

1st July 2025

Innovation, Ecosystems and Cyber

Dr. Phil Budden

MIT Management

Cyber Festival 2025

Welcome to 'Innovation, Ecosystems and Cyber'

Dr. Phil Budden
Senior Lecturer &
Diplomatic Advisor

Sloan's TIES (Tech Innovation,
Entrepreneurship and Strategy)
Group

MIT's Management School

British diplomat, 1993-2013



Going back to the basics of 'innovation' can help ...

1. INNOVATION: A WORKING DEFINITION

Innovation

[in-uh-vey-shuh n]

1. At MIT, innovation is the 'process of taking ideas from inception to impact'
2. We focus on the **process** (not products / services) to highlight the entire journey
3. We are interested in **impact** which is broader than simply profit
4. We emphasize that an '**idea**' is the match between a **problem** and a **solution**
5. We recognize the journey engages many – eg start-ups, corporations, governments, etc



INNOVATION: A WORKING DEFINITION

Innovation

[in-uh-vey-shuh n]

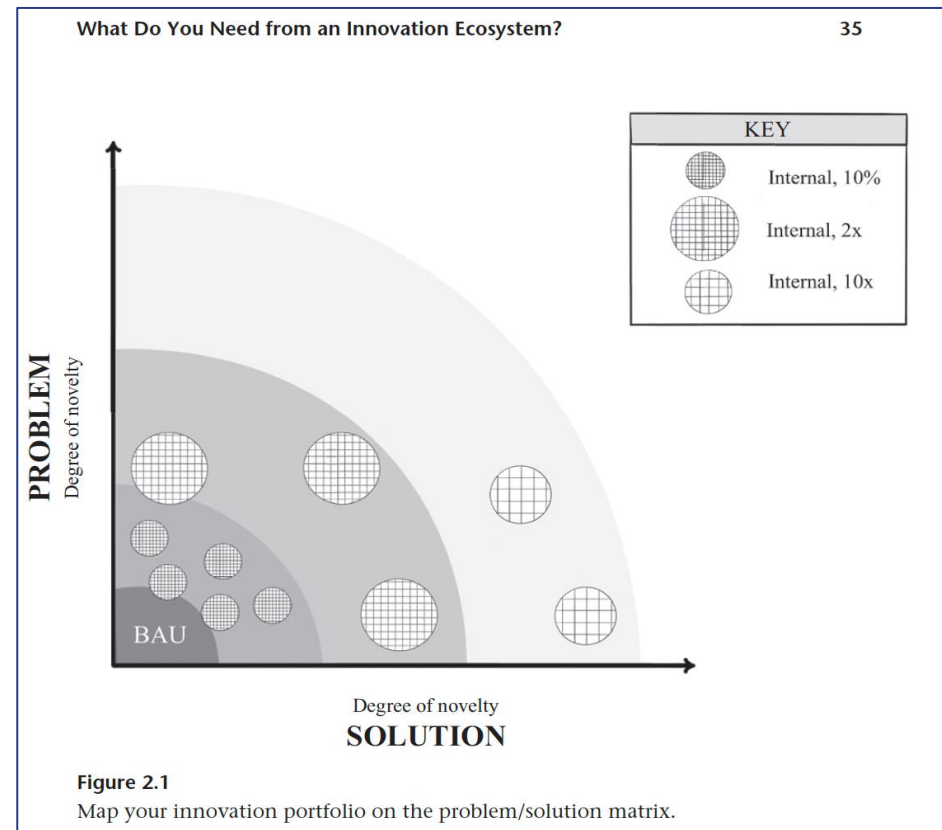
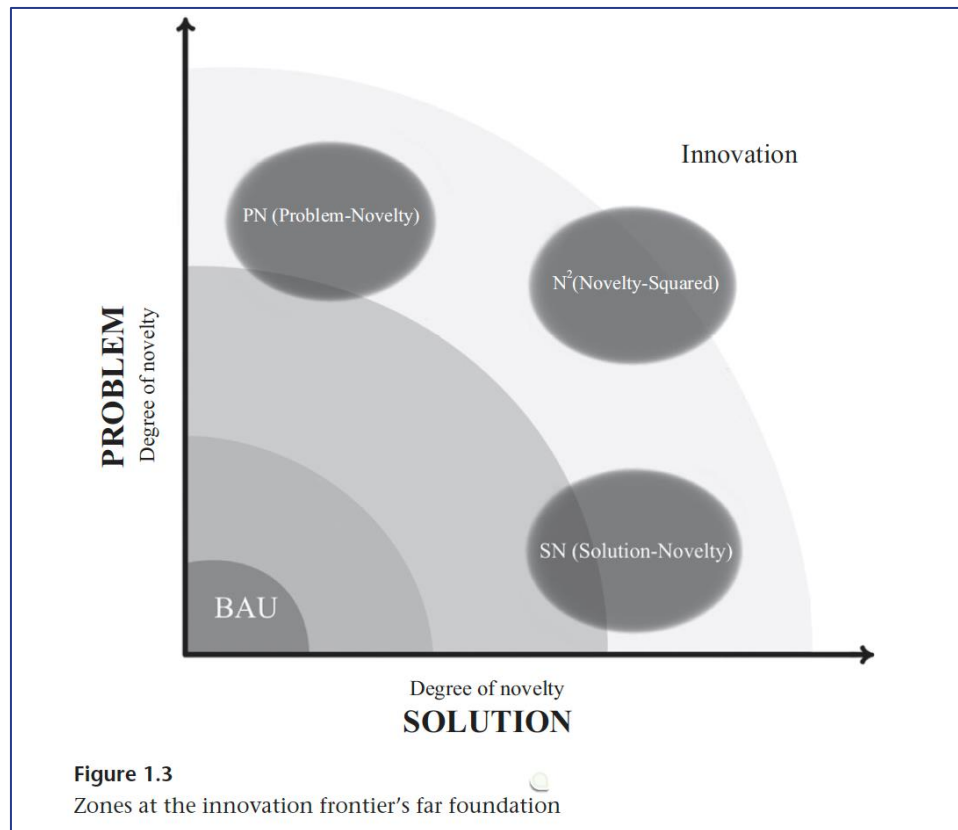
...is a match between a 'problem' and a 'solution':-

- ❑ The 'problem' can be a business or security one;
- ❑ The 'solution' can be a technological one, or not;
- ❑ But the better the match between the problem and the solution, the better is the 'idea' which is then worth exploring.



An 'idea' is a 'match' between a problem & solution...

...in a 'problem/solution' matrix (with degrees of novelty & risk on the two axes) onto which a large organization can map its efforts at 'innovation' as a portfolio.



