Strengthening linkages between education, research and industry to improve innovation performance

Dr Malcolm Parry OBE

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Supply side - university traditions

University cultural heritage influences links

- Classics/ theology
- Medicine
- Agriculture
- Science
- Engineering

Academic contracts

Supply side - university traditions

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Links need

- Subject mix
- Quality research
- Infrastructure
- Policy
- Management
- Incentives
- Funding

Business environment

Innovation as an economy advances

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	Factor-driven Economies*	Efficiency-driven Economies*	Innovation-driven Economies*
Societal developments	Industrialisation, urbanisation	Labor and capital shortages, needs for higher skills	Wealth spreads throughout population, higher education levels
Business opportunities	Rush to supply basic demands	Develop new markets - domestic or international	Creative, fresh new ideas - innovation
Key competitive strengths	Get there first!	Operational efficiency, rapid scaling, high quality	Manage (allow) risk, early ID of great new ideas, sustain high growth
Focus of new government policies	Basic laws, establish industry base	IPR, select and promote key industries	Encourage entrepreneurs, bridge over “valley of death”

* Terms from Global Entrepreneurship Monitor, chart and analysis original to RD
After Richard B. Dasher, Stanford University

Innovation as an economy advances

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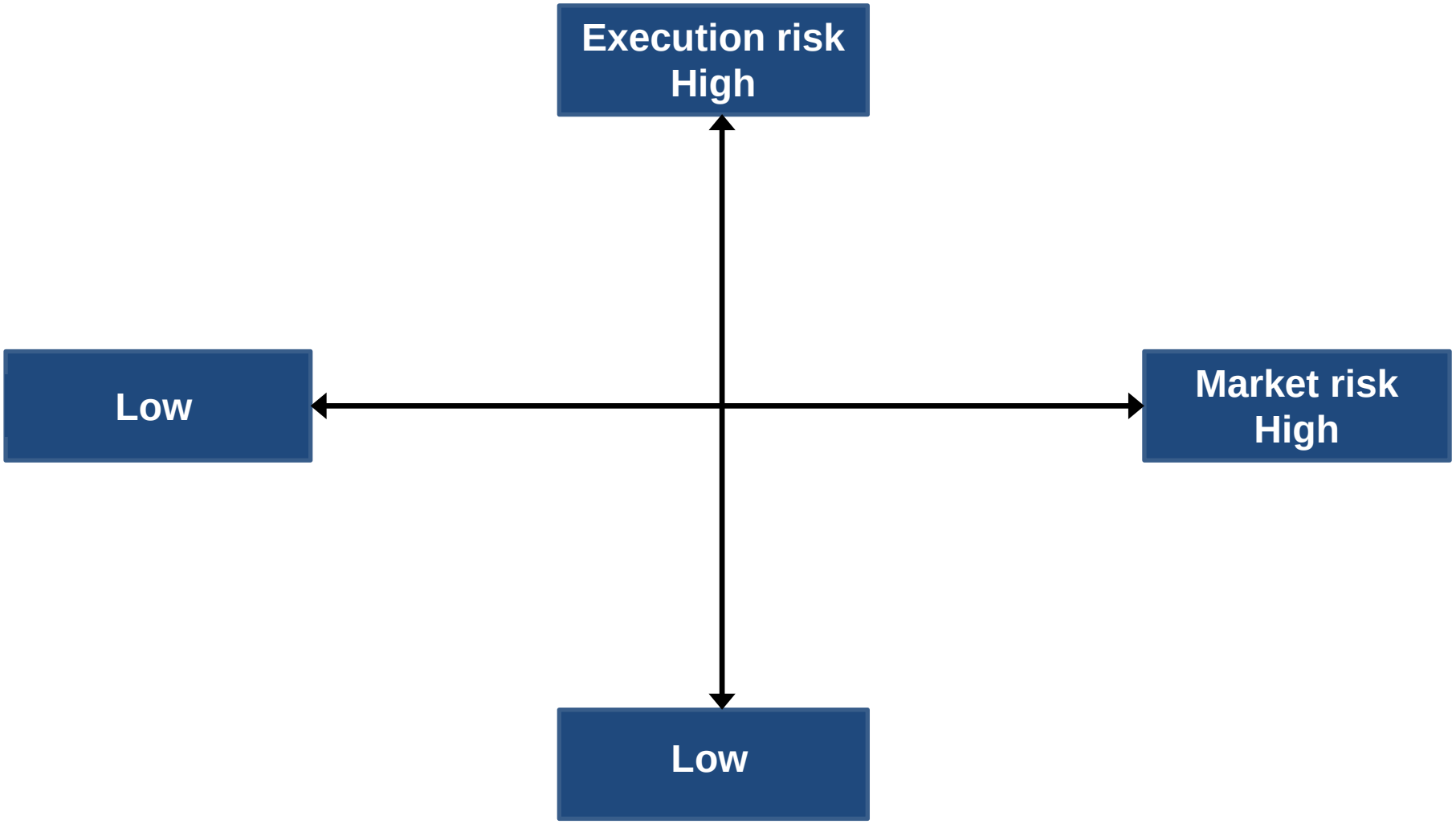
Incubation - targets for big firms



