KUALA LUMPUR 2012 WORLD GAS CONFERENCE

IGU

25th world gas conference

"Gas: Sustaining Future Global Growth"

The talent pipeline, the Oil and Gas Industry and new media

By: Michael Kahn, Research & Innovation Associates

5 June 2012

Level 1 Plenary Theatre

Patron

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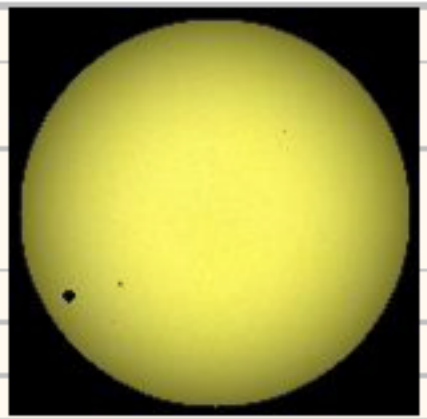
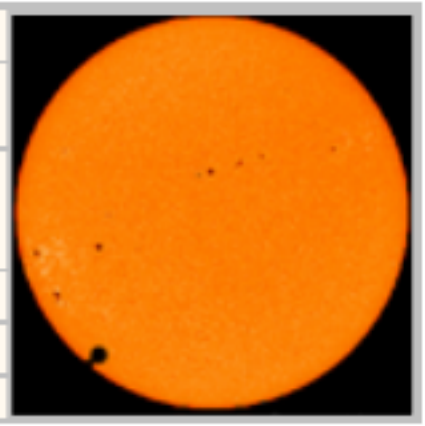
TRANSIT OF VENUS IN MALAYSIA
WEDNESDAY 6 JUNE 2012

TIME	PHASES OF THE EVENT
07h 03m 37s	Transit of Venus at Sunrise Magnitude: 3.1% - Obscuration: 0.1%
09h 32m 36s	Maximum Transit of Venus Magnitude: 3.05% - Obscuration: 0.09% Duration of Transit of Venus: 5h 46m
12h 31m 51s	Umbra Transit of Venus ends
12h 49m 17s	Transit of Venus ends



Maximum Transit in KUALA LUMPUR



"Black Drop Effect"