INNOVATION: A WORKING DEFINITION

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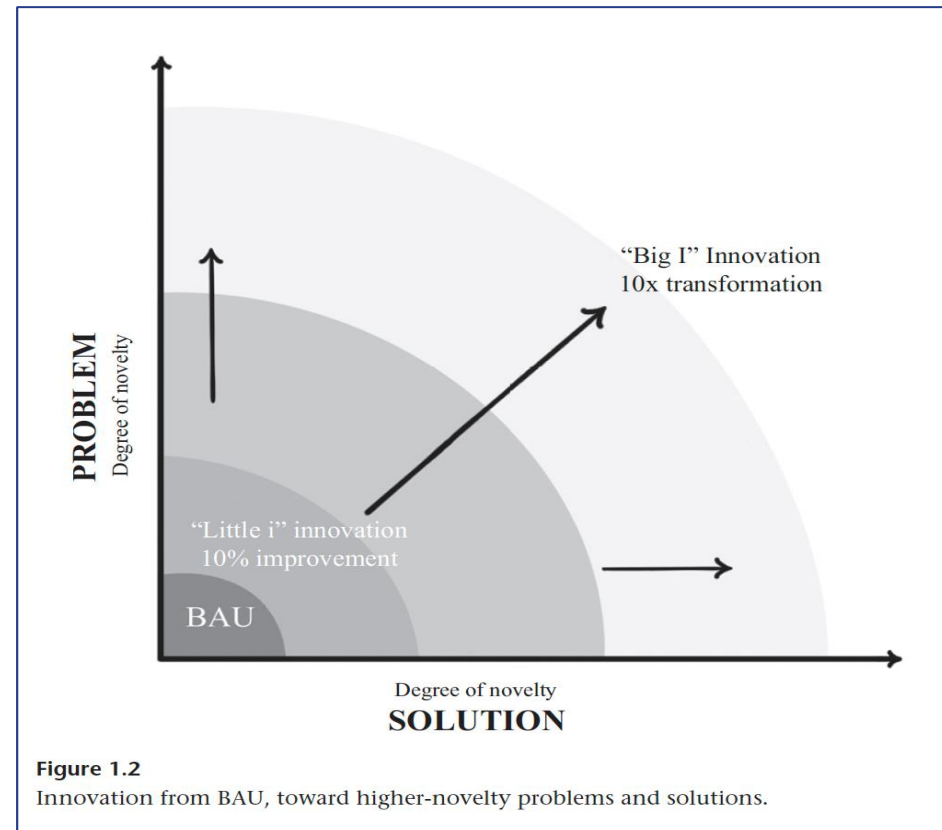
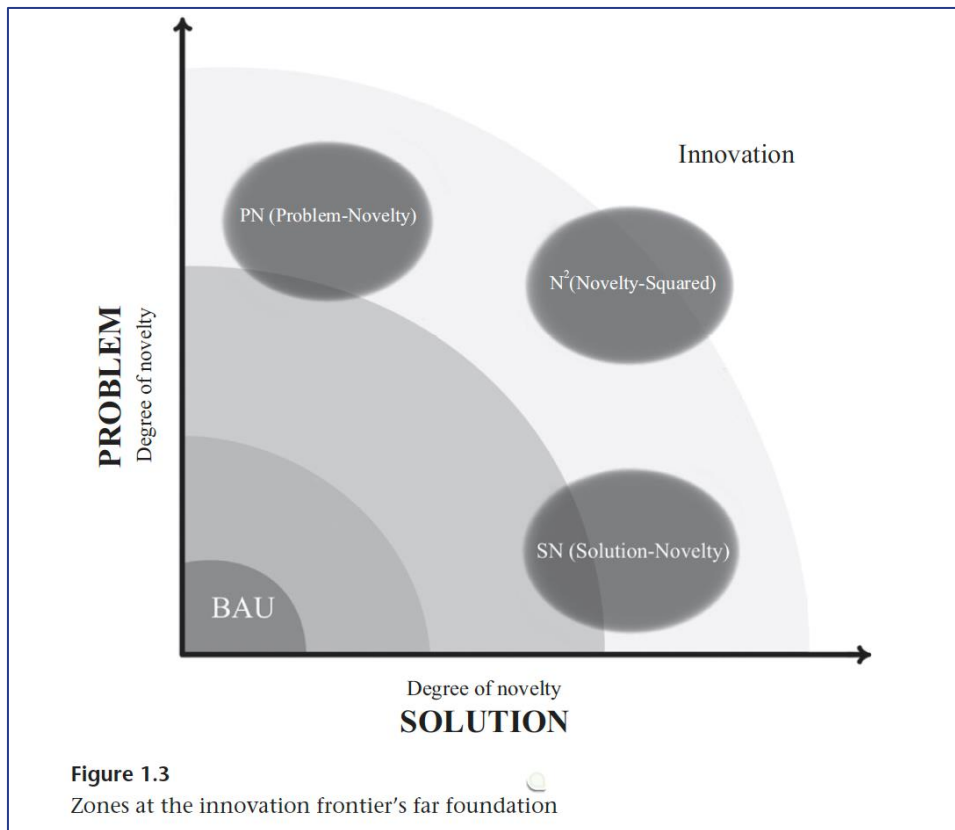
...is on a spectrum, from little “i” out to big “I” innovation:-

- ❑ ‘Innovation’ (with a big “I”, like R&D/S&T), meaning formal processes of taking research & tech at a far **horizon** through to ‘10x’ impact, and;
- ❑ ‘innovative’ behaviour’ (with a little “i”) signifying a more widely applicable but more modest (‘10%’) behaviour/culture, in public & private sectors.



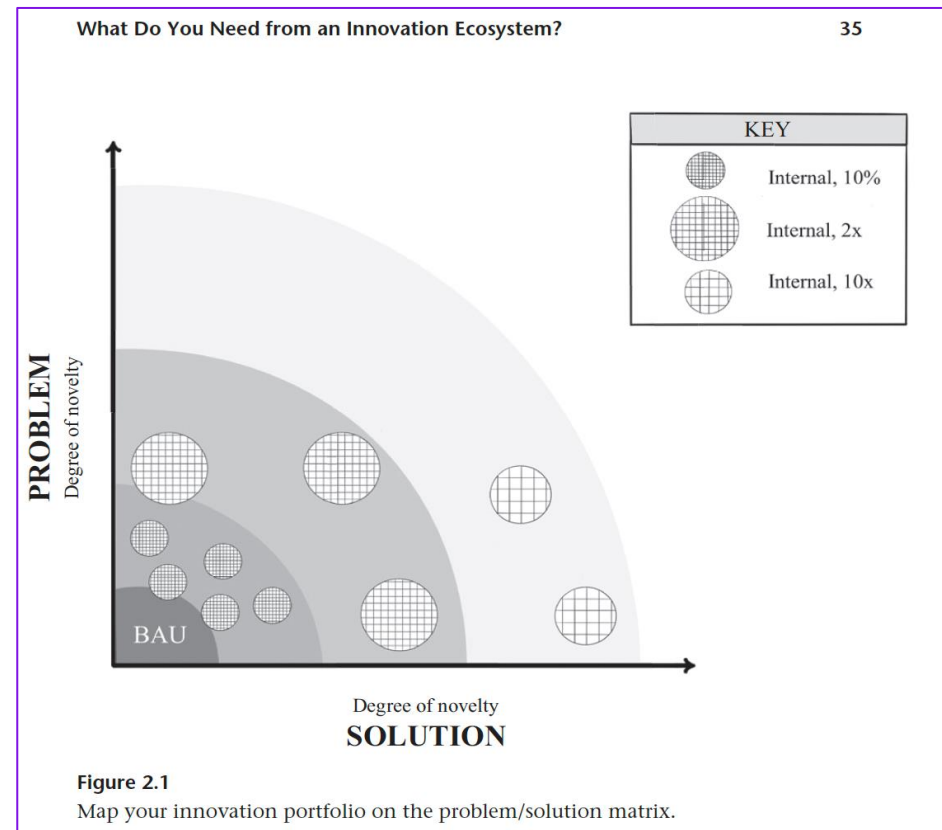
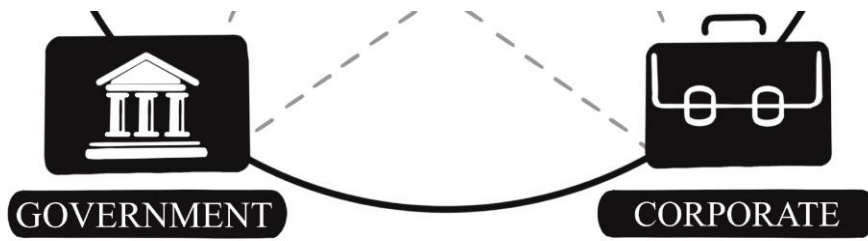
A spectrum, from little “i” out to big “I” innovation...

...from ‘Business as Usual’ (BAU) out to the horizons of innovation, but along a number of vectors (with differing novelty and risk) within a ‘problem/solution’ matrix.



Large organizations are much better at little “i”...

...but even getting beyond ‘BAU’ (ie Business As Usual) requires considerable effort and leadership, harnessing good innovation and entrepreneurial techniques.



2. INSIGHTS ABOUT INNOVATION FROM 'ECOSYSTEMS'


INSIGHTS FROM OUR GLOBAL MIT 'REAP' PROGRAM...

