



Futures Commission Meeting

Wednesday, September 30, 2020

9:00-11:30

Webcast/Conference Call Only Meeting

<https://us02web.zoom.us/j/88147237271?pwd=OVREc2NuUXZGL3gzYkI4bFJyOUlodz09>

Meeting ID: 881 4723 7271

Passcode: 523097

OR

Join by phone: (646) 558 8656; Meeting ID: 881 4723 7271

AGENDA

Time	Item	Presenter
9:00 am–9:10 am	Welcome and Introductions	Co-Chair Gopalpur Co-Chair Lynch
9:10 am–9:20 am	Innovation Plan Vision	Kate Sinner
9:20 am–9:55 am	Availability of Value-Added Services Discussion	Deb Cummings Jonathan Dworin
9:55 am–10:30 am	Availability of Risk Capital Discussion	Deb Cummings Jonathan Dworin
10:30 am–11:00 am	Connectivity of Industry Clusters Discussion	Deb Cummings Jonathan Dworin
11:00 am-11:20 am	Prioritization of Potential Actions	Deb Cummings Jonathan Dworin
11:20 am-11:25 am	Next Steps	Deb Cummings
11:25 am-11:30 am	Public Comment and Adjourn <ul style="list-style-type: none">• Public comment	Co-Chair Gopalpur Co-Chair Lynch

Unanticipated agenda items may or may not be included.

The meeting location is accessible to persons with disabilities. A request for an interpreter for the hearing impaired or for other accommodations should be made at least 48 hours before the meeting to: [Jordana Barclay](#) at (971) 718-7459.

Oregon's Innovation Plan

Futures Commission Meeting

September 30, 2020



Agenda: Futures Commission Meeting #2



Welcome

9:00
AM

Introductory remarks from the co-chairs of the Futures Commission.



Risk Capital Availability

9:55
AM

Discussion of key findings, situational analyses, and potential solutions and recommendations to address gaps.



Next Steps

11:20
AM

Review next steps.



Innovation Plan Vision

9:10
AM

Discussion on the 'vision' for the Innovation Plan and potential outcomes.



Industry Cluster Connectivity

10:30
AM

Discussion of key findings, situational analyses, and potential solutions and recommendations to address gaps.



Public Comment

11:25
AM



Value-Added Services Availability

9:20
AM

Discussion of key findings, situational analyses, and potential solutions and recommendations to address gaps.



Vetting Potential Actions

11:00
AM

Discussion of potential recommended actions that should be incorporated into the Innovation Strategic Plan to address near-term and long-term needs.



Adjourn

11:30
AM

Thank you for joining us!

CO-CHAIR WELCOME

KANTH GOPALPUR AND JENN LYNCH

INNOVATION PLAN VISION

DISCUSSION BY FUTURES COMMISSION MEMBERS

PRELIMINARY FINDINGS REGARDING OREGON'S INNOVATION CLIMATE

DEBORAH CUMMINGS AND JONATHAN DWORIN

TECONOMY PARTNERS, LLC

Process: Focus of Futures Commission Meetings

FUTURES COMMISSION MEETING #2

- **Today:** Review/Discuss Feedback from Focus Groups 1-3 and begin discussing potential strategies/actions to strengthen Oregon's Innovation Ecosystem

FUTURES COMMISSION MEETING #4

November 30th: Review/Discuss Strawman Strategies and Actions

FUTURES COMMISSION MEETING #3

October 27th: Review/Discuss Feedback from Focus Groups 4-6 and continue discussing potential actions

FUTURES COMMISSION MEETING #5

January 11th: Review/Discuss Draft Innovation Strategy

Understanding Oregon's Innovation Climate

Innovation Plan stakeholders were asked to assess the **importance + availability** of six factors:

Innovation Culture

including opportunities for value-added networking, business service provider expertise, availability of entrepreneurial assistance targeted to emerging firms, and other aspects involving the mobilization of resources in support of innovators.

Risk Capital

including translational research, commercialization support, pre-seed, seed and venture capital, and other debt financing.

Infrastructure for Ideation + Commercialization

including the ability to conduct research and development and to link market-driven commercial needs to research endeavors.

Business Climate

including access to broadband and other issues specific to the overall business, tax, and regulatory climate germane to fostering innovation-based growth.

Business Acumen

including managerial talent needs and the availability of education and training programs to address these needs.

