Elements of Successful GCSP Programs

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Why? How? Q&A



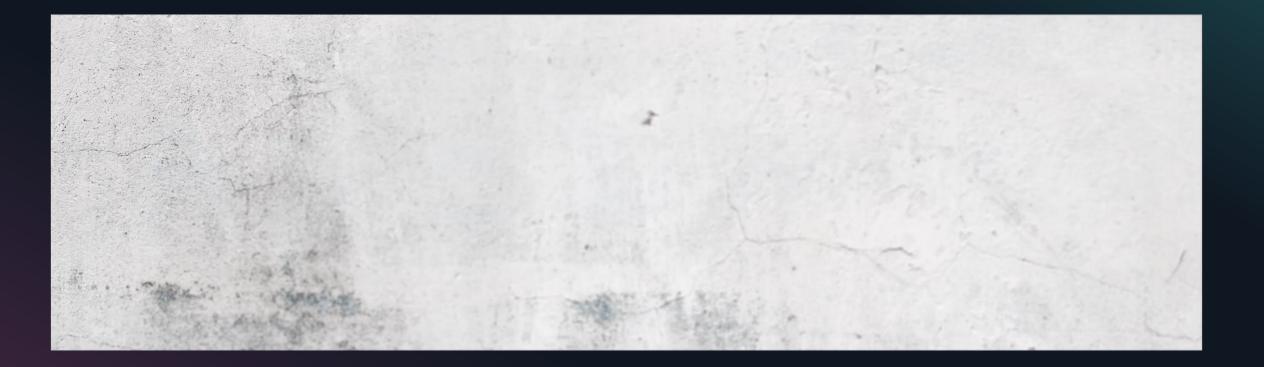
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THE WORLD TODAY

many problems, many opportunities

the world today



https://www.youtube.com/watch?v=p50OWLS4WBY&sns=em

Volatile Unrest Complex Ambiguous

Source: Dr. Bob Johansen, President and CEO of the Institute for the Future

a highly competitive world

This is the top 30 of the 2017–2018 report:^[10]

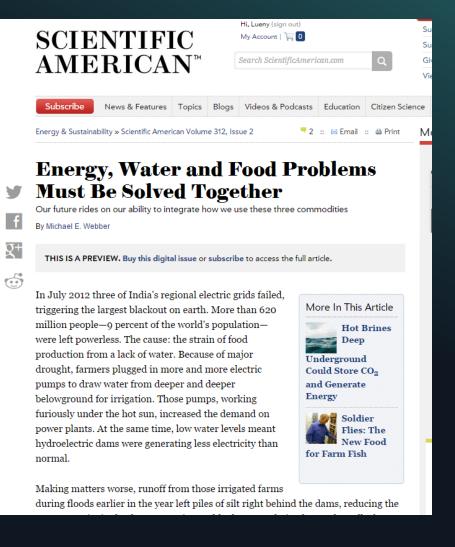
- 1. 🛨 Switzerland 5.86 (—)
- 2. United States 5.85 (+1)
- 3. Singapore 5.71 (-1)
- 4. ____ Netherlands 5.66 (---)
- 5. Germany 5.65 (—)
- 6. \star Hong Kong 5.53 (+3)
- 7. Sweden 5.52 (-1)
- 8. ₩ United Kingdom 5.51 (-1)
- 9. Japan 5.49 (-1)
- 10. 🛨 Finland 5.49 (—)

11. **Norway** 5.40 (—) 21. **Australia** 5.19 (+1) 12. Denmark 5.39 (—) 22. France 5.18 (-1) 13. **New Zealand 5.37 (—)** 23. Malaysia 5.17 (+2) 14. **Canada** 5.35 (+1) 24. **I** Ireland 5.16 (-1) 15. **Taiwan** 5.33 (-1) 25. Qatar 5.11 (-7) 16. 幸 Israel 5.31 (+8) 26. South Korea 5.07 (—) 17. United Arab Emirates 5.30 (-1) China 5.00 (+1) 27. 18. Austria 5.25 (+1) 28. Leeland 4.99 (-1) 19. <u>Luxembourg 5.23 (+1)</u> Estonia 4.85 (+1) 29. 20. Belgium 5.23 (-3) Saudi Arabia 4.83 (-1) 30.

