

The ‘Science of Innovation’:

what makes MIT good at this?

**Dr. Phil Budden
MIT ILP Perth Seminar**

Welcome to the 'Science of Innovation'



Dr. Phil Budden
Senior Lecturer &
Diplomatic Advisor

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

MIT's Management School

MIT has proven good at innovation...

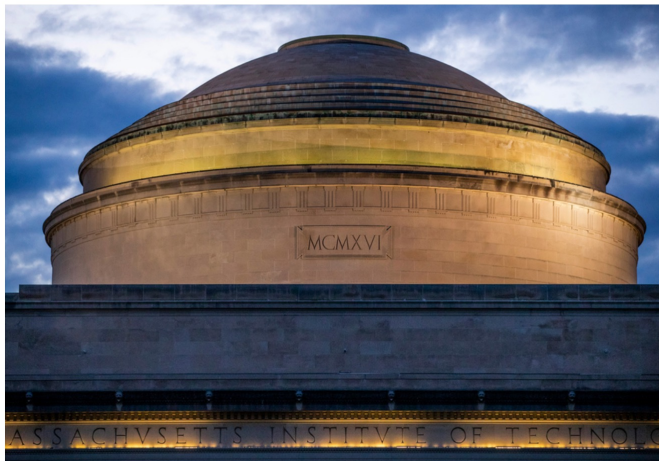
...both as a university...

...and as anchor of Kendall Square (KSq)

QS ranks MIT the world's No. 1 university for 2021-22

Ranked at the top for the 10th straight year, the Institute also places first in 12 subject areas.

MIT News Office
June 8, 2021



MIT has again been named the world's top university by the QS World University Rankings, which were announced today. This is the 10th year in a row MIT has received this distinction.



MIT also studies that through the the ‘Science of Innovation’

I will outline MIT’s systematic approach to innovation, ecosystems and stakeholders, with a focus on ‘corporate innovation’ especially for the resource sector...

...and focus on why innovation is hard in large organisations, but also how they can be better at it internally, while also externally engaging their local innovation ecosystem for competitive advantage.

MIT's 'Science of Innovation'

Drawing on MIT research... ...summarised for executives.



**MIT Lab for
Innovation Science
and Policy**

WORKING PAPER VERSION 2.0

**A systematic MIT approach for assessing
'innovation-driven entrepreneurship' in
ecosystems**

Dr. Phil Budden
Senior Lecturer, MIT Sloan School of Management

Prof. Fiona Murray
Associate Dean for Innovation, MIT Sloan School of Management
Co-Director, MIT Innovation Initiative

Anna Turskaya
Questrom School of Business, Boston University

FEBRUARY 2019

<https://innovation.mit.edu/assets/Assessing-iEcosystems-V2-Final.pdf>



**MIT Lab for
Innovation Science
and Policy**

WORKING PAPER

**Differentiating Small Enterprises in
the Innovation Economy:**

Start-ups, new SMEs & other Growth Ventures

Dr. Phil Budden
MIT Sloan School of Management

Prof. Fiona Murray
MIT Sloan School of Management
MIT Innovation Initiative

Ogbogu Ukuku
Joint MBA/IDM Candidate
MIT Sloan School of Management

JANUARY 2021

<https://innovation.mit.edu/assets/BuddenMurrayUkuku-SME-IDE-WorkingPaper-Jan2021.pdf>

A WORKING DEFINITION?

Innovation

[in-uh-vey-shuh n]



A WORKING DEFINITION

Innovation

[in-uh-vey-shuh n]

noun

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



https://innovation.mit.edu/assets/BuddenMurray_An-MIT-Approach-to-Innovation2.pdf

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DISTINGUISH 'INNOVATION' & 'INNOVATIVE'

MIT researches and teaches about innovation, both:

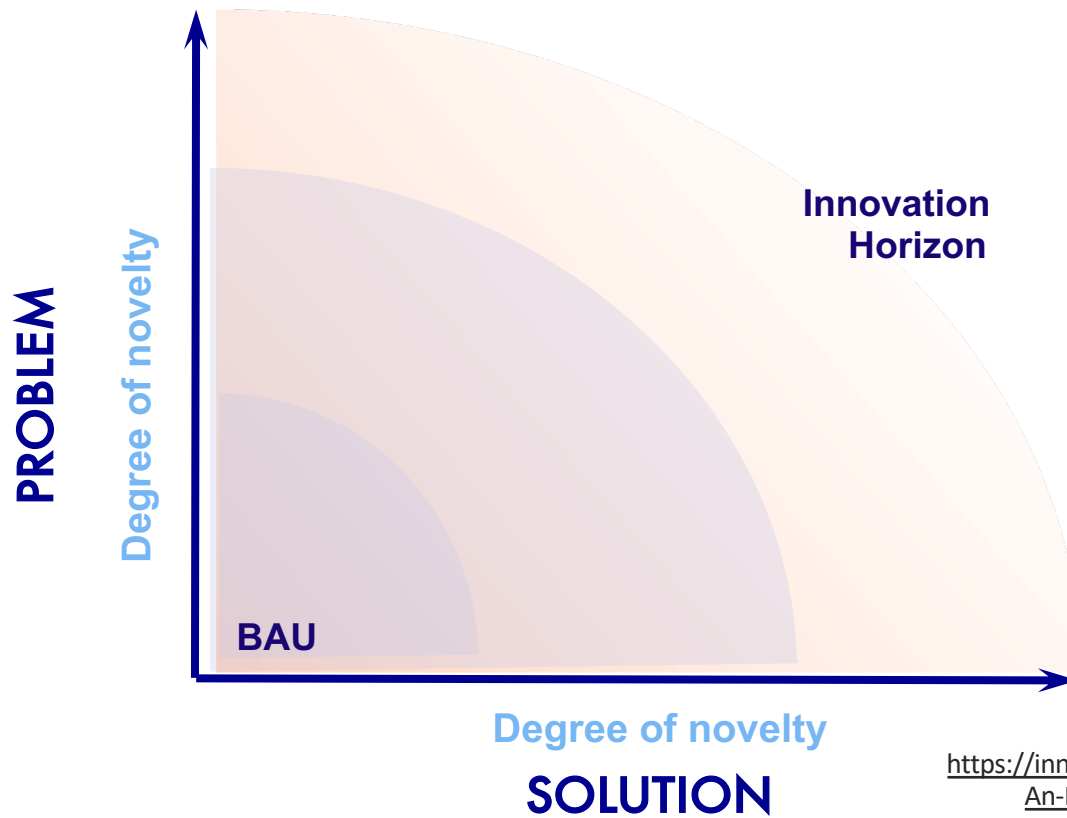
- ❑ 'Innovation' (with a capital "I", like S&I), meaning formal processes of taking science, research at the **horizon** through to '10x' impact, and;
- ❑ 'innovative' behaviour (with a little "i"), signifying a more widely applicable but more modest ('10%') behaviour/culture, in both the public & private sectors.

