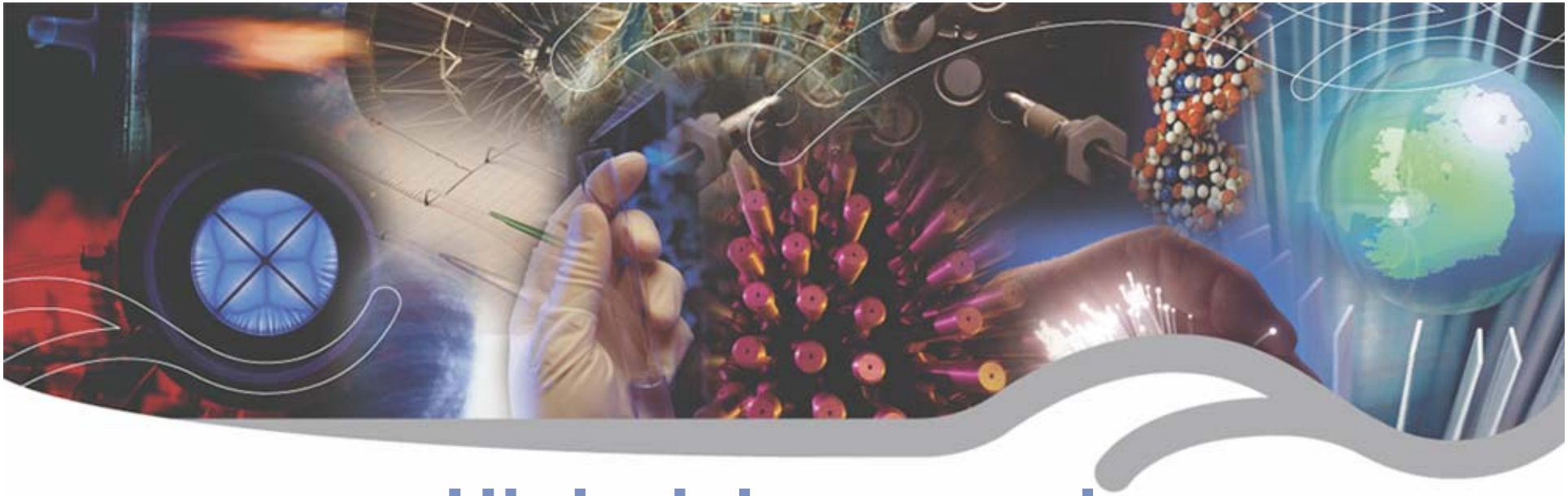


High risk research

an SFI perspective

Dr. Stephen Flinter, ICT Programme Officer

science foundation ireland
fondúireacht eolaíochta éireann

The National Foundation for Excellence in Scientific Research

science foundation ireland

fondúireacht eolaíochta éireann

About SFI

- Irish Government science funding agency
- Started in 2000
- Statutory body in 2003
- Three main directorates:
  - Information and Communication Technologies
  - BioScience and BioEngineering
  - Frontiers Engineering and Science

A sea change…

- Before SFI:

- Low levels of national funding
- Broadly (thinly) spread
- Hence, small projects
- Enterprise Ireland funding -> very applied

A sea change…

- Since SFI:

- High levels of funding
  - > €3b|n up to 2010
  - €150m in 2006 -> €200 by 2010
- Concentrated in ICT & BioT (~80%)
- Small numbers of well funded projects

Range of funding levels

- RFP: €50-150k (3 years)
- PI: €50k - €1m|n (4 years)
- Strategic Research Clusters: €5-8m|n (3+2 years)
- Centre for Science, Engineering & Technology: €10–25m|n (5 years)