(Regional Entrepreneurship Acceleration Program)



...AND FROM AN HMG-BACKED 'FOCUS-UK' VERSION OF REAP

(including a Team 'North West' anchored by Lancashire)

**MIT REAP**
Regional Entrepreneurship
Acceleration Program

ABOUTMIT SLOAN GLOBAL PROGRAMS

COMMUNITYAPPLY TO MIT REAPRESOURCESMIT AFFILIATESGET IN

Focus UK

ABOUT MIT REAP FOCUS UKOBJECTIVESPROGRESS & TIMELINENEWSFACULTY

In March 2020, MIT REAP launched the pilot of its new Focus program in the UK. Gathering six teams from across the target region, the program drove the creation and execution of actionable MIT REAP strategies to strengthen innovation and entrepreneurship. The MIT REAP Focus UK program concluded on February 4, 2021, but many regional initiatives remain ongoing.

Focus UK leveraged learnings from the MIT REAP Core Cohort 6 team, Leeds City, UK – graduated in October 2020 – to expedite productivity, employment, and returns from research in six additional UK communities. Originally conceived as an intense six-month long program, Focus UK expanded its engagement to accommodate new challenges posed by the COVID-19 pandemic through March 2021. Focus UK was supported by the UK Department for Business, Energy & Industrial Strategy (BEIS), and by Loughborough University.


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Cumbria, Lancashire, and Cheshire & Warrington LEPs

Cheshire, Lancashire and Cumbria Local Enterprise Partnerships (LEPs) represent a coterminous North West Coastal Arc geography with common challenges and opportunities as evidenced in their Local Industrial Strategies (LIS'), Strategic Economic Plans (SEPs) and Science & Innovation Audits (SIAs).




They are part of the MIT REAP UK program to assist their partners with understanding their regional complementarity and equip them to implement a strategy at scale for transitioning to an innovative digital and low carbon economy.

**Lancashire Enterprise Partnership**



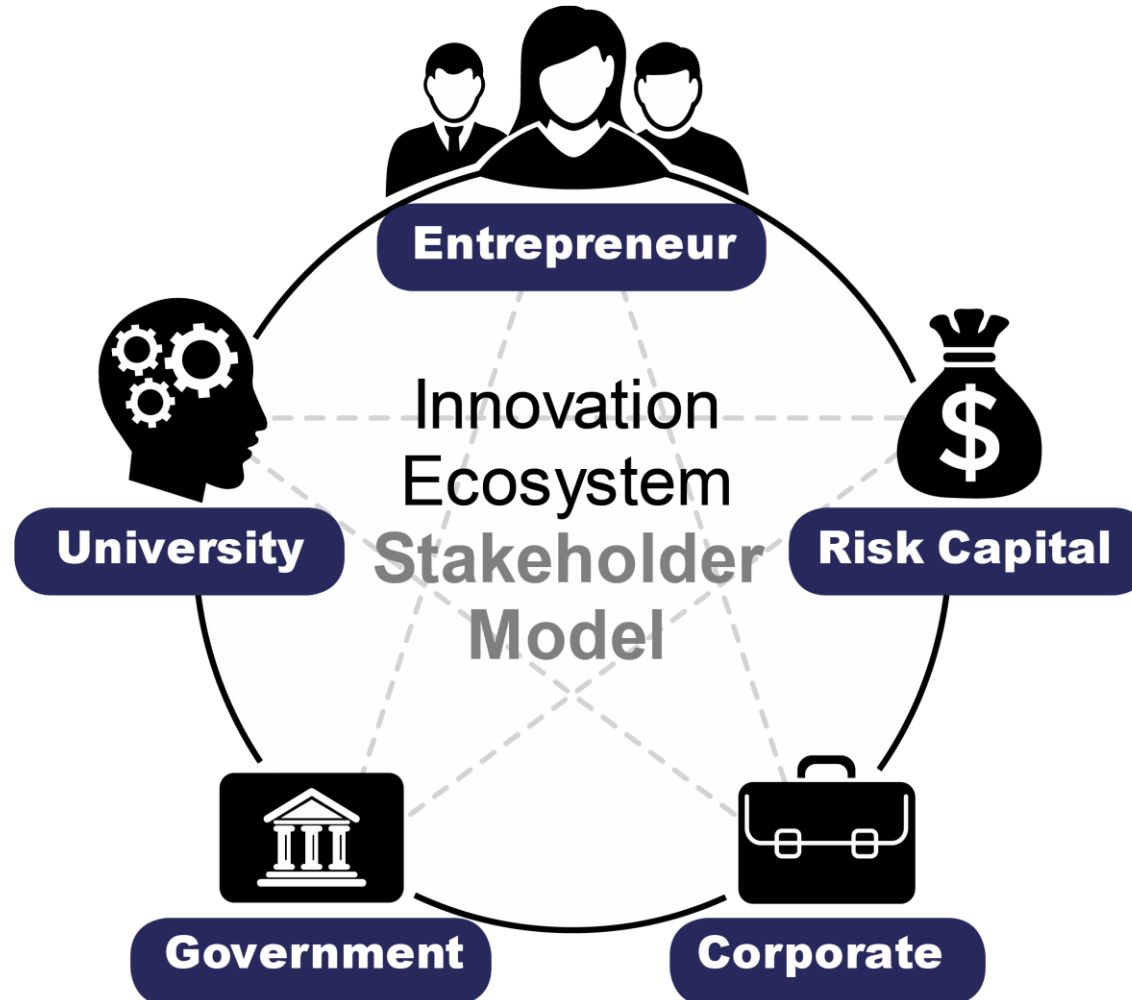
The diagram illustrates the Innovation Ecosystem Stakeholder Model, showing a central circle labeled 'Innovation Ecosystem Stakeholder Model' surrounded by five icons: a person (Entrepreneur), a gear (University), a building (Government), a briefcase (Corporate), and a money bag (Risk Capital). Arrows connect these icons in a circular fashion, indicating a continuous flow and interaction between all stakeholders.

TEAM MEMBERS

| | | | |
|---|---|---|---|
| Miranda Kirsche! MBE Champion Head of Business and Innovation, Cumbria LEP |  | Matt Wright Program Manager Innovation Manager, Lancaster University, UCLan, Edge Hill University & Lancashire LEP |  |
| Andy Devaney Director of Business Innovation, Cheshire & Warrington LEP |  | Graeme Bristow Site Leader, Astra Zeneca | |
| Steve Fogg Chairman, Lancashire LEP, NP11 Board, Ex BAE Systems | | Gary Guest Fund Director, FW Capital & Northern Powerhouse Investment Fund | |
| Rick Holland North West Regional Manager, Innovate UK | | Mark Johnson Head of Strategy and Policy, Cumbria LEP | |
| Duncan Steel Chief Technology Officer, Sellafield Ltd | | Stuart MacLennan CEO, Cows & Co Energy Ltd | |
| Becky Stuttard Non-Executive Director, PortSwigger Ltd | | Dion Williams Director of Research, Enterprise & Innovation, Lancaster University | |