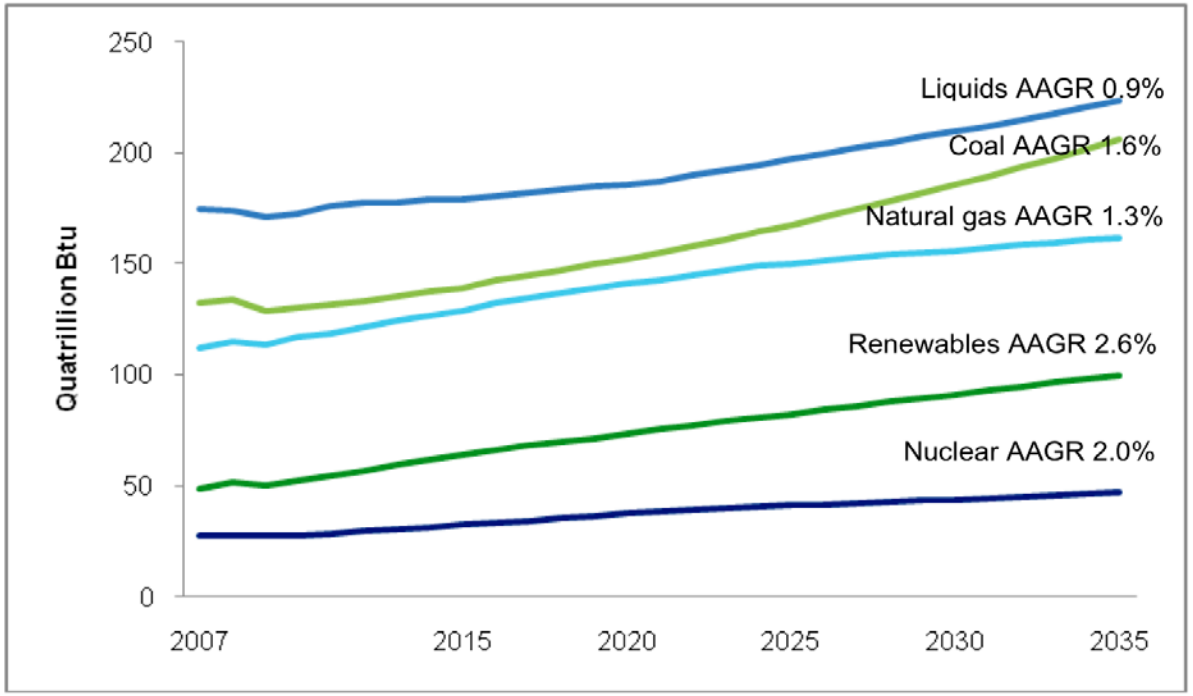
* Times are shown as LOCAL TIME

Context: a changing & connected world

- The emergence of the global OGI is synchronous with the **4th Great Technology Surge** (Chemical/ICE) from the late 19th century
- The **5th Great Technology Surge** (ICT) intensifies:
  - Globalization & the connected world: 80% will be on mobiles; 60% wired
  - In the North: services dominate GDP
  - In the South: the rise of liberation technology
- Doha trade round stutters, inequalities grow, MDGs elusive
- Population decline in the old core; mobility for survival
- The rise of the BRICS: shifting balances
- The **6th Great Technology Surge –** Biotechnology & Nanotechology accelerates

