Innovation Ecosystem Module 1:
The ILO/SPI Role within an ERC

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ILO / SPI Mentoring Program

- Mentor pairing
- Onboarding Modules
- ERC Consulting Visit
- ILO WG & Resource Page

Innovation Ecosystem Resources

Module	Module Type
First Orientation Call	Required
ILO/SPI Role within ERC	Required
IP and Tech Transfer	Required
IAB Management	Required
Site Visit & Annual Report	Required
Entrepreneurship	Elective
MarComm	Elective
	Elective
Sustainability	Elective

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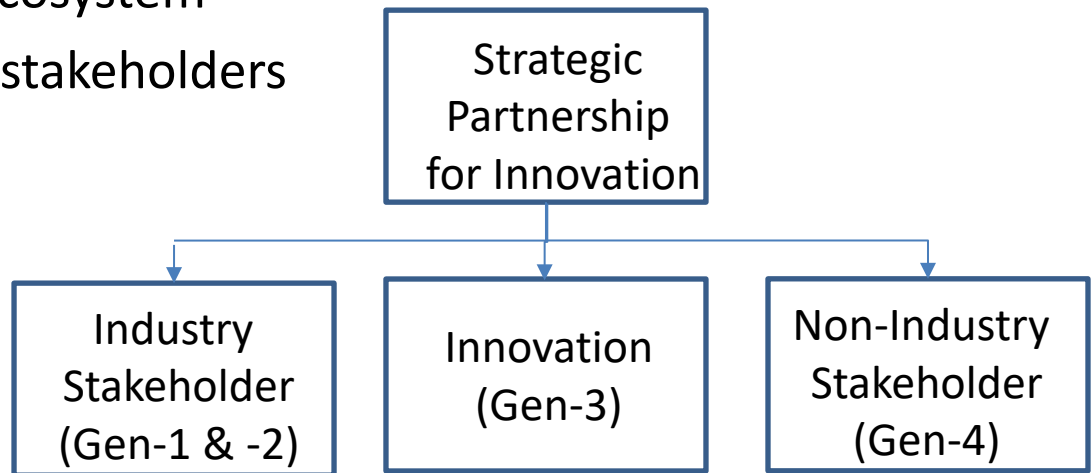# ERCs are Charged with Nurturing the Innovation Ecosystem

- **Gen 4 Innovation Ecosystem**
  - is a community of like-minded stakeholders taking advantage of world-class resources proven to deliver results for individuals, teams and organizations, irrespective of geography, industry or company size.

  - **Gen-4 stakeholders** are **All entities** impacting or being impacted by the ERC's Engineered System.

  - **Gen-4 Engineered Systems** designed to have high societal impact.

Industry Liaison Officer → Strategic Partner and Innovation (SPI) Director

- **RESPONSIBILITY:** Create the strategic plan for nurturing the ERC's innovation ecosystem. Under that umbrella, the SPI Director defines the organization, reporting structure, and processes needed to complete the following three functions:
  a) Manage industry stakeholder partner relations
  b) Nurture innovation ecosystem
  c) Engage non-industry stakeholders

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                    ┌──────────────────┐
                    │    Strategic     │
                    │   Partnership    │
                    │  for Innovation  │
                    └──────────────────┘
         ┌───────────────────┼───────────────────┐
         ▼                   ▼                   ▼
  ┌──────────────┐   ┌──────────────┐   ┌──────────────┐
  │   Industry   │   │              │   │ Non-Industry │
  │ Stakeholder  │   │  Innovation  │   │ Stakeholder  │
  │ (Gen-1 & -2) │   │   (Gen-3)    │   │   (Gen-4)    │
  └──────────────┘   └──────────────┘   └──────────────┘
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NSF Core Competencies

ref. ERC Handbook Ch. 5.4 and Elysium Training

Technology

- Domain working knowledge
- University tech transfer & IP
- Innovation methods/processes
- Tech startups/entrepreneurship

Communications

- Marketing/promotions
- PPT presentations
- Written communication/reporting

Partnerships

- Recruiting
- Networking
- Relationship management
- Business development

Administration

- Advisory board management
- Project management
- Research administration
- Legal agreements
- Accounting/finance operations

Essential Functions and Competencies

1. **Industrial Liaison X%**
   - Direct the implementation of the membership agreement for Industrial Practitioner Advisory Board (IPAB) participation…..

