KEDCo Innovation Center

Final Report, Delivered November 20, 2020

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CONTENTS

Background on the KEDCo innovation center concept

Orthopedic and agriculture industry sector findings and challenges

Recommendations for future exploration

BACKGROUND

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GOALS

Provide a hub for entrepreneurs in Kosciusko County

Build a community of entrepreneurs and their supporters

Promote startup and innovation activities in growth industries

CRI FEASIBILITY STUDY

Recommendations

- Support and grow the “Orthopedic-plus” industries: medical device, production agriculture, agribusiness, or other ag services or products
- Serve as commercialization hub and accelerator for entrepreneurs/startups
- Owned and/or managed by KEDCO or an associated venture
- Target existing/aspiring entrepreneurs with varying levels of experience
- Locate in Warsaw Tech Park, close to orthopedic companies and easily accessible
- Provide full business development continuum support
- Host innovation workshops, meetups, hackathons, etc.

Conducted by Community Research Institute (CRI). Completed July 22, 2020.

PLAN

Size: 10,000+ square feet

Location: TBD, Possibly next to Ivy Tech in Warsaw, Highway 30

Industries: Ortho+ (med device and agriculture, all)

Operations: Coworking model with anchor tenants, operator TBD

Funding: Pursuing 80/20 funding, EDA grant, CTP tax increment

Financial sustainability: Memberships, tenants, events, sponsorships

Audiences: Startups, industry, higher education, government, nonprofits

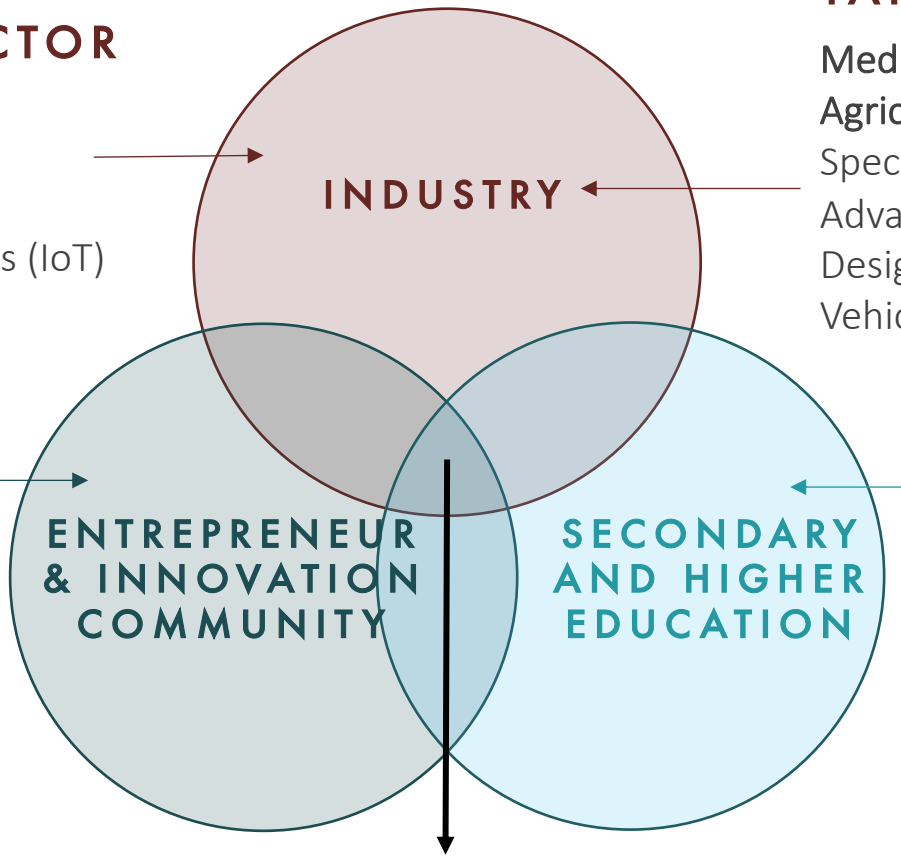
CONVERGENCE

CROSS SECTOR

Logistics
Data Science
eCommerce
Internet of Things (IoT)

