MIT Regional Entrepreneurship Acceleration Program

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MIT REAP Objectives

✓ Accelerate innovation-driven entrepreneurship to create vibrant regional economies!

✓ Understand the key drivers of innovation-driven entrepreneurial ecosystems

✓ Evaluate the strengths and weaknesses of your region’s innovation-driven entrepreneurial ecosystem

✓ Design an Acceleration Strategy to strengthen and catalyze your innovation-driven entrepreneurial ecosystem

✓ Find resources and engage stakeholders to move the Acceleration Strategy into implementation
WELCOME BACK COHORT 1

Brief Introductions
MIT REAP: 2-year learning engagement

- **Feb 2012**: Workshop 1 - Envisioning Ecosystems: frameworks, levers, linkages
  - @MIT

- **Sept 2012**: Action Phase 1 - From Vision to Practical Action
  - @Member Region

- **March 2013**: Workshop 2 - Analyzing Ecosystem with rigor & data
  - @Member Region

- **Feb 2014**: Workshop 3 - REAP Strategy, Action & Implementation
  - REAP Acceleration Strategy

- **March 2013**: Action Phase 2 - REAP Acceleration Strategy
  - @Member Region

- **Feb 2014**: Workshop 4 - REAP Acceleration Strategy Impact
  - Ongoing Initiatives
  - @MIT
Two distinctive types of Entrepreneurship: SMEs & IDEs

SME Revenue, Cash Flow, Jobs over Time

IDE Revenue, Cash Flow, Jobs over Time
Two approaches to a similar problem: distinctive intention & potential

Gluten allergies: Bakery vs. Sensor?
MIT REAP Framework Overview
Neither Innovation nor Entrepreneurship exist in isolation. Accounting for interactions and interdependencies yields insights into the potential for IDE Ecosystem Acceleration.

*Innovation and Entrepreneurship depend on each other, on regional economic structure and linkages, and on background institutions, laws, and norms*
MIT REAP IDE Ecosystem Framework

IDE Framework
The Relationship Between Innovation and Entrepreneurial Performance

Patent Rate (I-Capacity) vs. Business Formation Rate (E-Capacity)
Innovative Capacity & Entrepreneurial Capacity Are Distinct Regional Assets

I-Capacity
Ability to develop new to the world innovations from inception through to the market.

Strong I-Cap:
Universities, Central R&D, Network of researchers, Medical Centers

E-Capacity
Ability to start and build new to the world businesses from inception to maturity.

Strong E-Cap:
Enterpreneurs, Mentors, Founding Teams, Investors at all stages
Both Innovative Capacity and Entrepreneurial Capacity Reflect Investments, Policy and Norms

### I-Capacity

- Innovation output (patents and papers)
- Pool of innovators
  - Education in tech and commercialization
- Funding for research
  - Government programs
- Physical infrastructure
  - Example: hi speed internet
- Clear rules around patents
  - Clear support for STEM education
- Celebration of invention and innovation
  - Rewards to innovation – tenure process
- Nature of established companies in region

### E-Capacity

<table>
<thead>
<tr>
<th>PERFORMANCE</th>
<th>PEOPLE</th>
<th>FUNDING</th>
<th>INFRASTRUCTURE</th>
<th>POLICY</th>
<th>CULTURE &amp; COMMUNITY</th>
<th>DEMAND</th>
</tr>
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</table>
| - Entrepreneurship output (new firms & growth) | - Pool of entrepreneurs
  - Quality of entrepreneurial education | - Accessibility of entrepreneurial capital
  (government, private, equity, debt, grants) | - Physical infrastructure (space, transportation)
  - Availability of key services (internet, training) | - Clear rules on new business creation
  - Clear rules on business operations and growth | - Culture of entrepreneurialism and failure
  - Societal support, ties and recognition | - Government, corporate and consumer demand for new products and services

### MIT REAP

REGIONAL ENTREPRENEURSHIP ACCELERATION PROGRAM
Neither I-Cap Nor E-Cap Is By Themselves Enough to Create a Dynamic Innovation-Driven Entrepreneurial Ecosystem

<table>
<thead>
<tr>
<th>I-Capacity</th>
<th>E-Capacity</th>
</tr>
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<tbody>
<tr>
<td>Research</td>
<td>$1.4 B</td>
</tr>
<tr>
<td>Public Firms</td>
<td>58</td>
</tr>
<tr>
<td>Phase III Products</td>
<td>51</td>
</tr>
<tr>
<td>Employees</td>
<td>32,000</td>
</tr>
</tbody>
</table>

Example: UK’s Poor Track Record in Biotech

With similar “engines supplying scientific ideas” Boston is transforming those ideas into more pronounced economic value.

