

Grand Challenges

Innovation Seminar

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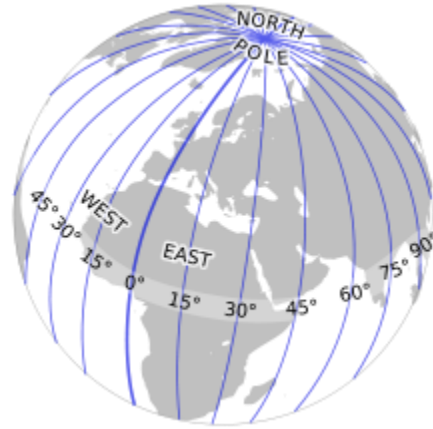
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Outline

- Historical context
- Motivation
 - International examples
- Grand challenges for Ireland
 - Disruptive Technologies Innovation Fund
- The story so far.....

History




- Longitude Prize – instituted 1714
 - Motivated by maritime disasters
 - Graduated awards, depending on accuracy of solution
 - £20,000 for accuracy to within 30'
 - Many winners. John Harrison awarded £23,000 over 36 years
 - Over £100,000 awarded up to 1828

Motivation

- Solve real problems
- Encourage collaboration
 - Across scientific domains
 - Public and private
 - Science, engineering and the humanities
- Demonstrate the value of science
 - Science at the core of economic and societal development

Process



- Inducement Prize Contest
 - DARPA Grand Challenge (autonomous vehicles)
 - Ansari X prize (re-usable spacecraft)
 - Wolfskehl Prize (Fermat's Last Theorem)
- Funded 
 - Global Grand Challenges (B&M Gates Foundation)
 - Danish Inno+
- Hybrid
 - Nesta (UK)

Inno+ Program (Denmark)

- Focus area relates to a significant, and preferably global, societal challenge or opportunity that may prove a driving force for growth in Denmark.
- “Public innovation” in the broadest sense i.e encompasses
 - Innovation policy instruments
 - Public regulation,
 - Public procurement
 - Publicly funded research
- Must build on strengths (academic and industrial).
- Must involve collaboration between companies, knowledge institutions and public authorities – and include international collaboration to a relevant degree.

Inno+ Example (Shipping)

- The CO₂ emission per transported unit is to be reduced by at least 30 per cent in relation to the 2008-level. The figure is a minimum target, as the aim is to achieve a CO₂ reduction of up to 50 per cent.
- The NO_x and SO₂ emission level is to be reduced by 80 per cent in relation to the current standard .
- The noise produced by ship propellers is to be reduced by 3 dB in relation to the current standard.

Grand Challenges and Ireland

(AmCham perspective)

- 2015 policy paper “Ireland’s Innovation Pathway to 2025”
 - One of the levers to raise investment in research
- Seminar Jan 2017 (featuring Danish Inno+ program)
- Paper, 2017 “Establishing a Grand Innovation Challenge Process for Ireland”
 - Unlock new sources of funding
 - Foster collaboration
 - Increase public engagement
 - Solve real problems - Ireland as the lab, but with global impact
- SFI-hosted workshop Jul 2018
 - Explore interest in program
 - Construct some example challenges

Getting Real - DTIF

Project Ireland 2040
National Planning Framework

- DBEI Initiative – Disruptive Technologies Innovation Fund
- Built into National Development Plan
 - Future Jobs Initiative
 - Total €500m
- First awards announced Dec 2018
- 27 projects €75m (over 3 years)
- Admin support from Enterprise Ireland

DTIF1 – Some examples

- Advanced Environmental Decision Support System for Coastal Areas
- Cooperative Energy Trading System
- E-BAMBI: 3-D printing to develop biomedical implants
- Disruptive gene therapy platform replacing viruses in the treatment of genetic conditions
- Blockchain in the Technology Product Supply Chain

DTIF2

- Alter markets and/or the way business operates
- Create new products or develop new business models.
- Ideally, looking for projects that can demonstrate commercial impact within 3 to 5 years of completion
- Minimum €1.5m over 3 years
- Minimum 3 partners, one SME, one other enterprise
- RPO 100%, Enterprise 50% of costs (RPO max total 50% of budget)
- Align with (14) research priorities

For discussion

- How Grand should a Challenge be?
 - Balance between feasibility and ambition
- How to ensure that program is distinctive ?
 - Not just another funding stream for established research groups
 - Foster new collaborations (leveraging existing expertise)
- What does an Irish grand challenge look like ?
 - Must have global impact to attract commercial interest (esp MNCs)
 - Must be a problem space which is particularly relevant to Ireland