SESSION: How to build local capability content

Balancing the motivations of Industry and University within Partnerships

Pete Smith (RPS Energy)
A Couple of Detours!

- Researcher
- Reservoir Engineer
- Subsurface Manager
- Commercial Director
- Consultant
- Training Advisor
- Institute Director
- Associate Provost
Plan of Talk

- Context
- Example - BPI
- Example - UTT
- Balancing Motivations
- Conclusions
  - Critical Success Factors
  - Lessons Learnt
  - What could we have done differently
• Sovereign nations wish to build local capability content:
  - To build sustainable businesses
  - Create employment for nationals
  - To enhance concept of nationhood

• International Companies wish to help:
  - To build their sustainable business
  - To enhance skilled local workforce
  - To globally diversify and make profits
• Additional focus in hydrocarbon rich nations:
  ➢ Hydrocarbon developments lead to few jobs
  ➢ Creates economic imbalances in currency, employment and society
  ➢ Planning is difficult – like winning the lottery!

• International Companies can help:
  ➢ Social Responsibility
    ➢ Usually not the company’s core business
    ➢ Requires allocated resources – money, people and time
  ➢ Leveraging companies technical skills through educational partnerships is one way
Building partnerships between...

- National Government
- New Institute or National University
- International Oil Company
- International Universities
BPI is a partnership between...

UK
Government

CMI

bp

International Universities
Cambridge University
$40 million endowment to Cambridge over 15 years

Managed by interdisciplinary Committee:
Earth Science, Maths, Engineering, Chemistry, Chem Eng

Faculty Positions + Admin, computing, laboratory staff

+$5 million for new institute building + new laboratories

Long-term, research into challenging problems
Uniquely placed to provide the expertise and breadth needed for the Institute to be effective

Cambridge University has a long history of multi-disciplinary collaboration in research

Cambridge University is well respected across the world and provides a constant stream of people who wish to collaborate in research

Cambridge brings diverse thinking to BP’s Business
Unique Relationship - Cambridge and BP

**Research Expertise**

Inform BP of new and relevant research - new knowledge & innovative processes for industry

DIVERSE THINKING

**Technical Challenges**

Inform academics of technical challenges, operations and field data from within BP/oil industry

FUNDING AND SUPPORT

two-way dialogue
UTT is a partnership between...

Trinidad & Tobago Government

International Universities
- Cambridge University (UK)
- Johns Hopkins Medicine (USA)
- University of Texas (USA)
- UBC (Canada)
- Southampton Solent (UK)
- DTU (Denmark)
- SAIT (Canada)
- University of the West Indies (Trinidad)
Recognition that there is an insufficient supply of technically skilled workforce for the future

Training system was overly complex and fragmented

Shortage of “on-island” opportunities for Tertiary Education
  • Tertiary Education expansion from 10% to 20% of 18 year old population
  • Expansion in line with developed nation status
## Comparison of Manpower Requirements and Output/Year

<table>
<thead>
<tr>
<th>Level</th>
<th>Requirement /Year</th>
<th>Output /Year</th>
<th>Balance /Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Professionals</td>
<td>620</td>
<td>204</td>
<td>- 416</td>
</tr>
<tr>
<td>Engineering Technician</td>
<td>1,310</td>
<td>120</td>
<td>- 1,190</td>
</tr>
<tr>
<td>Skilled Craftsmen &amp; Machine Operators</td>
<td>1,030</td>
<td>500</td>
<td>- 530</td>
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**New Sites**
- W – Wallerfield
- T – Tobago
- OM – O’Meara

**Existing Sites**
- PL – Point Lisas
- C – Chaguaramas
- M – Mayaro
- SF – San Fernando
- JD – John Donaldson
Programme Articulation

World of work

- MSc. M.Eng.
- PhD
- M.Phil.
- B. Eng. Programmes (4.5 Years)
- B.Ed. Programmes (4 years)
- BSc. Programmes (4 years)
- National Engineering Technician Diploma (2.5 years)
- CXC -Cape 2 O” Levels & “A” Levels
- Transition Studies
- Journeyman, Skills Training Craft Programmes

GEOSKILL 2013
University of Trinidad and Tobago:

- Ensures that students develop broad integrated skills that maximize the benefit of new and emerging technologies.

- Undertakes R&D activities that helps T&T develop technologies necessary for national wealth generation and future employment.
Broadening the access to tertiary education for previously underserved groups
Improving vertical and horizontal articulation in seamless national higher education system
Improving effectiveness and efficiency of public tertiary education provision
Improving the quality and relevance of public tertiary education and employability of graduates
Contributing to attainment of 20% tertiary education participation rate
Genuine partnership between Government, Industry and Community
Partnerships have been important to UTT...

- ...they have allowed swift course development
- ...they have also allowed courses and research to be matched to local company requirements
- ...they have allowed a rich new network of colleagues to develop joint R&D projects
- ...they have allowed international companies to be involved in the community and seen to be beneficial stakeholders in the country
- ...they have provided the challenge of continuous improvement by working with the very best international academics
Building Partnerships

1. Existing and future skills need of industry
2. Identify Learning Partner
3. Identify Industrial Sponsor
4. Create linkage
   Define nature of collaboration
   Secure Board Approval
Balancing Motivations

**National Government**

- Insufficient supply of skilled workforce for economic growth
- Training system complex and fragmented
- Hydrocarbon revenue used for expansion of tertiary education
- Large population of 18-25 year olds and insufficient local employment
- Shortage of R&D and new business opportunities

**International Oil Company**

- Insufficient supply of skilled national workforce for future expansion
- Part of the companies social responsibility to the nation
- Window of opportunity where increased revenues - national stability and crime reduction - reducing cost of operations
- Increasing company diversity and potential future leadership
The 1st Petroleum Engineering Master’s
• Critical Success Factors
  – You being there 100% of the time indicates your company’s 100% commitment to the endeavour
  – Get your colleagues to visit - organise workshops, conferences, field trips...
  – Do whatever is needed to get the institution going forward – create your job and remember status is illusory so hand any kudos to others
  – Take your time to understand the culture
• Lessons Learnt
  – The academics don’t necessarily want cash they may just want your companies interest and they want it sustained over a period of years
  – Operate at what ever level is required to move the project forward
  – Don’t forget to remain attached to the Mother Ship
Conclusions

• What could we have done differently
  – More visits of academics into the companies technical groups – more networking increases the chance of establishing valuable collaborations
  – More longer term planning to stabilise the headless chicken syndrome – don’t allow everything to be contingency
  – More outreach into schools and local industry
  – Learn as much as possible about the sensitivities of the local environment and keep learning
....and maybe the greatest challenge?

......how we our perceived!