Many of the insights about 'innovative behaviour' are informed by research into the practices at the frontier of world-class innovation, so the two are mutually supportive and can co-exist...

...with insights for innovation in all organizations.



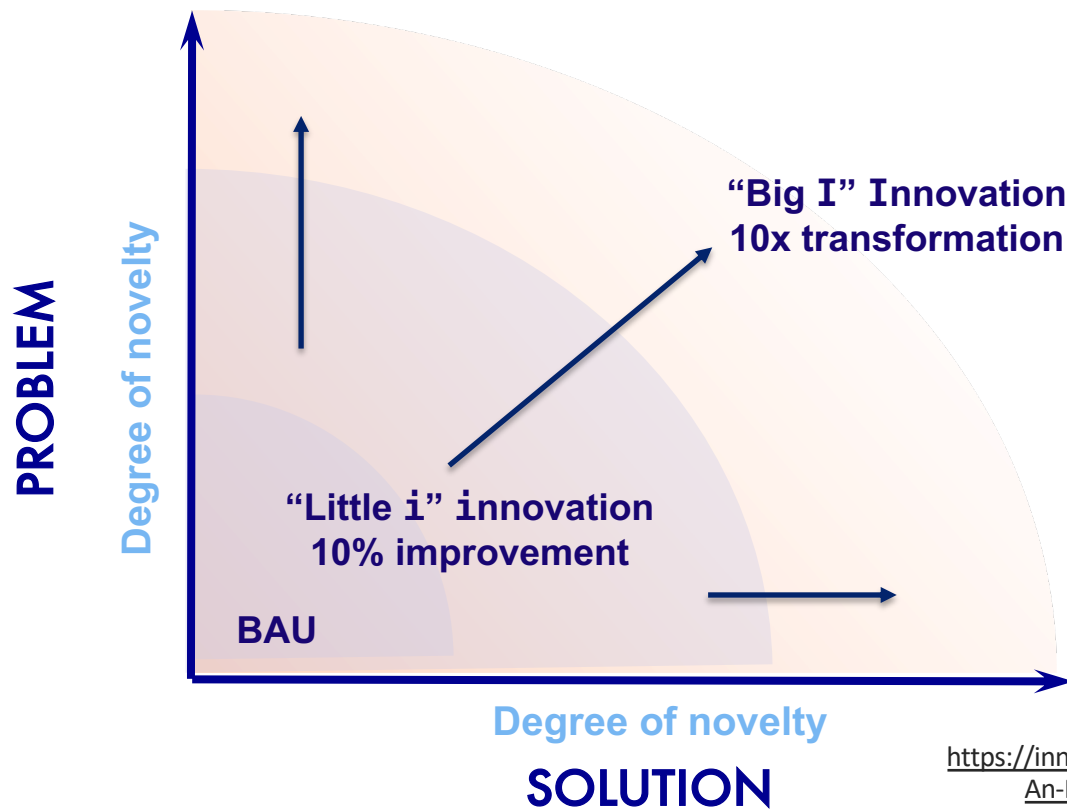
EMPHASIZE THAT THERE ARE DISTINCTIVE INNOVATION 'HORIZONS'



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REMINDING US THAT WHEN WE SAY “INNOVATION” WE NEED TO SPECIFY ...



Large organizations used to seek innovation through a 'closed system' of internal processes...





The World Is Flat

A BRIEF HISTORY OF
THE TWENTY-FIRST CENTURY

Thomas L. Friedman

...as a response, some organizations sought to tap 'open innovation' & emphasized global connectivity, engaging individuals everywhere in the world...