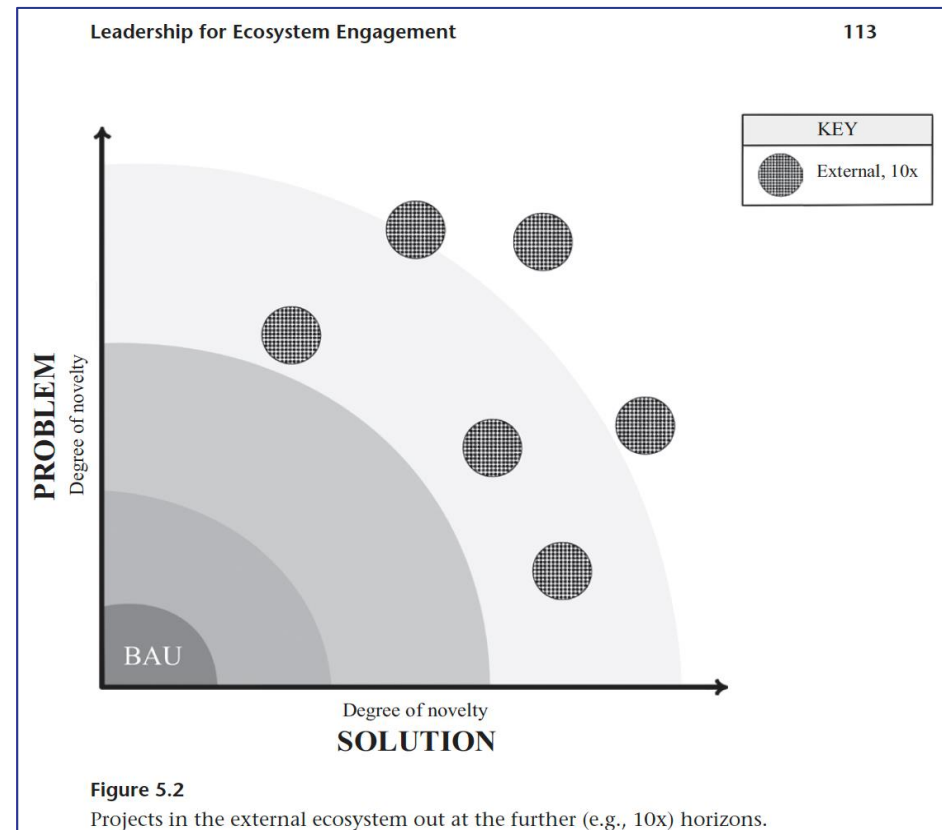
<https://reap.mit.edu/focus-program/uk/>

The most effective 'innovation ecosystems' comprise five key Stakeholders (as set out below)....



The 'apex 3' are much better at big "I" innovation...

...and are by nature better at 'innovation-driven entrepreneurial' techniques out at the further horizons of innovation, especially in the 'high-novelty zones' of the matrix.



...which is true even for cyber, defence, etc...



https://innovation.mit.edu/assets/MIT-GE-EPIC-final_April-2021_FINAL-2.pdf



<https://innovation.mit.edu/assets/Defense-Innovation-Report.pdf>

...and a range of other ‘national security’ efforts.



Another sign that the walls are being broken down is the encouragement of clusters of innovation around the country, often on the fringes of secret places. HMGC now operates an office in Milton Keynes, enabling outsiders to collaborate without having to venture out to its heavily guarded campus miles outside the city. GCHQ is supporting the “Golden Valley” development, a tech campus right next to its headquarters in Cheltenham.

“Proximity still matters,” argues Phil Budden, an MIT lecturer and former British diplomat involved in such innovation ecosystems. He contrasts the closed nature of the “high side”, insider parlance for classified systems, with the openness of the “low side”, the unclassified world. “You need low-side places where people can gather.” That benefits both sides. Companies can reach the people who will use their products; the spies are in closer touch with the people doing the innovating. “One of the good reasons to have secret people in these ecosystems is that a bit of the ecosystem rubs off on them,” says Mr Budden.

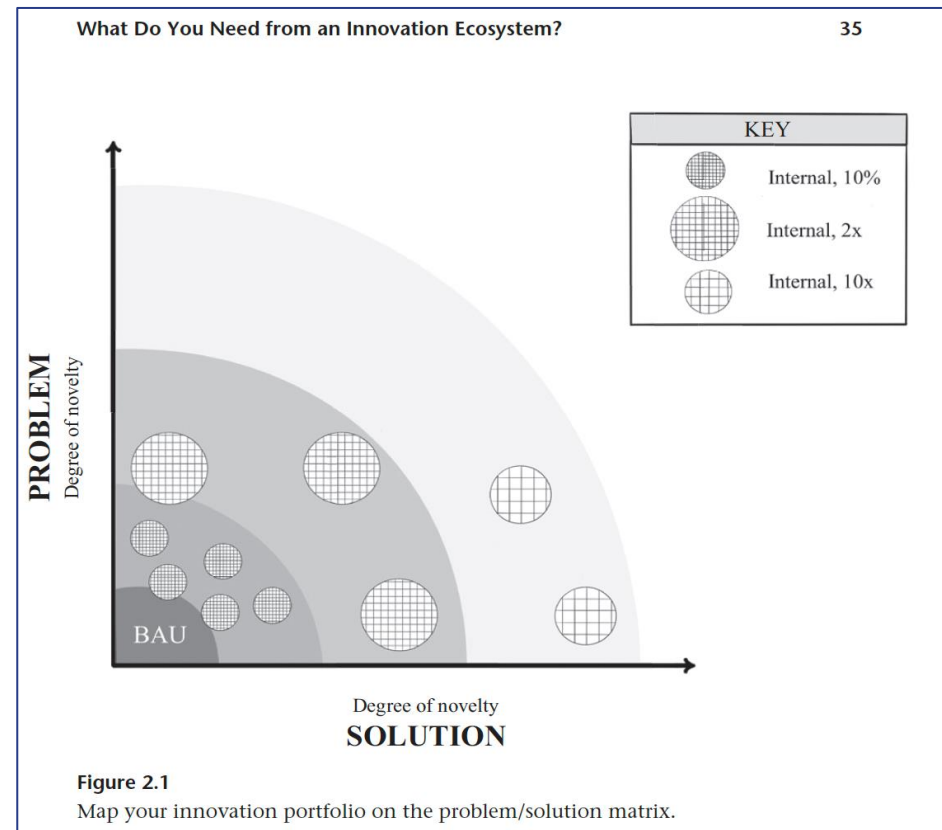
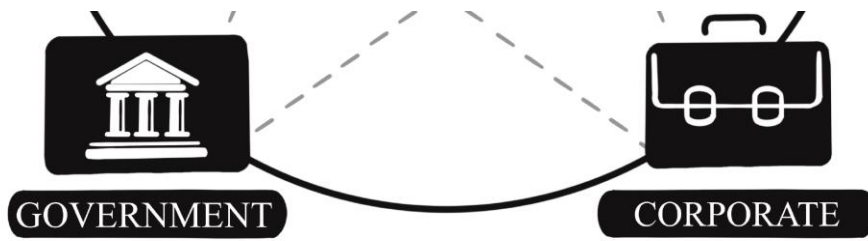
Richard Moore, the chief of MI6, acknowledged in 2021: “Unlike Q in the Bond movies, we cannot do it all in-house.” ■

<https://www.economist.com/britain/2025/03/19/why-british-spooks-are-reaching-out-to-the-private-sector>