¿Dónde está América Latina?

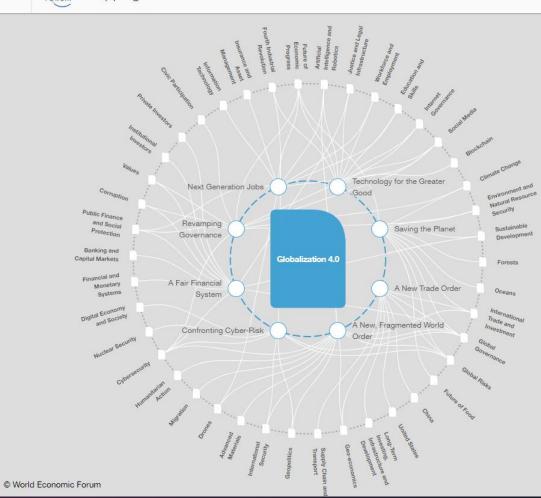
http://www3.weforum.org/docs/GCR2017-2018/05FullReport/TheGlobalCompetitivenessReport2017%E2%80%932018.pdf

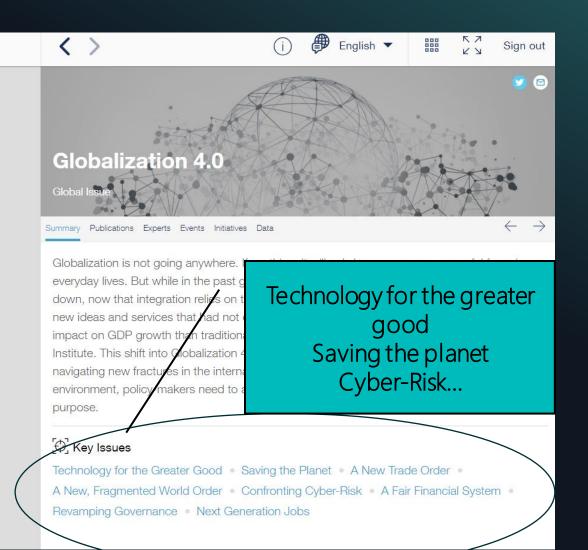
...with global challenges & opportunities that are multidisciplinary & that will take multiple technologies & stakeholders to solve



...entering globalization 4.0

ECONOMIC Mapping Global Transformations





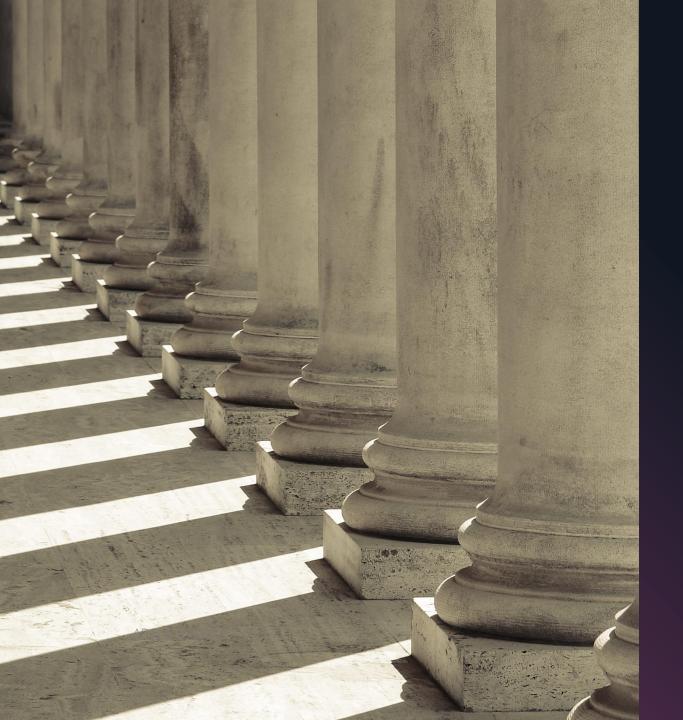
Engineers are key not only in solving local/global problems, but also in knowledge creation/transfer & new business creation An engineer is many things — a leader, a mentor, a dedicated problem solver, an innovator, a global citizen.