TARGET INDUSTRIES

Medical Device and Technology
Agriculture, "Food and Beverage"
Specialty Insurance
Advanced Materials
Design and Craftsmanship
Vehicles

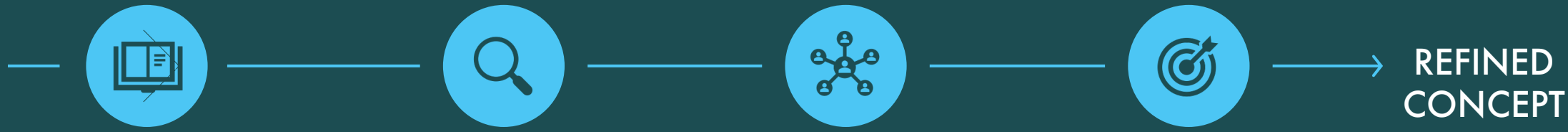


Scale-up
Start-up
Skunk Works®-esque
Main Street

Intellectual Property
Research & Innovation
Expertise
Curriculum Alignment
Career Advancement
Internships

INNOVATION, BUSINESS CREATION, WORKFORCE TRAINING, JOB CREATION

PROJECT SCOPE



Review existing research

Identify best practices of comparable facilities

Connect with industry stakeholders

Make recommendations for the innovation center strategy

REFINED CONCEPT

COMPARABLE FACILITIES BEST PRACTICES

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M2D2

Ortho business incubator offering coworking, networking, and program opportunities for startups

FOUNDED	2007
LOCATION	Worcester, MA
BUSINESS ENTITY	Non-profit
UNIVERSITY AFFILIATION	University of Massachusetts Amherst
PRIMARY CUSTOMER (S)	Entrepreneurs (orthopedics) and manufacturers; industry/business partners with a problem or challenge; and researchers and educators in orthopedics and medical device.
KPI/IMPACT:	41 resident startups, 60 network startups, $152M raised angel capital & venture capital; $12M SBIR grants, 359 meetings annual with subject matter experts, 122 jobs created, 116 student interns; 18 converted to FT; 34 converted to PT, 25+ events annually, 1,250 event attendees annually.
MEMBERSHIP MODEL	Rent structure. No membership fee. Access to campus, expertise, faculty, intern program, private/shared labs, maker spaces.
SOURCE OF REVENUE	Corporate sponsorship, research grants, rent, events
PROGRAMMING	• Business development assistance • Engineering and design assistance • Clinical pathway assistance • Incubator/co-working

M2D2 STARTUP SUPPORT

BUSINESS DEVELOPMENT ASSISTANCE

- Business opportunity assessment
- Business plan development services
- Engineering and design assistance

ENGINEERING AND DESIGN ASSISTANCE

- Prototype design and development services
- Prototype costing and manufacturing assistance

CLINICAL PATHWAY ASSISTANCE

- Consultation for clinical pathway studies
- Access to patient population for clinical trials
- Facilitates partnership with clinical investigators

INCUBATOR SPACE & FACILITIES

- Office space and conference rooms
- Private office suite with 5 offices
- Small kitchen
- Conference room (2000 sq ft)
- Private office space (300 sq ft)
- Private and co-working wet lab space
- Access to University of Massachusetts engineering and research facilities & medical facilities

CCAM

Commonwealth Center for Advanced Manufacturing (CCAM)

Membership-based scientific, research and educational corporation focused on “solving advanced manufacturing challenges” that bridges the gap between lab research and new manufacturing technologies with industrial applications