OGI growth and new technology

Figure 3.16 Projection of global demand for energy by sources

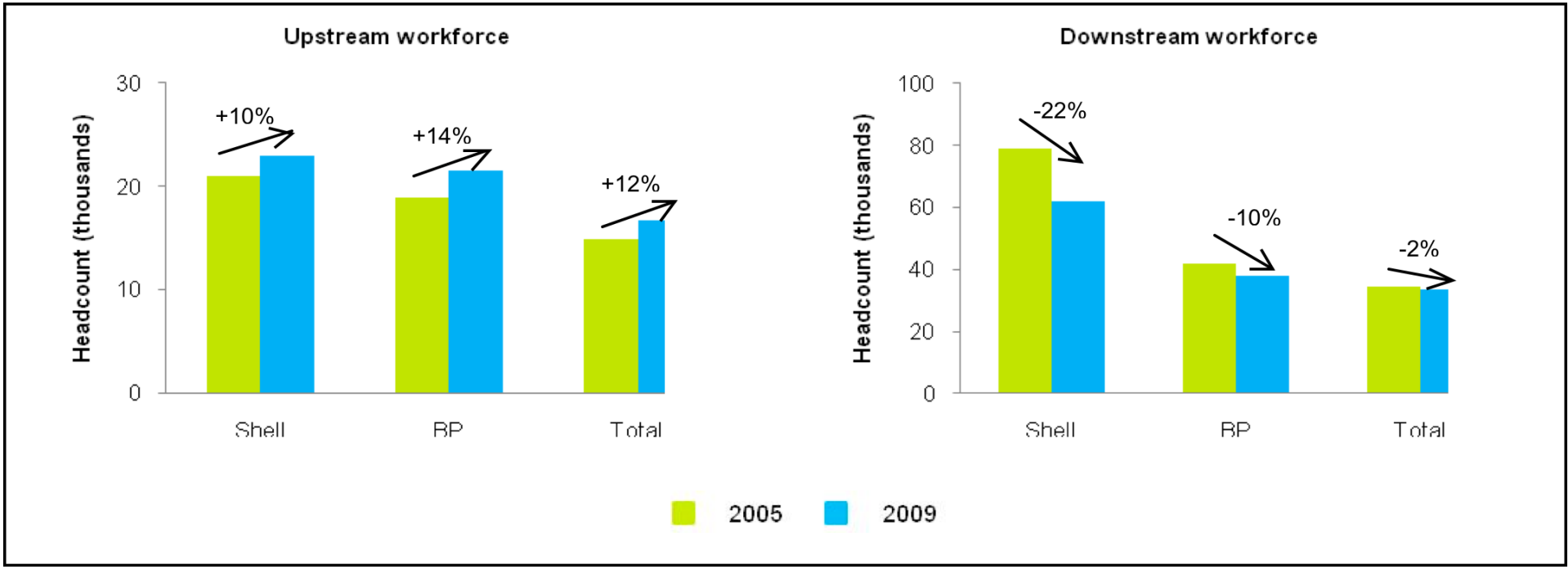


Source: *U.S. Energy Information Administration (2010).*

- Demand for O&G products:
  - **technological frontier challenge**: deep water sources, shale