2. **Business Development X%**
   - Direct a process to identify prospective IPAB members, engage and convert them to members………

3. **Innovation Ecosystem X%**
   - Direct a process to define the breadth and range of intra/entrepreneurial efforts in the center…….
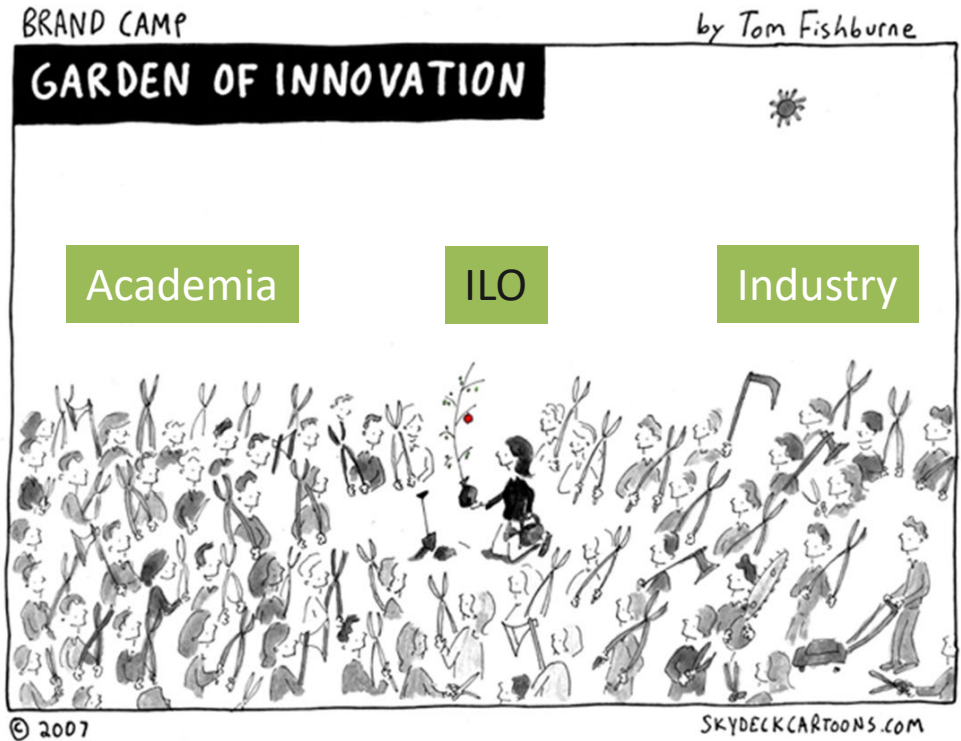
4. **Miscellaneous X%**
   - Perform miscellaneous duties related to the ERC to ensure the success of the center…..

"In five years, I see myself with the same job title, about the same salary, and significantly more responsibilities."