- a locally pertinent but globally competent professional

IN ENGINEERING – SKILLS, ATTITUDES & VALUES ARE CRITICAL

It's not what you know... but what you can do with what you know!



THE UNIVERSITY TODAY

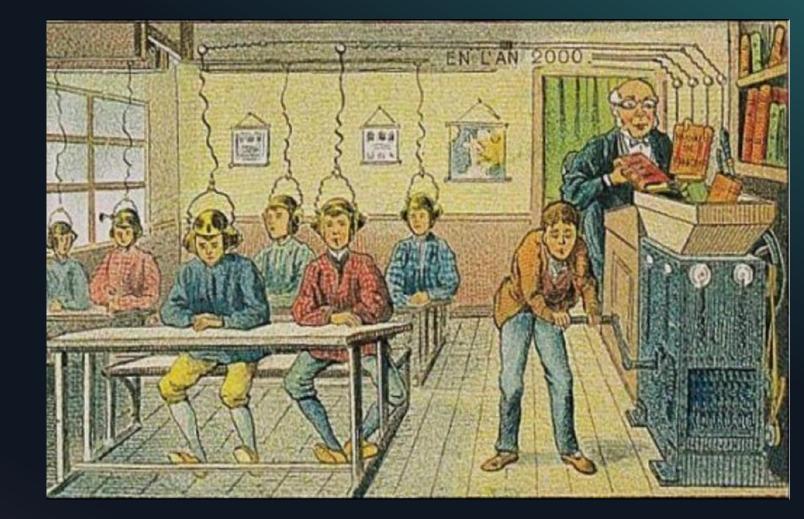
We have forgotten our role in society and become very selfish

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"The aim of education must be the training of independently acting and thinking individuals who, however, see in the service to the community their highest life achievement."

- Einstein

But we are teaching 21st century students with 20th century curricula in 18th century classrooms





how can we educate a new breed of engineer?

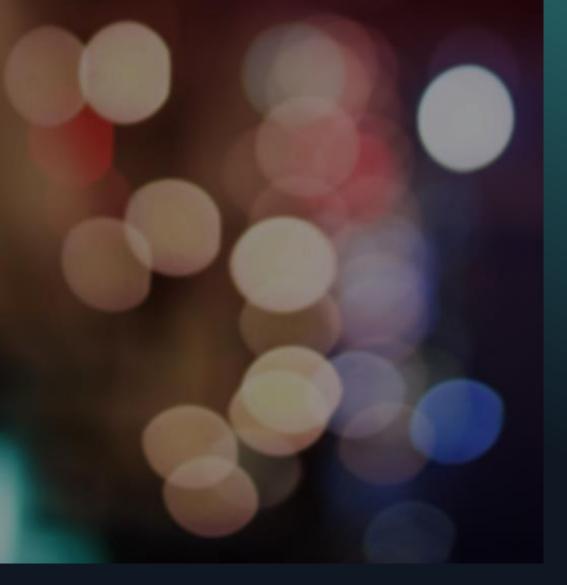
diverse, interdisciplinary, & all flavors of creative.

a locally relevant but globally competitive engineer



SOME BIG PICTURE

- 1. Re-visit & balance the mission of the university to serve society (educate, create, serve)
- 2. Innovate the curriculum AND the learning experience (competency/need based, backwards design, stakeholder involvement) and focus on learning (not on teaching)
- 3. Develop an R&D + I + e portfolio (local & global areas)
- 4. Develop a culture of innovation across the university to be a model to society (CQI, int'l accreditation)
- 5. Reconsider the "business model" (inclusive, international, efficient, effective, accessible, affordable i²e²a²)



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If you decide to implement a Grand Challenges Scholar Program...

Preparing a generation to tackle the Global Grand Challenges of Engineering for the 21st Century

e the Grand Challenges

http://www.engineeringchallenges.org/GrandChallengeScholarsProgram.aspx for the 21st Century

Elements for a Successful GCSP Program

- Start with a small team of motivated leader
- Institutional alignment
- Institutional support
- GCSP leader competencies
- Industry engagement
- Locally/globally themes
- Leverage activities already in place (research, courses, etc.)
- Continuous assessment

"The ones who are crazy enough to think they can change the world are the ones who do." - Steve Jobs