3. Engaging the ecosystem for innovation advantage

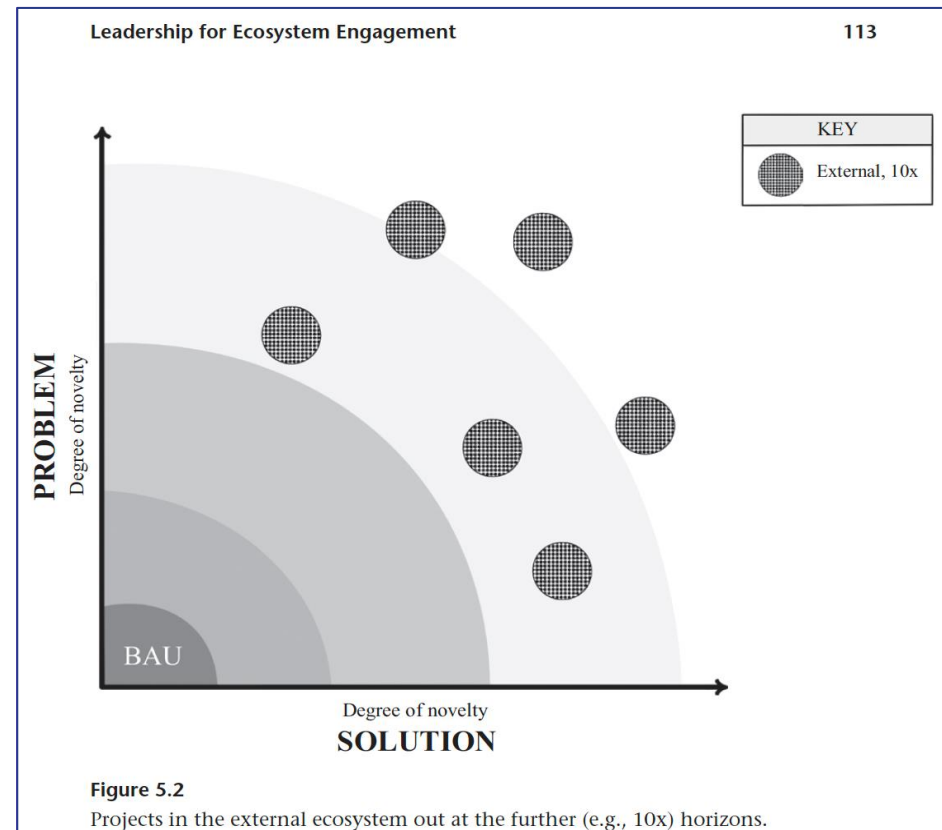
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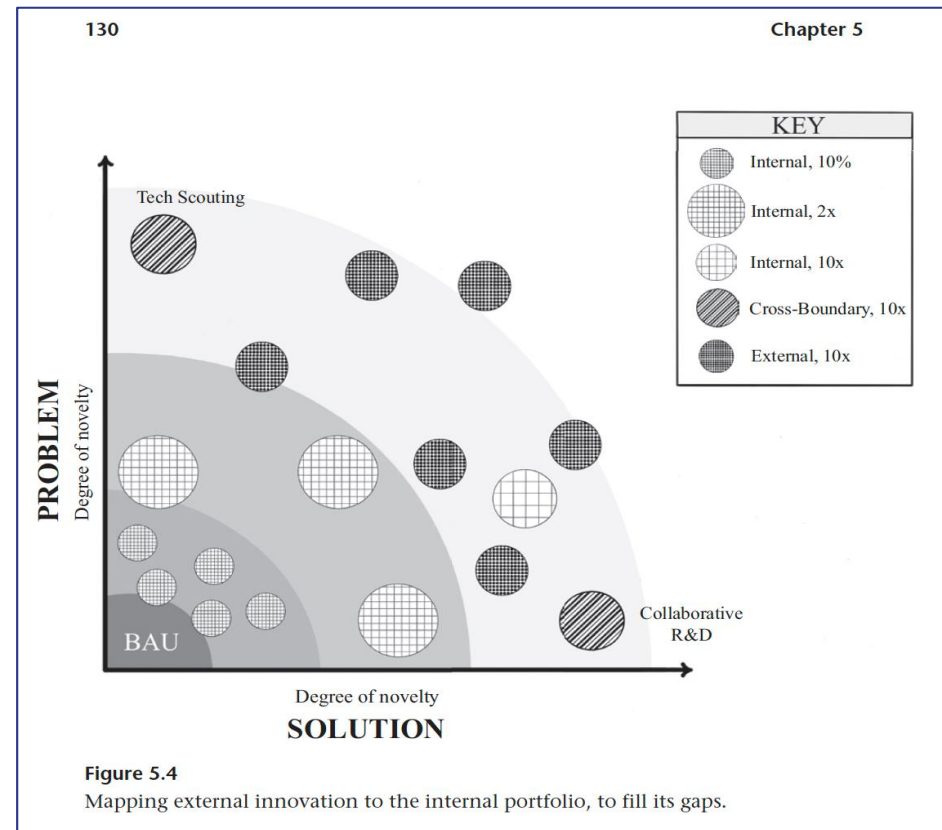
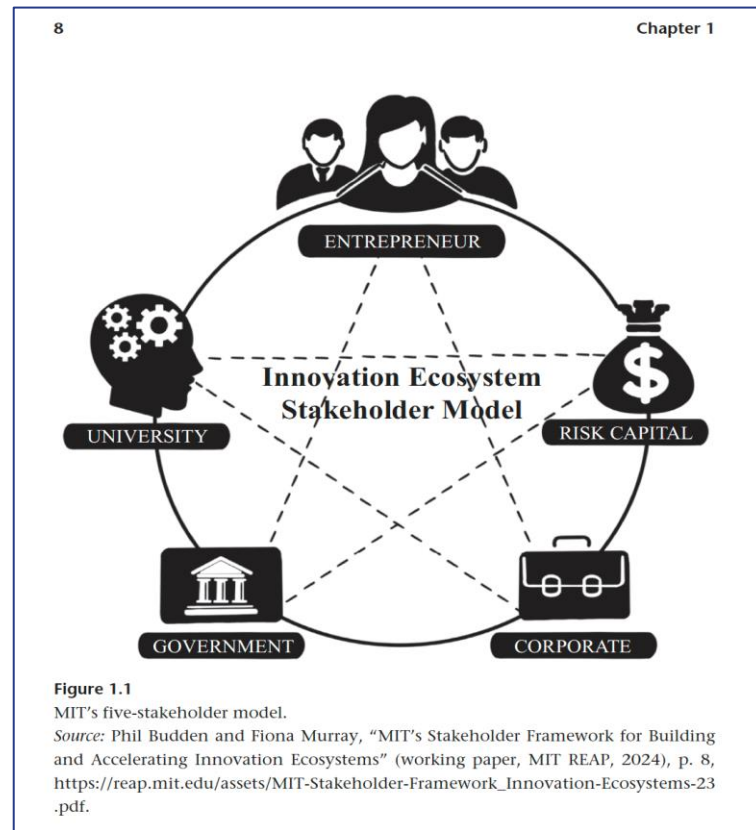
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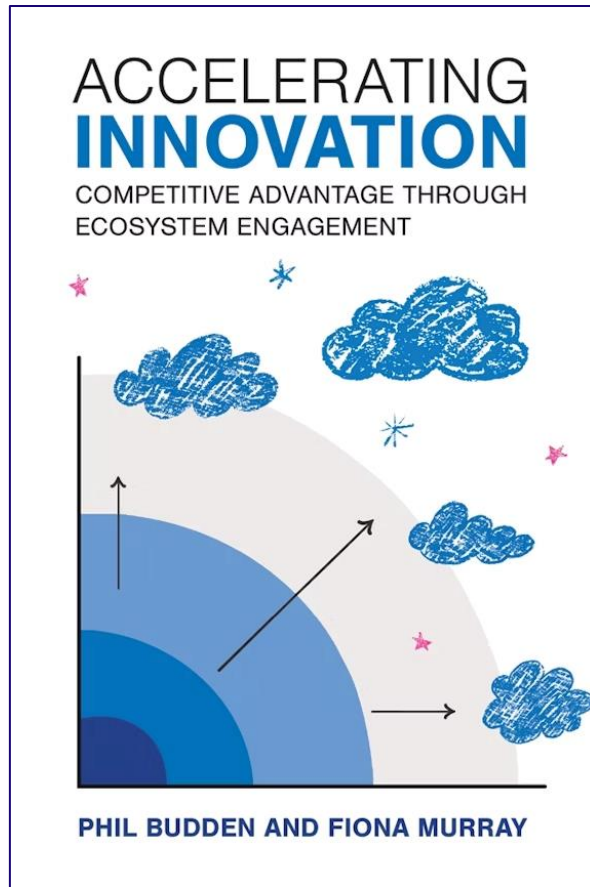


...as such, the ecosystem is a source of innovation.

...and, for large organizations (in the 'little i' space), engaging others in the ecosystem can fill 'gaps' in the portfolio and be a source of competitive advantage for them.