ILO Role

- INFINITE

- A JOURNEY

- DIFFERENT ACROSS ERCs
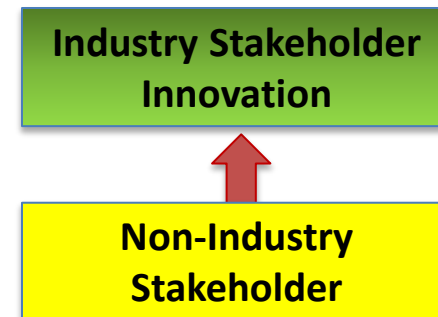
- RECRUIT / RETAIN / EVOLV

ILO Role Changes over Time

ERC STAGES & YEARS CONCEPT	Stage 1. ERC Years -2 thru 0 Formation and Foundation	Stage 2. ERC Years 1 thru 3 Define and Develop	Stage 3. ERC Years 4 thru 6 Refine and Optimize	Stage 4. ERC Years 7 thru 10 Redefine and Mature	Stage 5. ERC Years 10+ Graduate to Sustainable Center
Ideation and Formation	Work closely with ERC Founders and University advisors to develop ideas within context of NSF ERC Guidelines. Help define ERC opportunity.	Define and develop ERC concept working closely with ERC Management Team.	Refine ERC concept working closely with ERC Management Team.	Redefine Center concept based around a vision of future sustainability.	Review and define new sustainability strategy
Member Recruitment	Secure letters of Intent from future industry members. Identify key individuals to work with.	Develop active outreach process through business connections, technical summits, outreach presentations, fliers and brochures. Tiered membership structure based on company size, varying benefits. What is a realistic IAB size.	Refine recruitment efforts with a greater emphasis on maximizing ability to retain key members.	Redefine recruitment and retention around a future sustainability strategy.	Develop connections to forge the best path into Sustainability.
Member Retention	Begin to define strategy to retain members through engagement in center activities including newsletters, websites and other informational tools.	Develop company interaction and benefits. Develop ideas around joint projects, testbeds, and other ERC opportunities.	Maximize ERC / company interaction and benefits. Cultivate interest in joint projects, involvement in testbeds, and other ERC opportunities. Value and mechanisms of establishing multiple points of contact in firms.	Redefine recruitment and retention around a future sustainability strategy.	Develop retained connections to forge the best path into Sustainability.
Commericializat ion of IP	Begin to define testbeds and cross project integration alongside a strategy for commercialization.	Develop Industry R&D needs alongside ERC needs in testbeds, Integrate industrial input from project inception, using project management tools (timelines, go/no-go points, cross project integration, etc.). Strategies for increasing sponsored research projects with industry.	Meet Industry R&D needs alongside ERC needs in testbeds, Integrate industrial input from project inception, using project management tools (timelines, go/no-go points, cross project integration, etc.). Strategies for increasing sponsored research projects with industry.	Redefine commercialization strategy around a future sustainability strategy.	Redefine commercialization strategy in light of sustainability path.
Intellectual Property	Begin to define strategy for IP management and technology transfer.	Develop processes for management and strategy, Technology Transfer and the Invention Disclosure. Start to identify key technology transfer staff for ERC IP management (invention disclosures, patent processing, IP marketing, etc.), the licensing process and what is really valuable to the membership.	Refine management and strategy, Technology Transfer and the Invention Disclosure process. Realistic chances of "big-hit" from IP generated revenue. Cultivate connections to key technology transfer staff for ERC IP management (invention disclosures, patent processing, IP marketing, etc.), the licensing process and what is really valuable to the membership.	Redefine intellectual property strategy around a future sustainability strategy.	Redefine IP strategy in light of sustainability path.
Innovation Strategy	Begin to identify key local innovation partners and infrastructure	Develop paths to entrepreneurship activities in the ERC and University, connecting to local, state, and regional economic development and incentive programs and role of investment groups such as Angels, VCs.	Cultivate entrepreneurship activities in the ERC and University, connecting to local, state, and regional economic development and incentive programs and role of investment groups such as Angels, VCs.	Redefine innovation strategy around a future sustainability strategy.	Redefine innovation strategy in light of sustainability path.
Education Programs	Begin to identify strategy to develop valuable education programs	Start student mentoring programs, short courses and workshops for industry, Certificate programs and distance learning models, Faculty and student exchange, Active promotion of industrial recruitment of graduates.	Refine student mentoring programs, short courses and workshops for industry, Certificate programs and distance learning models, Faculty and student exchange, Active promotion of industrial recruitment of graduates.	Redefine education strategy around a future sustainability strategy.	Redefine education strategy in light of sustainability path.

Modularized Functions Can Be Combined in Many Different Ways

- Single person reporting structure

  Industry Stakeholder
  Innovation
  Non-Industry Stakeholder

- 2-person reporting structure may diverge due to
  - Different legal contexts
  - Social context
  - Political context

  Industry Stakeholder
  Innovation

  ↑

  Non-Industry
  Stakeholder

  Industry Stakeholder
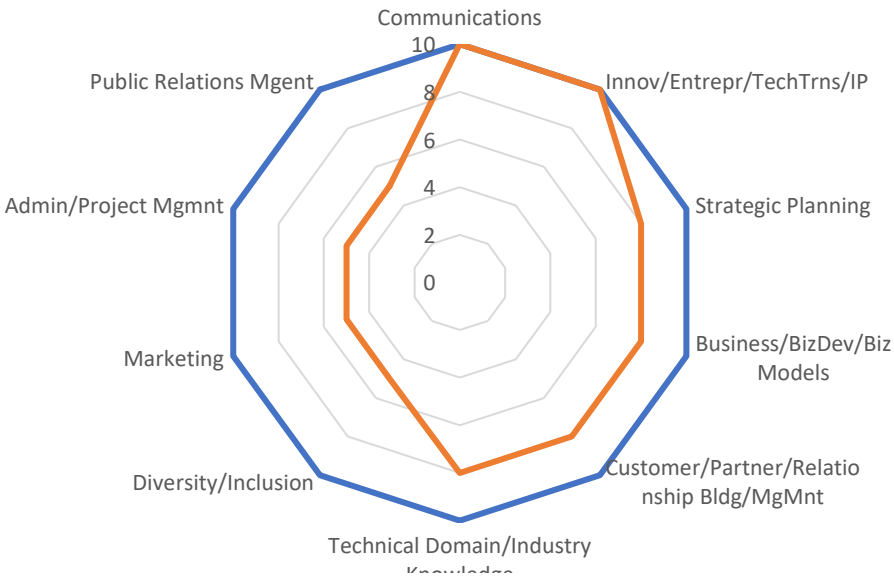 **Innovation** ↔ **Non-Industry**
  Stakeholder

Dimensions

Direct and Implement strategies to develop the Industrial Membership and Innovation Ecosystem Program in the Center.....