FOUNDED	2011
LOCATION	Prince George County, VA
BUSINESS ENTITY	Non-profit, 501(c)3
MEMBERS	• Higher Ed: Old Dominion University, University of Virginia, Virginia Tech, Virginia Commonwealth University, and Virginia State University • Industry: Airbus, Canon, CISCO, Cummins, HURCO, Rolls Royce, Northrop Grumman, RTI International Metals, Sandvik, Siemens, Simplimatic Automation, SIS, and more • Government: Genedge, NASA, National Center for Manufacturing Sciences, NIST
RESEARCH AREAS	Adaptive automation systems, additive manufacturing, machining technologies, surface engineering

OPERATIONS	• 26 research staff members
	• 2018 990 info:
	  • Total revenue: $6.9M, $1M in government grants, $1.4M in member fees, $3.99M labor reimbursement
	  • 2018 salaries/other compensation: $4.1M
	  • Other: $2.7M

WHIN

Agriculture living laboratory for education and scientific research related to Internet of Things (IoT) technologies

FOUNDED	2017
LOCATION	West Lafayette, IN
BUSINESS ENTITY	Non-profit
UNIVERSITY AFFILIATION	Purdue University, Ivy tech Community College
PRIMARY CUSTOMER (S)	Growers (soy and corn) and manufacturers; tech partners (commercial and near-commercial) with IoT products that provide network data; and researchers and educators in agriculture, ag tech, digital manufacturing, IoT, data science, networking, broadband, meteorology.
KPI/IMPACT:	WHIN Alliance Model: Field-tested, accelerating both the widespread adoption of IoT technology in the region and the research that is advancing that technology.
MEMBERSHIP MODEL	Growers and manufacturers pay a nominal membership fee
SOURCE OF REVENUE	Growers and manufacturers pay a nominal membership fee. Tech partners share in the cost of those discounts. The discount is reduced in the second year, and by the third year, if users are finding value and continue to use the technology, WHIN begins to receive revenue from the tech partners.
PROGRAMMING	Access to IoT and commercial technology that is likely to have immediate impact on their operations.

WHIN ALLIANCE MODEL

ACCESS TO IOT TECHNOLOGY

- Field-testing
- IoT technology adoption
- Research to advance technology

SUMMITS

- Events for growers to share experiences and learn from each other
- Networking

RESEARCH

- Growers and manufacturers sign on to be a part of Purdue's boots-on-the-ground research opportunities in the region

BROADBAND

- Affordable connectivity and wireless technologies
- Identification of broadband assets and gaps in the region

INDIANA IOT LAB

IoT Lab designed for entrepreneurs, businesses, and higher ed to bring ideation, cloud data, edge hardware, and development together to launch technology solutions needed to meet the world's growing tech needs

FOUNDED	2017
LOCATION	Fishers, IN
BUSINESS ENTITY	Non-profit, 501(c)3
MEMBERS	Entrepreneurs with an idea, startups with a vision, established companies with a desire to collaborate, and academic institutions in need of a hands-on learning facility
KPI/IMPACT	One of the first "true public/private partnership innovation labs" in the country. In 2019, the IoT Lab: • Individual membership more than doubled, 5 new companies launched operations at the IoT Lab, 3 international companies agreed to launch their North American activities at the IoT Lab • Corporate events were presented with AT&T, Comcast's Artificial Intelligence, and X-Finity Home, and other Brand management teams • Launched the Indiana Festival of Autonomy event in partnership with the Association of Unmanned Vehicle Systems International for professionals and community members to explore advanced technologies in robotics, vehicles, and drones
MEMBERSHIP MODEL	Individual memberships start at $1,000 annually, which includes access to prototyping equipment, technology suppliers, Design Thinking sessions led by field experts, coworking rights at Launch Fishers, badge access 24/7, and locker space
SOURCE OF REVENUE	Memberships, sponsorships from higher ed, industry, and state and local government