(idea for drawing based on Christensen 1997 and Dasher 2013).

Incubation - targets for big firms

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Large companies: develop new technology for existing market

Execution risk High

Low

Market risk High

Low

Large companies: incremental product development

Large companies: find new market for existing technology

(idea for drawing based on Christensen 1997 and Dasher 2013). Photo A380: Julian Herzog

Incubation - targets for big firms

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Large companies: develop new technology for existing market

Typically, **only start-up companies** will carry both risks

Example: Bullfrog computer games,

Execution risk High

Low

Market risk High

Low

Incubation

Acquisition or licensing

Acquisition or licensing

Large companies: incremental product development

Large companies: find new market for existing technology

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Science parks and the value chain

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Open innovation

Develop business skills

Business to business

Business to consumer

Business to government

Mobilising resources
Skills
Access to finance

Science and Technology Parks

- Pre incubation in specific technologies
- Pre and full incubation facilities and programmes
- Grow on space
- Deliver knowledge transfer support

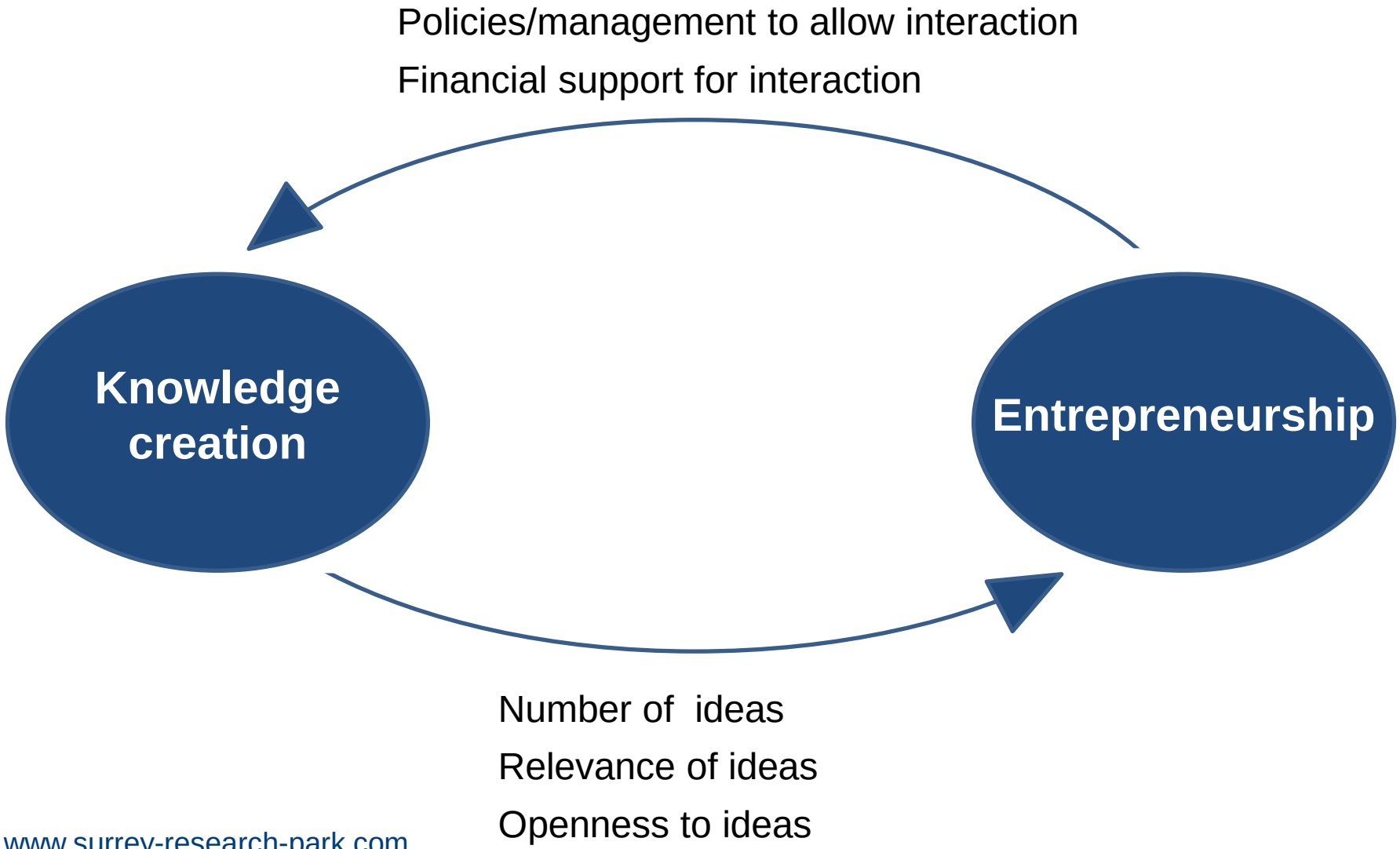
Knowledge creation
Number of ideas

Entrepreneurship
Openness to ideas

Selection
Competition
Demand

Failure

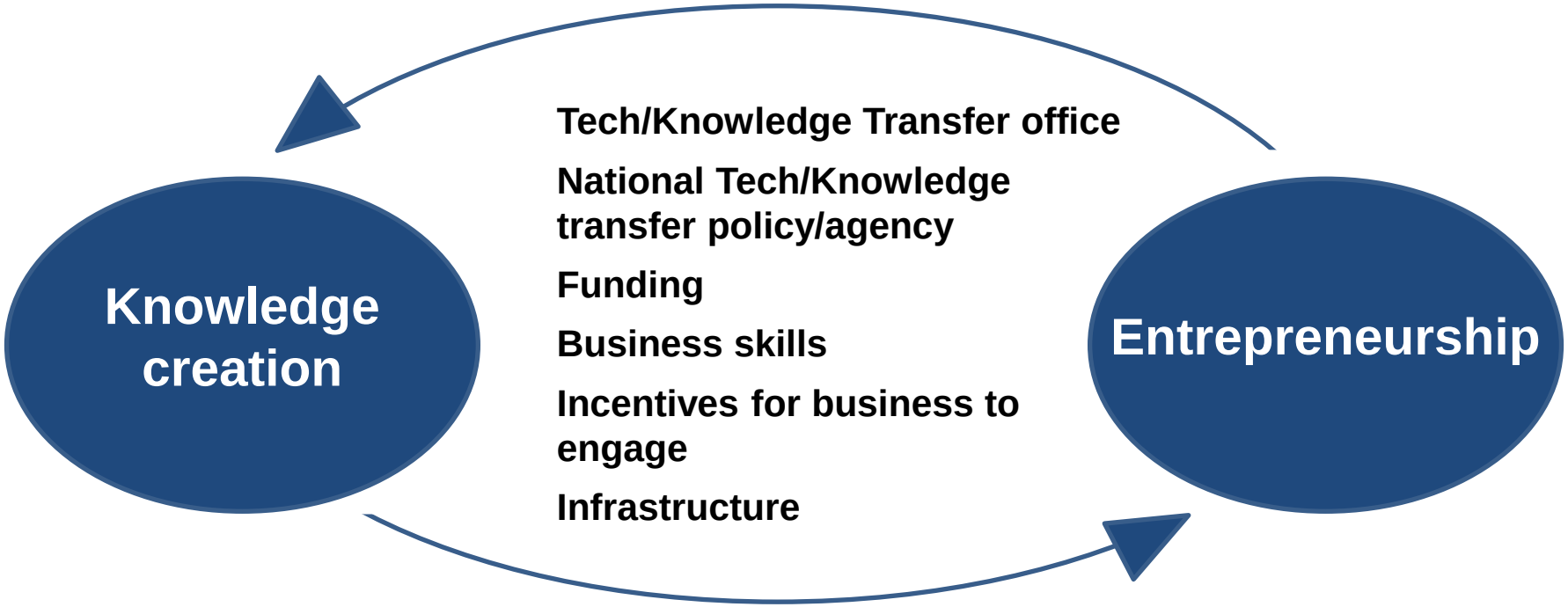
Functional links for innovation



Functional links for innovation

Policies/management to allow interaction

Financial support for interaction



Number of ideas

Relevance of ideas

Openness to ideas

Policy - Technology Strategy Board (TSB) – UK innovation agency

- Catalysts
- Catapults
- Collaborative R&D
- Demonstrators
- Feasibility studies
- IC tomorrow
- Innovate UK
- Innovation vouchers
- International programmes
- Knowledge Transfer Networks
- Knowledge Transfer Partnerships
- Launchpads
- Micro and Nano Technology Centres
- Missions
- Small Business Research Initiative