Example: Poor Nation’s Entrepreneurship Rates

Indonesia, Thailand, India and Malaysia all have high rates of entrepreneurialism.
I-Cap versus E-Cap

Innovation Capacity

Entrepreneurial Capacity

MIT REAP
REGIONAL ENTREPRENEURSHIP ACCELERATION PROGRAM
Linkages: From I-Cap to E-Cap
I-Cap and E-Cap must be effectively linked

Strong I-Cap:
Universities, Central R&D,
Network of researchers,
Medical Centers

Strong E-Cap:
Entrepreneurs, Mentors,
Founding Teams
Investors at all stages

Linkages are critical to combine innovative ideas and pursuit of entrepreneurial opportunities to enabled innovation-based enterprises to flourish.
I-Cap and E-Cap reinforce each other

Strong I-Cap:
Universities, Central R&D, Network of researchers, Medical Centers

Strong E-Cap:
Entrepreneurs, Mentors, Founding Teams, Investors at all stages

Capacity must be “Matched”—complementarity between the capacity on each side and regional strengths to maximize the opportunities for IBE.
Innovation-Driven Entrepreneurial Ecosystems Need to Leverage Comparative Advantage

**Strong I-Cap:** Universities, Central R&D, Network of researchers, Medical Centers

**Strong E-Cap:** Entrepreneurs, Mentors, Founding Teams, Investors at all stages

MATCHED to strengths in sophisticated customers and large sector-specific corporate partners to give opportunities to learn, to gain additional resources and to grow.
The Australian Wine Cluster

Locations

Western Australia
South Australia
New South Wales
Victoria
Tasmania
Northern Territory
Queensland

Note: Colored areas indicate wine growing regions
Source: Australian Wine & Brandy Corporation
Accelerating Ecosystems through Assessment, Strategic Choice and Focused Implementation

IDE Framework
This means making hard choices…

About what to do and what **NOT** to do!

Our program is designed to help you do both. Learning from one another and working with us through the process.
Stakeholder

Acceleration through inclusive and active engagement with stakeholders throughout the ecosystem
MIT REAP Stakeholders
Core creators of iCap & eCap as well as the actors in the underlying social fabric of regions
The Collective Impact Foundations for Entrepreneurial Acceleration

• A Common Agenda

• Backbone Support

• Shared Measurement

• Mutually Reinforcing Activities and Communication
## Phases of Collective Impact

<table>
<thead>
<tr>
<th>Components for Success</th>
<th>Phase I: Initiate Action</th>
<th>Phase II: Organize for Impact</th>
<th>Phase III: Sustain Action and Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Governance and Infrastructure</td>
<td>Identify champions and form cross-sector group</td>
<td>Create infrastructure (backbone and processes)</td>
<td>Facilitate and refine</td>
</tr>
<tr>
<td>Strategic Planning</td>
<td>Map the landscape and use data to make case</td>
<td>Create common agenda (goals and strategy)</td>
<td>Support implementation (alignment to goals and strategies)</td>
</tr>
<tr>
<td>Community Involvement</td>
<td>Facilitate community outreach</td>
<td>Engage community and build public will</td>
<td>Continue engagement and conduct advocacy</td>
</tr>
<tr>
<td>Evaluation and Improvement</td>
<td>Analyze baseline data to identify key issues and gaps</td>
<td>Establish shared metrics (indicators, measurement, and approach)</td>
<td>Collect, track, and report progress (process to learn and improve)</td>
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Assessment - Shared Measurement

**NEW ZEALAND**

New Zealand prides itself as a smart, innovative nation. From ground-breaking cancer research, award winning digital content, to world leading dairy nutrition, our products and services are exported globally. But much of our potential in this area remains unrealized and fostering a high performing science and...

**projects & news**

- Lightning Lab
- Kiwi Landing Pad and Catapult
- Wynyard Quarter
- Advanced Technology Institute

**REAP team**

- Joseph Stewart
  - Champion
- Brett O’Riley
  - Government
- Peter Rose
  - Entrepreneur
- David Beard
  - Risk Capital
- Ian Town
  - Academic
- Mitch Olson
  - Entrepreneur
- Phil Love
  - Corporate

**Key Challenge**

The key Challenge of this region is plainly stated lorem ipsum lorem ipsum lorem ipsum lorem ipsum lorem ipsum lorem ipsum.