beds, tar sands, coal bed methane, coal to liquid, geo-engineering (managing atmospheric brown clouds) etc
  - **Climate change and environmental sustainability challenge**

OGI HR projections

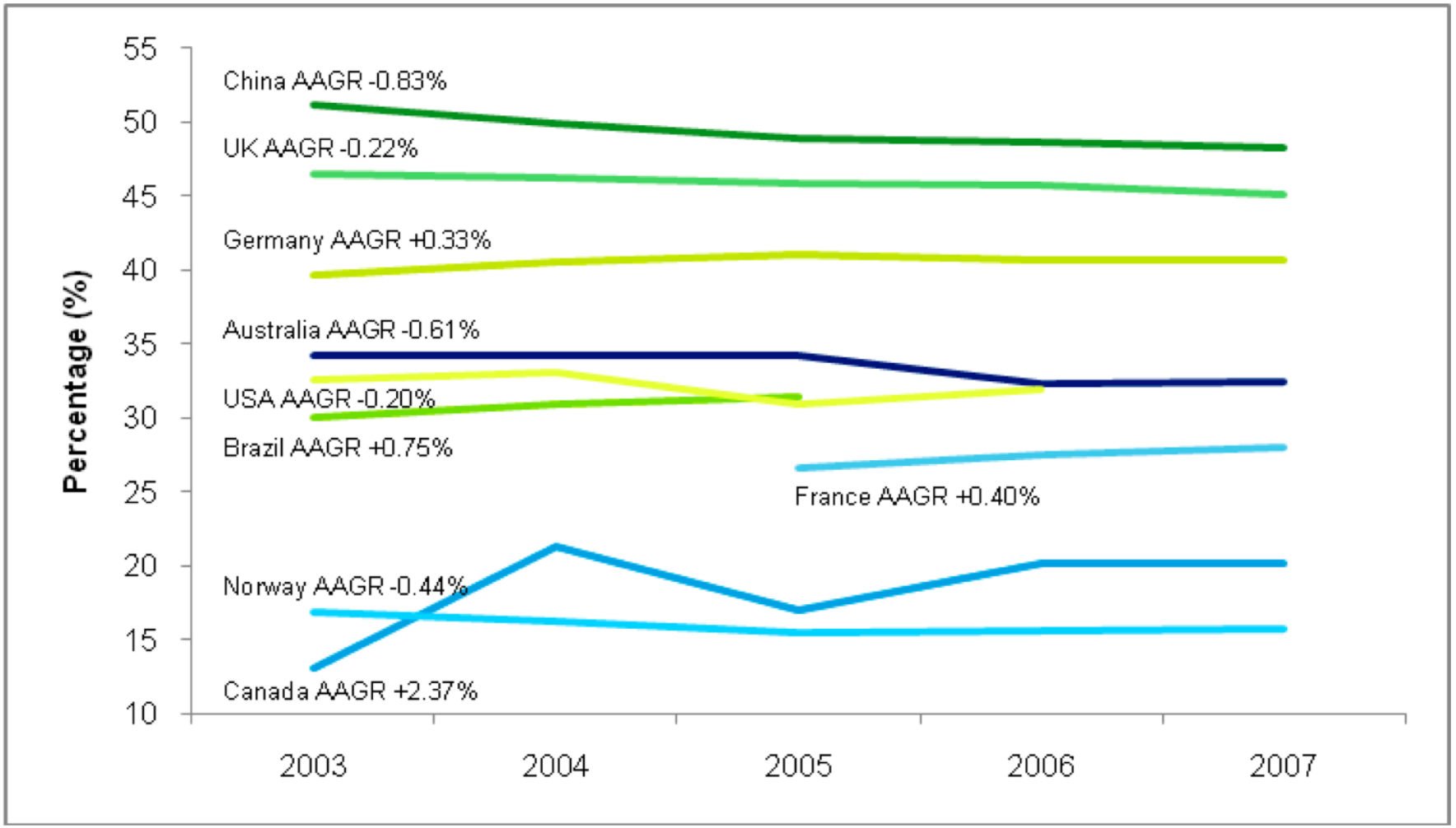
Figure 3.18 Hiring patterns by major industry players