INDIANA IOT LAB FISHERS STARTUP SUPPORT

DISCOVERY

- Entrepreneurs network with members, sponsors, and partners to expands their knowledge, present alternate perspectives, and provides free-flowing ideas going beyond a singular focus, breaking down barriers to innovation

DEVELOPMENT

- Entrepreneurs have access to design software, coding hardware, soldering irons, test and measurement equipment, a laser cutter, CNC machines, and a complete wood shop, allows for rapid prototyping to condense project timelines

IDEATION

- IoT Lab has partners with organizations which specialize in leading Design Thinking Sessions to assist in defining entrepreneur's product, enhancing the customer experience, and finding their "why"

LAUNCH

- When entrepreneur's project is complete, the IoT Lab supports deployment through a vast network of partners

BEST PRACTICES

BUSINESS TYPE

Nonprofit

TARGET AUDIENCE

Entrepreneurs
Higher Education
Industry
Government

CULTURE

Collaborative
Research-focused
Open innovation

MEMBERSHIP

Membership gives access to expertise and research

M2D2, WHIN & IOT: Access to programming private/shared labs, maker spaces

STARTUP SUPORT

Ideating to establishing
Business development
Technical assistance
Access to larger network
Research opportunities

PARTNERSHIPS/ AFFILIATIONS

Higher Education
Nonprofits
Industry
Government

SUCCESS METRICS

Number of resident startups, facilities and features, events and attendees
Raised capital
Grants received
Jobs created

STAKEHOLDER INTERVIEWS

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INTERVIEW TOPICS

01 Share current innovation center vision and strategy

02 Understand industry's current R&D, startup, innovation practices, and challenges

03 Discuss new scenarios for the innovation center strategy from inputs gleaned during interviews

04 Determine individual company's interest and potential engagement with the center

05 Revise the innovation center and strategy and provide recommendations

NEW INPUTS FOR THE INNOVATION CENTER

STAKEHOLDER INTERVIEW LIST

ORTHOPEDICS

M2D2
- Mary Ann, Director of Operations

ACCELINX
- Dave Anderson, Commercial Affairs
- Mike Hawkins, Technical Affairs
- Matt Hall, Capital Sourcing & Business Financing

MICROPULSE
- Brian Emerick, CEO

ENPARK, LLC
- Marlene Betances, President & CEO

JC INNOVATIONS
- Jody Claypool, Founder

ORTHOWORX
- Brad Bishop, Executive Director
- Nicole Rouached, Communications Manager

AGRICULTURE

AGRINOVUS
- Mitch Frazier, President & CEO
- Dan Dawes, Senior Director of Strategy and Innovation

TOM FARMS
- Kassi Rowland, Assistant Director of Administration

MAPLE LEAF FARMS
- Zach Tucker, Director of QA Communication & Compliance

EGG INNOVATIONS
- John Hornbostel, VP Sustainability & Milling

CHORE TIME (CBT SILVEUS)
- Mindy Brooks, Global Marketing Director

GRACE COLLEGE
- Tobe Forshtay, Ag Department Director

HIGHER EDUCATION

PURDUE UNIVERSITY
- Wade Lange, VP & CEO, Purdue Research Foundation
- Kelley Heckaman, Purdue Extension, Warsaw
- Ben Forsythe, Director of College of Agriculture and Office of Industry Partnerships

GRACE COLLEGE
- William Katip, President
- Drew Flamm, VP of Advancement & Marketing
- Tobe Forshtay, Ag Department Director
- Erin Lawhon, Comm. Liaison, Dept of Engineering

IVY TECH WARSAW
- Jerrilee Mosier, Chancellor
- Allyn Decker, Vice-Chancellor
- Valerie Eakins, Exec Dir Administration