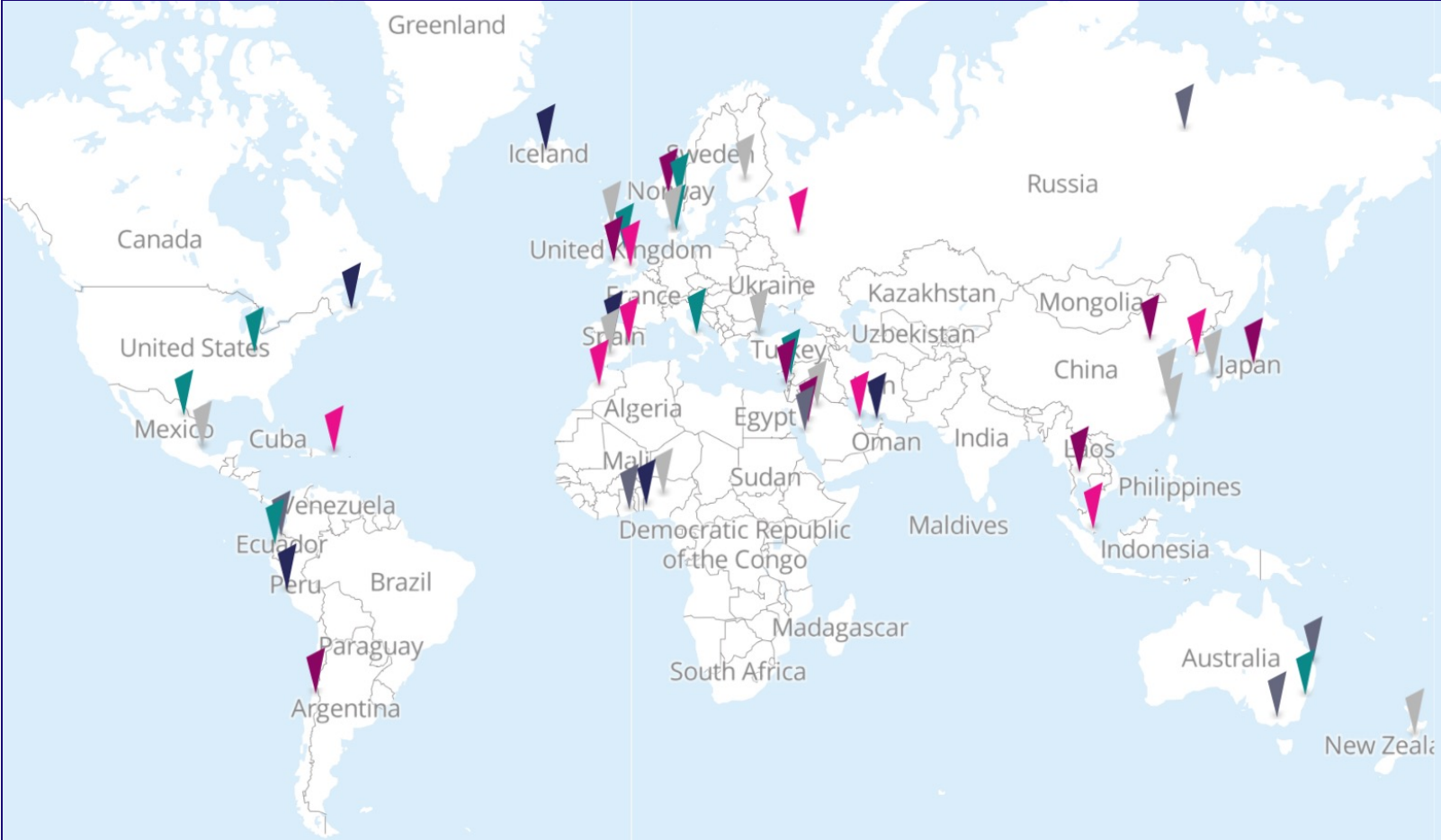


...today, open innovation is still external but now geographically focused on eco-systems....



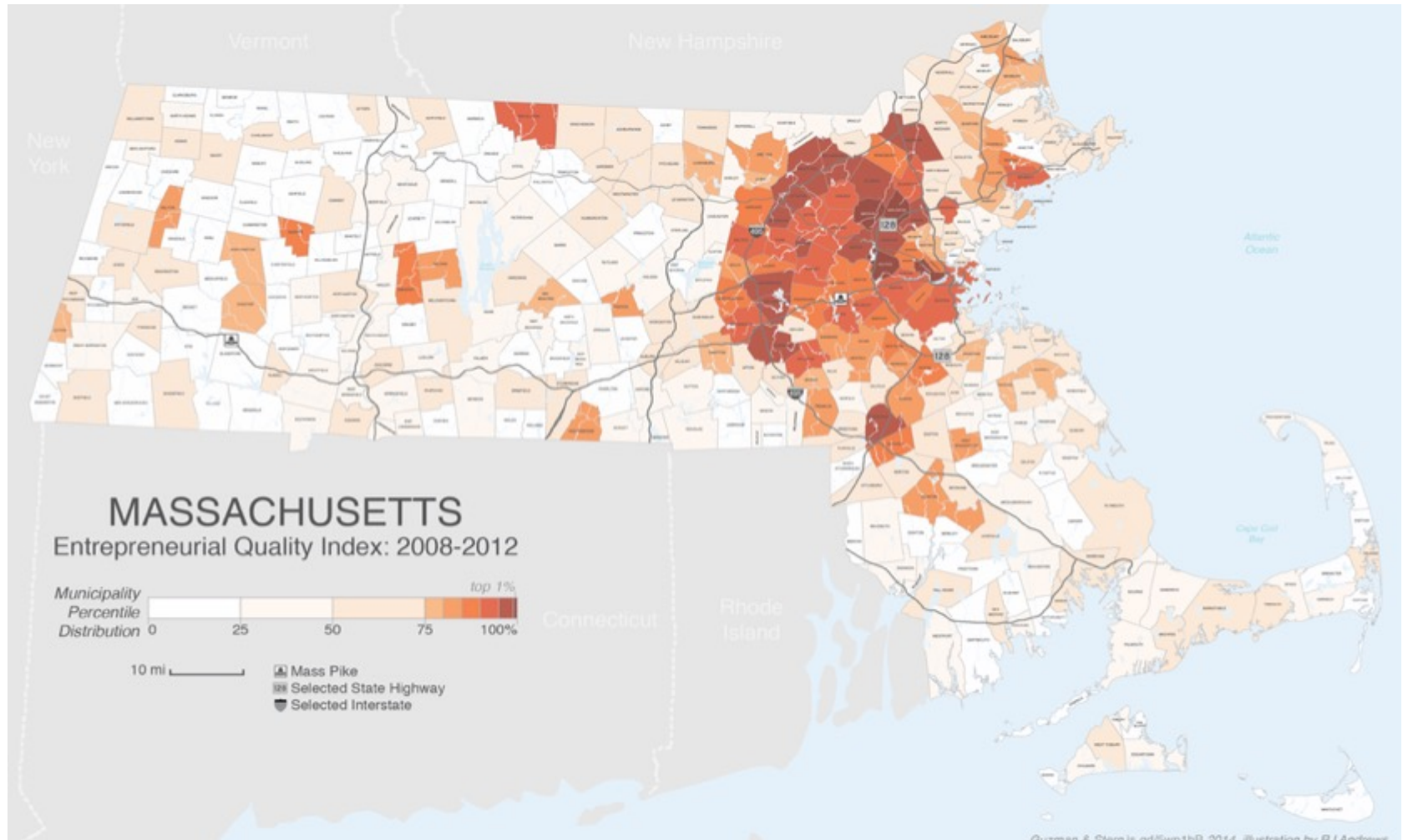
...to support the internal innovation system but with the requirement that innovation leaders create & execute a clear 'eco-system' strategy (even post Covid-19).