Source: *Shell Annual Report (2009); BP Annual Report (2009); Total Annual Report (2009).*

STEM Enrolment

Figure 3.13 Percentage of STEM enrolment from total enrolment, by country: 2003-2007

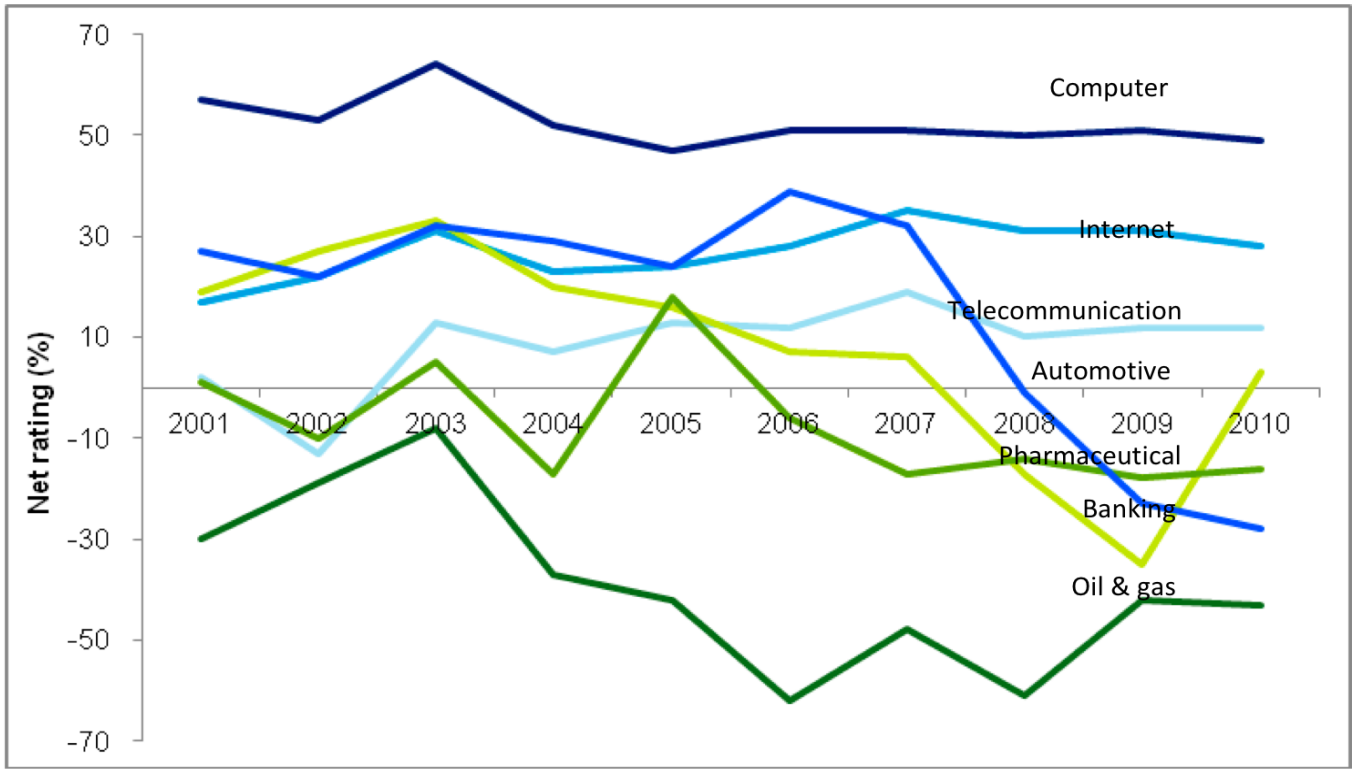


TALENT central to OGI growth and sustainability

- Changing **values & expectations** in the workforce
  - Baby Boomers
  - Generation X
  - Generation Y
  - Generation Z or is it “I” or “C” ?
- Varies enormously within and across countries
- **Personal freedoms** of association, domicile, media access – imply increased choice – “I Twitter, therefore I am”
- After China comes India; after India comes Africa (2 billion youthful population by 2050) or is it the near East?

