Report

Indiana Rural Technology Commercialization Summit

2 December 2014

Prepared by: Indiana Office of Defense Develoment
January 2015

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Executive Summary

On 2 December 2014, key stakeholders and subject matter experts met in Indianapolis, Indiana at the Indiana Rural Technology Commercialization Summit (TCS) to respond to the challenge*: How might Indiana achieve rural economic impact and national prominence through the commercialization of the federal lab's intellectual assets?*

Indiana has one federal lab in Naval Surface Warfare Center Crane Division (Crane). Over the past seven years Crane has significantly increased its patent and technology transfer program and its innovation culture such that it is regarded as model in the Department of Defense (DoD). It has produced in excess of 400 pieces of intellectual property (IP) and targeting to have over 1,000 pieces by the year 2020. Additionally, Crane has demonstrated its willingness and desire to leverage its IP and other innovation assets for economic development. Crane employees and contractors have directly contributed to over a dozen startups. Indiana and the lab benefit through technology commercialization when new and existing companies can leverage the assets of Crane to hire talent, invest capital, develop innovation and finally bring new products and services to market. The lab understands that these activities support and nurture the fledgling innovation eco-system in their region and ultimately enhances their ability to support the primary mission of national security to the country.

Participants of the TCS were led through a facilitated event to first understand and assess the current state (see Appendices A and B) and then to vision cast what needs to be addressed for Indiana to achieve rural economic impact and national prominence through commercialization of Crane's intellectual assets.

Stakeholders Reviewing Current Technology Commercialization Model

The current model depicts how Crane has partnered with universities and economic development entities across Indiana to successfully demonstrate components of the commercialization process in very innovative ways. As a result, Crane has become a major source of innovation and a pivotal element in the larger, but yet immature eco-system. Crane's contributions have been at a minimal cost to the lab. The strategy involves tapping into existing business and academic programs and processes that are looking for technical content. Crane provides this content through its assets. Much of the recent activity has been around connecting these successful programs and processes to form a value stream.

During the TCS, participants reviewed the current state identifying missing pieces. These included translating innovation into market needs; an entrepreneurial culture including networks and "collider programs" to connect entrepreneurs with each other, capital, and innovation; mature "deal" packaging capabilities; regional capital; and experience in taking products and services to market. Most if not all of these missing pieces are not something the lab or the Government can lead. Rather, industry must see value and drive technology commercialization from Crane with support from the lab, state and local government, and academia.

From the vision casting part of the TCS, the key insights going forward were as follow:

- Indiana has most of the ingredients including the strategic vision and leadership to achieve both economic impact and national prominence but industry must become the primary driver for a successful technology commercialization program. All other participants play a supporting role.

- An entity outside the lab is necessary to help:
    - Facilitate the establishment and/or building of mentor, entrepreneur, and capital networks
    - Identify and pull innovation from the lab
    - Identify and understand the needs of industry to help translate
    - Create opportunities for the community to "collide" and collaborate in order to create, assess and package "deals"
    - Facilitate transaction of "deals"
    - Support the "deal" and the partners after the transaction

The TCS was successful at validating today's technology commercialization model in a rural setting and identifying major opportunities to achieve rural economic impact and national prominence through the commercialization of Crane's intellectual assets.

Participants

Mr. Tony Armstrong	President, Indiana University Research and Technology Commercialization
Dr. Mark Bernhard	Associate Provost for Outreach and Engagement, University of Southern Indiana
Mr. John Dement	Director of Technology Commercialization, Inidiana Office of Defense Development
Dr. Sue Ellspermann	Lieuteant Governor, State of Indiana
Mr. Duane Embree	Director, Indiana Office of Defense Development
Dr. John Fischer	Director, Defense Laboratory Office, Assistant Secretary of Defense (Research & Engineering)
Ms. Janet Getto	Faciliator, Getto Group
Mr. Dan Hasler	President, Purdue Research Foundation
Mr. Rich Overmoyer	CEO, 4th Economy Consulting and Executive Director, University Economic Development Association
Mr. John Pyrovolakis	CEO, Innovation Accelerator
Mr. Jacob Schpok	Director, Indiana Office of Small Business and Entrepreneurship
Mr. Mark Skinner	Director, Regional Innovation Acceleration Network and Vice President of SSTI
Mr. Ian Steff	Senior Advisor for Nanotechnology and Advanced Manufacturing, Indiana Economic Development Corporation
Mr. Bill Stephan	Vice President for Engagement, Indiana University
Mr. Brian Stemme	Project Director, Central Indiana Corporate Partnership
Ms. Daniela Vidal	Director, Center for Applied Research and Economic Development, University of Southern Indiana
Mr. Paul Zielinski	Chair, Federal Laboratory Consortium and Director, Technology Partnerships Office at National Institute of Standards and Technology

Summit Approach and Findings

The main purpose of the TCS was to explore the current Technology Commercialization process at Crane with the intent of finding opportunities to focus future efforts on improving the process and creating a sustainable model that would benefit rural Indiana and also achieve national prominence.

The approach in the TCS was to understand today's current state as represented in the panels (Appendix A) in order to identify missing components in the process and to see opportunities to move forward. Crane and its partners regionally and beyond have demonstrated a value proposition that includes a ready and growing supply of innovation and the ability to create both startups and support existing companies. Many of the processes and programs developed are recognized as best practices and have been adopted by multiple labs across the country. What has been missing is connecting the various processes and best practices into a value stream of sorts to realize more success. The TCS helped identify gaps and other missing resources needed to meet the challenge posed.

Key to this approach was assembling a group of Indiana stakeholders and national subject matter experts (SME). The stakeholders were senior leaders from State government and public universities all responsible in some capacity for innovation and economic development – many were also practitioners. The SMEs were nationally reknown practitioners and consultants that represented a comprensive understanding of best practices and models in the United States.

The following are key findings and ideas developed in the TCS:

- The key challenges identified:
    - How might we (HMW) attract resources to the region?
    - HMW find the IP's highest and best (commercialization) purposes sooner?
    - HMW create industry pull (vice lab push)?
    - HMW create opportunities to listen more to industry needs?
    - HMW reduce the operational friction of getting IP out of the lab and Indiana?
    - HMW aggregate resources we have to create critical mass?
    - HMW extract value beyond IP?

- Key ideas to pursue going forward included:
    - Understand relationships that we currently have
    - Actively listen and hear what industry is telling us – their concerns not ours
    - Research industry publications to understand their challenges and trends
    - Attend industry trade associations
    - Reach out to industry, identify right resources to engage in conversations
    - Explore different industry sectors
    - Develop a network of people interested to build deals

    - Restate the problem that the innovation solved in ways relevant to the audience
    - Identify technology commercialization capacity gaps
    - Identify what critical mass is needed to attract

- Key recommended actions for consideration included:
    - Engage and listen to existing entrepreneur networks (eg Tech on Tap)
    - Focus on emerging areas of technology to build necessary infrastructure
    - Engage and listen to Launch Indy Network for mentoring network
    - Convene and/or attend industry stakeholder sessions to understand their needs
    - Conduct a "relationship analysis" to better understand current connectivity among industry sectors, infrastructure, and opportunities (reference Dr. S. Dempwolf at University of Maryland work)
    - Increase engagement and participation in "collider programs" to grow and develop the network, increasing the opportunities to connect ideas, teams, and capital
    - Stand up a private entity to focus and manage the commercialization activities in the region

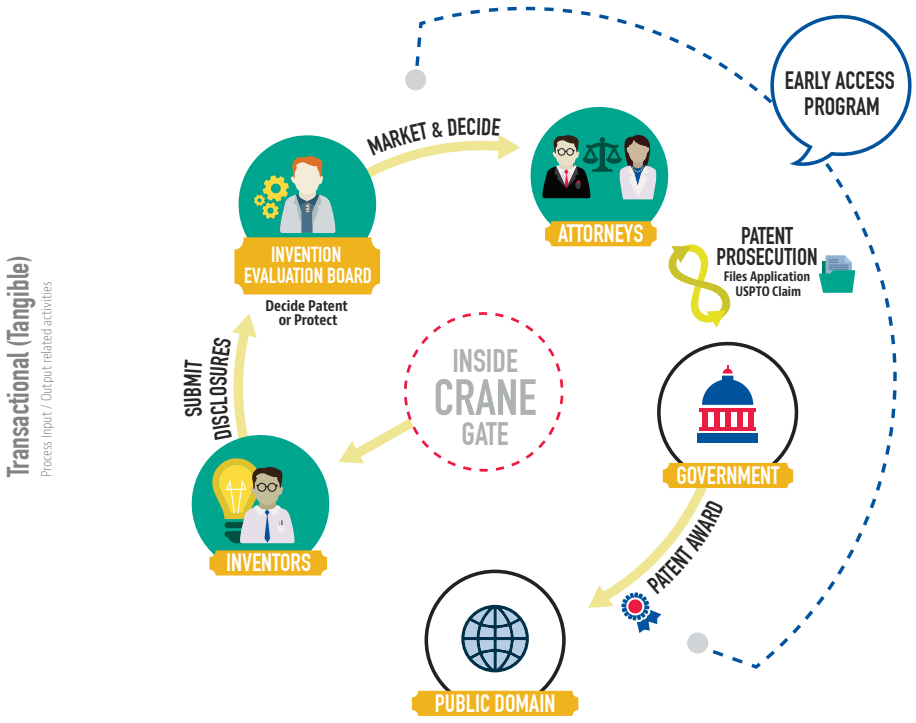
Complete findings and insights are available in Appendix C.

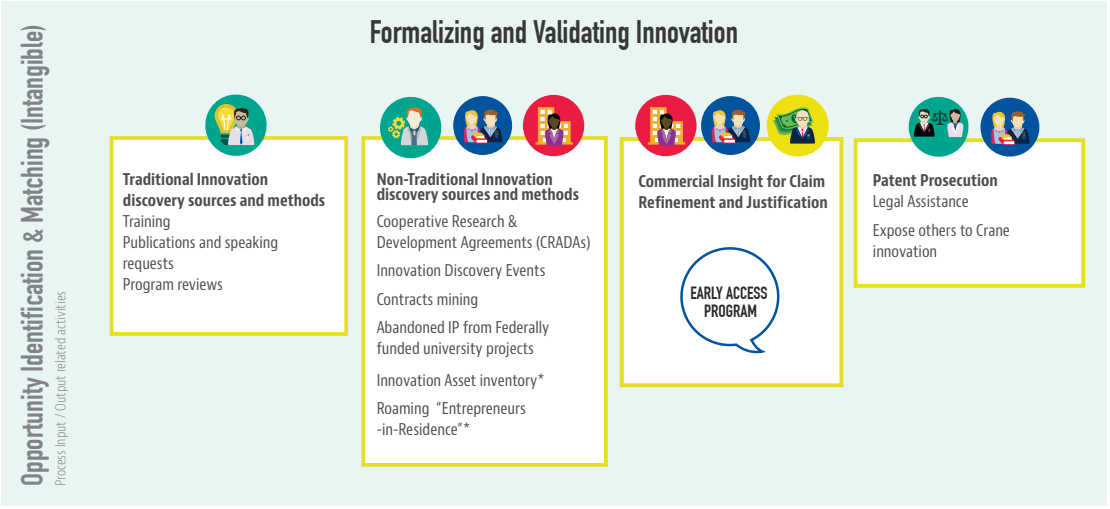
Conclusion

The first Indiana Rural Technology Commercialization Summit was a success in validating the direction and intent of the efforts to leverage the State's federal lab and its intellectual assets for growing economic impact in a rural eco-system and bringing national prominence. The participants were also successful in identifying necessary future efforts to better commercialize the innovation and assets of Crane for regional economic development, enhanced lab mission performance, and national prominence.

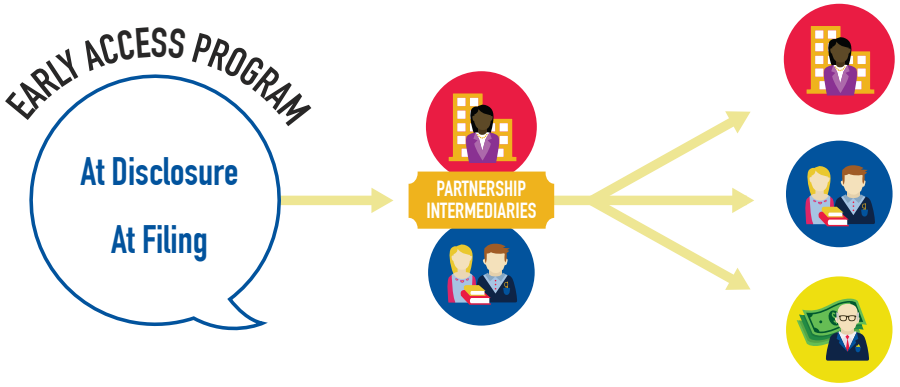
The findings are being pursued by the Director of Technology Commercialization in the Indiana Office of Defense Development office. The intent of the IODD is to host a follow up TCS in the fall of 2015 to discuss and evaluate the progress made.

LAB INNOVATION

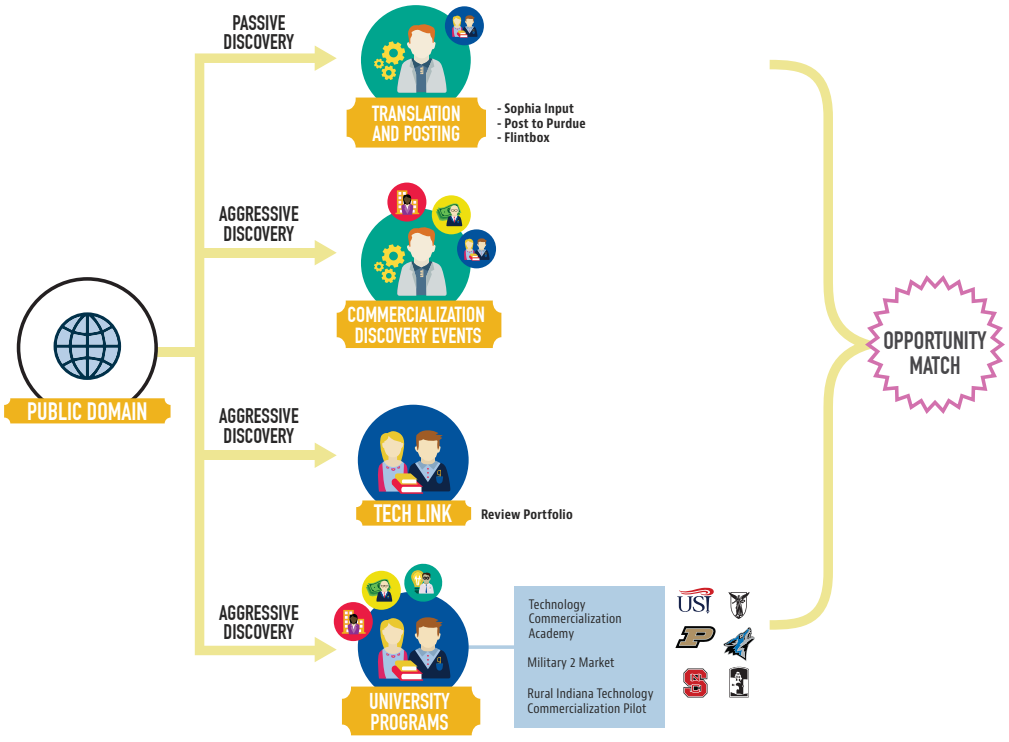




Get external market and commercialization input early
to influence patent application development and identify early partners.