**Location Quotient**

- 1.24 Heavy equipment cluster
- 1.06 Mobile tech beta cluster
- 0.85 Bioscience gamma cluster

**region metrics**

- New STEM Grads: 135
- High-tech Jobs: 5%
- Published Papers: 12%

**clusters**

**Key challenges**

- 3m: 98
- 6m: 93
- 1y: all
- all: 5%

**innovation**

**Patent Intensity**

- 3m: 50
- 6m: 68
- 1y: all
- all: 35%
Nowcasting and Placecasting Growth
Entrepreneurship

Jorge Guzman, MIT
Scott Stern, MIT and NBER

March 19, 2014
The Entrepreneurship Measurement Challenge

• Significant interest by academics, policymakers and practitioners in measuring growth entrepreneurship
  – Understand the origins and dynamics of start-up firms that are commonly believed to be a key driver of economic growth and job creation
  – Be able to evaluate the role of institutions, regional ecosystems, and economic and social factors in shaping both the creation and dynamics of start-up firms
  – Be able to forecast and measure real-time changes in the nature and location of growth entrepreneurship
• However, little consensus on what exactly is meant by growth entrepreneurship or what data might be useful
  – Traditional measurement of broad-based entrepreneurship is based on surveys (such as the Global Entrepreneurship Monitor) of randomly selected individual.
  – Much academic research conditions on a certain level of growth, such as the receipt of VC
Nowcasting and Placecasting Growth Entrepreneurship

• This paper introduces a novel approach to the measurement of growth entrepreneurship
  – **Incorporation.** We take advantage of the fact that nearly all growth activity requires some form of incorporation or business registration. Comprehensive and consistent over time and place.
  – **Development of a Predictive Model of Growth Entrepreneurship.** We use information available at the time of incorporation to predict the growth intention and potential of all start-up firms. Leveraging information within the incorporation record (its name!), and contemporaneous information (patents and copyrights, etc)
  – **Placecasting.** We can use our model to create an index of the growth prospects for start-up firms from that location from any given cohort (at any level of granularity)
  – **Nowcasting.** We can use our model to identify firms or areas that have characteristics similar to firms that have grown in the past but be able to capture that information on a real-time basis.
Key Findings

• Incorporation data turns out to be a rich (and essentially unused) resource that has been largely digitized and can be exploited for detailed understanding of business activity

• **Prediction.** There is a meaningful relationship between the growth outcome of start-ups and publicly available information at the time of incorporation (or just after incorporation)
  – The start-up Lorenz curve (50% of growth is from top 10% of start-ups)

• **Placecasting.** Results suggest the ability to identify key changes in the location of growth entrepreneurship over time
  – Route 128 to Kendall Square
  – Silicon Valley to San Francisco

• **Nowcasting.** Results suggest the ability to offer a real-time tool that provides detailed insight into how to use incorporation data for policy and practitioner forecasting
  – How long in a firm’s life do we need to observe before we can detect whether it is a growth entrepreneur?
Cambridge vs Route 128 - All Firms

Route 128 = Waltham, Wayland, Lexington, Burlington, Woburn
Count of High-Growth Firms S. Francisco vs S. Valley

SV = Santa Clara, San Jose, Cupertino, Mountain View, Palo Alto
Strategy

Choosing an Innovator-Based Entrepreneur-Led Value Proposition for Your Region
Your REAP Strategy

- Objective
- Regional Capabilities
- Scope
- Regional Positioning
A REAP Strategy:
A Dynamic IBE Ecosystem

Innovation pushes out the frontier, clusters focus innovation, and IDEs allow a region to reach the frontier for economic impact.
MIT REAP Strategy

Catalytic Interventions – Enabling Change:
Shaping the system, stakeholders inline with the strategy
Impact Through Choosing and Winning A Must-Win Battle!
MIT REAP Framework
\[ a = \frac{\Delta v}{\Delta t} \]
NEW ZEALAND
Wynyard Quarter Innovation Precinct

REAP Goal: developing New Zealand into the innovation hub of the Asia-Pacific rim.

“The innovation precinct will be an ICT and digital media hub that brings together innovative entrepreneurs and multi-national companies, as well as research and development-intensive organizations.“ ATEED Auckland

It will provide the focus, resources, connections and opportunities to launch successful IDE enterprises for success on the global stage.
New Zealand REAP is committed to the Maori spirit of Kotahitanga: being highly collaborative and being highly transparent and therefore works closely with government agencies to achieve their goals.
Key Accomplishments for Must-win Battle
— Promoting Oversea Returnees Entrepreneurship

• Since March 2013 in NZ, REAP Hangzhou Team has achieved following:
  – Phoenix Tree Project (梧桐会): Attracting talents, A joint program by Gov & local entrepreneurs aiming to get outside entrepreneurs to build start-up in Hangzhou starting Oct 2013.
  – Entrepreneurship Acceleration Program by Zhejiang Province and Hangzhou Municipal Government, including financial support,
  – Zhejiang University joins MIT Start-up Accelerator International 2013: A team stay in MIT for 3 months and build their app for elder in China.
  – Peking University-Ivy League association event Dec 2013: A visiting team of oversea Chinese entrepreneurs come to Hangzhou for future location of their start-ups.
Lessons for Emerging Economies...