BROAD FINDINGS, INDUSTRY CHALLENGES & RECOMMENDATIONS

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BROAD FINDINGS

1. The need for an innovation hub exists
2. Current number of startups in Kosciusko County is low
3. Affordable prototyping capabilities with engineering experts are needed
4. Most companies are approached by startups and inventors with new ideas
5. Founders tend to be subject matter experts and do not have the full set of skills needed to take concept to product launch
6. The innovation culture leans toward closed innovation rather than open innovation
7. There is cross-sector industry overlap in the areas of supply chain, materials, data analytics, IoT, engineering support, and workforce
8. Most welcome for better relationships with regional higher ed institutions, and especially state research universities
9. Workforce is in short supply and hard to recruit to Warsaw. There is fierce competition, especially for engineering across multiple industries

ORTHOPEDIC INDUSTRY

TARGET PROFILES

CORPORATE/ EX-CORPORATE

Entrepreneur that works/worked at a large company

Mid-to late-career

Knowledgeable about own technical area

Company will no longer fund project, frustrated

Has an idea for a project

Need support from others

DOCTOR/ VETERINARIAN

Has an idea, but lacks expertise to take product from concept to design to launch and beyond

CHALLENGES

1. Currently small number of startups
2. Hard to find expert support for new startup concept along the development process
3. Perception that existing support is expensive for most inventors/startups
4. Confidentiality and competition restrict collaboration and prevent open innovation
5. Long lead time for product development and market validation
6. Limited startup funding available
7. Hard to recruit to Warsaw, fierce competition for talent
8. Competition for small supply chain resources
9. Poor connection to regional higher ed partners, have outside of NEI/state
10. Future of med device production is moving closer to patient

CHALLENGES

Continued

11. Many companies have underutilized intellectual property
12. Slow/Hard to adopt new innovations due to regulations*
13. Insufficient data mining and analytics resources

RECOMMENDATIONS

1. Establish an impartial entity to support founder and serve as point of contact, connector, coach
2. Provide training programs for founders on process, time commitment, available resources
3. Help founders discover applications outside of main industry
4. Provide affordable prototyping lab with engineering consultants, including students as a workforce training program
5. Provide networking events: IP showcase, speaker series, hackathons, roundtables
6. Build VC and angel network for new startups

RECOMMENDATIONS CONT.

7. Create formal relationships with ONE and Fort Wayne Orthopedics
8. Research independent, private, and higher ed tech-transfer office (TTOs) and IP matchmaking programs
9. Commercialize untapped IP via the recruitment of startups from outside the region, and assemble startup teams
10. Research out-of-state startup recruitment programs like St. Louis Arch Grants

ARCH GRANTS

- Provides $50,000 equity-free grants, access to ecosystem resources, help early-stage startups grow and scale
- Since 2012, grant over $8.2 million to more than 150 startups from around the globe to grow in St. Louis
- Areas of focus: Consumer Goods Energy & Communication Education Technology Healthcare Information Technology Life Sciences Manufacturing

AGRICULTURE INDUSTRY

CHALLENGES

Startups/Innovation

1. Currently small number of startups in community
2. Companies have internal innovation teams, don’t spin-out new technologies
3. Regularly approached by startups, nowhere to house or refer
4. Confidentiality and competition restrict collaboration and prevent innovation

Workforce

5. Aging, inconsistent/high turnover, hard to attract to Warsaw
6. Outdated perception of industry and practices
7. Usually recruited from out of state, ag tech training programs nationwide are limited
8. Competition for engineering graduates across many industries

CHALLENGES

Continued

9. Dealing with supply chain disruptions
10. Limited data mining and analytics resources, especially for forecasting, sustainability, footprint ROI
11. Modernization of processing and packaging
12. Increasing nutritional value of products
13. Needing to do more with less: land, money, talent
14. Limited access to organic products grown locally
12. Insufficient animal behavior research and tracking
13. Competition for and availability of land for growing, testing, and research
14. Limited partnerships with regional higher ed research partners, most are outside of region or state
15. Inadequate support for family farms to adopt new technologies, practices