Co-authored a new book on “Accelerating Innovation: Competitive Advantage through Ecosystem Engagement”



Accelerating Innovation: Competitive Advantage through Ecosystem Engagement (Management on the Cutting Edge) Hardcover – 29 April 2025

by [Philip Budden](#) (Author), [Fiona Murray](#) (Author)

5.0 ★★★★★ ✓ 2 ratings

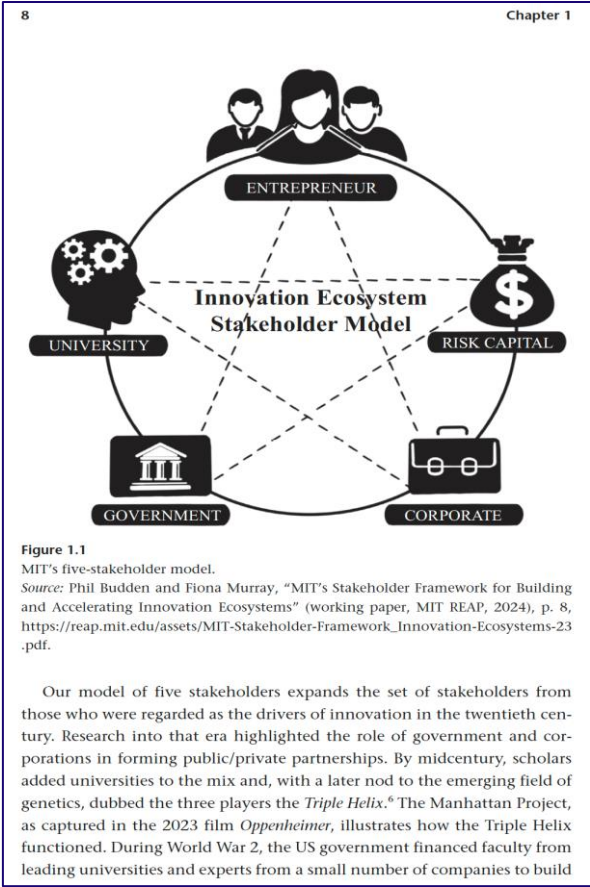
Part of: [Management on the Cutting Edge \(25 books\)](#)

[See all formats and editions](#)

"A practical handbook for accelerating innovation, both internally and externally, through engagement with innovation ecosystems. Leaders in large organizations face continuous pressure to innovate, and few possess all the internal resources needed to keep up with rapid advances in innovation, science, and technology. But looking beyond their own organizations, most face a bewildering landscape of external resources. In *Accelerating Innovation*, these leaders—whether from the private, public, or nonprofit sectors—will find a practical guide to this external landscape. Authors Phil Budden and Fiona Murray provide directions for navigating innovation ecosystems—those hotspots worldwide where researchers, entrepreneurs, and investors congregate. While Silicon Valley and Greater Boston are popularly known for web-based digital technology and biotechnology respectively, the logic of innovation ecosystems is not solely American—so this guide takes in new locations and varied sectors such as Singapore (smart cities), Perth (mining), Cairo and Dubai (fintech), London and Lagos (fintech and media), Copenhagen (quantum computing), Rio de Janeiro (energy), Halifax (oceans), and Tel Aviv (cybersecurity). Drawing practical advice from a synthesis of works on tech, innovation, entrepreneurship, and strategic management, and from a decade of their own research and teaching at the intersection of these topics, Budden and Murray distill insights and interconnections from all these different worlds into a useful and globally applicable set of frameworks and models. Their approach provides leaders at every organizational level with a clear and workable roadmap for making the most of the unique resources of innovation ecosystems, and how to bring that into their organizations."

<https://www.amazon.co.uk/Accelerating-Innovation-Competitive-Engagement-Management/dp/0262049619>

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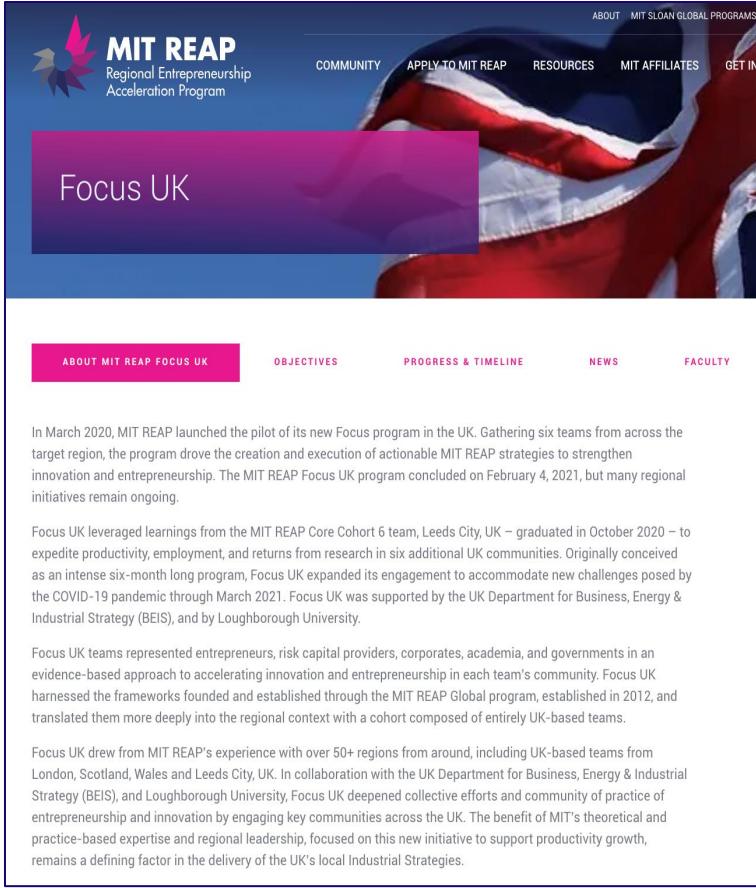
Co-authored a new book on “Accelerating Innovation” with examples from closer to home too...

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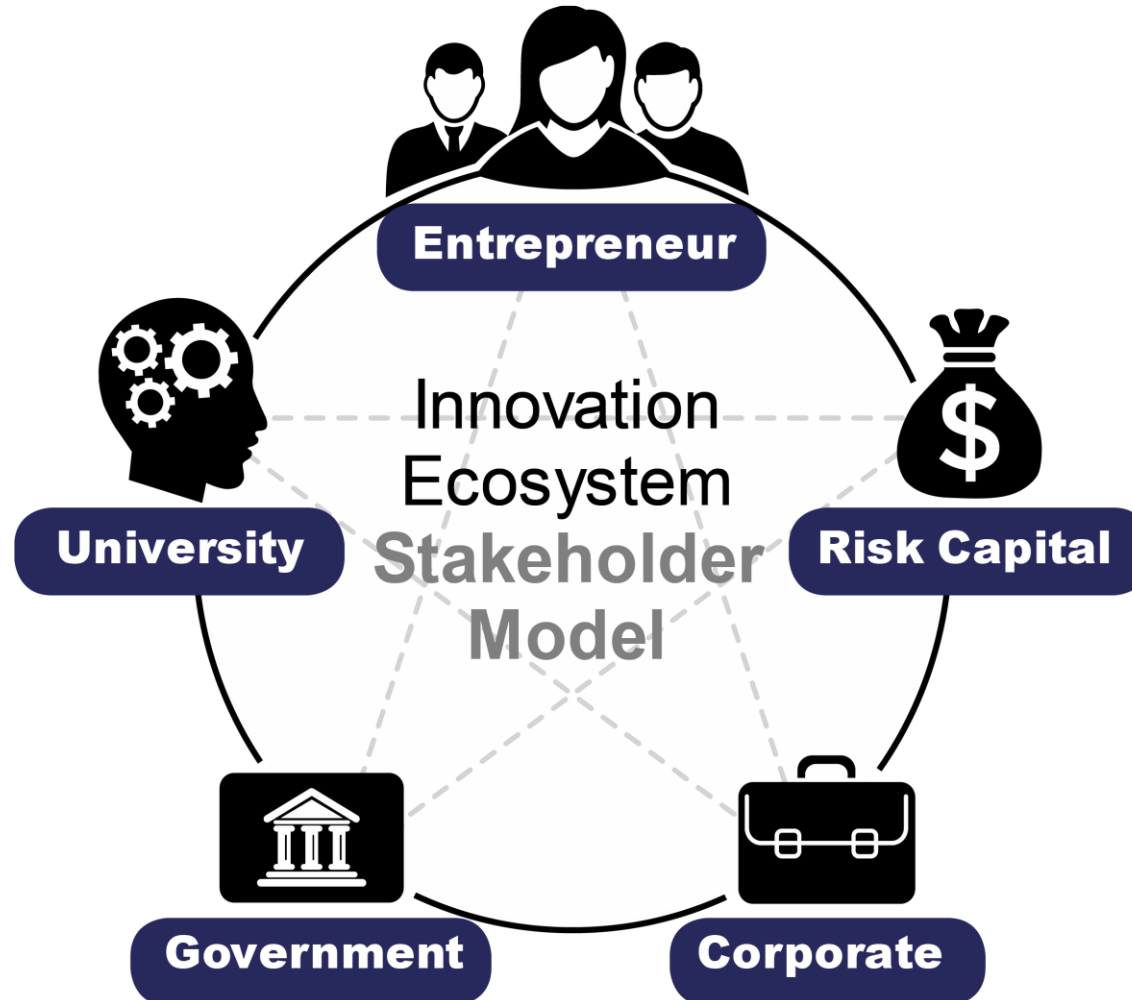
Chapter 7