ASSESSMENT



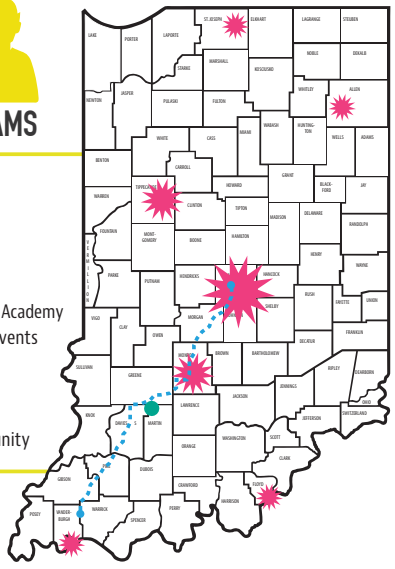
Translating and Communicating Opportunities

Assessment for Business Opportunity → Business Concepts

- **Translation**
- **Commercial Ideation**
- **Milestones Development**
  - Prototyping
  - Business Plan
  - Marketing Plan
- **Tech Showcases**
- **Inventor Involvement**

COLLIDER PROGRAMS

- Tech on Tap
- Pitch Practice
- Meetups
- Startup Weekend
- Co-working space
- Technology Commercialization Academy
- Innovation Point open door events
- Kaufman FastTrac
- Facebook
- Technology Showcases
- Virtual Collider-online community



South Bend

Ft. Wayne

Lafayette

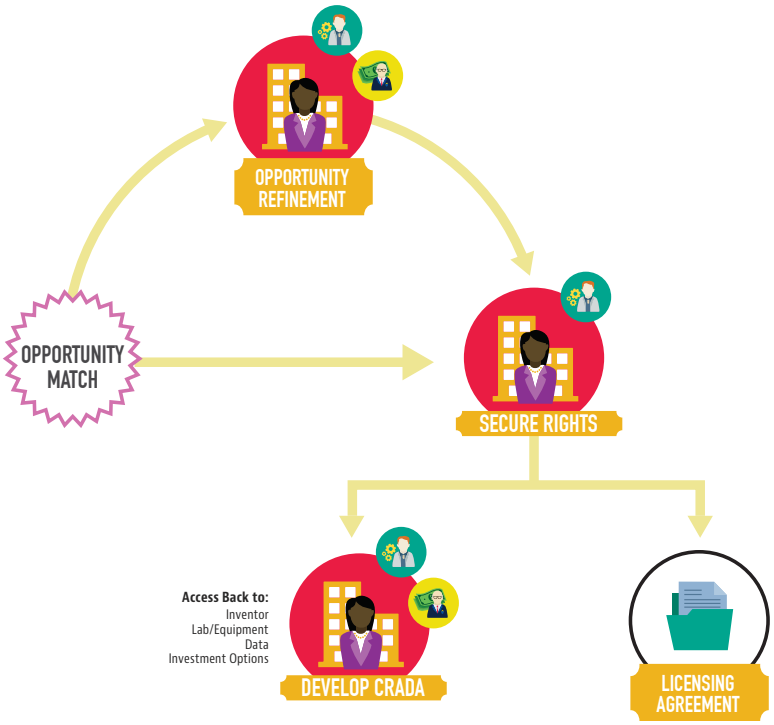
Indianapolis

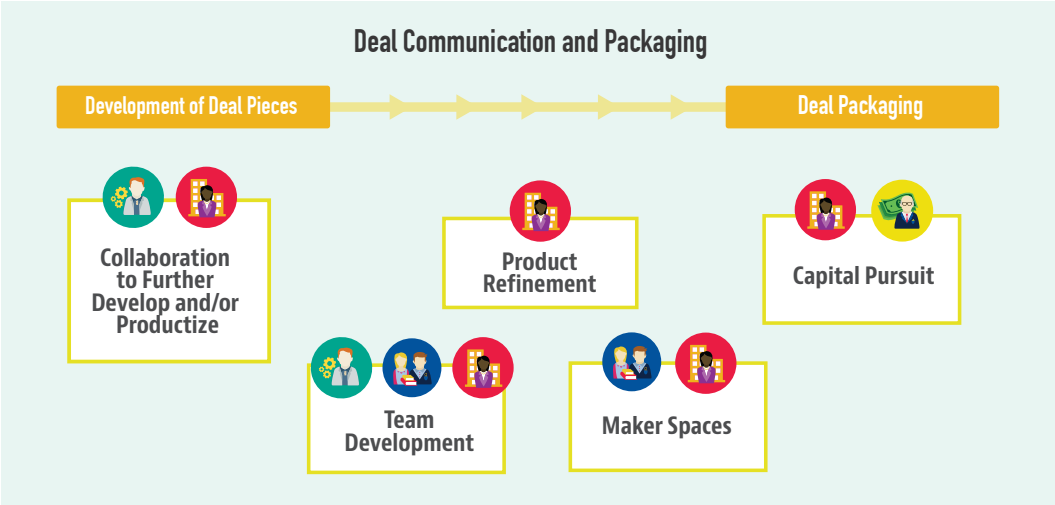
Bloomington

New Albany

Evansville

DEAL DEVELOPMENT





TO MARKET

Getting Capital and Resources to drive innovation to market

Alpha / Beta Customer Testing Prototyping	Mentoring	Deal Structure	Partnerships

Available Resources

UNIVERSITIES	GOVERNMENT	PRIVATE
IU Law Clinic (Legal) Purdue Foundry (Start Up) USI Advance Engineering Center (Prototyping)	OSBE IEDC TAP PTAC SBDC SBIR/STTR	Elevate Ventures Score Accelerators, Incubators, etc. SproutBox VisionTech TechPoint

Crane T2 in Indiana

Building Technology Infrastructure

Since 2009

11 awards plus 4 more awards for partners

The Indiana PIA/Univ Network / total US

- **Partnership Intermediary**
  signed – 17 / *20*

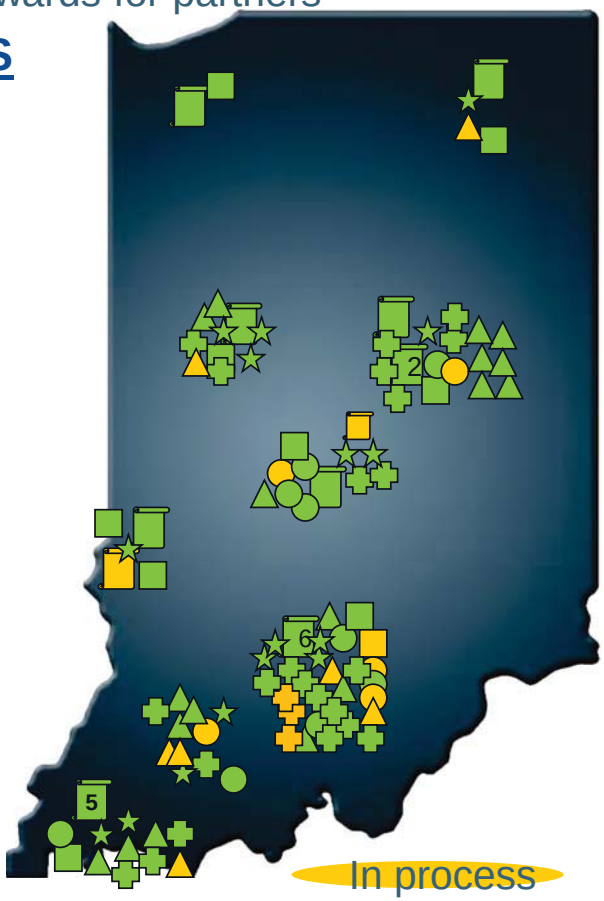
Univ. Edu. Partnerships

- signed – 11 / *28*
- projects – 16 (+4 planned) / *20+*

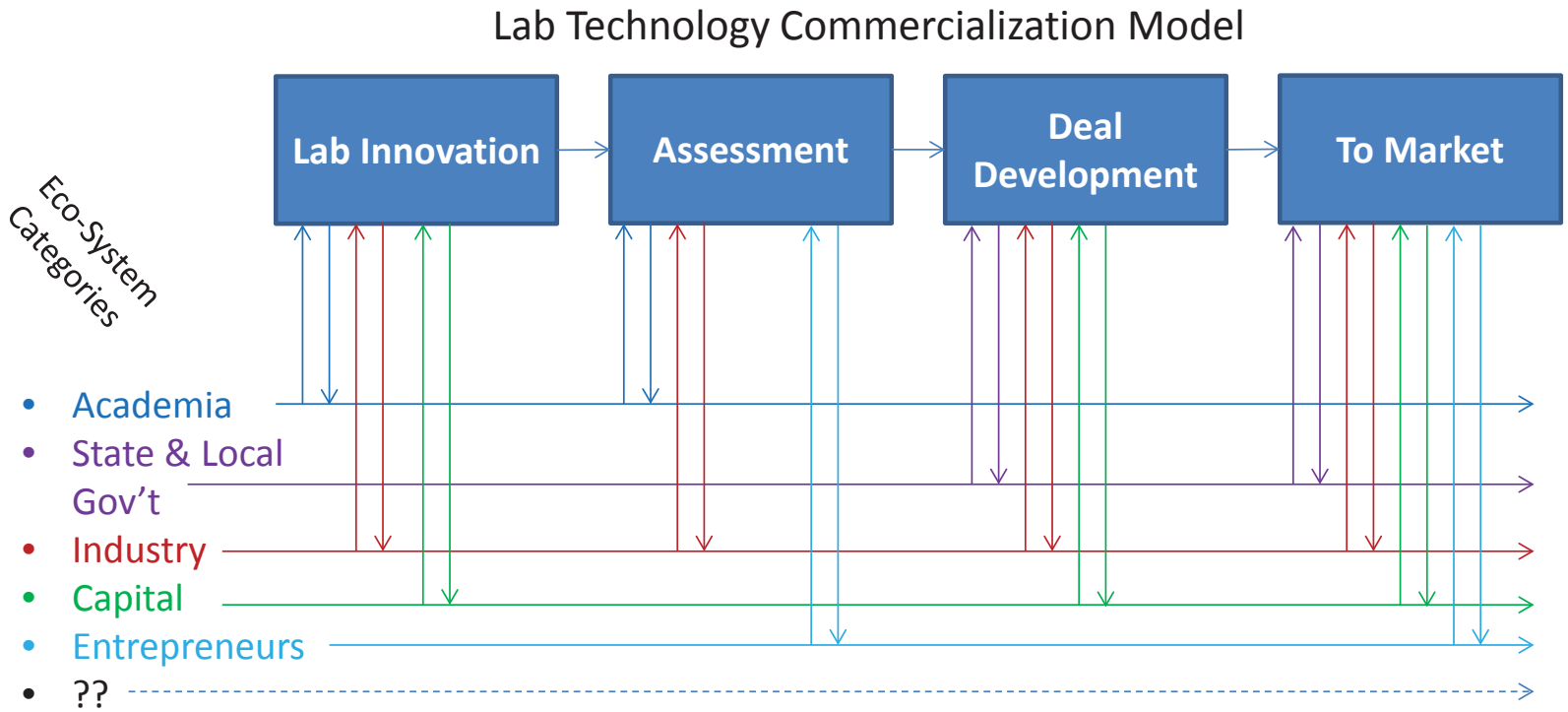
The Indiana Deals & Output / *total US*

- **Patent License**
  signed – 11 (+2 in process) / *21*
- **CRADA**
  signed – 21 / *40*
- **START UPs –** 17 / *33*