Global insight through MIT REAP

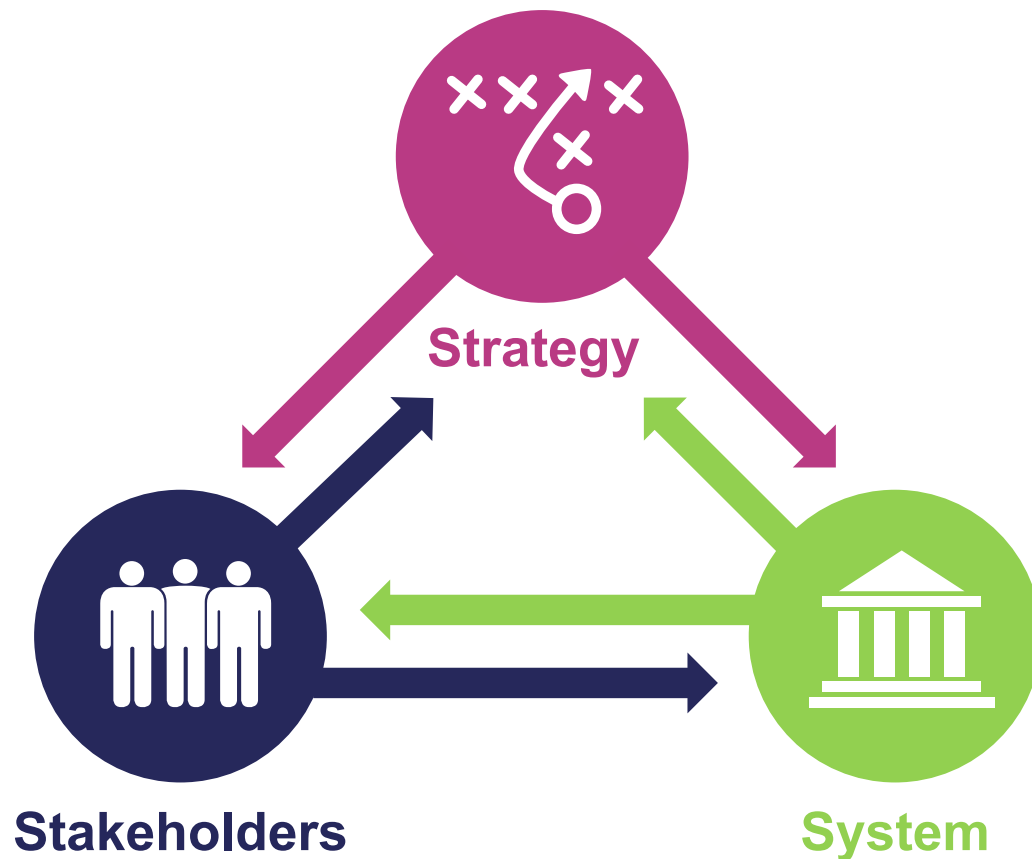


<https://reap.mit.edu>

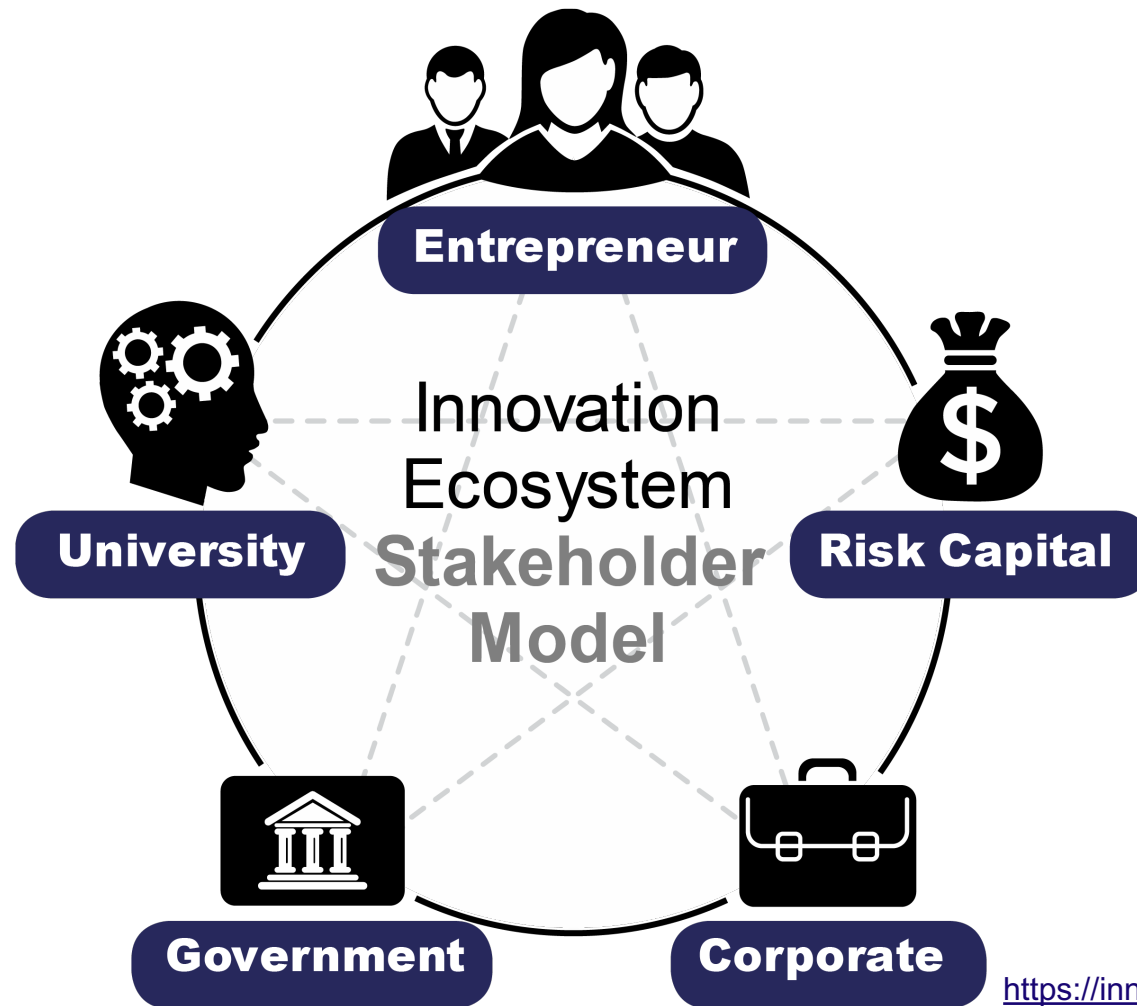
Even within regions, innovation is highly-concentrated in 'innovation ecosystems' (eg Greater Boston)



MIT's approach to analyzing Innovation Ecosystems (3xS's)