RECOMMENDATIONS

1. Establish an impartial entity that supports founders and serves as primary point of contact, connector, coach
2. Recruit national ag tech accelerator program such as THRIVE, Terra, or gBETA/gener8tor, focused on connecting startups with industry
3. Research independent, private, and higher ed tech-transfer office (TTOs) and IP matchmaking programs

AG LAUNCH

- Create ventures: (1) tech businesses based around protectable IP focused on solving problems in ag, and (2) new value-added process ventures connecting farmers with end-users
- Connect farms and technology, field test new ideas, and build toward adoption
- Cultivate new talent with national mentor network to support startups, future workforce, meet needs of regional businesses

RECOMMENDATIONS

Continued

4. Commercialize viable, untapped IP via the recruitment of startups out of state, higher ed partnerships
6. Develop a strong, regionally-focused partnership with AgriNovus; promote Field Atlas and other startup programs
7. Launch a county-wide, national ag tech workforce recruiting program
8. Establish mutually beneficial relationships with regional and state higher ed providers

FIELD ATLAS
Presented by AgriNovus Indiana

- A career exploration platform that informs high school and college students about the kinds of diverse professions in the growing agbiosciences industry
- An online tool that offers a peer-to-peer program among students enables them to explore various agbioscience careers through videos and a quiz

RECOMMENDATIONS

Continued

9. Recruit, launch, or partner with a custom equipment design studio and testing lab that includes engineering consultants and students
10. Produce networking and knowledge sharing events: IP showcase, speaker series, hackathons, roundtables
11. Research out-of-state startup recruitment programs like St. Louis Arch Grants. (See slide 28.)

ROSE-HULMAN Ventures
INNOVATING FOR 20 YEARS

- Specialize in software and new product development
- Led by a team of experienced engineers, software developers and designers, and supported by creative and skilled interns from the colleges
- Helping new ideas from start to finish while discovering the best solutions along the way for partners

RECOMMENDATIONS

Continued

9. Determine shared research needs that are unique and differentiating to NEI that advance the industry
10. Establish an agriculture industry research center that increases innovation while reducing individual innovation costs, addresses supply chain disruptions, advances the NEI agriculture industry, and safeguards individual company confidentiality and competitiveness
11. Locate research center at the new innovation center: neutral location with shared amenities that create efficiencies and build an innovation community

Note: *Refer to Slide 12 for CCAM information. It is an example of how this research center could operate. Refer to Slide 36 for potential fields of differentiation to explore.*

RECOMMENDATIONS

Continued

12. Further explore these fields to determine points of differentiation and where NEI might lead in research and innovation:
    - Supply chain: Disruption, packaging, quality control, traceability, automation
    - Automation: Design, management, improvement, technology integration
    - Data: Collection, mining, analysis, forecasting. Anonymous data sharing
    - Equipment & Packaging: local engineering resource for design and production, new materials
    - Regenerative ag
    - Animal science/microchipping
    - Internet of Things
    - Precision agriculture
    - Stacking enterprise
    - Vertical farming, hydroponics, aquaculture
    - Rural sociology (e.g. Amish) and sustainability practices

HIGHER EDUCATION PARTNERSHIPS

HIGHER EDUCATION

OPPORTUNITIES TO PURSUE

Purdue University, Grace College, and Ivy Tech are interested in having a presence at the future innovation center.

Purdue: Explore a partnership model similar to Vincennes University and Purdue Research Foundation (PRF) focused a challenge/opportunity unique to NEI and built on regional strengths.

Grace: Explore partnering with agribusiness and engineering colleges, their engineering prototyping lab, or the future Center of Sustainable Agriculture.

Ivy Tech: Explore partnering with Cook Institute for Entrepreneurship, their engineering prototyping lab, and relevant degree programs and certifications.