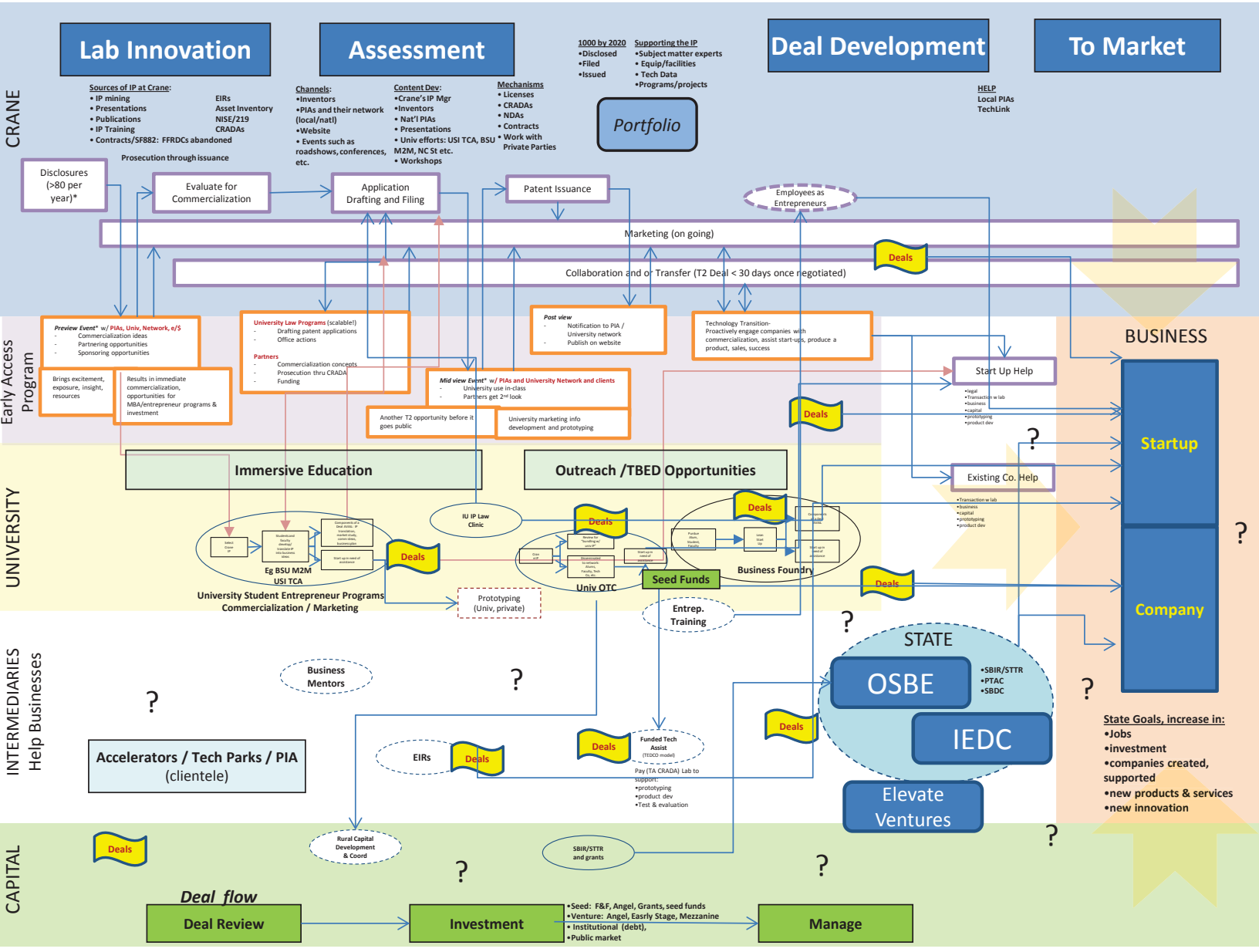
Assoc. Company Partners – 25 / *29*



Notional Value Stream: Lab to Market



- Each has something to contribute and extract of value
- Most are in existence, funded and just need integration


Lab Innovation
Assessment
Deal Development
To Market
CRANE
Sources of IP at Crane:
• IP mining
• Presentations
• Publications
• IP Training
• Contracts/SF882: FFRDCs abandoned
EIRs
Asset Inventory
NISE/219
CRADAs
Prosecution through issuance
Channels:
•Inventors
•PIAs and their network (local/natl)
•Website
• Events such as roadshows, conferences, etc.
Content Dev:
•Crane's IP Mgr
•Inventors
• Nat'l PIAs
• Presentations
• Univ efforts: USI TCA, BSU M2M, NC St etc.
• Workshops
Mechanisms
• Licenses
• CRADAs
• NDAs
• Contracts
• Work with Private Parties
1000 by 2020
•Disclosed
•Filed
•Issued
Supporting the IP
•Subject matter experts
• Equip/facilities
• Tech Data
•Programs/projects
Portfolio
HELP
Local PIAs
TechLink
Disclosures (>80 per year)*
Evaluate for Commercialization
Application Drafting and Filing
Patent Issuance
Employees as Entrepreneurs
Marketing (on going)
Collaboration and or Transfer (T2 Deal < 30 days once negotiated)
Deals
Preview Event* w/ PIAs, Univ, Network, e/$
- Commercialization ideas
- Partnering opportunities
- Sponsoring opportunities
Brings excitement, exposure, insight, resources
Results in immediate commercialization, opportunities for MBA/entrepreneur programs & investment
University Law Programs (scalable!)
- Drafting patent applications
- Office actions
Partners
- Commercialization concepts
- Prosecution thru CRADA
- Funding
Post view
- Notification to PIA / University network
- Publish on website
Technology Transition-
Proactively engage companies with commercialization, assist start-ups, produce a product, sales, success
Mid view Event* w/ PIAs and University Network and clients
- University use in-class
- Partners get 2nd look
Another T2 opportunity before it goes public
University marketing info development and prototyping
Early Access Program
BUSINESS
Start Up Help
•legal
•Transaction w lab
•business
•capital
•prototyping
•product dev
Startup
Existing Co. Help
•Transaction w lab
•business
•capital
•prototyping
•product dev
Company
UNIVERSITY
Immersive Education
Outreach /TBED Opportunities
Eg BSU M2M
USI TCA
University Student Entrepreneur Programs
Commercialization / Marketing
IU IP Law Clinic
Univ OTC
Business Foundry
Seed Funds
Entrep. Training
Prototyping (Univ, private)
INTERMEDIARIES
Help Businesses
Business Mentors
Accelerators / Tech Parks / PIA
(clientele)
EIRs
Funded Tech Assist
(TEDCO model)
Pay (TA CRADA) Lab to support:
•prototyping
•product dev
•Test & evaluation
STATE
OSBE
•SBIR/STTR
•PTAC
•SBDC
IEDC
Elevate Ventures
State Goals, increase in:
•Jobs
•investment
•companies created, supported
•new products & services
•new innovation
CAPITAL
Rural Capital Development & Coord
SBIR/STTR and grants
Deal flow
Deal Review
Investment
Manage
•Seed: F&F, Angel, Grants, seed funds
•Venture: Angel, Easrly Stage, Mezzanine
• Institutional (debt),
•Public market

Innovation at Crane

Disclosure Rate:

- 2014 – 92 (all time high)
- 2013 – 59
- 2010-12 – avg. 37/year
- < 2010 – avg <20/year

Current Portfolio:

- Disclosed – 113
- File – 96
- Issued – 187
- Total approaching 400

Goals:

- 1,000 pieces of IP by 2020
- 80 disclosures/year

Innovation Discovery Events

"What tough technical problem did you solve to support the warfighter?"

- Identifying IP & Commercial Applications
- Exposing PIAs To Crane's "Shareable Resources"
- Training Lab Personnel

Expert Panel:
- **PIAs (econ dev & IP experts)**
- **Universities**
  - **Technologists**
  - **T2 / IP experts**

"Telling the Story":
- **Inventor(s) Present**
- **Scripted Template**
- **Hands On & Seeing "Stuff"**

Facilitated Process:
- **Potential Inventions**
- **Potential Commercial Applications**
- **Real Time Training**

Innovation Discovery Results

7 Events with **29** "projects" reviewed

114 potential disclosures identified

428 commercialization potentials

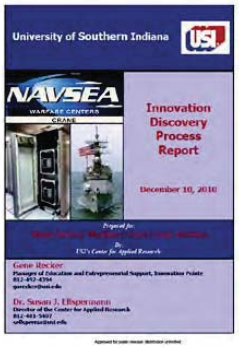
So far…**15** patents, **15** filed, and **5** disclosures

24 partners exposed to Crane & our innovation

50 Crane inventors exposed & trained

Process Report Developed: methodology, templates, and lessons learned*

Process expanded and ***Transferred***: AFRL Rome and Kirtland, SSC-A, SSC- P, NAVAIR, NAWC TSD, NPT



Indirect results:

Licenses:
- 3 signed
- 1 negotiated

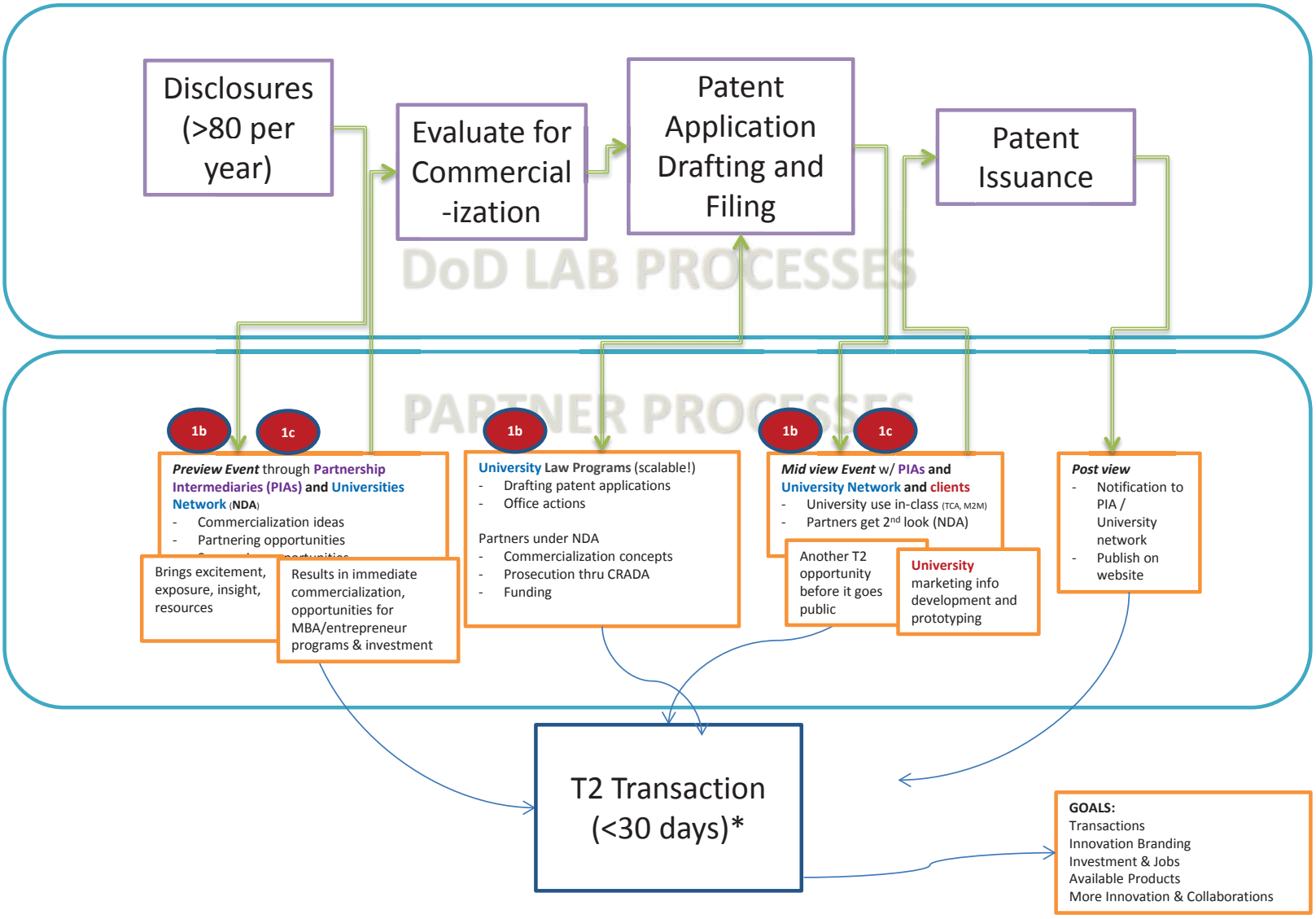
CRADAs:
- 2 signed
- 2 in process

Startups: 4

1a

"Early Access Program"

PURPOSE: Get external market and commercialization input early to influence patent application development



Partnership Intermediary Network

Leveraging Resources!

Content

- **University Collaboration**
  - **Business & Entrepreneurship programs (market studies, business plans, etc.:** USI, Ball State, Purdue, CSUSB, SDSU, NC St Marquette,
  - **Law schools (patent prosecution):** IU (2), Valparaiso, Pepperdine, MSU, UC, USC, UCSB, USIC, Cincy, Dayton, UL, more

Channels

- **Partnership Intermediary Agreements**
  - **Regional** *(trapper)*: know the local players
  - **National** *(skinner)*: closes the deal

Win / Win: partners are chartered, funded, motivated, and looking for good technical "content"…leveraging functional expertise

Local/Regional PIAs*: Trappers

* - Per Navy policy, no funding of PIAs

Signed:

- GAGE, Evansville
- Terre Haute Economic Dev. Corp (EDC)
- Bloomington EDC
- Radius | Indiana (EDC)
- University of So. Indiana
- Muncie Innovation Connector
- Ball State University
- IPFW Ft. Wayne
- Indiana University
- Wright Brothers Institute (OH)
- Greater Lafayette Commerce
- SCRA (SC)
- Battery Innovation Center
- State of Indiana/ IN Office of Def. Dev
- Ivy Tech
- Purdue University.
- Purdue Research Foundation
- Penn State University EOC
- Indianapolis Chamber

Distribution Statement Pending

University & PIA Collaboration: Military 2 Market

By the Numbers (*since Jan 10*)

- 7 start up companies
- 6 signed CRADAs
- 4 exclusive licenses signed
- 11 national bus. plan competitions

Great National & Local PR!