Attraction requires a hard look at the issue of TRUST

Figure 3.20 Select net industry ratings, 2001 - 2010



Source: *Gallup Annual Work and Education Poll (2010).*

Our focus is on TALENT

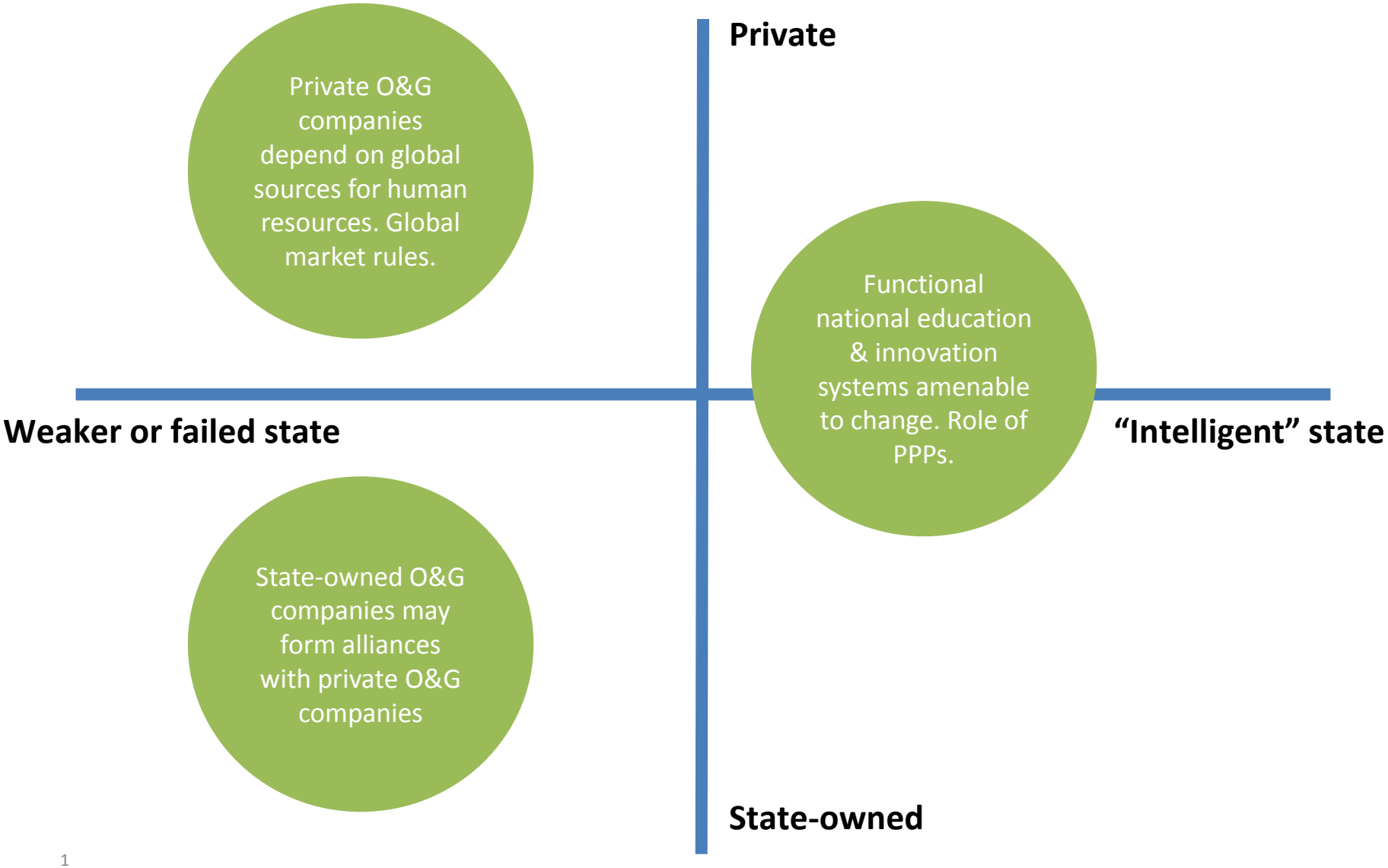
- Difficulty finding, training and retaining **well-qualified science teachers**
- **Lack of resources** devoted to science and science education globally
- **Curricula** that do not generally reflect new and emerging ways of doing science
- Perceived **lack of relevancy** of modern science curricula resulting in student disengagement
- Public **misconceptions** of science and science careers
- "There is a mismatch of science as it is taught in schools and how science exists in the re world."