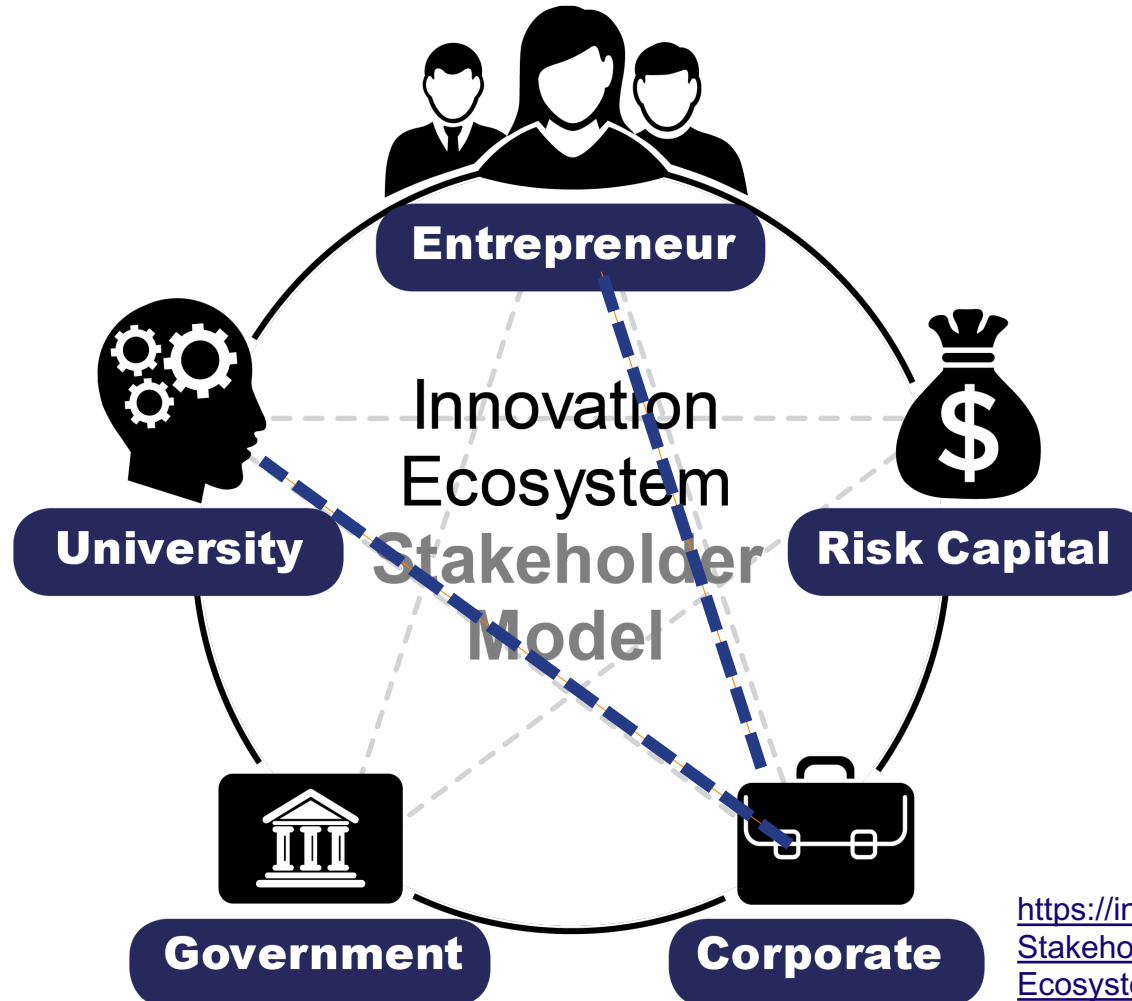


MIT's iEcosystem approach recognizes engagement with multiple Stakeholders



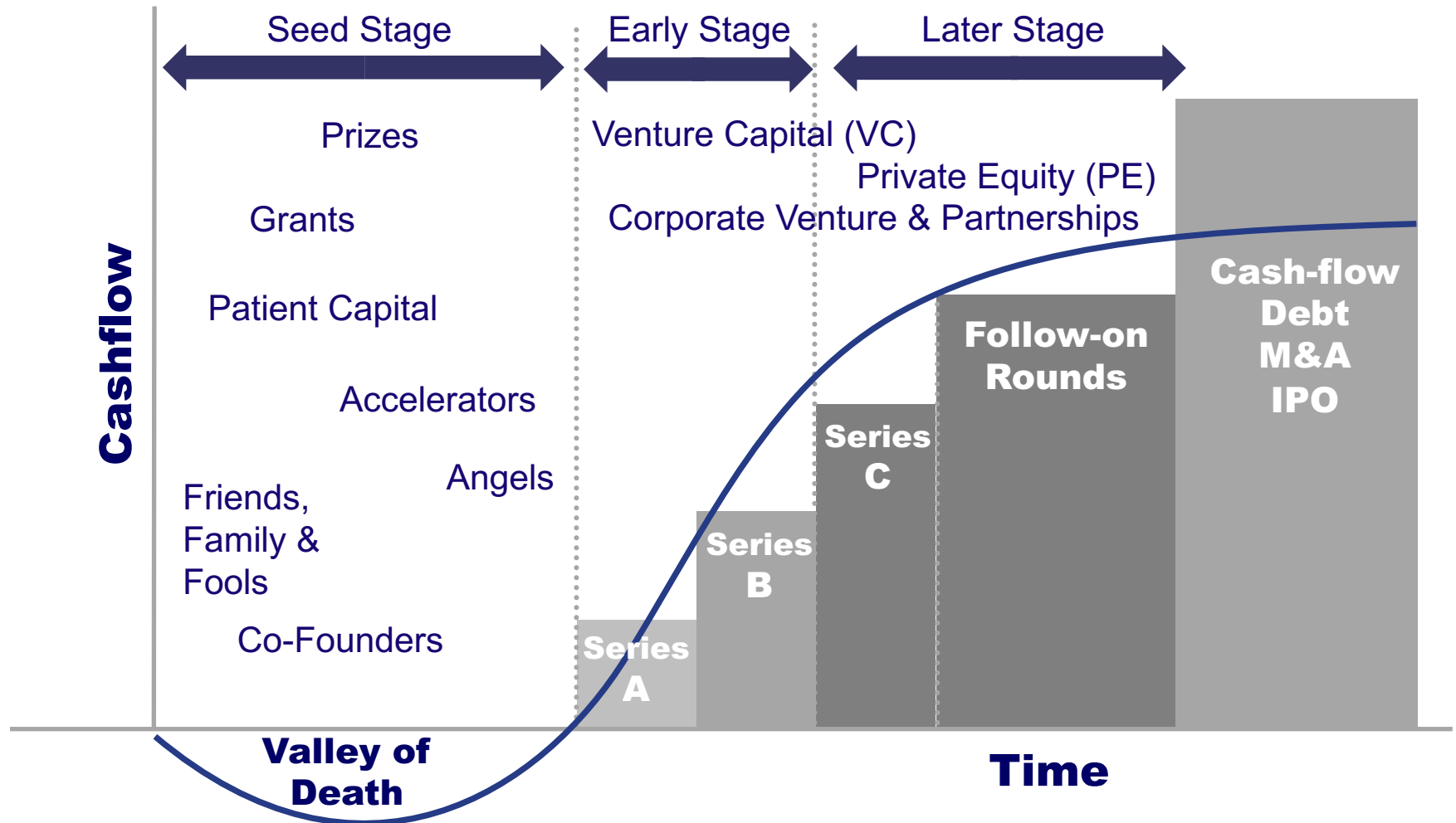
https://innovation.mit.edu/assets/MIT-Stakeholder-Framework_Innovation-Ecosystems.pdf

For large corporations, this usually means improving their engagement with start-up entrepreneurs & universities...



https://innovation.mit.edu/assets/MIT-Stakeholder-Framework_Innovation-Ecosystems.pdf

...but also to Risk Capital providers (especially the General Partners (GPs) who directly invest).