- US News & World Report #1 ranking for classroom impact, Apr 11
- NDIA's National Defense Magazine article (Aug 11)
- 3 FLC Awards for BSU and M2M
- BSU business college flyer (mailed to 34,000)
- Multi Inside Indiana Business: TV and radio interviews

http://www.usnews.com/education/best-colleges/articles/2011/04/18/10-college-classes-that-impact-the-outside-world

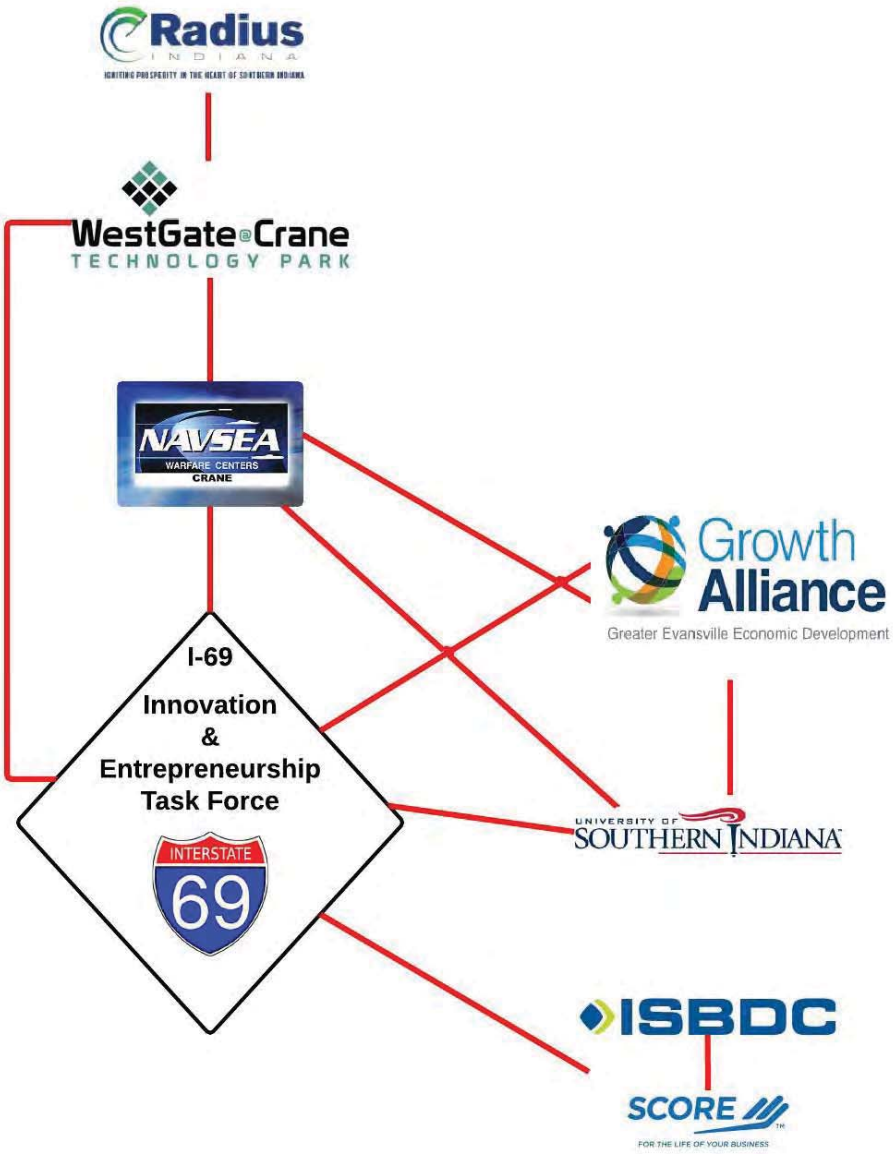
University & PIA Collaboration: Technology Commercialization Academy

Engineers & Business undergrads

- Private Funding
- 3 years in…funded for 3 more
- 8 Technologies / 21 patents
- 1,000+ commercialization ideas
- To date:
  - 1 startup w/ license
  - 1 T2 award
  - 2 PLA applications in process
  - Attracting partners

Prototypes

Presenting to biz & investor community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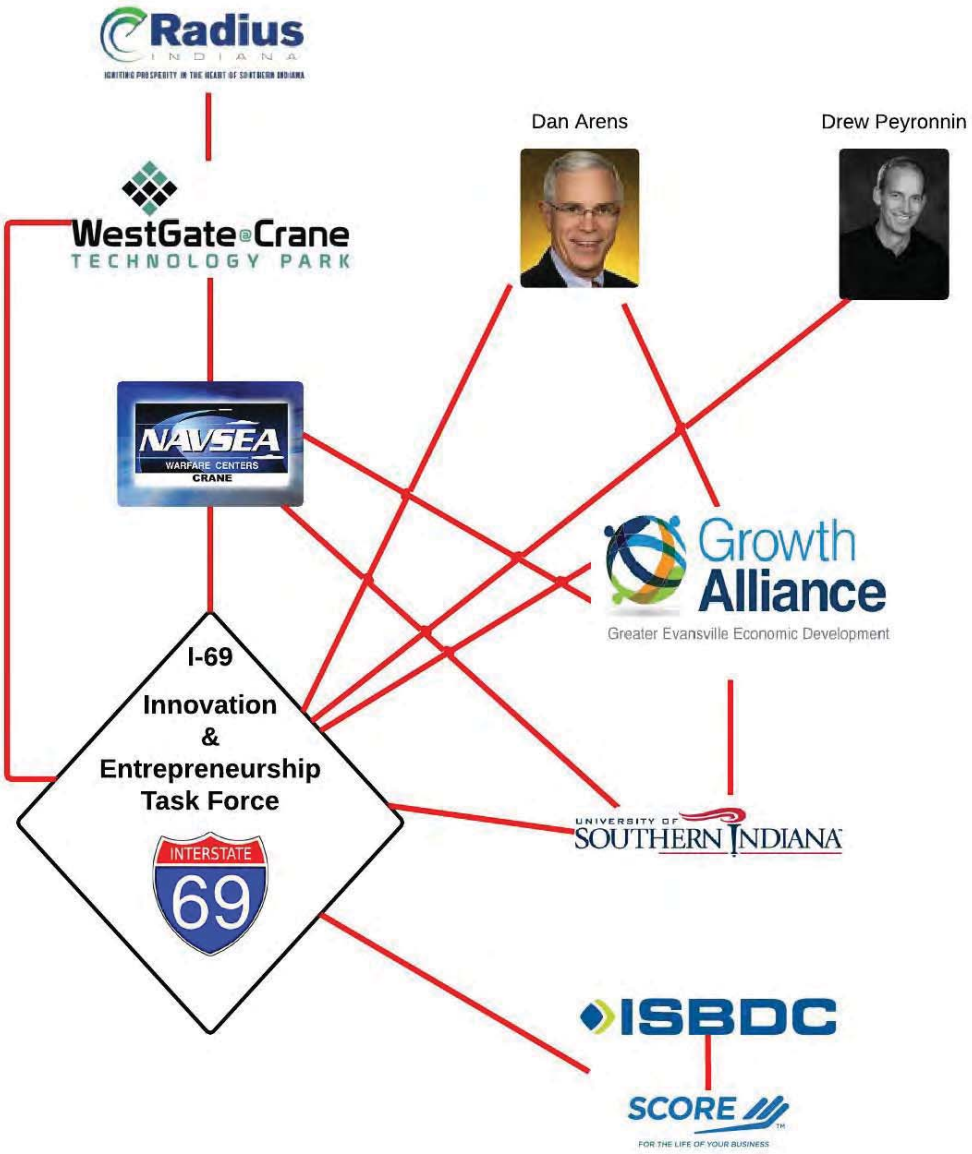
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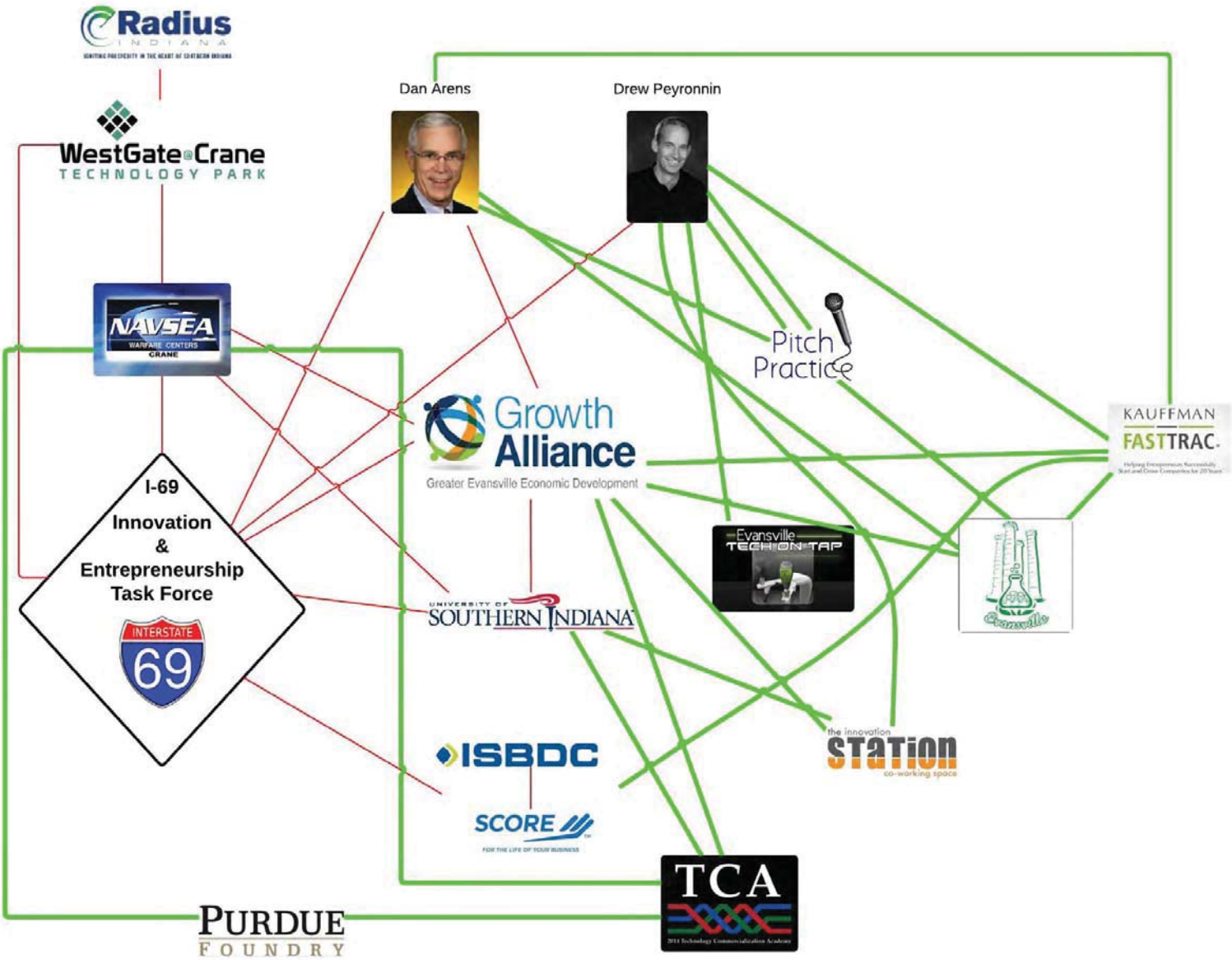
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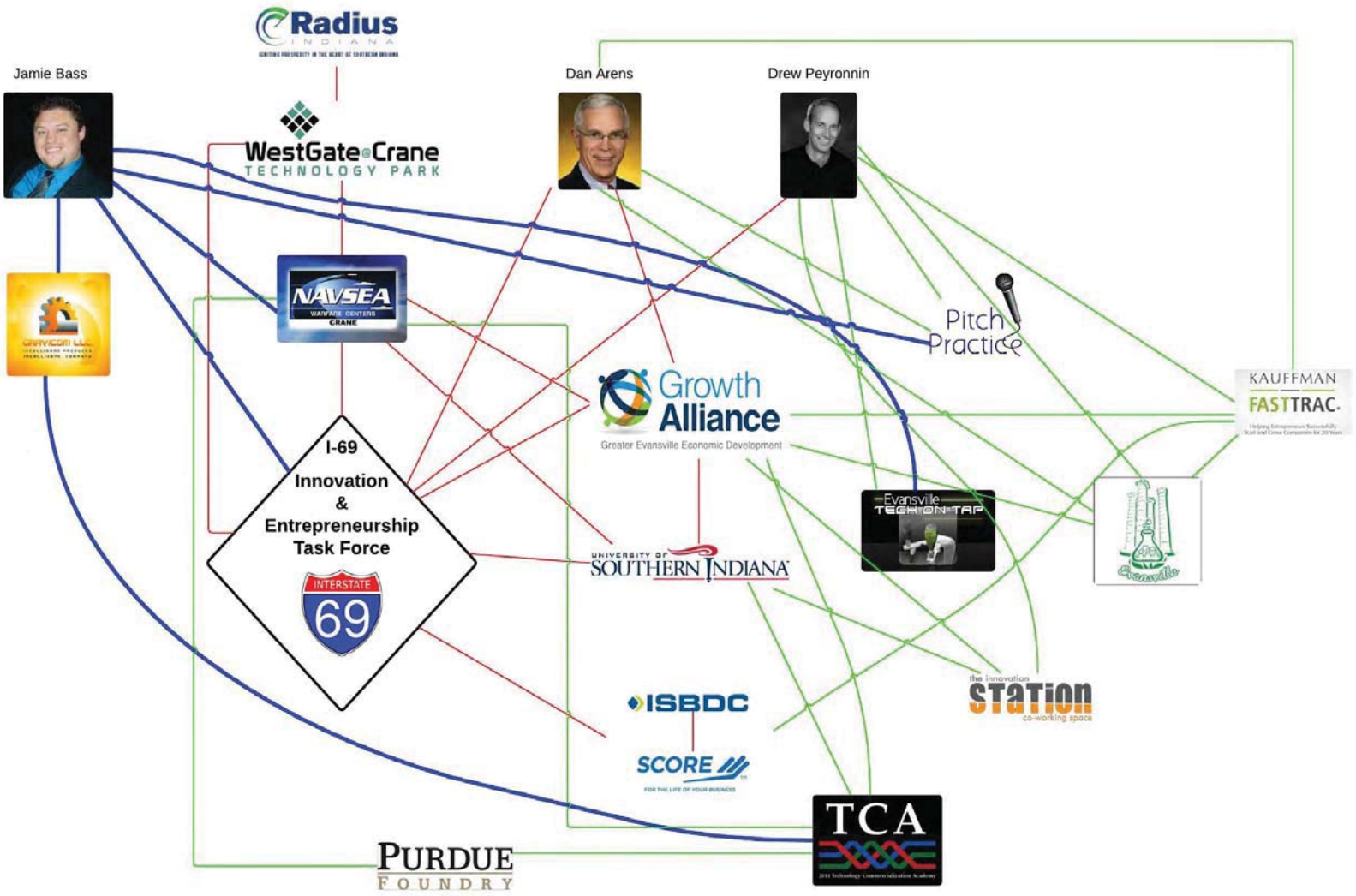
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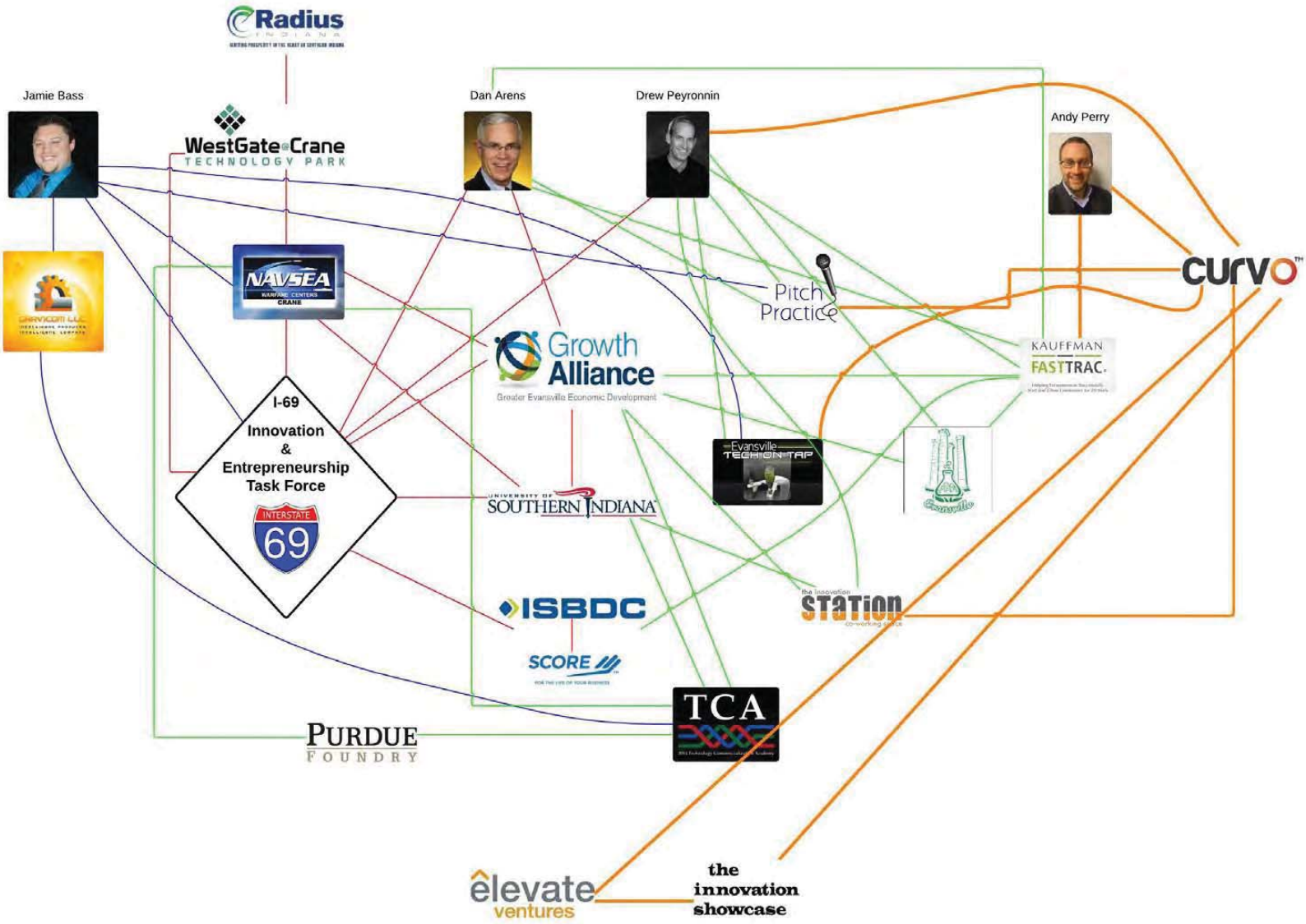
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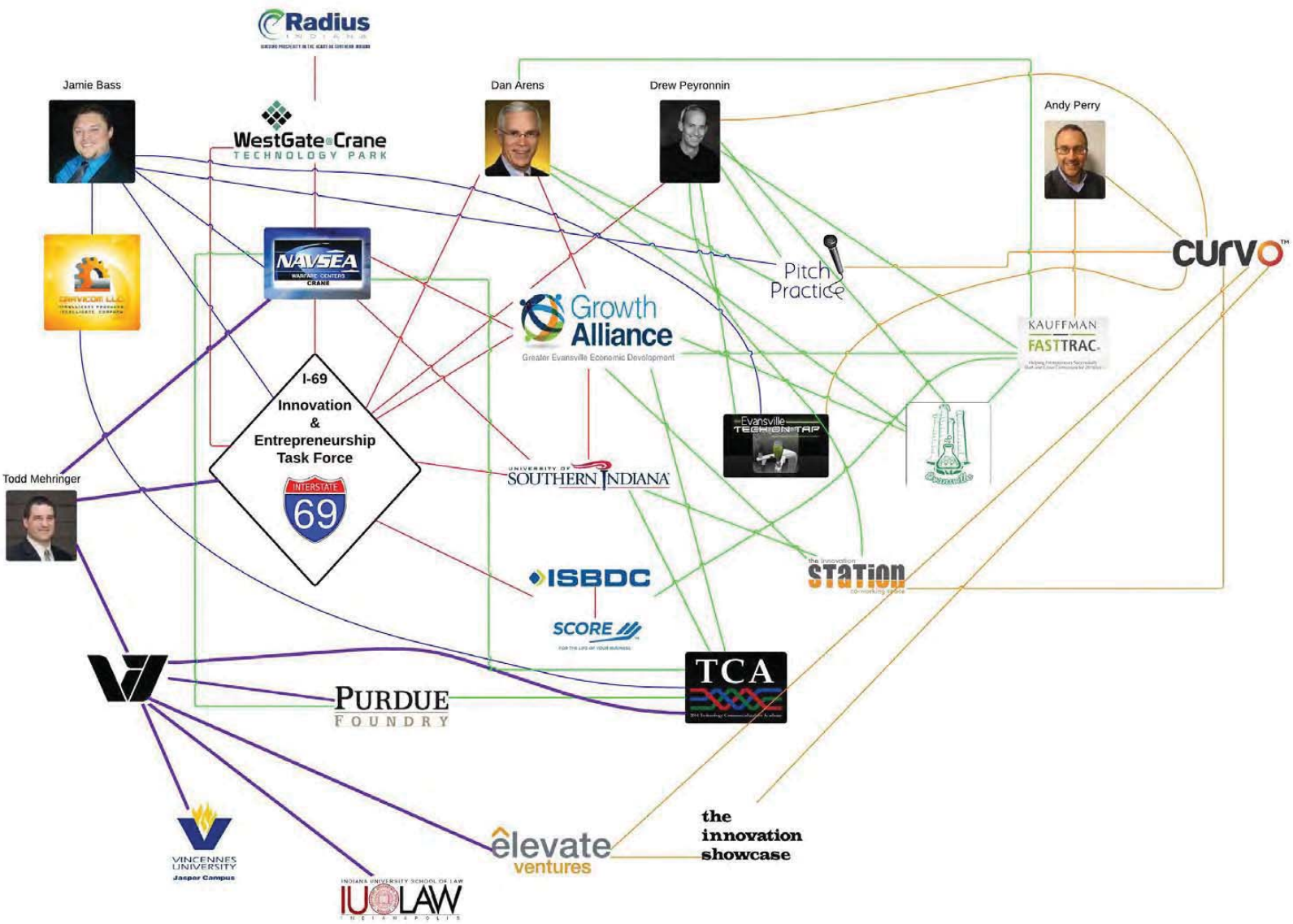
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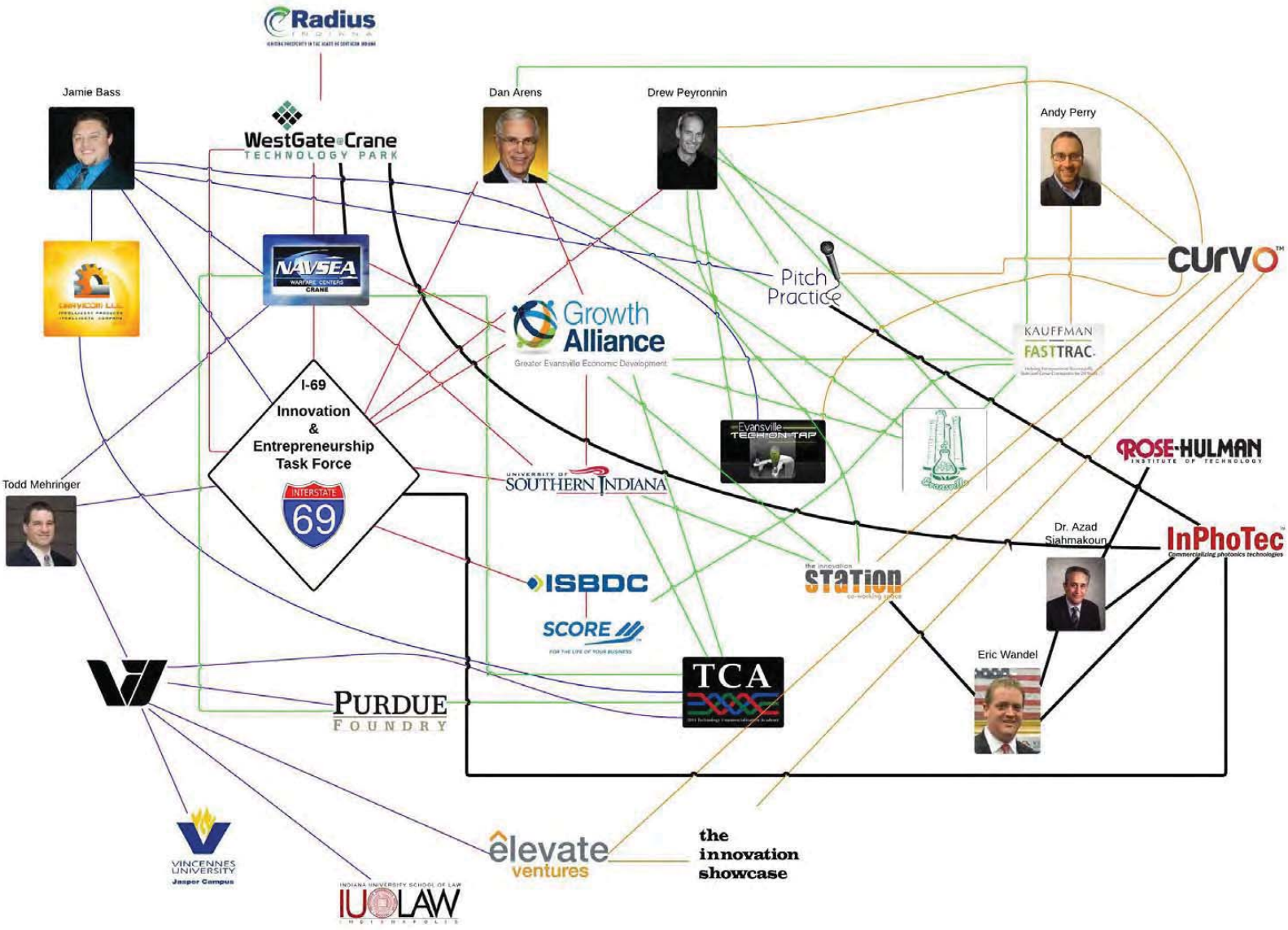