Recommended Next Steps

All:

1. Discover Kosciusko County's differentiating agribusiness and orthopedic industry needs and areas of strength
2. Start roundtables based on individual and shared industry needs to find differentiating focus area(s)
3. Explore partnership opportunities between industry and higher ed

Purdue Specific:

1. Compile list of Purdue agriculture research currently underway in county/region
2. Determine on one or two next gen technologies that do not compete with West Lafayette, WestGate, Vincennes
3. Share results with PRF and determine best path forward for partnering on research and innovation in the new center

SHARED CHALLENGES & RECOMMENDATIONS

SHARED CHALLENGES

1. Workforce recruitment, development, longevity, relevance
2. Supply chain improvement: Packaging, traceability, logistics, temperature control, contamination, etc.
3. Confidentiality and competition restrict collaboration and prevent open innovation
4. Limited partnerships with regional higher ed research partners
5. Limited startup funding available
6. Companies have internal innovation teams, underutilized IP, and don’t spin-out new technologies
7. Insufficient data mining and analytics resources
8. Inventors/founders find it get support from SME along the development process
9. Need for increased innovation and adoption of IoT into various industry applications

SHARED RECOMMENDATIONS

1. Determine unique, shared research and innovation needs that differentiate NEI in the chosen industries. The area(s) of focus might be unique to one of the industries (e.g. precision ag) or be shared across both e.g. IoT)
2. Establish industry research center(s) that increases innovation and startup activity, distributes research and innovation costs, and advances the industry, while safeguarding individual company confidentiality and competitiveness
3. Locate research center(s) at the future innovation center: neutral location, shared amenities, builds an innovation community

Refer to slide 16

SHARED RECOMMENDATIONS

4. Establish an impartial entity to support founder and serve as point of contact, connector, coach
5. Provide training programs for founders on process, time commitment, available resources
6. Help founders discover applications outside of main industry
7. Provide affordable prototyping and testing lab with engineering consultants, including students as a workforce training program
8. Provide networking events: IP showcase, speaker series, hackathons, roundtables
9. Build VC and angel network for new startups

Refer to slide 16

SHARED RECOMMENDATIONS

10. Research independent, private, and higher ed tech-transfer office (TTOs) and IP matchmaking programs
11. Recruit regional/state and national startup incubator and accelerator programs
12. Commercialize untapped IP via the recruitment of startups from outside the region, and assemble startup teams
13. Research out-of-state startup recruitment programs like St. Louis Arch Grants
14. Launch a county-wide, nation-wide workforce recruiting program
15. Provide networking events: IP showcase, speaker series, hackathons, roundtables

Refer to slide 16

SHARED RECOMMENDATIONS

CREATE AN OPEN INNOVATION CULTURE. HOW?

1. Align innovation strategy with ecosystem strategy
2. Help companies discover applications outside of main industry building
3. Show benefits of spinning-out new technologies into startups
4. Create cross-sector challenge working groups, hackathons, etc.
5. Host speaker events that showcase successful collaboration models
6. Partner with academia for new and usable IP, research, and workforce development
7. Design center with environmental elements that encourage and reflect collaboration: open spaces, shared uses, common areas, glass walls, brainstorming rooms