In several REAP Teams, a Corporate in the resource sector has played a key role: Eg Team Morocco (OCP)

MIT REAP
Regional Entrepreneurship Acceleration Program

Morocco
COHORT 2

ABOUT MIT SLOAN GLOBAL PROGRAMS CONTACT TEAM

COMMUNITY APPLY TO MIT REAP RESOURCES MIT AFFILIATES GET INVOLVED NEWS

Team Members Team Strategy Core Regional Metrics Team News

MIT REAP FRAMEWORK

MIT REAP Team Morocco's regional focus is on Greater Casablanca and Rabat. OCP Innovation Fund for Agriculture is the backbone organization in MIT REAP Team Morocco as well as uniquely positioned as the Team Champion. The team is also represented by strong entrepreneurial and corporate stakeholders, as well as the Ministry of Industry, Trade, and New Technologies, and the Polytechnic University.

Team Members

 Outmane El Hassani Champion Head of Regional Coordination / provides for Director, OCP Entrepreneurship Network / OCP Foundation	 Ghita Chraibi Champion Head of Strategy and Partnerships, OCP Entrepreneurship	 Redouane Agoudal CEO, GreenEngineering
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ENTREPRENEUR
UNIVERSITY Innovation Ecosystem Stakeholder Model RISK CAPITAL
GOVERNMENT CORPORATE

Ghita Chraibi
Champion
Head of Strategy and Partnerships, OCP Entrepreneurship

<https://reap.mit.edu/cohort/morocco/>

In several REAP Teams, a Corporate in the resource sector has played a key role: Eg Team Chile (CODELCO)

MIT REAP
Regional Entrepreneurship Acceleration Program

Santiago, Chile
COHORT 3

ABOUT MIT SLOAN GLOBAL PROGRAMS CONTACT TEAM

COMMUNITY APPLY TO MIT REAP RESOURCES MIT AFFILIATES GET INVOLVED NEWS

Team Members Team Strategy Core Regional Metrics Team News

MIT REAP FRAMEWORK

MIT REAP Team Santiago's regional focus is on Santiago with a goal to lead impact in broader Chile. The team has representatives from all stakeholder groups, including Universidad de Chile, National Council of Innovation for Development, Inversur Capital, and **Fundación Chile (FCH)**.

Team Members

Juan Velasquez
Champion
Director of "Una Nueva Ingeniería para el 2030", Universidad de Chile

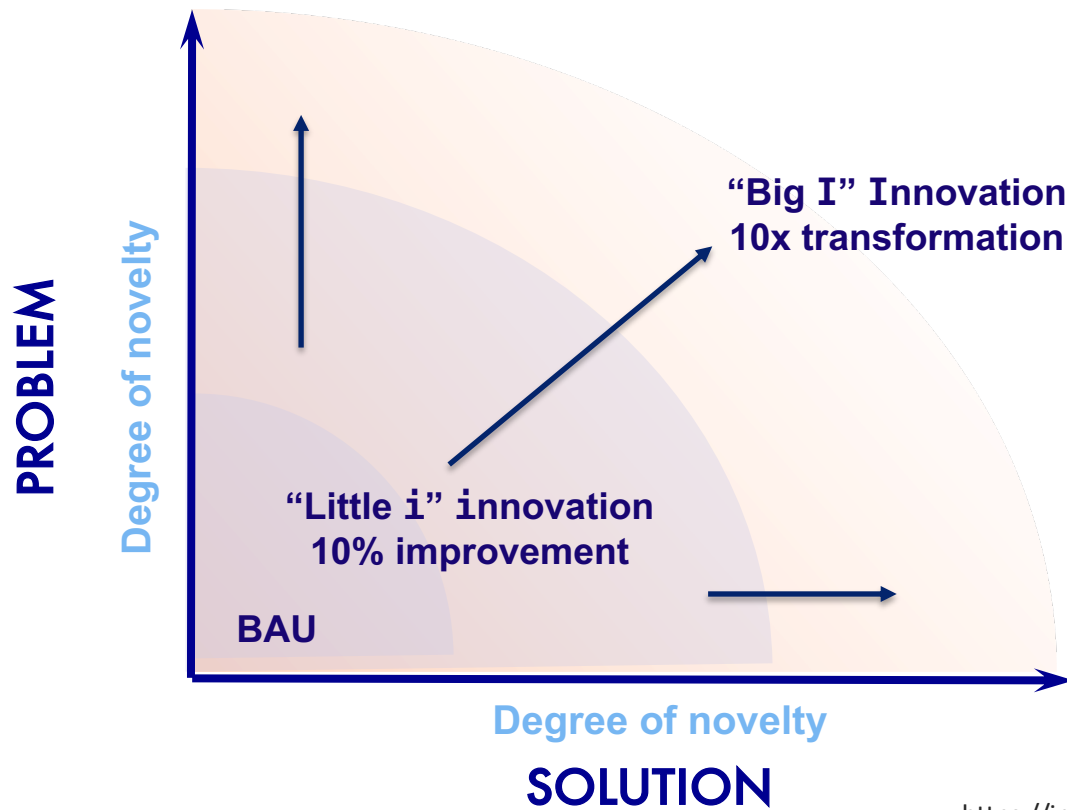
Susan Lasecki
Champion
Head of Corporation Innovation