Radius
INDIANA
Jamie Bass
WestGate Crane
TECHNOLOGY PARK
Dan Arens
Drew Peyronnin
Andy Perry
NAVSEA
WARFARE CENTERS
CRANE
Pitch Practice
curvo
Growth Alliance
Greater Evansville Economic Development
KAUFFMAN
FASTTRAC
I-69
Innovation
&
Entrepreneurship
Task Force
INTERSTATE
69
Evansville
TECHNOLOGY TAP
ROSE-HULMAN
INSTITUTE OF TECHNOLOGY
Todd Mehringer
UNIVERSITY OF SOUTHERN INDIANA
Dr. Azad Siahmakoun
InPhoTec
Commercializing photonics technologies
ISBDC
the innovation
station
co-working space
SCORE
FOR THE LIFE OF YOUR BUSINESS
Eric Wandel
TCA
PURDUE
FOUNDRY
VINCENNES
UNIVERSITY
Jasper Campus
élevate
ventures
the
innovation
showcase
INDIANA UNIVERSITY SCHOOL OF LAW
IU LAW
INDIANAPOLIS

Typical Crane License Deal Structure*

Condition 1: start up, no or little capital

- 0 to $500 upfront fee
- 4-6% royalty on sales to non-Fed entities
- Pick up patent maintenance fees

Condition 3: established entity

- Upfront fee
- 4-6% royalty on sales to non-Fed entities
- Min annual royalty payment of $2-4k
- Pick up patent maintenance fees

Condition 2: exclusivity requested by start up

- Up to $500 upfront fee
- Exclusivity tied to sales &/or investment milestones IAW business plan
- 4-6% royalty on sales to non-Fed entities
- Pick up patent maintenance fees

Condition 4: exclusivity requested by established entity

- Higher upfront fee (highest to date is $34k, more typical has been in the $6-12k range)
- Exclusivity tied to meeting certain sales &/or investment milestones IAW their business plan
- 5-6% royalty on sales to non-Fed gov't entities
- Pick up patent maintenance fees once sales began

* based on projected sales/value

Start ups

ACTIVE

- ProEngage (Evansville moved to OK), PLA
- Ponologistics (Indy), PLA
- **IN Microelectronics** (West Lafayette)
- **Omega Micr**o (West Lafayette)
- **Variable Technologies** (Jasper); PLA
- ***MatterFab**** (David Warren , Matt Burris, in CA 13);
- **Gravicom** (Jamie Bass, Plainville, IN);
- ***Silvanus*** (Albany, IN, 13); PLA, CRADA (in process)
- Kinvents LLC (Kellar, Bloomington, 14);
- Firebug (Eville, 14); CRADA (in process)
- Kinney Defense Solutions (B'ton, 14); IP
- ***SEER, LLC*** (Bloomington, IN , 14 Wes Evans, STMTRC); working license
- ***Pivot Engineering*** (USI TCA students, Evansville 14); working license

DEAD (or seemingly)

- TechTrans Inc. (Muncie) - DEAD
- BOLD (Indy), PLA
- Aurora Tech (b'ton),
- MHM Tech (Muncie); PLA
- Unified Communicating Systems (VOIP, Muncie); CRADA
- 360 Mobility (Kaityln)(Chicago area), CRADA
- Pulsar(B'ton, lasers 13); CRADA
- Take Flight (Gadlage, Kay, etc. 13; Bloomington); IP
- Ora Pacem (Bloomington, 12); PLA, CRADA (in process)
- Fence Chips (Evansville, 12); IP
- Apogee Science (b'ton);