thus providing a key deep-tech anchor point in the innovation ecosystem.) Such job growth might be seen as a social good in its own right or as contributing to the growth of a local customer base with greater purchasing power. Either way, the local community is likely to welcome the increase in employment opportunities.

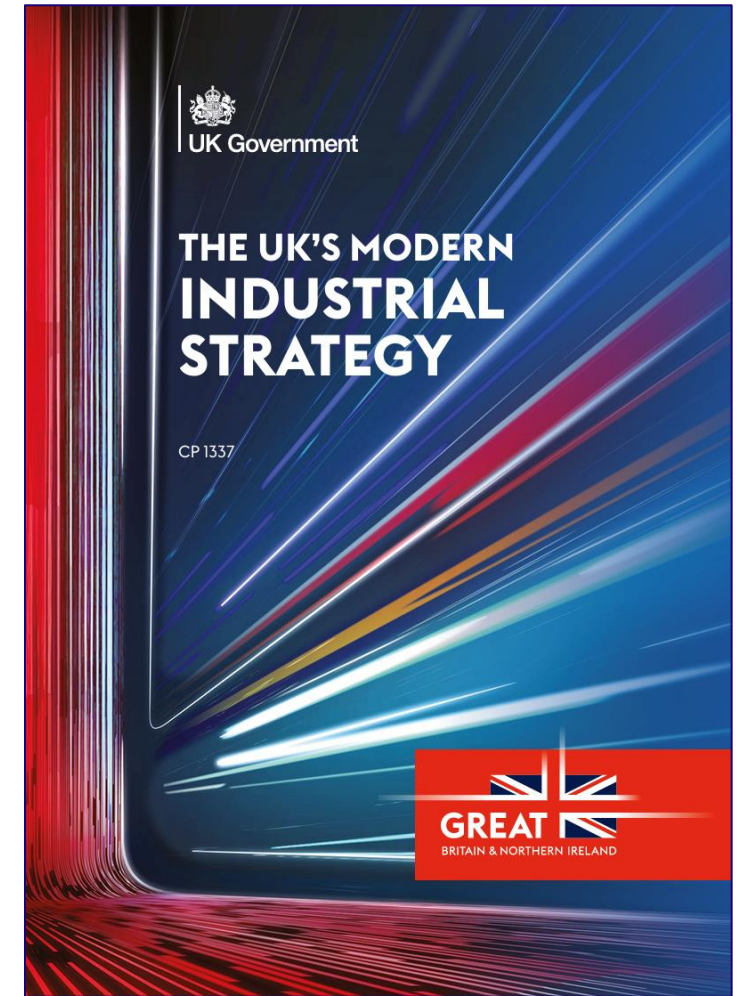
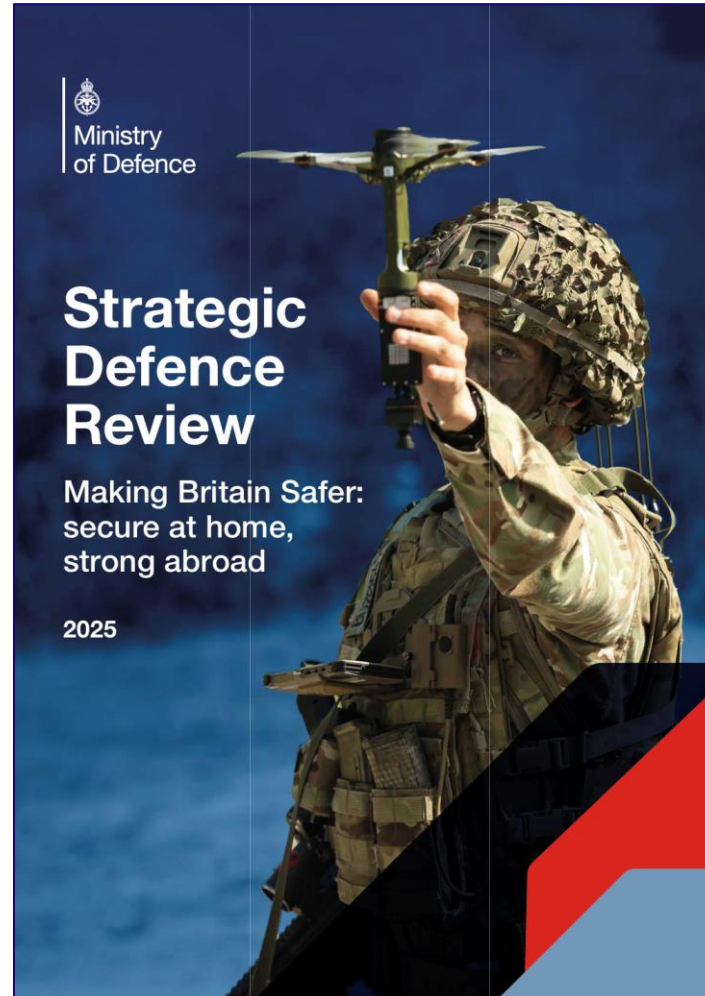
For example, the cybersecurity mission of the National Cyber Force (NCF) in the United Kingdom has considerable importance to the government: it also anchors, and is supported by, the development of a “cyber corridor” from Manchester, north to the Lake District.² This emerging ecosystem has brought together the University of Manchester and the University of Lancaster, with large corporations including the defense company BAE Systems and the regional government. It meets the needs of the government’s NCF while providing better training, and more jobs, locally. Additionally, it fosters a growing set of specialized resources and experimentation opportunities that attract more people and novel ideas, which in turn benefits BAE Systems and also, over time, the universities.