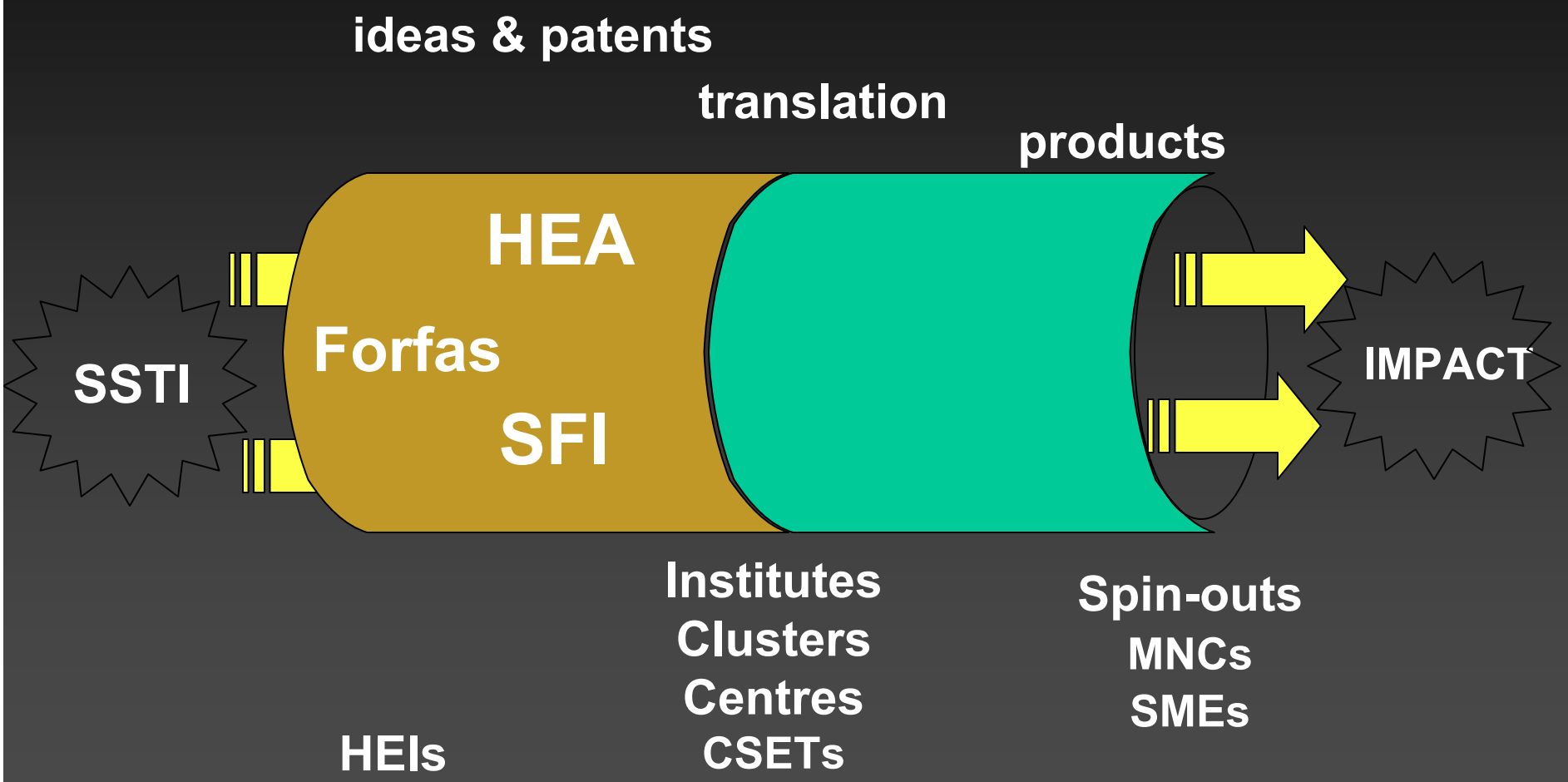
Modus operandus

- International peer-review
  - Quality of applicant
  - Quality of research programme
  - Impact to Ireland
- Expert Programme Officers
- Annual report
- Mid-term site review

Head count

- ICT:
  - 117 PIs
  - 286 Post-docs
  - 463 PhDs
- BioT:
  - 117 PIs
  - 323 Post-docs
  - 262 PhDs

Rough Divisions of Labour



What is high risk?

- Research at the frontier
- Ambitious
- Possibility of failure
- Path to success is not known at the outset

Frontier research

- Eliminating the barriers between "*basic*" and "*applied*"
- Rather: frontier versus derivative

How do we judge?

- Excellence of ideas
- Excellence of people
- No “me too” research
- What is your edge?
- Potential impact

Why is it important?

- Why not just fund good "*applied*" research?
- Don't know where the next innovations will come from
- Informed by real world problems, not directed by industry

Potential impact

- Impact may be academic or commercial
- Impact is impossible to foresee, but can be estimated
  - Publications
  - New PIs
  - PhDs graduated
  - Patents
  - Industrial benefits
  - Start-ups and Spin-outs

Invest in people first and foremost

- Lower barrier to entry for younger researchers
  - Can apply 3 years post PhD
- Specific programmes for world-class researchers:
  - President of Ireland Young Researcher Award (PIYRA)
  - Research Frontier Programme (RFP)
  - Principal Investigator Career Advancement (PICA)