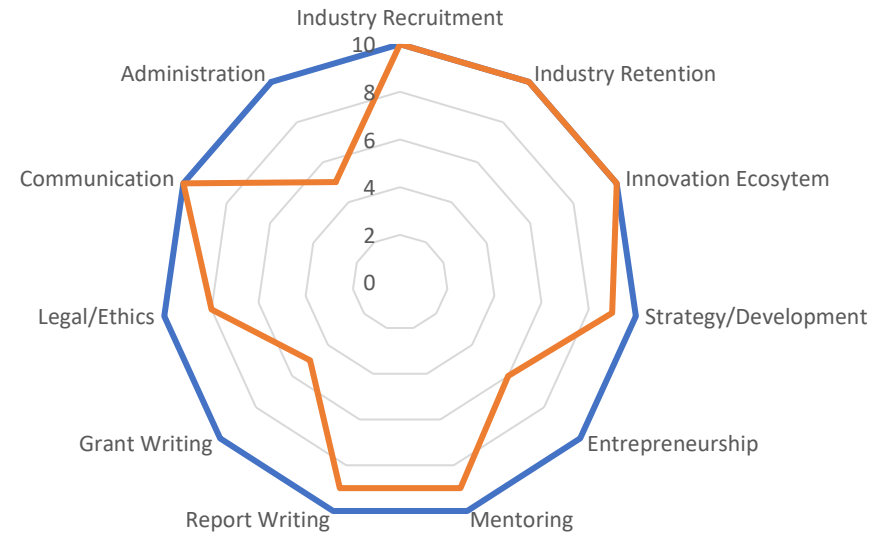Management & Communications

Membership & Innovation

Ecosystem

Governance & Institutions
- Federal and State Funding
- Next Generation Learning
- Inventions & Innovation
- Interact with Industry
- Jobs & Internships

Research & Technology
- Cutting Edge Science & Technology
- Annual Reviews & Meetings
- Critical Tools & Knowhow
- Webinars & Discussion
- Exclusive Access to IP

Foreign Government

Other Industries

Other Research Labs

Governance & Institutions

Research & Technology

Industry & Partnering

Workforce & Diversity

Federal/State Government

Entre/Intra-preneurship

Venture Capital Private Equity Non Profits

Industry & Partnering
- Networking
- Sponsored Projects
- Advice and Guidance
- Real World Applications
- Partnering Academia/iCorps

Workforce & Diversity
- Jobs and Internships
- Experienced Mentors
- Pitch Contests/Seminars
- Interactions with Industry
- Partnering Education & Diversity

Technology-Led Entrepreneurship
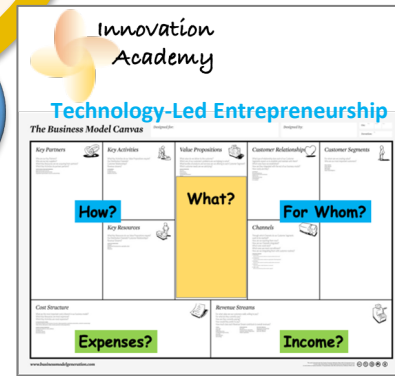
Suggested Process for Identifying Relevant Entities

A. What entities impact available funding?
   – Commercial funding
   – Government funding
   – NGOs and charities
B. What entities or groups comprise the end-user community ?
C. What entities or groups are impacted by the technology?
   – Is it a net positive impact
   – Is it a net negative impact
D. What entities provide the governing frameworks that define the interactions among A, B, and C above?
   – Policy
   – Regulatory agencies
   – Laws reflecting social desires
   – Tax incentives
   – Established customs
   – Etc.

Distribution of Core Needs & Expectations

– **Full / Part time / Distributed?**

– **What does NSF Expect?**

– **What does ERC Need?**

– **What does Director Want?**

– **What do you Want?**

Job #1 = Grow Membership

Job #2 = Retain Members

Job #3 = Be Organized (CRM)

Job #4 = Don't Drop the Ball

You are Not Alone

- *****Consultant Training

- *****ILO ANNUAL SUMMIT

- *****ILO Contacts / NSF Contacts

- *NSF ILO Working Group Calls

- *****NSF Biennial Meeting

- *****NSF Best Practices Manual – Chapter 4 IE

- Resources Page

Closing Advice – Keep it Simple

Questions?