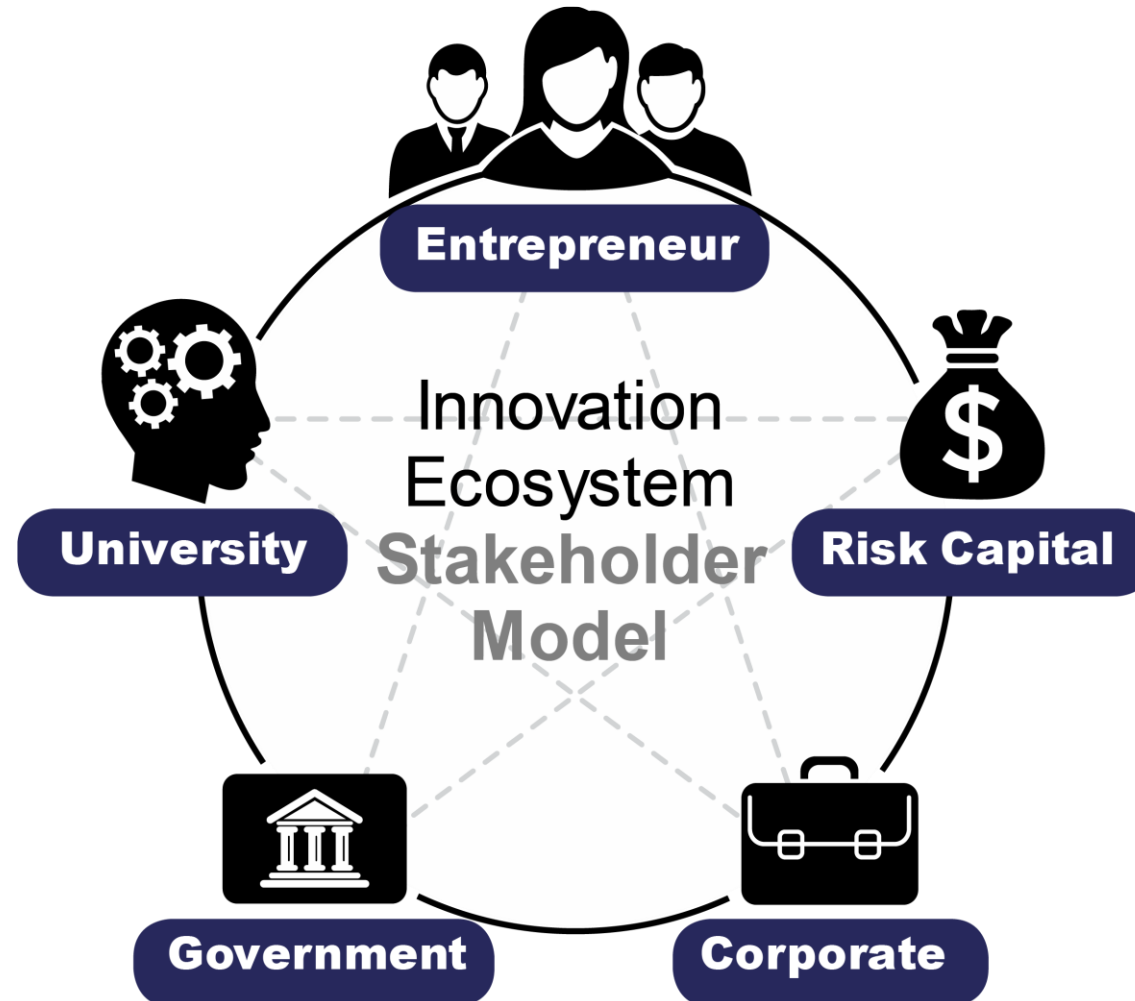
As the most effective 'innovation ecosystems' have
all five key Stakeholders working together...



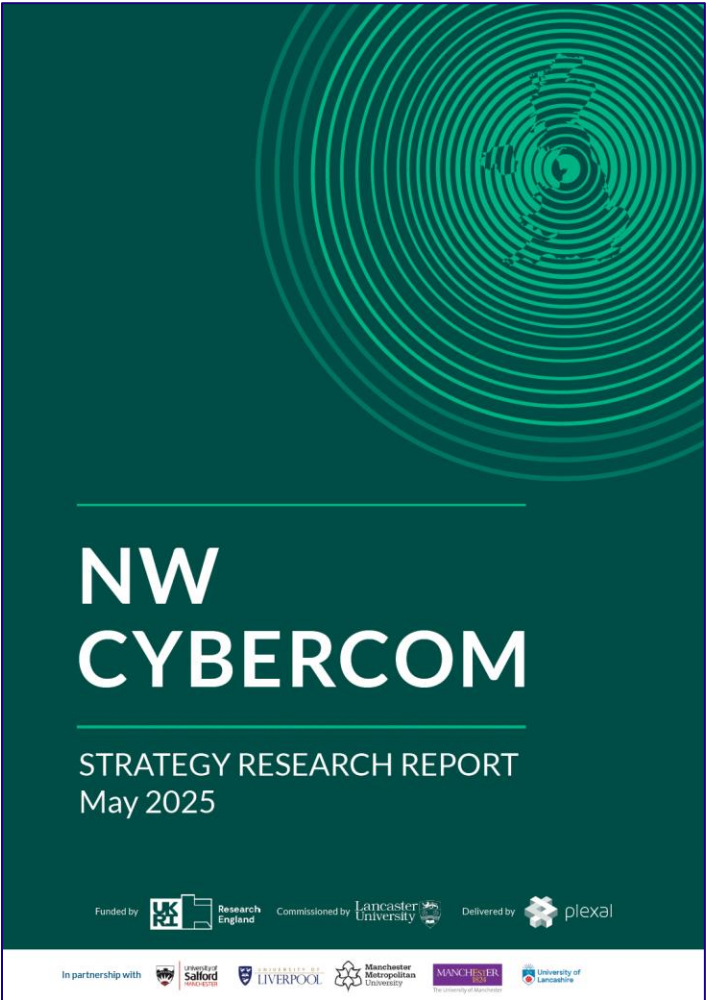
...the UK needs to encourage 'place-based' innovation across the homeland, for security and resilience...



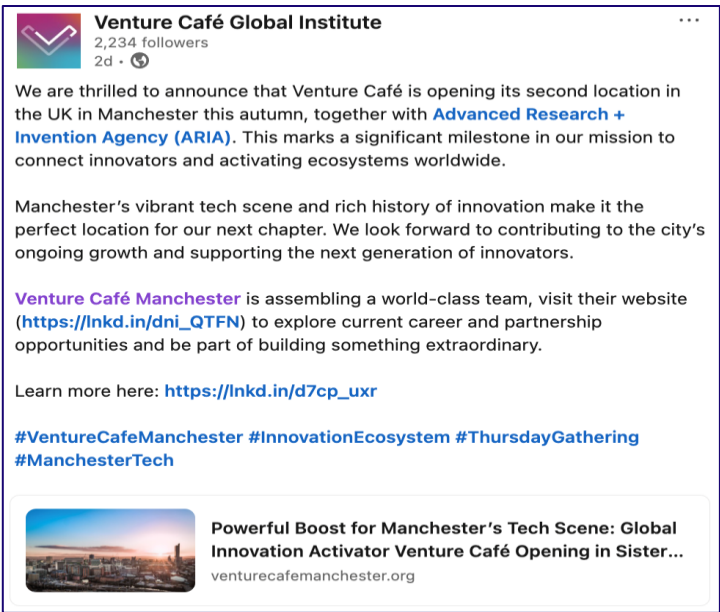
...with all the North West's innovation ecosystems contributing fully to its industrial clusters...



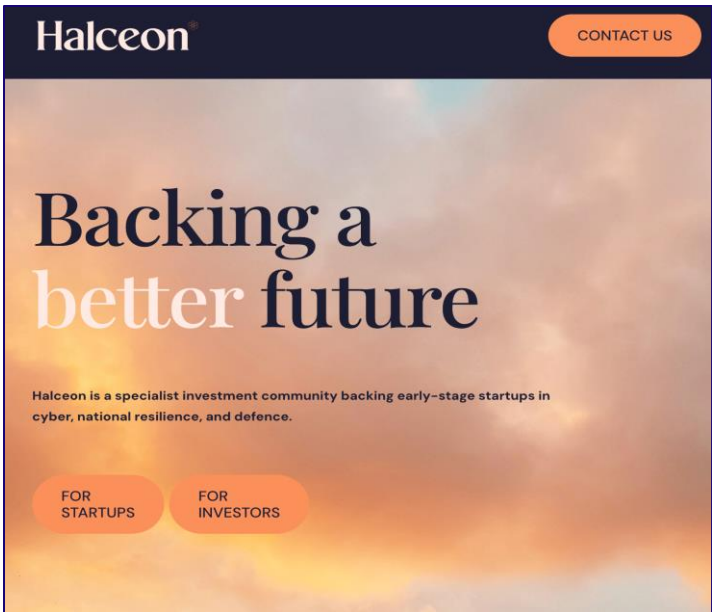
...as the ‘NW CyberCom’ partners’ report highlighted, with the timely arrival of VentureCafe and Halceon.



<https://venturecafemanchester.org/>



<https://www.halceon.tech/>



Thank you, good luck, and stay in touch.

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