Trust the PI

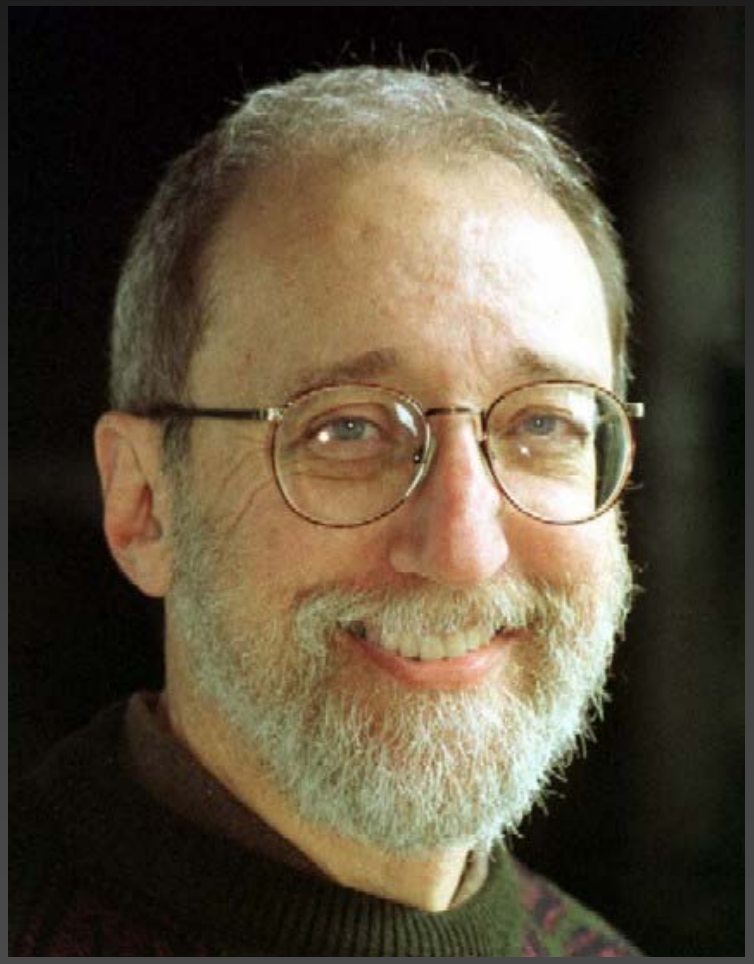
- Lighter administrative touch
- One mid-term site visit
- Guide and advise rather than direct
- Flexibility in work programme and budget
- Research questions, rather than work packages

Personalisation, UCD

- **Prof. Barry Smyth** (Adaptive Information Cluster)
- Nominee for Ernst & Young Entrepreneur of the Year (2006), EI Informatics Commercialisation Award (2006)
- I-Spy search engine patents on collaborate ranking of results
- *Changingworlds* personalisation of mobile portal content (50M users, 37 operators) DHL Exporter of the Year (2005)

Constraints, 4C, UCC

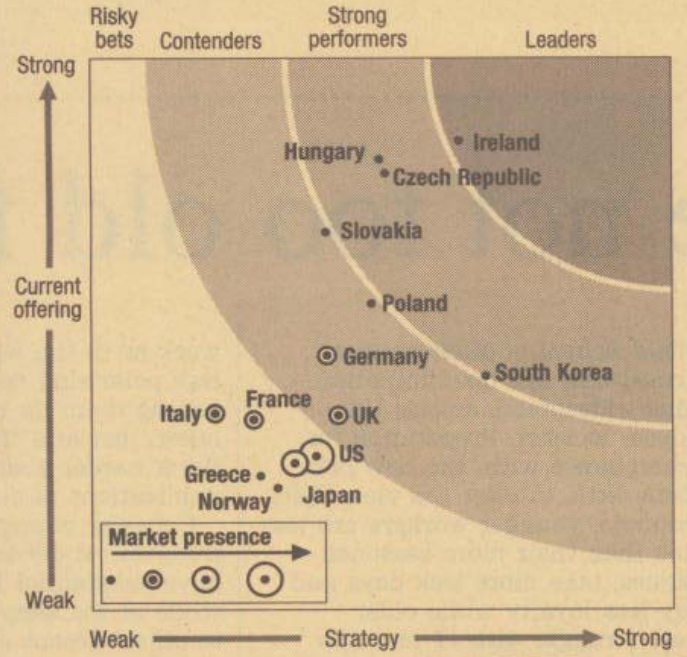
- Prof. Gene Freuder
- One of the largest constraints groups in the world
- Supply-chain
- Advanced manufacturing