ASSOCIATED (tech based)

- Nextwave (Pekin, IN); PLA, CRADA, contract
- Scientia (Bloomington); PLA, CRADA, contract
- Stimulus (Loogootee); CRADA, contract

BACK UPS

I-69 iGNITE
sparking innovation & entrepreneurship

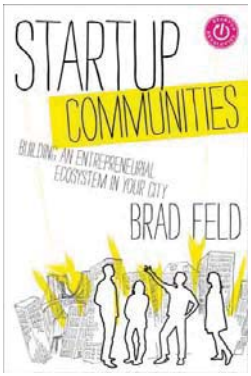
Feedback

Technical Mentors

Networking Events & Spaces

Education

Prototyping



Leaders & Feeders

I-69 iGNiTE
sparking innovation & entrepreneurship

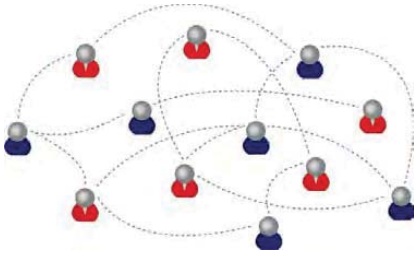
KAUFFMAN FASTTRAC®

New, Tech, and Growth Venture

Co-Working Space

Pitch Practice

Meetup®

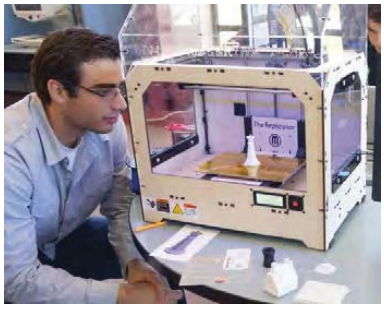


Shared Contacts

Startup Weekend
Evansville
powered by the Kauffman Foundation

I-69 iGNiTE
sparking innovation & entrepreneurship

Technology Commercialization Academy



Makerspace

Online Community

Access to Legacy Companies

Virtual Accelerator

Tech on Tap

I-69 iGNITE
sparking innovation & entrepreneurship

STEM Tech Open House

Surface Navy Electro Optics Industry Days

College Fair

WEST GATE ACADEMY
CONFERENCING & TRAINING CENTER
Managed by STIMULUS Engineering

Science Fair

Advanced Planning Briefing for Industry

Crane Tech Showcase

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Introduction to Government Contracting

Launching Your Own Business Workshop

Path to Business Ownership Seminar

ISBDC
Business. Smarter.

SCORE
FOR THE LIFE OF YOUR BUSINESS

Partnering

How to Run Your Business so You Can Leave it in Style

TECHPOINT

New Economy New Rules

SBA Veteran Entrepreneur Training

Rural Indiana Technology Commercialization Summit

December 2, 2014
Indianapolis, IN

[POST–SESSION NOTES]

GettoGroup
Innovation | Collaboration | Acceleration

Rural Indiana Technology Commercialization Summit Overview

Table of Contents

Respectfully submitted by Janet Getto, meeting facilitator.

December 2, 2014 Meeting Attendees

Dr. John Fischer	ASN (R&E)
Lt. Gov Sue Ellspermann	IN Ofc. Of Lt. Governor
Duane Embree	IODD
John Dement	IODD
Brooke Pyne	NSWC Crane T2
Dr. Adam A Razavian	NSWC Crane TD
John Serafini	Allied Minds
Mark Skinner	SSTI
Dan Hasler	PRF
David Johnson	CICP
Paul Zielinski	FLC / DOC NIST
Rich Overmoyer	4th Economy Consulting
Bill Stephan	IU Outreach
Tony Armstrong	IURTC
Mark Bernhard	USI
Jacob Schpok	OSBE
Ian Steff	IEDC
John Pyrovolakis	Innovation Accelerator
Daniela Vidal	USI
Brian Stemme	CICP

Meeting Notes

Process Comment: *The purpose of this meeting was to explore the current Technology Commercialization process of Crane, a US federal lab, with the intent of finding opportunities to focus our future efforts on to improve the process and to create a sustainable model that would not only benefit rural Indiana but also achieve national prominence.*

Pre-work included a deep analysis and visual representation of the current scenario of technology commercialization from the Federal Lab. This work was presented to the group by John Dement. The following are insights generated as a result of that presentation. Highlighted insights were chosen by the group as most important to consider.

Insights about Today's process

1. Crane's physical gate is a true barrier
2. Bureaucracy in the middle slows down the process. Ex) John's IPS taking 18 months.
3. There is a desire to connect the assets and understand what assets we have.
4. I.U. has interest in adding engineering programs not offered in other parts of state.
5. I69 and Lily's involvement are important underpinnings
6. We don't incentivize inventors with royalties and now @disclosure
7. Culturally at Crane, it's hip to be a patent holder
8. Innovation discovery events helped to celebrate inventors
9. Commercialization opportunities have emerged even when invention was very specific to military
10. Recognizing that we don't know commercialization application is start – 1st step (not a 12 step)
11. IN Commercialization Discovery events, we found it was best not to have lawyers early on.
12. I69 Task Force has catalyzed a broad network.
13. Paul thinks market needs drive the process and not the lab
14. Rural challenges include:
    - Lack of density
    - Lower educational attainment
    - Lower tech
15. We have many companies and industries that could use Crane's intellectual assets – Daniela sees there is often a translation problem
16. Mark thinks there's a need for critical mass of resources for commercialization-challenge in rural areas
17. Manufacturing is strong in i69 corridor
18. Bryon sees startups are so hard, don't know how we are connecting to mid to large companies that already know how to take thinks to market
19. Market pull – Sometimes big companies don't care- maybe we should focus on companies with propensity to transact in early stage.
20. Duane thinks perhaps national prominence would build up rural

21. Historically, metrics for performance is # of patents. Now moving to valuing IP – meaningfulness.
22. Perdue – weakest spot – describing technology and getting out of way of the deal
23. We want Indiana institutions to be easy to pull technology out of.
24. Professors are going to conferences – must have mind set of tech comm
25. How do I create a system that's easy to pull innovation and describe innovation?
26. Sharing the wealth hasn't been a hang up at Crane
27. Process works when everything lines up
28. Don't know how to attract people (physically or virtually) to our IP
29. Golden rule of venture capital – don't invest beyond 1 hour of where you are at.
30. Duane thinks we need some timeframe with milestones
31. IP draws people in- relationships and talent keeps them there.
32. Rome, NY has lots of relevance
33. Free IP from Air Force Lab
34. Indiana doesn't give "the farm" away as much as NY
35. I69 build around Crane
36. NY picked a sector- electronics and how to arrange assets
37. Partnership between state/lab service is critical
38. Duane thinks Air Force isn't going to change minds about closing Rome Lab
39. Crane's goal was to be a higher level asset to nation
40. Crane build strategic plan to be Center of Excellence – may not be communicated
41. Don't know effectiveness and capacity of collider programs
42. Don't know perceived value of intellectual property out of Crane by market size – from attracting small startups to big companies.
43. Don't know value of Crane (beyond IP)
44. Faculty: amount and availability for federal research funding with challenge of getting funding – takes focus away from commercialization
45. Don't know how many Crane inventors would be interested to be involved – we don't do much to cultivate inventors staying involved
46. We haven't tapped significant Crane retirees
47. Commercialization isn't primary mission of Crane and Universities and bureaucracy fights it.
48. Mark thinks Indiana limits by not borrowing $
49. Indian can be the bastion of boots
50. John has an interesting case study in Omaha on best practices
51. Bryon thinks to attract early stage companies – we need a concerted effort with multiple strategies
52. USDA rural development and man. ext. partnerships are 2 assets
53. SW IN region has mapped assets and picked a sector: next generation automotive, advanced materials, sensors, energy source for IMEP
54. Industry has continuously chosen Indiana engineers to solve challenges (nanotechnology)
55. IT electronic industry is big enough to share

Our Strengths

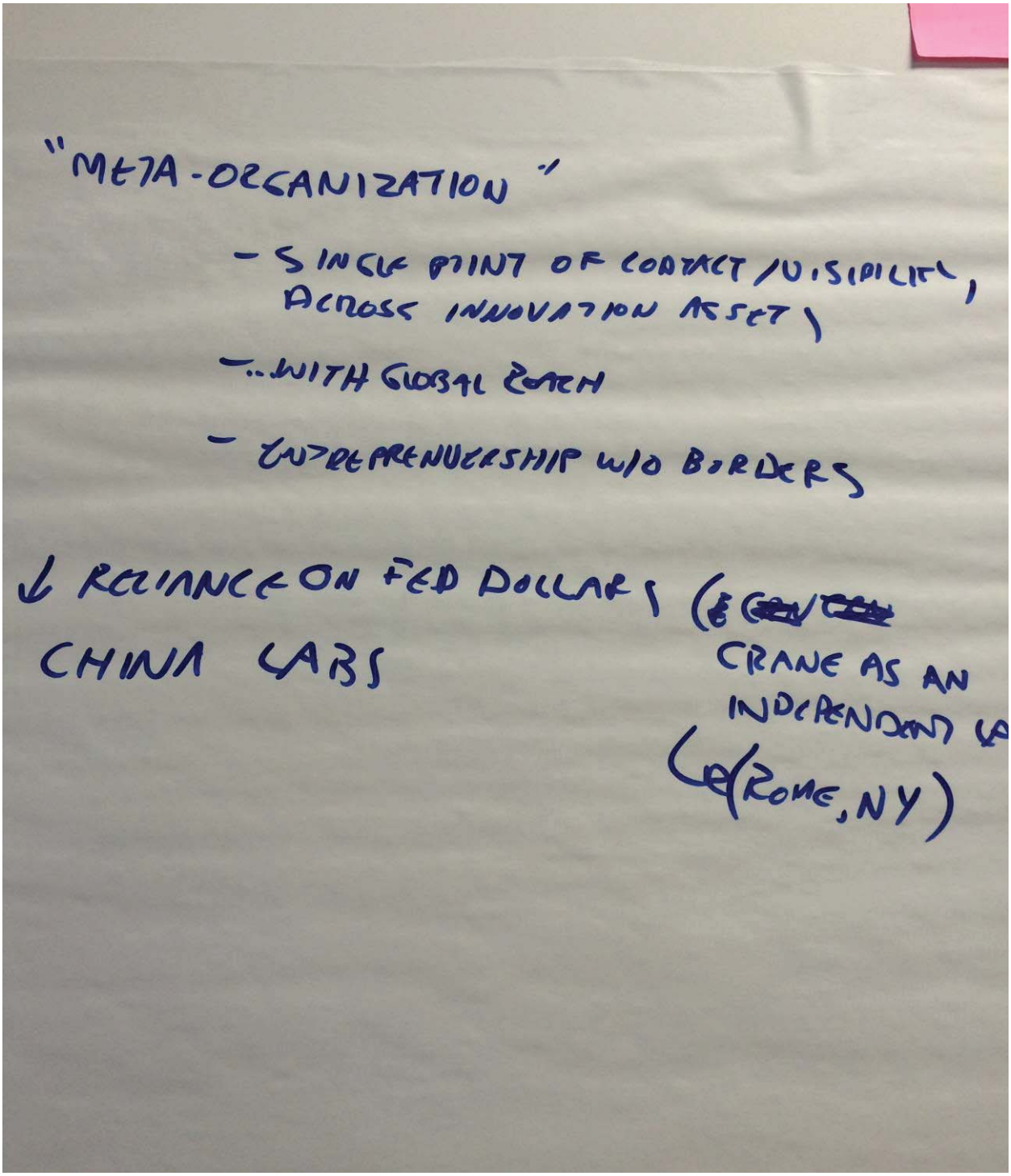
- National lab with funding
- World class universities
- Intellectual assets *
- Federal lab invested in process
- Strong collaboration**
- Diversity of partnerships
- Diversification of industries

