to security
2. Utilise a range of key security tools
3. Protect against malware such as viruses, trojans and social engineering attacks
4. Develop & implement procedures for logging and auditing
5. Perform operating system hardening
6. Implement a VPN, firewall & IDS/IPS solution
7. Identify risks & solutions for wireless/mobile network security
8. Perform security reviews

**Attributes:**

<table>
<thead>
<tr>
<th>Confidence &amp; Self Motivation</th>
<th>Able to use judgement, make decisions and apply solutions with confidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Problem-solving skills</td>
<td>Able to work independently to identify, troubleshoot and solve problems related to information security</td>
</tr>
<tr>
<td>Evaluation skills</td>
<td>Able to evaluate and assess solutions to the design and troubleshooting of information security systems</td>
</tr>
<tr>
<td>Communication skills</td>
<td>Able to perform documentation &amp; construct reports in a structured and coherent manner</td>
</tr>
<tr>
<td>Analysis skills &amp; critical thinking</td>
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</tr>
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</table>
We are working closely with CyberSecurity (MOSTI) and their framework is aligned and will be incorporated into the PCF.
### Example Framework – first cut

#### SWOT Analysis

- **Strengths:**
- **Weaknesses:**
- **Opportunities:**
- **Threats:**

#### Competencies to be defined

<table>
<thead>
<tr>
<th>SUB SECTOR</th>
<th>AREA</th>
<th>JOB AREA</th>
<th>PROFESSIONAL/ SPECIALIST</th>
<th>INTERMEDIATE</th>
<th>FOUNDATION</th>
</tr>
</thead>
</table>

**Note:**
Once competencies are identified, upstream, downstream, etc. can be rearranged to reflect shared/transferable competencies.
## Example Section: Draft of Instrumentation & Control

<table>
<thead>
<tr>
<th></th>
<th>INSTRUMENTATION &amp; CONTROL</th>
<th>ELECTRICAL</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Fabrication</td>
<td>Design</td>
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<tr>
<td>FOUNDATION</td>
<td>tbd</td>
<td>Draughtsman</td>
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<tr>
<td></td>
<td>tbd</td>
<td>Analog &amp; Digital Systems Analysis</td>
</tr>
</tbody>
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Note: this is **draft only**, areas to be further defined

Transferability across areas/disciplines

Each of these would have a descriptor behind it to detail out the required KSAs

MOGSC O&G Competency Framework © Orbitage 2017 slide 14
The Competency Framework: A Common Language

How do I explain requirements without being too techie

I hope he is not too techie
I hope he is strategic

Technology Dept

Learning & Development

Provides a starting point for dialogue

We are on the same page
## IT Framework for Oil & Gas

Adapted from the CCPS PCF
Currently under review across the industry to incorporate and further align to Oil & Gas areas

**A foundation of common, transferable skills allows for movement between disciplines and reskilling of personnel**

<table>
<thead>
<tr>
<th>Certified IP Roadmap</th>
<th>Certified Information Security Roadmap</th>
<th>Certified ICT Roadmap</th>
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</thead>
<tbody>
<tr>
<td><strong>Computer Networking</strong></td>
<td><strong>Practitioner</strong></td>
<td><strong>System Administration</strong></td>
</tr>
<tr>
<td>Practitioner</td>
<td><strong>Management</strong></td>
<td><strong>Virtualization</strong></td>
</tr>
<tr>
<td>Professional</td>
<td></td>
<td><strong>Data Analytics</strong></td>
</tr>
<tr>
<td>Intermediate</td>
<td></td>
<td><strong>IT Mgmt</strong></td>
</tr>
<tr>
<td>Fundamental</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Common, Transferable Skills

- IT data communications and networking
- IT security

IT systems, databases, software development, etc.
Benefits

• **Identifies competencies needed for Digital Transformation within O&G industry**
  - This supports the building of a workforce to meet the challenges presented

• **Provides a framework for skills development**
  - Organisations do not need to build their own
  - Can create a job role mapping from the competencies

• **Identifies transferability of skills across disciplines**
  - Assists with organisational flexibility, succession planning, competency gap analysis, recruitment, etc.
  - Shows lateral movements between disciplines

• **Facilitates clear dialog between HR and technical teams**
  - HR can focus on capability development from a strategic perspective while technical teams have a standard description outlining their competency requirements

• **Competence-based Assessment mapped to framework identifies who can “walk” the “talk”**
  - Provides a mechanism to assess staff capabilities against those competencies required by the job role
Conclusions & Next Steps

• **Break the framework up into ‘sections’**
• **Subject Matter Experts from O&G industry will assist to:**
  - Identify the core competencies required for each job role in the section
  - Identify which competencies can be shared & by which job roles
  - Group the competencies into appropriate areas
  - Map the competencies into the framework
  - Once completed & ratified, develop descriptors defining each competency
Thank You

Many thanks for your time and attention

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