Recruiting, motivating and retaining young subsurface professionals

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Deepsea Metro I drill ship
Tanzania

Safety moment

Deepwater drilling

- *Deep Sea Metro I* drillship
- Drilling kilometres-deep wells in water depths >2km
- Within 100km of the continent-ocean boundary at ‘the edge of the world’, the last intellectual frontier in the plate tectonic cycle?
- Salt... Gondwanaland volcanics...exquisitely imaged channel features... fluid pressures 15,000psi
- We work in an extraordinarily ‘can do’ industry representing one of the pinnacles of human engineering and technological achievement
- Are aspiring youngsters aware of the opportunities available to them from an oil & gas career?
- Have we become blasé about communicating what we do?

Recruiting, motivating and retaining subsurface professionals

- What are the main challenges we face?
- What should we be doing better as an industry?
- What is BG Group doing?

My biog.

- Structural geology PhD
- 5 years Shell, LASMO
- 15 years academic
- 4 years BG Group
- 3.5 years in specialist team
- Currently Geology Deputy Head focusing on International Graduate Programme, Subject Matter Experts, Technology Programme

Demographic gap

Geoscience and reservoir engineering will be hit hardest
Oil & Gas IQ: from a survey of 67,000 members

Little overall growth over 20-year period

Maintain steadier recruitment programme

Listening to female geoscience professionals

- BG Group's IGDP intake ~50:50 female:male but that ratio tails off into more senior grades
- We need to better understand the reasons for this decline in our ability to retain women – lifestyle choices?
- Do we need to make flexible working arrangements more attractive?

How do we encourage students to choose *STEM* subjects?

- Perceived drop in the standard of maths and physics at both GCSE and A-level
- Ensure that industry projects allow an element of investigation
- Encourage team-working from an early stage with balanced teams
- Engage in the big societal debates e.g. environment, energy security = choices

Fluid pressure, landslides, earthquakes and an empty Coke can... school children love destruction & disaster!

- Need greater awareness of application of STEM subjects in schools
 - Start young, pre-GCSE choices
 - Assist teachers to demonstrate relevance
 - Promote more schools fieldwork, better engagement with ESTA
- GSL's online Plate Tectonics module (KS3) funded by Centrica – we can do more!
- Make maths & sciences relevant
 - Put the science and maths together
 - Demonstrate that science is creative, solving puzzles/problems not just following rules
 - 'Fuzziness' of geology (incompleteness of stratigraphic record, remoteness of subsurface) can be very appealing to the most full-bore maths & physics grads
- Engage graduates in industry with school and undergraduate programs, they are STEM's most effective ambassadors

Pinnacles of technology

- Geosteering, extended-reach drilling
- Seismic imaging
- Logistics of seismic operations
- Computer resources (seismic processing is up there with climate modelling, defence)
- Software tools e.g. 3D visualization

Decline of MScs

- Are would-be oil & gas recruits being put off by perceived burden of further debt?
- UK government funding largely withdrawn from (geoscience) MScs
- Industry needs to join with GSL, CHUGD, PESGB, etc. to present our case
- But... departments should be leveraging more research income from their industry links through MScs
- Industry can provide more data for research and teaching

Source: Univ. Manchester

BG working with the academic sector

- International graduates sponsored through MScs
- University-based centres of excellence e.g. coal seam gas hub, UQ
- Develop overseas-based MScs e.g. carbonate sedimentology, UFRJ
- MSc scholarships, host interns on 'live' summer projects
- Engage with MSc programme management
- CNPq Science Without Borders Fellowship Programme – 450 Brazilian PhDs to be funded over 8 years

BG Group's International Graduate Development Programme

- 2 years, 3-4 placements on 'live' projects – expl. and dev., conventional & unconv., one overseas, one geological operations in the Integrated Collaborative Environment including offshore work
- UK-based and overseas have an identical programme
- Strong parenting, open dialogue
- Encouraged to share work and lessons learned
- Early Career Professional Network endorsed and well-funded
- 20-30 days training p.a.
- STEM participation is actively encouraged
- Strong networks and lasting friendships
- 30% of current geoscientist population have come through IGDP in last 10 years

Geological Society CGeol

- Professional recognition/affiliation is attractive to grads and early-career geoscientists
- Promotes better record-keeping among candidate CGeols
- Develops better mentoring skills across the G&G function
- Stronger collaboration & networking behaviours
- Forges stronger links between oil & gas industry and GSL
- Independent accreditation & recognition of BG Group training quality

Depth vs. breadth in geoscience careers

BG GROUP

We can accommodate a broad range of career aspirations

PhDs

- Where relevant use the expertise acquired by geoscience PhDs for a few years in their specialist area
- New-hire PhDs are empowered by the company's recognition of their specialist expertise and the opportunity it presents them to raise their profile through becoming an acknowledged expert, part of a Subject Matter Expert network, etc.

Technology and research

- Use early-career professionals as a prime source of ideas for technology projects
- Integrate technology as seamlessly as possible with asset geoscience
 - Use 'sandpits' as ideas factories
 - Regular updates on progress with technology projects
 - Make technology relevant to asset needs
 - Remove bureaucratic barriers to getting involved in technology
- Provide opportunities for grads to include Technology placements in their structured programme
- Offer short-term 'secondments' in Technology centre for more experienced asset geoscientists

Subject Matter Experts

- Responsible for improving technical quality and maintaining a 'buzz' in their specialist area
- Leveraging knowledge, retaining skills
- 12 SMEs appointed across Geology, overall scheme run by DCG
- 10% of SMEs' time comprising i) peer assists , ii) development & maintenance of internal websites providing a range of specialist resources e.g. JIPs access details and results, forthcoming conferences/conference reports, latest papers, internal projects in SME specialist area, etc.
- I am Fractures & Geomechanics SME, some other SMEs are only 4 years post-IGDP

Geoscience is at the heart of our business

- Geoscience skills are highly valued - drilling is the ultimate test of an hypothesis - new hires can make significant contributions to decisions worth \$100s millions
- Geoscience training gives an intuitive understanding of risk & uncertainty
- Especially fieldwork because of aspects of scale & scalability, heterogeneity, three-dimensionality, etc. – fieldwork is not a ‘jolly’!
- Do we need to embed concepts of risk & uncertainty in MSc programmes?

Onboard the Deepsea Metro I drillship
Offshore Tanzania

In summary...

- Work with schools to arrest the decline in STEM subjects – get school children excited by science & technology
- Work with universities, especially to further strengthen vocational MScs and to resist the decline in Masters funding
- Better understand peoples' aspirations and that there is no single motivating factor e.g. travel may be a motivator or a barrier, depth vs. breadth, salary, training
- Clear but flexible career paths balancing technical and managerial opportunities, retain adaptability as people develop
- Create opportunities to make significant decisions early in careers
- Ensure the latest technology is available to early-career geoscientists
- Keep in touch through appropriate media...

Utilize social networking

<http://www.flickr.com/photos/bgggroup>

<http://twitter.com/BGGroup>

<http://www.youtube.com/bgggroupofficial>