Cognitive Radio, TCD

- Dr. Linda Doyle, Centre for Telecoms Value-Chain Driven Research (CTVR)
- Reconfigurable radio spectrum
- "*From nowhere to world class in two years*"

Joining forces for innovation in the face of globalisation



Source: Forrester Research Inc

FT Montage Photo: Matthias Rietschel

Ireland is the surprise leader in a ranking of how far 26 industrialised countries benefit from a trend towards 'innovation networks' – partnerships between companies or countries which are thought to be more effective than keeping research and development to oneself

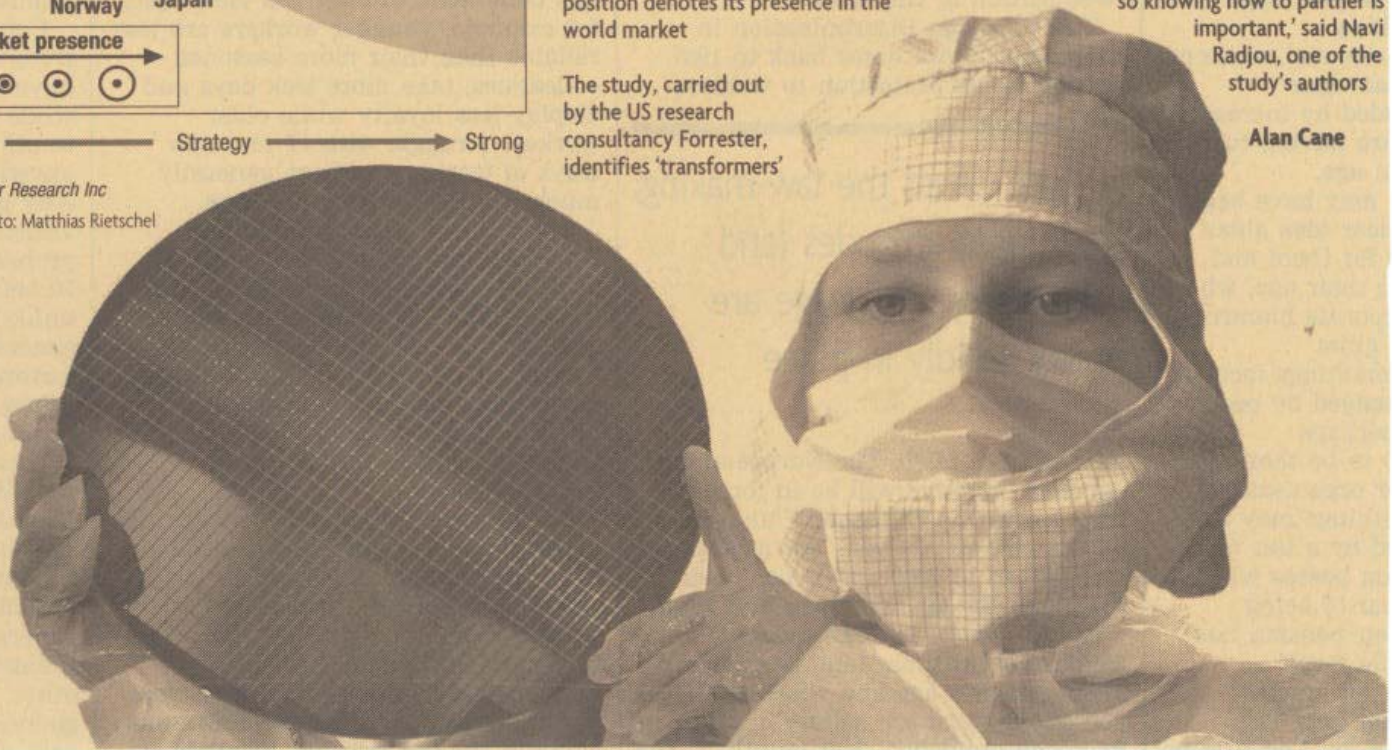
Countries placed towards the right of the chart are deemed to be strong on strategy, with those towards the top considered to have a strong current offering. Countries not falling into the three bands ('contenders', 'strong performers' or 'leaders') are judged to be 'risky bets'. The size of the dot indicating each country's position denotes its presence in the world market