Sources:

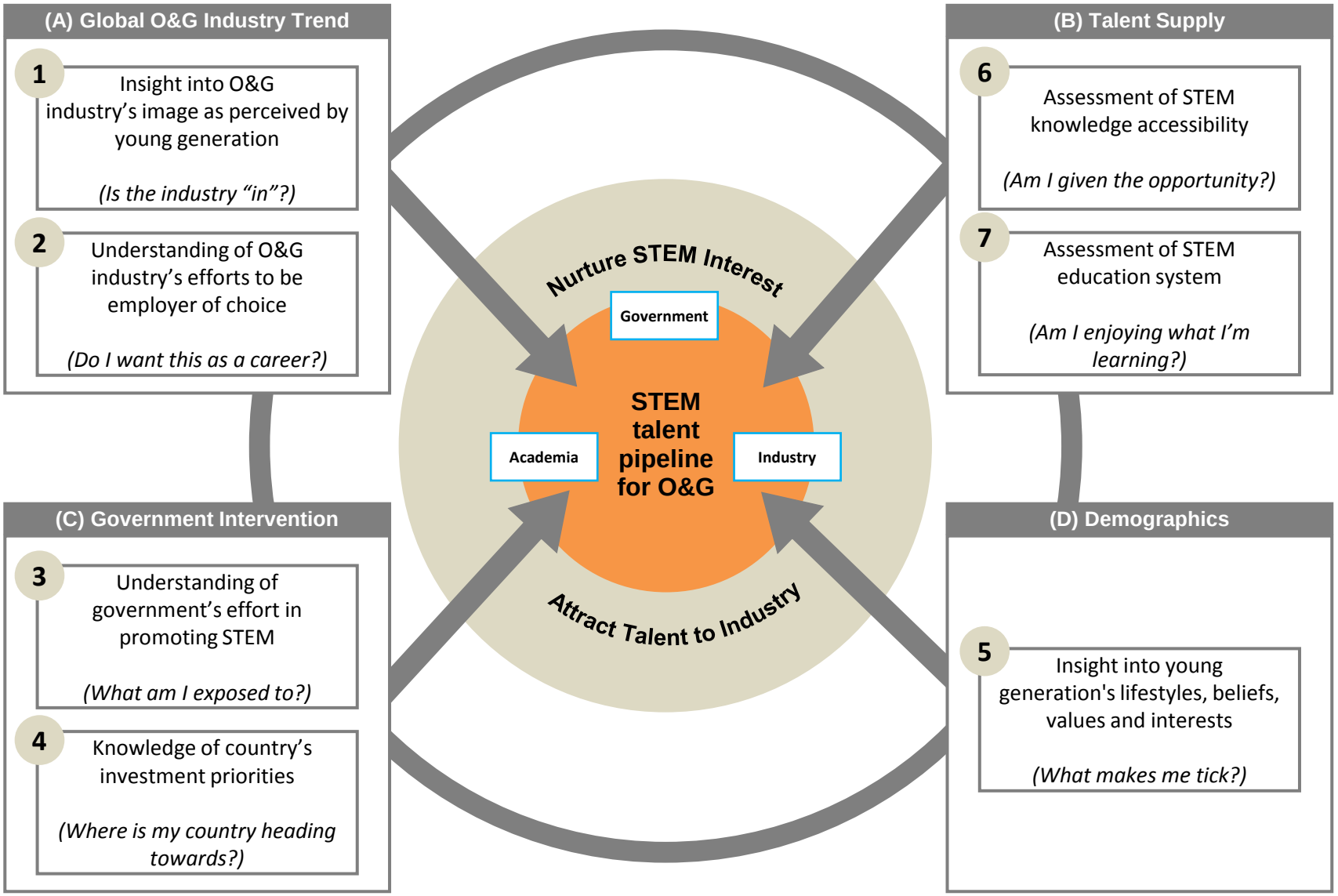
Tytler, R. (2007). Re-imagining Science Education: Engaging students in science for Australia's future. ACER Press.

Perth Declaration on science and technology education

HR strategies for O&G industry players

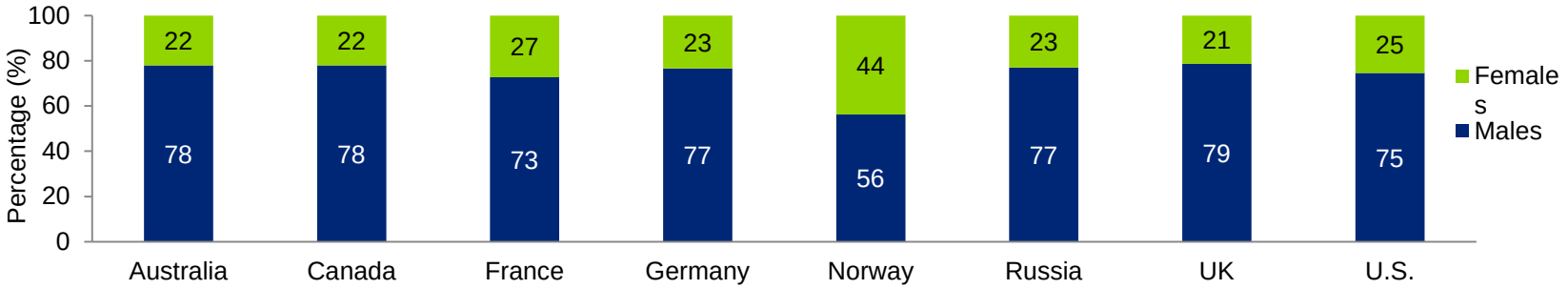


Our framework for analysis and strategy generation



Contextual force #1: Demographics

- Low participation rate from young generations
- Unbalanced gender distribution



- Some O&G companies have implemented initiatives which target the young generations
- The O&G industry is lacking in initiatives to attract women
- The emergence of a new generation has brought with it new career selection criteria and learning styles
- Women have negative perceptions and lose interest in STEM industries due to family obligations, biases and discriminations, lack of mentoring opportunities and role models