- SMART awards
- _Connect

www.innovateuk.org/deliveringinnovation.ashx

Technology Strategy Board Financing commercialisation

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Catalysts

Catapults

Collaborative R&D

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Technology Strategy Board
Collaboration for commercialisation

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Catalysts

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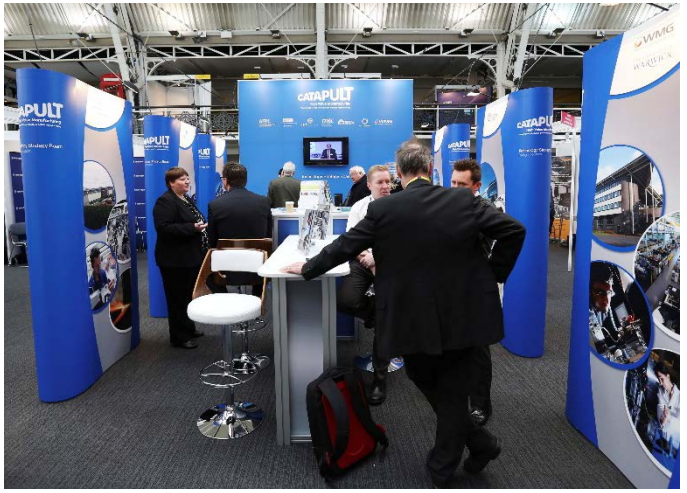

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Technology Strategy Board Networks and partnerships

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Catalysts

Catapults

Collaborative R&D

Demonstrators

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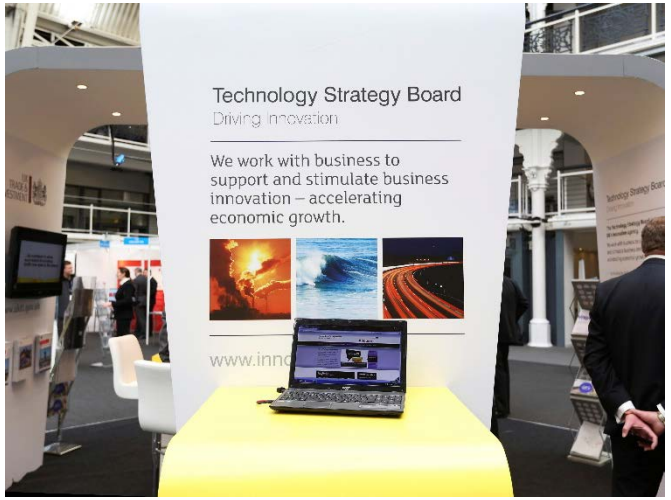

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The Surrey Research Park: infrastructure

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Surrey incubation

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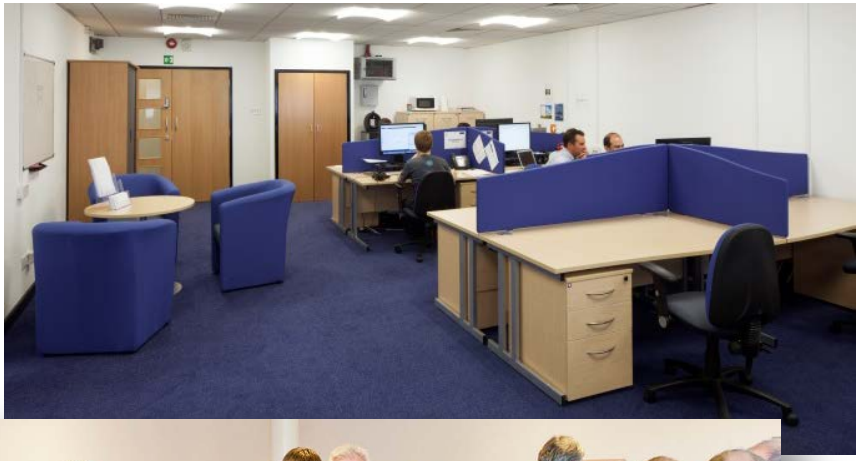
Staffing

