Globo sapiens or McGraduates? Engineers as a civilising influence

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Session 3, Room 403-401
Mud map

• Engineers’ roles increasingly complex
• More than globally portable, or competent
  – Globo sapiens
• Reassessing engineering education / image
  – 2008 ACED report
  – *Getting The Job Done* special advertising report 2008
For further information...
Methodology: Causal Layered Analysis

- Litany
- Systemic Causes
- Discourse / Worldview
- Myth / Metaphor
ACED Report: *The Supply And Quality Of Engineering Graduates For The New Century*

- **Litany**
  - Lack of quality and lack of engineers

- **Systemic Causes**
  - Skills shortages, insufficient preparation, student attitudes and culture; international and mobility issues; engineering culture; graduate outcomes

- **Discourse / worldview**
  - 2008 ‘respond to the market’ vs proactive ‘changing the culture’ (1996)

- **Myth / metaphor**
  - Planet is a no-limit market place: Engineers make it, sell it, fix it. ‘Business-as-usual’ future

*Australian College of Engineering Deans: (Johnston, A., King, R., Bradley, A., & O’Kane, M. (2008).*
Example 1: curriculum inclusivity

- Lack of change: Content and methodology
- Diversity up, not females or Indigenous students
- Mantras aren’t enough
  - Active spaces
  - Professional development
- ‘Loud’ resistance -> ‘resistings’
Example 2: ‘soft’ skills

- Improving, “business” writing still poor
- Lack of research, how to assess?
- How to teach them?
  - Research
  - ‘soft’, ‘fuzzy’ language ‘inhibits’ and ‘undermines’ change(ACED)
  - Engineering engineers? Or metacritical qualities
  - Leaders, who?, includes the media
Special Advertising Report

- Litany
  - Get the job done, ride the resources boom, deliver the complete package

- Systemic Causes
  - Resources boom, shortage of engineers, new wave of infrastructure spending, developing national markets

- Discourse/worldview
  - Ride the boom, colonialism - boys’ own adventures, business as usual future, techno-fix; wanting to make a difference

- Myth/metaphor
  - Planet as open-cut mine; engineers are well-paid cogs in the boom machine; consume now, pay later
“immense appetite for engineers”

“world’s appetite for commodities shows no sign of slowing”

“race to the sky, ASAP”

“make hay while the sun shines”

“women still have a way to go”

“the complete package”

“Young guns make a difference”
Forget something?

- **Breakdown** – the discourse that dare not speak its name
  - *Limits to Growth* revisited (Turner, 2008)
    - What roles would engineers have to play?
    - How prepared are they to respond to large-scale breakdown scenarios?
    - Is engineering education preparing graduates with the skills and attributes they will need?
Wanting to make a difference

- Alternative discourse: muted
- Reassess values
- ‘Breakdown’ or ‘break-through’
- *Engineering “stuck”*
- *Multiple hurdles*
a new story

Globo sapiens
Leadership
Courage