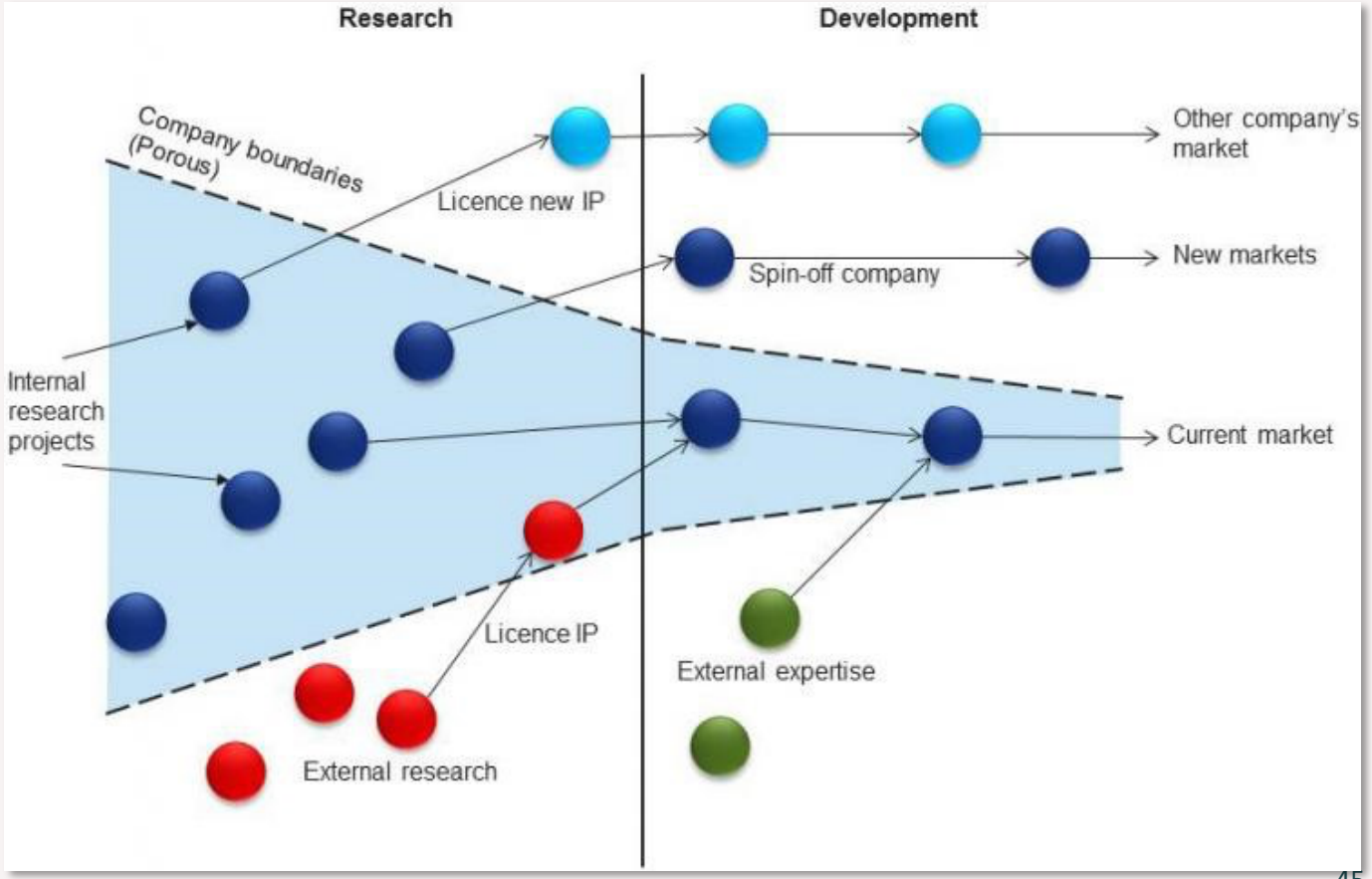
SHARED RECOMMENDATIONS

CREATE AN OPEN INNOVATION CULTURE. HOW?

Review open innovation center model practices and culture such as the ones in place at M2D2, WHIN, and CCAM.

Setup multi-industry, multi-discipline teams to discuss guidelines for collaboration.

Draft guidelines for discussion and future adoption.



Source: https://www.cambridgeconsultants.com/insights/open-innovation-culture

RECOMMENDED AMENITIES

Restaurant/ Café

Prototyping Lab

Conference Hall

Event Space

Private Offices

Quiet Café

Conference Rooms

Brainstorm Rooms

Kitchen

Phone Booths

Monthly Memberships

Utilities Included

Car Charging Station

Secure Lockers

Bike Storage

Outdoor Seating

Mother's Room

Thank You

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