Jaime Alvarez
Research Manager, National Council of Innovation for Development

Sebastián Carmona
Director of
Innovation, CODELCO

<https://reap.mit.edu/cohort/santiago-chile/>

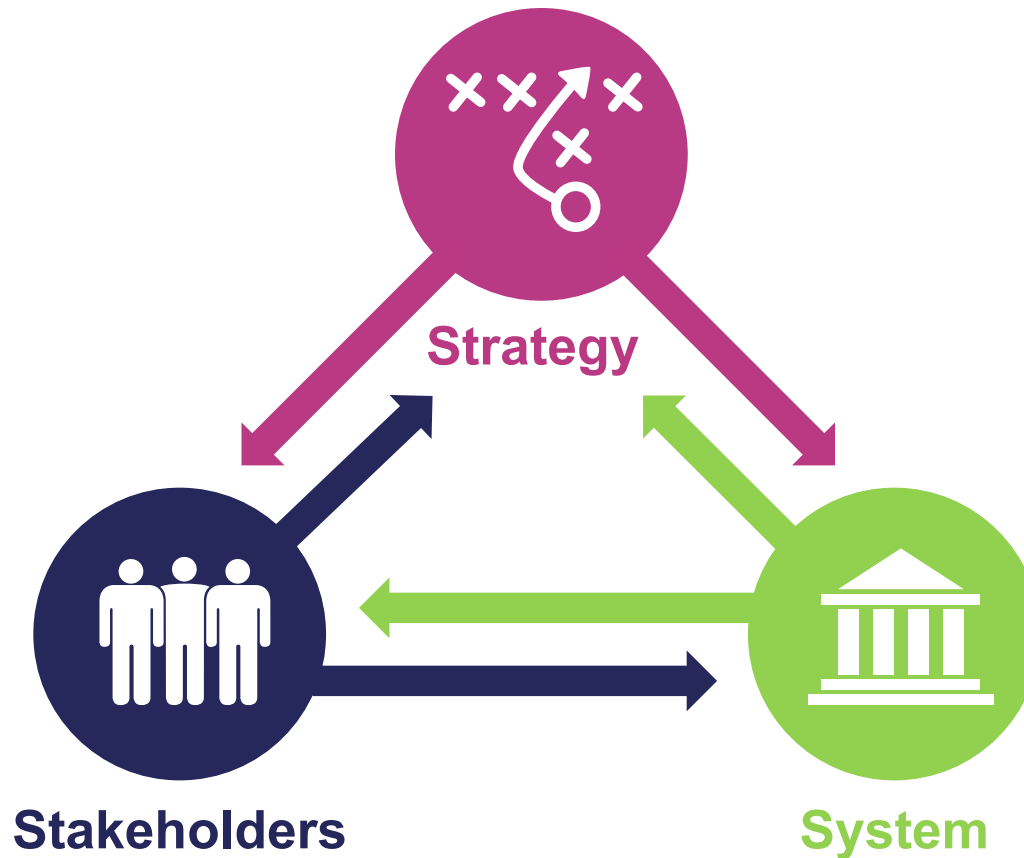
Large corporates (& resource sector) engage ecosystems for their internal '10%' (and for others' '10x') innovation.



https://innovation.mit.edu/assets/BuddenMurray_An-MIT-Approach-to-Innovation2.pdf



Applying MIT's '3xSs' Approach to drive your engagement with iEcosystems...



....focusing on three questions (3xQs).

SYSTEM NEEDS
What do you need from the iEcosystem?

- What are the key innovation resources?
- What are the key entrepreneurship resources?

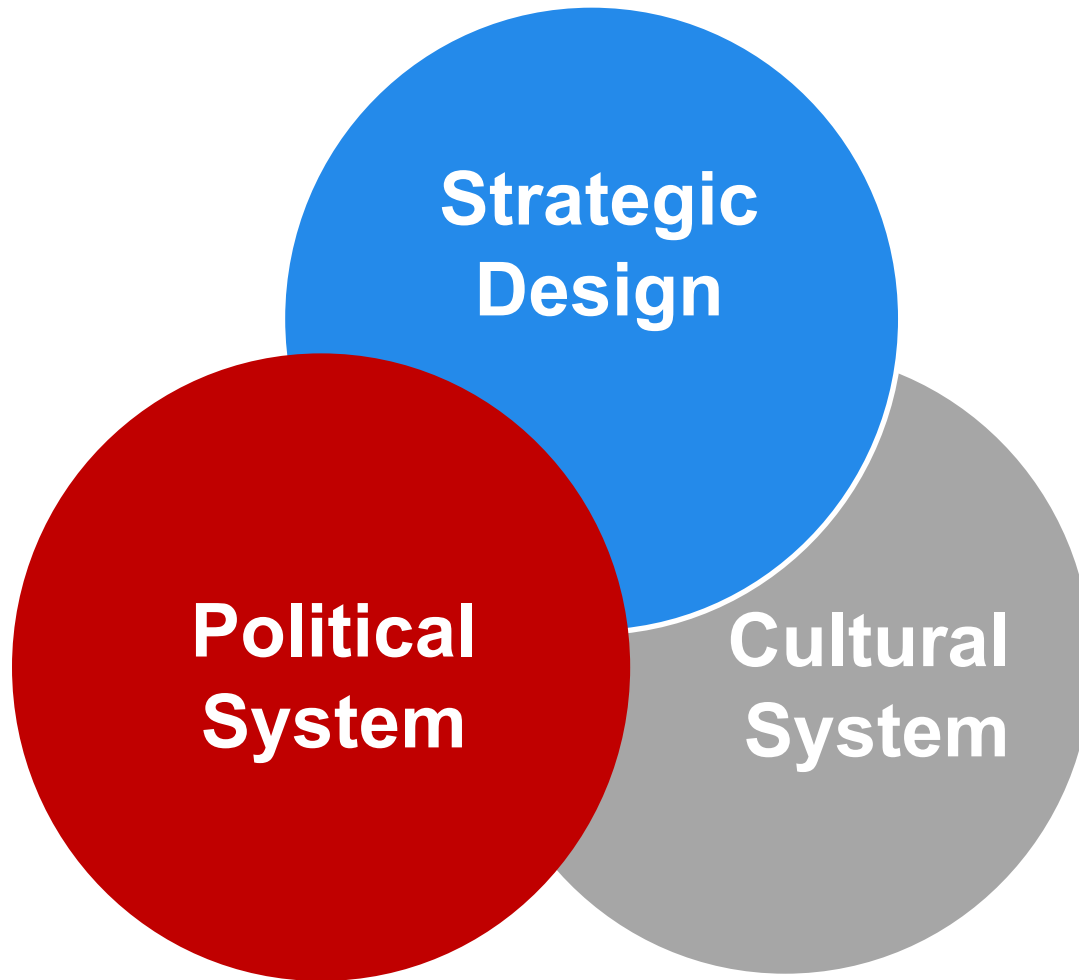
STAKEHOLDER FOCUS
Who do you need to engage with in the iEcosystem?

- Who are the key stakeholders?
- Who are the key network nodes?
- Who engages from the corporate side?

STRATEGIC INTERACTIONS
How do you engage the iEcosystem?

- How can you design strategic interactions?
- How can you use programs effectively?