Contextual force #2: Talent supply

- STEM enrolment at the **tertiary level** has been **stagnant**
- **Secondary level** STEM education is the **critical stage** where students' positive attitude towards science decreases
- The **gap between skills demanded by employers and skills acquired** by STEM graduates is widening
- Many countries have **revised their secondary STEM teaching methods** to be more student centric
- Tertiary education institutions implement **various initiatives to attract and retain** STEM talent
- The academia sector has also taken actions to **enhance the employability skills** of STEM graduates through programmes
- There is a need to address **students' negative perceptions** towards STEM subjects and career prospects, especially at secondary school level.
- Quality of tertiary **STEM education needs to be more career-relevant** to bridge the skill gap which persists between the talent supply and industry demand.

Contextual force #3: Global O&G industry trend

- Global **O&G industry outlook is positive** as the energy demand projected to increase
- The focus of the industry has **shifted towards E&P** activities
- The industry usually viewed negatively as **environmentally unfriendly** and **hazardous**
- O&G companies have **undertaken CSR initiatives** to promote environmental and social well being – most of which are negatively perceived by the public
- Companies efforts to be **"employer of choice"** by improving compensation and benefits, providing career development opportunities and conducive work culture
- The industry has **organised awareness and support programmes** with the objective to enlarge the pool of potential candidates
- O&G companies have started to **utilise social media** to reach out to the young generations
- The **persistent negative industry image** needs to be addressed
- The industry needs to make its **CSR investments transparent to the public**
- Poor **work-life balance** as perceived by a significant portion of employees in the industry needs to be addressed to attract the younger generation and women

Contextual force #4: Government intervention

- Governments can influence a country's future STEM direction by **raising it as a national agenda**
- They can also act as **catalysts for the public and private partnerships**
- Governments have established **national STEM plans**, with the following three focus:
  - **Stimulate industry growth**: provide financial incentives (tax reliefs and grants) and business support (business incubators and technology parks)
  - **Develop human capital**: raise public STEM awareness, enhance STEM education and create favourable work environment
  - **Foster strategic partnerships**: establish PPP's
- More **coordinated initiatives** between key stakeholders are essential to improve the quality and quantity of STEM workforce
- The **education system** needs to be addressed to produce STEM graduates with skills which are more relevant to the industry

What does this all mean?

Premise	Implications
1. Having grown up in the digital world, Gen –Y and –Z are comfortable with and even **dependent on technology**	1. **Technology** plays a significant part in engaging Gen –Y and –Z
2. The emergence of social media and virtual communities has led to a more **connected and collaborative** generation	2. **Global connectivity** has changed the way Gen –Y and –Z communicate and interact
3. Young generation is **influenced by pop culture** which is ingrained deeply into the society via mass media	3. **Pop culture** is a way of life which influences Gen –Y and –Z's thinking
4. Gen –Y and –Z look for **sense of purpose and meaning** in personal lives and jobs due to their desire to have a positive impact on the world	4. The extent to which organisations project themselves as **contributors to society** is a strong magnet to attract talent

What does this all mean?

Premise	Implications
5. **Negative view** of STEM professions as boring and eccentric is **more evident in developed economies** than developing ones	5. Efforts to reposition STEM industries as exciting are needed more critically in **developed countries**
6. Secondary level education, also recognised as the "**formative years**" of a child, is when students' positive inclination towards science decreases	6. Focus should be placed on students between **13 to 17 years old** to retain their interest in STEM
7. **More women** are getting access to quality education and are outperforming men	7. **Women** are significant talents that need to be fully tapped into

With Gas, the glass is half full!