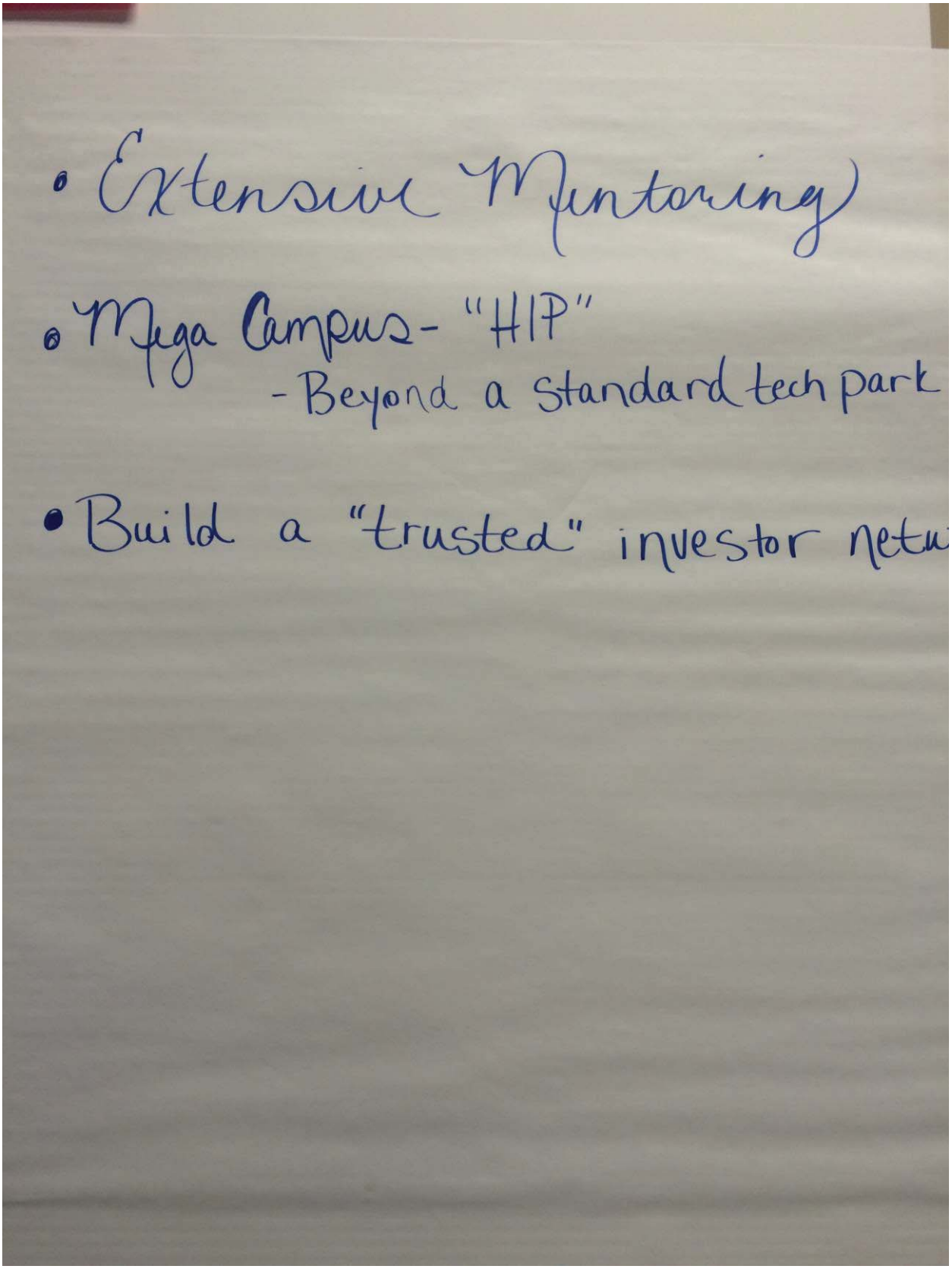
Our Weaknesses

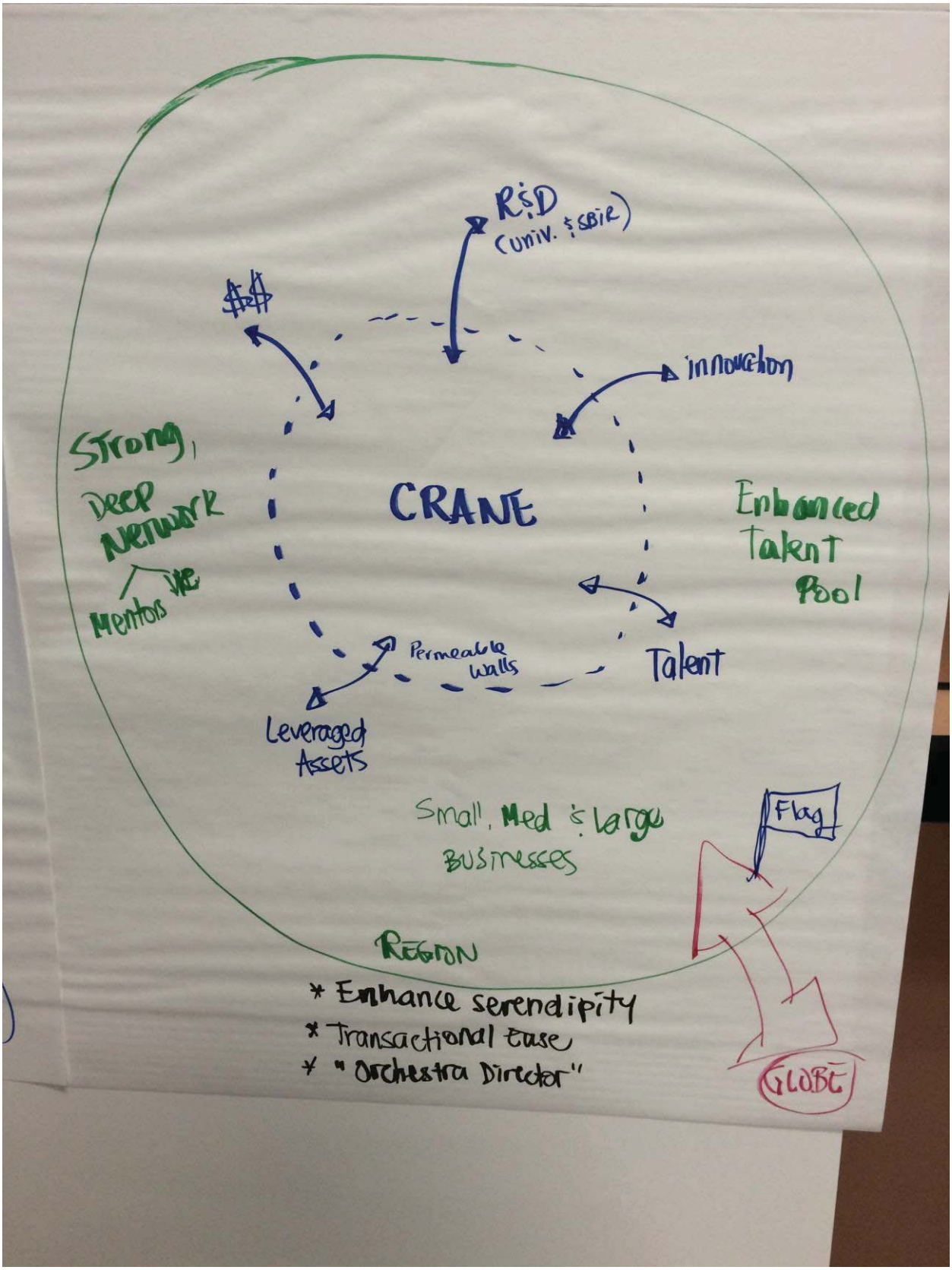
- Risk aversion
- No effective mechanism to identify entrepreneurs and their interest
- Lack of critical mass of people, expertise, companies
- Lack of broadband connectivity
- Lack of organized capital
- “Hip” Factor in Southern rural Indiana
- Immature network – not a lot of depth

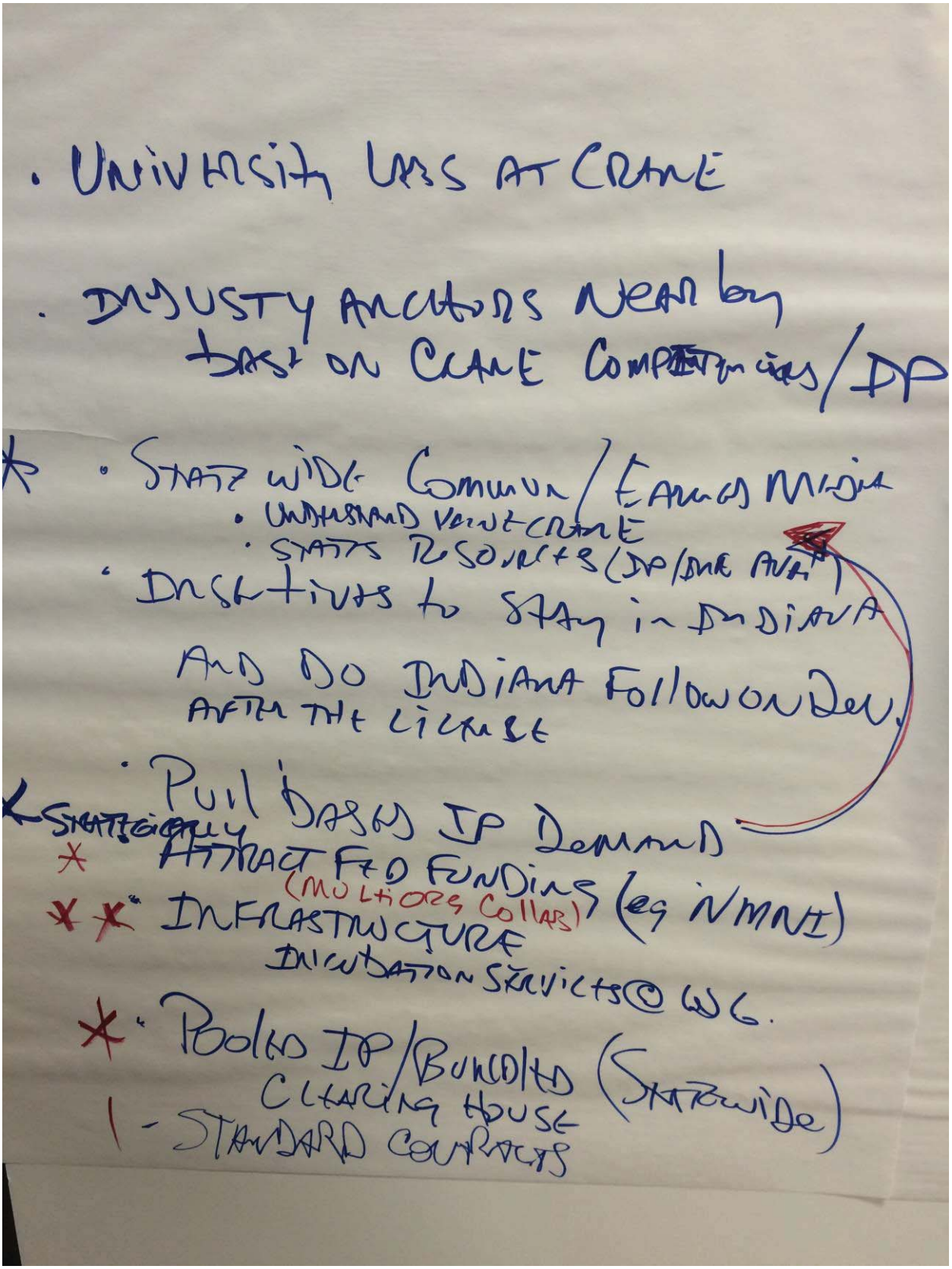
TOMORROW SCENARIOS

Process Comment: *The group imagined a tomorrow scenario of a technology commercialization process that created economic impact to rural Indiana and had national prominence. The group broke into small teams to share their visions and select the best of their collective visions for tomorrow.*




• Extensive Mentoring
• Mega Campus - "HIP"
- Beyond a standard tech park
• Build a "trusted" investor netw


R&D
(Univ. & SBIR)
$
innovation
Strong,
Deep
Network
Mentors
CRANE
Enhanced
Talent
Pool
Permeable
walls
Talent
Leveraged
Assets
Small, Med & large
Businesses
Flag
REGION
* Enhance serendipity
* Transactional ease
* "Orchestra Director"
GLOBE


• University Labs at Crane
• Industry Anchors Near by
based on Crane Competencies/IP
• State wide Commun / Earned Media
• Understand Value Crane
• State Resources (IP/Inf Avail)
• Incentives to stay in Indiana
And do Indiana Follow on Dev.
after the License
• Pull based IP Demand
Strategically
Attract Fed Funding (eg NMNI)
(Multiorg Collabs)
Infrastructure
Incubation Services @ WG.
• Pooled IP/Bundled (Statewide)
Clearing House
- Standard Contracts

Process Comment: *The group generated challenges and opportunities to consider that would bridge the gaps between today and tomorrow's vision. The following were the selected challenges from a large list generated.*

Key Challenges

HMW attract resources to our region?
HMW find the IP's highest and best purpose sooner?
HMW create industry pull (turn the arrow around)?
HMW create opportunities to listen more to industry needs
HMW reduce operational friction of getting IP out of Crane and Indiana
HMW aggregate resources we have to create a critical mass?

Patterns of Key Challenges

Private Sector Ownership	Capacity Building	Marketing	Streamlining Bureaucracy
How might we create industry pull?	How might we aggregate resources we have to create critical mass?	How might we celebrate model success? (entrepreneurs)	How we reduce operational friction of getting IP out of Crane and Universities?
How might we create opportunities to listen more to industry needs?	How might we attract resources to our region?	How might we communicate to the private sector (in state and out of state)?	How might we seek to understand?
How might we discover 2 or 3 tech challenges that unite a subset of otherwise unrelated industries?	How might we increase number of people interacting with Crane? (business)	How might we identify our assets beyond IP?	
How might we bundle solutions for more complete deal?	How might we develop a strong mentor network		
How might we bundle IP to create a better offering?			
How might we find the IP's highest and best purpose sooner?			
How might we construct a system where IP, knowledge, etc. focuses both ways? Federal lab - Industry			

Process Comment: *The group generated potential ideas for consideration.*

Key Ideas

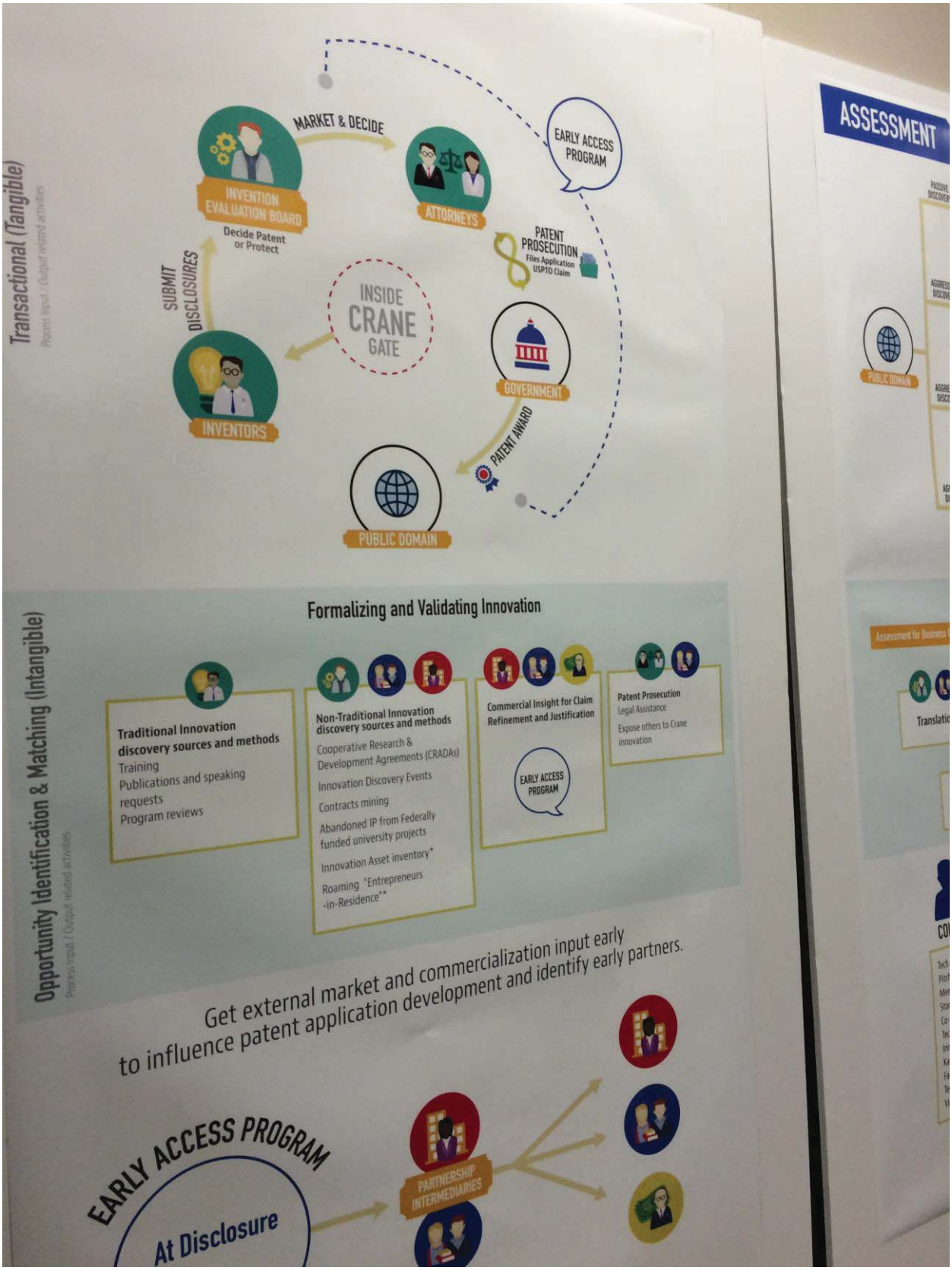
- Understand relationships that we currently have – who are we
- Use empathic design thinking to listen and hear what industry is telling us – their concerns not ours.
- Look to see industry publications to look for their challenges
- Go to industry trade associations for listening
- Get industry in same room
- Get different industry sectors
- Invest in building a network of people interested to build deals
- Communicate what problem did the innovation solve for
- Identify gaps for capacity
- Identify what critical mass is needed to attract