Innovation (like any change) is hard in large organizations, for the usual reasons...



https://innovation.mit.edu/assets/BuddenMurray_MIT-3-lenses-and-innovation.pdf

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MIT's 'Three lenses' on Organisations

Strategic Design

- Organizations are *machines*
- *Mechanical* systems crafted to achieve defined goals
- Parts must *fit* well together to match environmental demands
- Action comes through planning

Political System

- Organizations are *contests*
- *Social* systems encompassing contradictory interests
- *Competition* for power, influence and resources is to be expected as influencing behaviour
- Action comes through power

Cultural System

- Organizations are *institutions*
- *Symbolic* systems of meanings, artifacts, values and routines
- *Informal norms and traditions* exert a strong influence on behavior
- Action comes through habit

https://innovation.mit.edu/assets/BuddenMurray_MIT-3-lenses-and-innovation.pdf

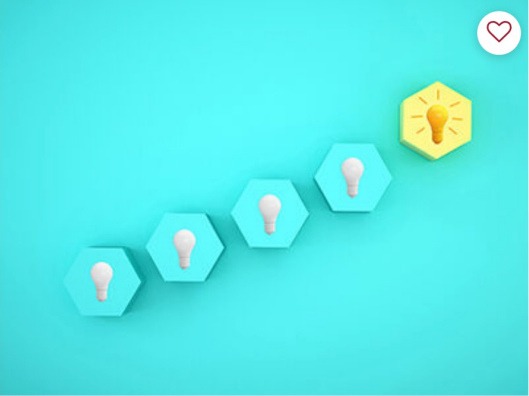
A few lessons & leadership challenges based on our experience...

The usual challenges & issues with leading innovation in a complex organizational system need to be understood, especially:

- A fear of 'failure'
- A desire for immediate results
- A wish to do things that make a splash
- Aversion to small experiments
- Problems of re-integration of successful projects
- A lack of clear reporting
- Need for leadership 'air cover'

By request, this Innovation Ecosystems is now linked with Innovator's DNA...

Courses for Individuals



Innovator's DNA: Mastering Five Skills for Innovative Disruption

★★★★★ [Read 62 Reviews](#)

Course Dates	Format	Duration	Time Commitment	Price
Dec 13-14, 2021				

Tracks

- Strategy and Innovation

[Download Brochure](#)

<https://executive.mit.edu/dna>



Accelerating Corporate Innovation: The Competitive Advantage of Ecosystem Engagement

★★★★★ [Read 42 Reviews](#)

Course Dates	Format	Duration	Time Commitment	Price
Oct 25-26, 2021	Live Online	2 days	5 hrs/day live online + 3-4 hrs self-paced	\$4,300

Tracks

- Strategy and Innovation

Certificate Credits

2.0 EEU's

Topics

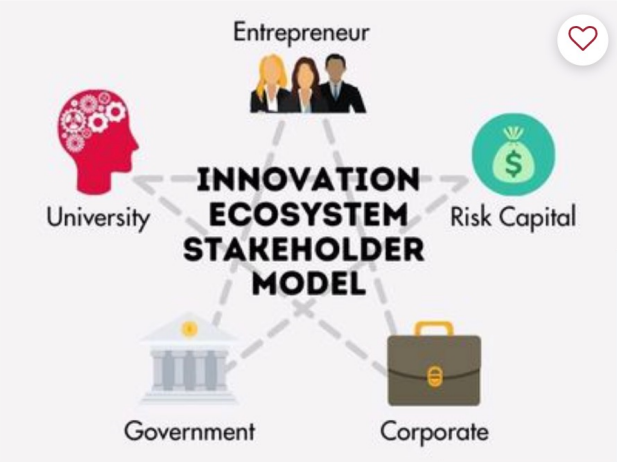
- Entrepreneurship
- Global Economics & Markets
- Strategy & Innovation

[Download Brochure](#)

Both also available as 'custom' (1- and ½-day) courses, eg from MIT ExecEd.

<https://executive.mit.edu/eco>

...and we also provide online complements, eg Corporate Innovation (& Ecosystems)...



INNOVATION ECOSYSTEM STAKEHOLDER MODEL

Entrepreneur
University
Risk Capital
Government
Corporate

Download Brochure

Corporate Innovation: Strategies for Leveraging Ecosystems

★★★★★ [Read 16 Reviews](#)

Course Dates	Format	Duration	Time Commitment	Price
Oct 27-Dec 14, 2021	Self-Paced Online	6 weeks	6-8 hours/week	\$2,800

Tracks
Strategy and Innovation

Certificate Credits
Topics

<https://executive.mit.edu/ci>

<https://exec.mit.edu/s/webinar-post/accelerating-corporate-innovation-in-a-post-covid-world-MC5KDLYWG7DFGH3LEZCONE3S2U5Y>



Accelerating Corporate Innovation in a Post-COVID ...

LINKEDIN LIVE

Accelerating Corporate Innovation in a Post-COVID World

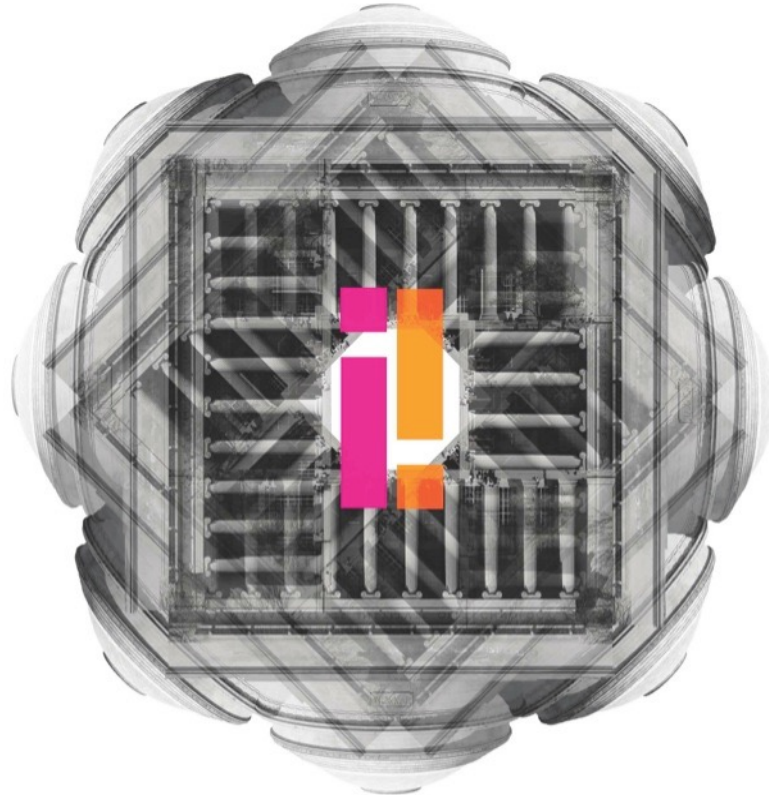
with MIT's Fiona Murray and Phil Budden

MIT MANAGEMENT EXECUTIVE EDUCATION

Watch on YouTube

Dr. Phil Budden

THANK YOU! QUESTIONS?



<https://www.linkedin.com/in/philbudden/>

pbudden@mit.edu

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