- Director
- Support
- 3 part time Entrepreneurs in Residence
- Mentor group
- Entrepreneurs Panel

Services

- Investment Club – 6 per annum
- Co-working
  - Pre revenue £150 pm
  - Post revenue £300 pm
  - Independent companies £50 pm
- Coaching and mentoring
- Numbers – 70 in system



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Skills

- Quality of graduates
- Post graduate courses
- Business school priorities
- Entrepreneurs club
- Entrepreneur in residence
- Technology Transfer Office
- Regional leadership role

Summary

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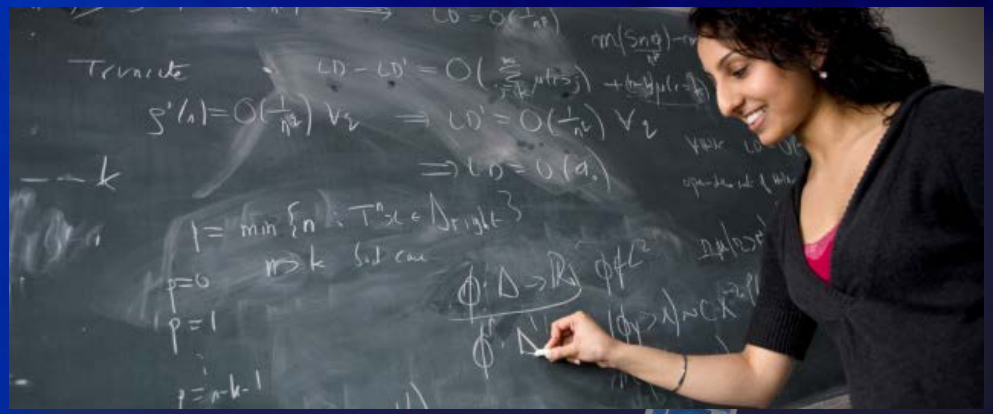
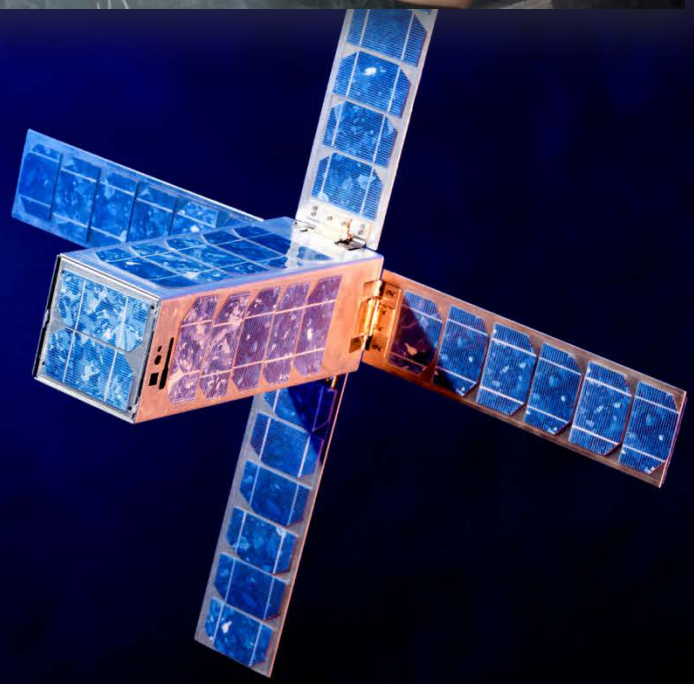
- Historic and economy matter
- What helps form links
- Role for SMEs
- Technology value chain
- National Innovation agency helps
- Programmes to support links
- Wider role for universities





Thank you

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