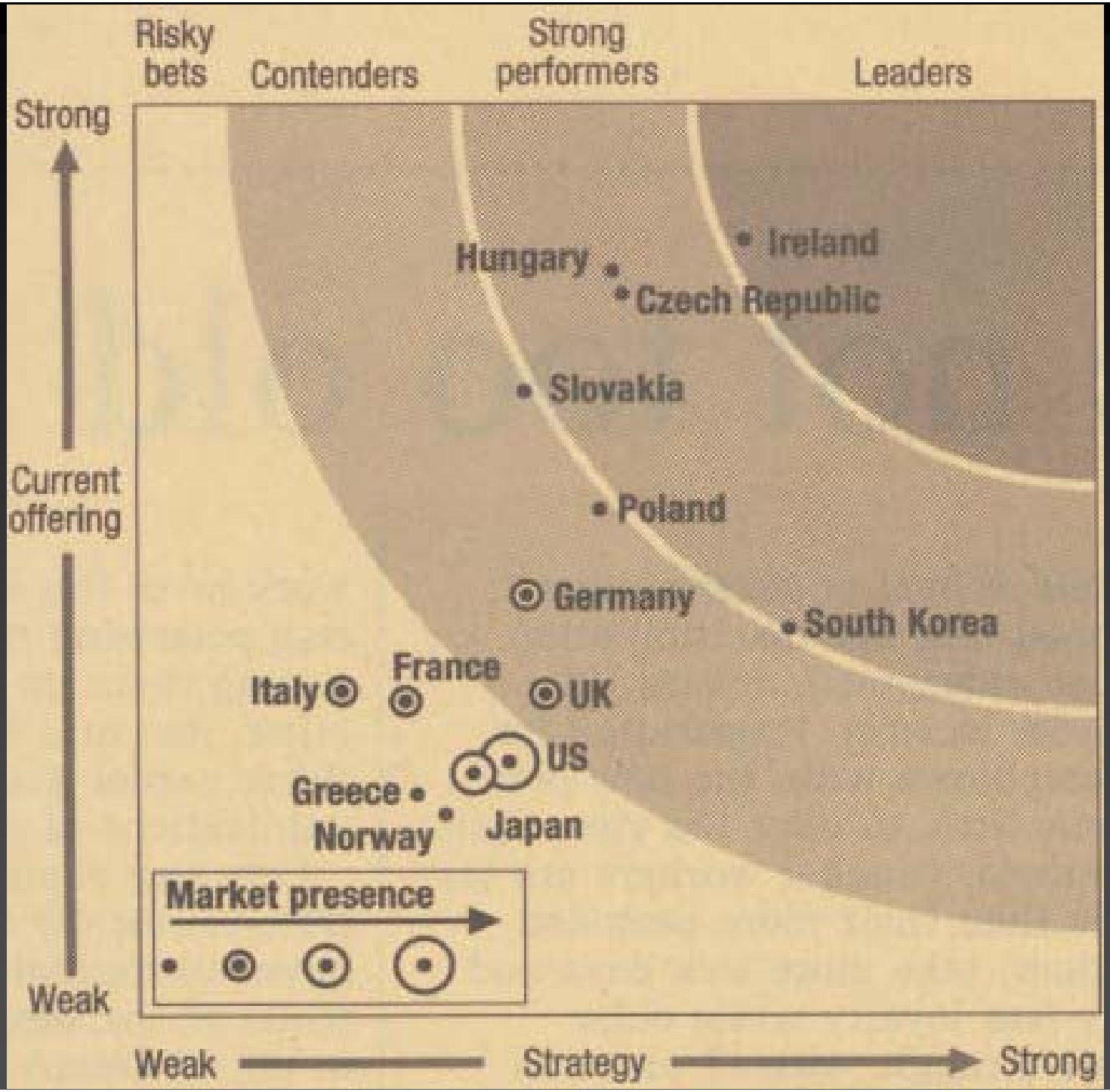
The study, carried out by the US research consultancy Forrester, identifies 'transformers' – countries that are effective at taking developments from other nations or companies and turning them into commercial products

A good example would be South Korea's silicon foundry industry, which takes semiconductor designs – chiefly from US and UK customers – and turns them into silicon chips

Forrester said the exercise had grown out of a belief that it was no longer possible to measure innovation by the amount a country invested in research. 'You don't have to invent everything. You can partner, so knowing how to partner is important,' said Navi Radjou, one of the study's authors

Alan Cane




Risky bets
Contenders
Strong performers
Leaders
Strong
Current offering
Weak
Hungary
Ireland
Czech Republic
Slovakia
Poland
Germany
South Korea
Italy
France
UK
US
Greece
Norway
Japan
Market presence
Weak
Strategy
Strong

European Research Council

- New body under FP7
- Budget of €7.5b|n over 7 years
  - 15% of FP7 budget
- Following much the same principles as SFI

The future

- More specific programmes for young researchers
- Continue to recruit PIs
- Continually refine the different grants
- Monitor the success (or otherwise) of our funding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