Recommended Actions for Consideration

Process Comment: *Each participant converged on one recommendation for John Dement to consider doing as he moves forward in his newly appointed role.*

What Action to Take	Recommendation By:
List of scheduled meetings with 10 Indiana companies to share how we can work with them. (Build Relationships)	Bryon
Get out and talk to entrepreneur network. Ex. Tech on Tap	Mark B
Pick new Area (Aspirational) that we are listening to in order to build infrastructure	Tony
Use business schools as a consultant	Dr. Fischer
Leverage Office of Governor	Paul
Leverage Launch Indy Network for beginning mentorship network	Jacob
Convene or attend industry stakeholder session to listen	Ian
Get CDE up and running	Daniela
Conduct relationship analysis (spaghetti plate)	Adam
Solidify goals and behaviors for this challenge	Rich
Communicate Crane strategy for public consumptions	
Keep churning activity of collider program and keep adding onto network slides	Mark


INDIANA RURAL TECHNOLOGY
COMMERCIALIZATION SUMMIT
OUR CHALLENGE
How might Indiana achieve rural economic impact and national prominence through the commercialization of the federal lab's intellectual assets?


Transactional (Tangible)
MARKET & DECIDE
INVENTION EVALUATION BOARD
Decide Patent or Protect
ATTORNEYS
EARLY ACCESS PROGRAM
PATENT PROSECUTION
Files Application USPTO Claim
SUBMIT DISCLOSURES
INSIDE CRANE GATE
GOVERNMENT
INVENTORS
PATENT AWARD
PUBLIC DOMAIN
ASSESSMENT
Formalizing and Validating Innovation
Opportunity Identification & Matching (Intangible)
Traditional Innovation discovery sources and methods
Training
Publications and speaking requests
Program reviews
Non-Traditional Innovation discovery sources and methods
Cooperative Research & Development Agreements (CRADAs)
Innovation Discovery Events
Contracts mining
Abandoned IP from Federally funded university projects
Innovation Asset inventory*
Roaming "Entrepreneurs -in-Residence"*
Commercial Insight for Claim Refinement and Justification
EARLY ACCESS PROGRAM
Patent Prosecution
Legal Assistance
Expose others to Crane innovation
Get external market and commercialization input early to influence patent application development and identify early partners.
EARLY ACCESS PROGRAM
At Disclosure
PARTNERSHIP INTERMEDIARIES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PASSIVE DISCOVERY
TRANSLATION AND POSTING
- Sophia Input
- Post to Purdue
- Flintbox
AGGRESSIVE DISCOVERY
COMMERCIALIZATION DISCOVERY EVENTS
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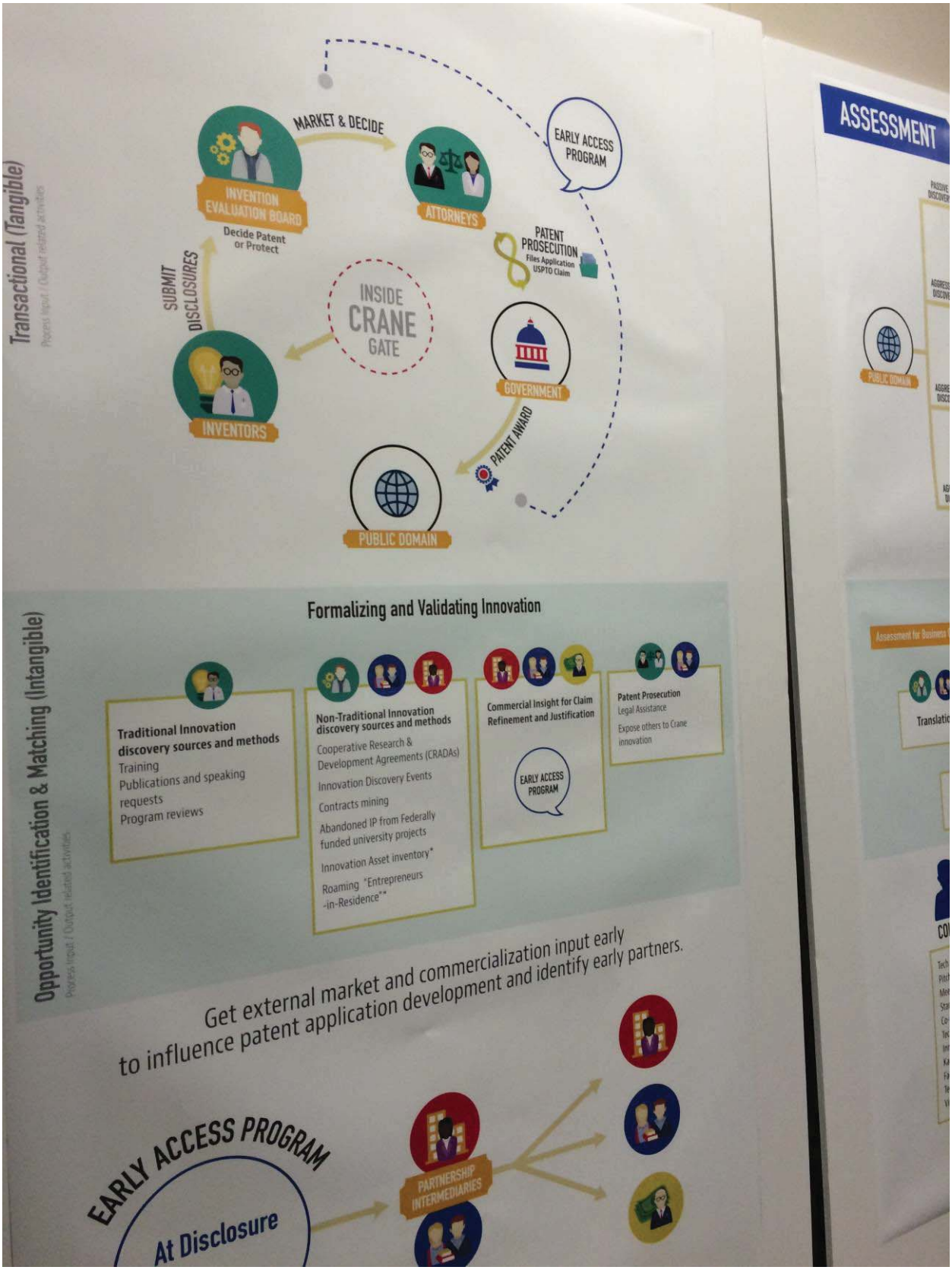
Ft. Wayne
Lafayette
Indianapolis
Bloomington
New Albany
Evansville


OPPORTUNITY REFINEMENT
OPPORTUNITY MATCH
SECURE RIGHTS
Access Back to:
Inventor
Lab/Equipment
Data
Investment Options
DEVELOP CRADA
LICENSING AGREEMENT
Deal Communication and Packaging
Development of Deal Pieces
Deal Packaging
Collaboration to Further Develop and/or Productize
Product Refinement
Capital Pursuit
Team Development
Maker Spaces
Innovation
Market Place Needs
Team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OPPORTUNITY MATCH
MARKET
Deal Communication and Packaging
Collaboration to Further Develop and/or Productive
Product Refinement
Team Development
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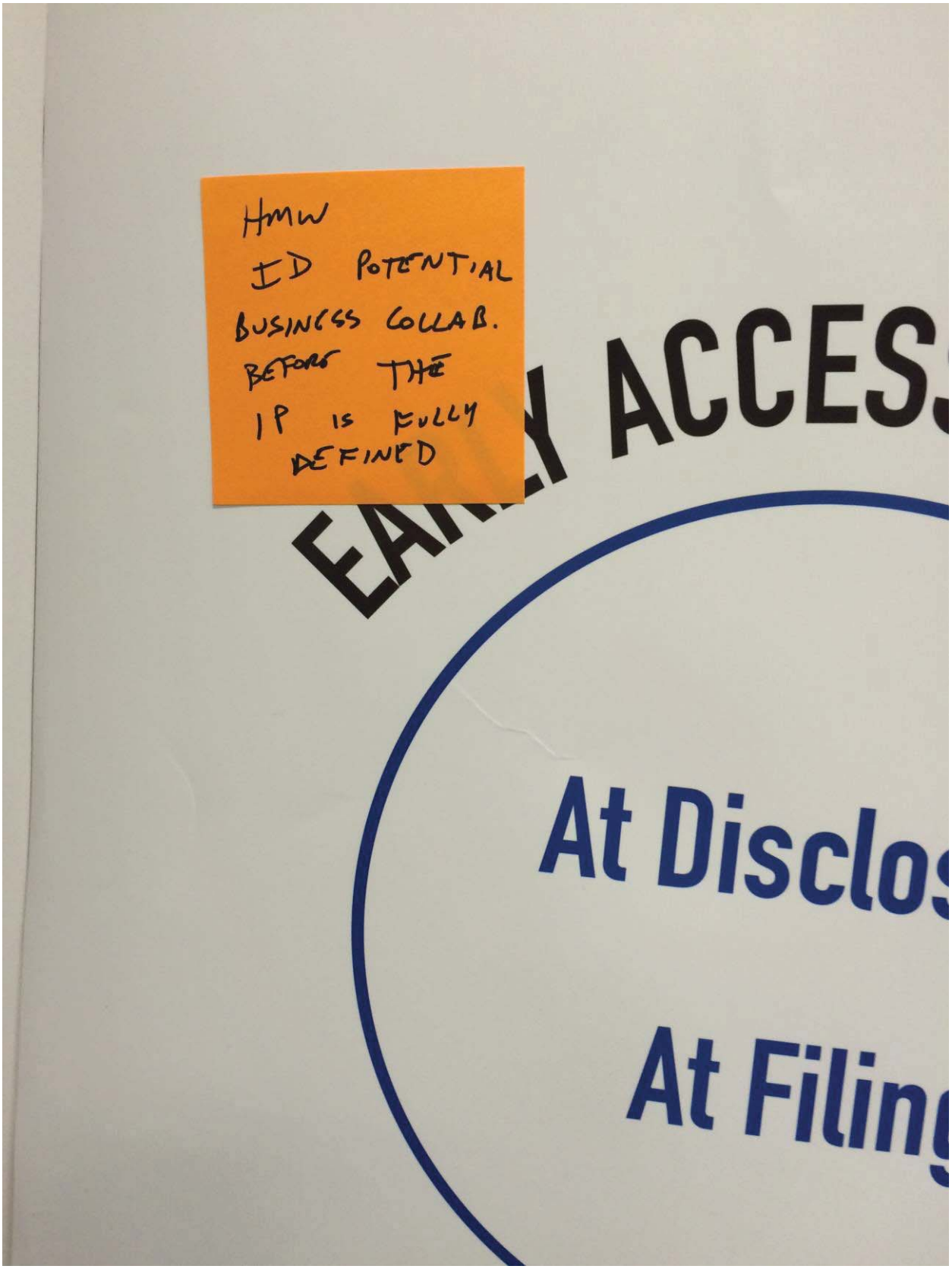
USPTO Clai
How might we discover if they're are 2 or 3 tech challenges that unite a subset of otherwise unrelated industry (in IN or outside) = Crane ? (eg, aviation, robotics, automotive, medical)
HMW... Influence the research by market need
How soon can we bring a group of electronics industry innovators to Crane to engage in a high level dialogue as to how they might work together ?
CULTURE & COMPLEXITY OF DEMING W/ CRANE CAN INSURE NOTHING HAPPENS W/IN
HMW make Crane's Gates more Permeable
HMW Understand & use Authorities & mechanisms
HMW increase the risk tolerance of Crane inventors
HMW Export & market Crane's world class ability to solve Complex Problems
MINDING + NURTURING CULTURE
Highlight expertise via Conference or other meetings
Formalizing and Validating Innovation
Traditional Innovation discovery sources and methods
Training
Publications and speaking requests
Non-Traditional Innovation discovery sources and methods
Cooperative Research & Development Agreements (CRADAs)
Innovation Discovery Events
Commercial Insight for Claim Refinement and Justification


HHW...
Leverage Crane Contractors and Suppliers for market insights
PARTNERSHIP INTERMEDIARIES
Do NOT provide exclusivity!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Maker Spaces
Innovation
Market Place Needs
Team