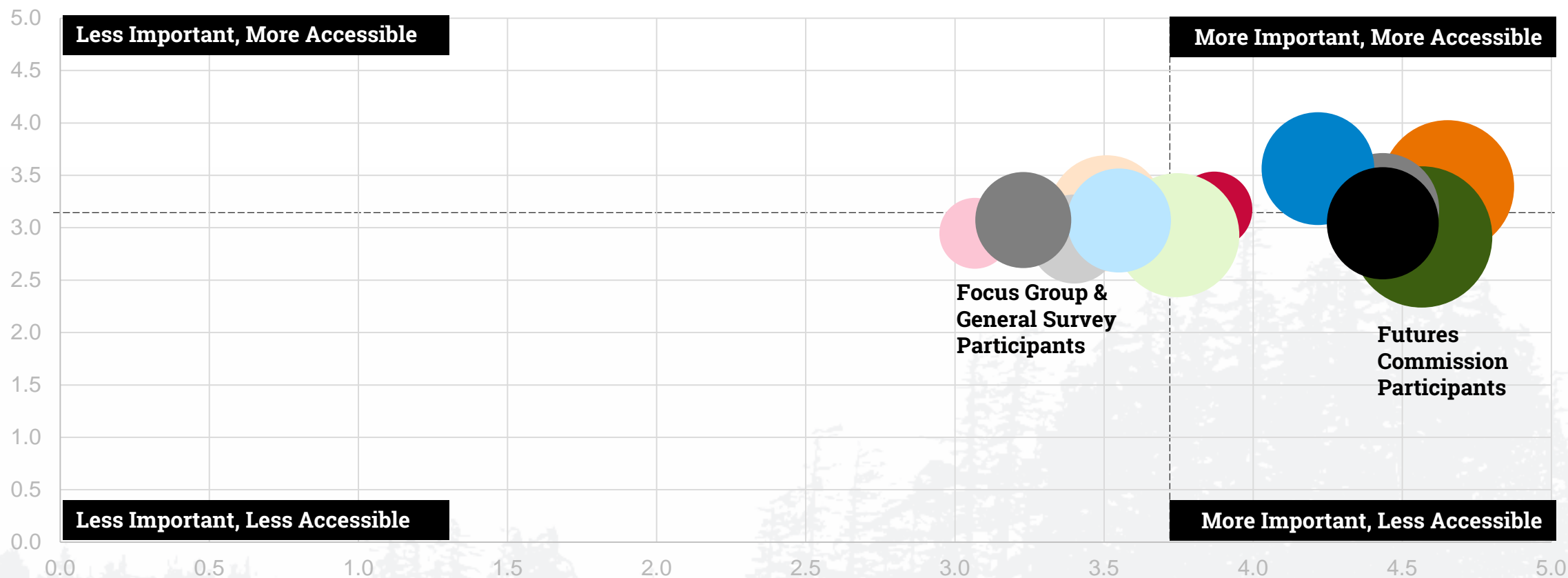
Physical Infrastructure

including needs related to innovation hubs, incubators, etc.



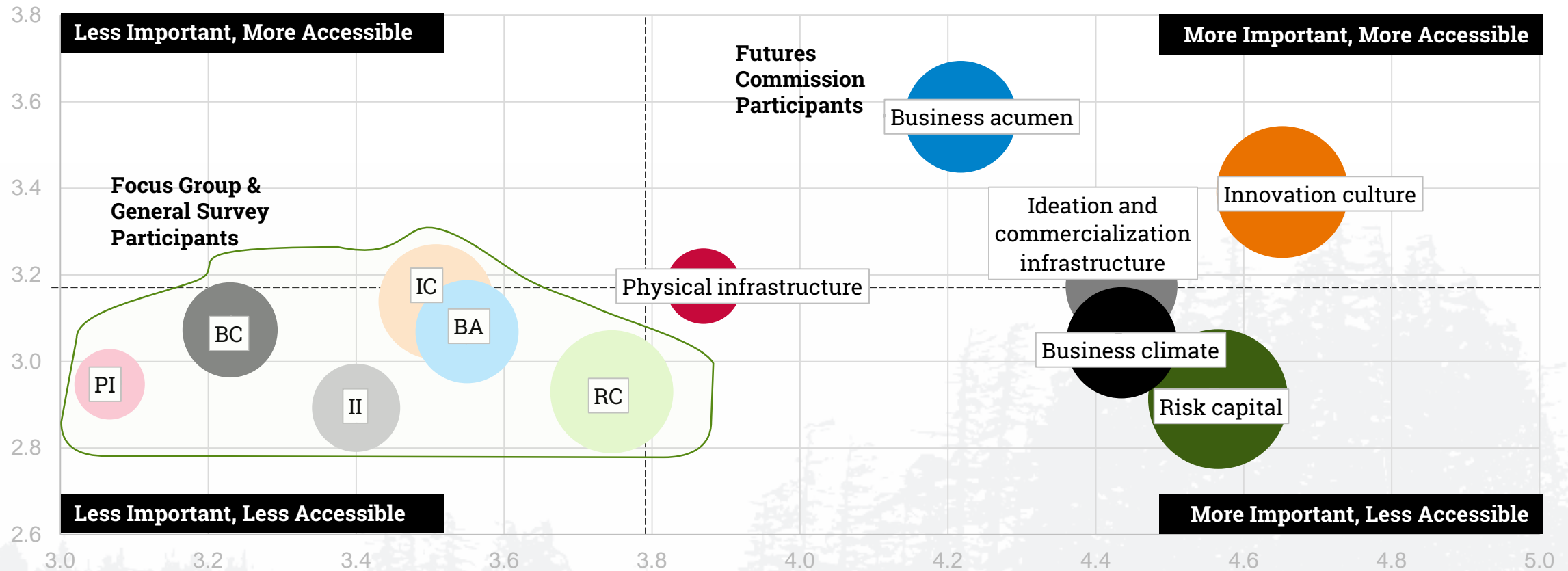
Evaluation of Oregon's Innovation Climate

Subject matter experts participating in the Focus Groups and the General Survey were more likely to rate the elements of innovation climate as less important and less accessible than Futures Commission members.



A Closer Look Highlights Additional Differences

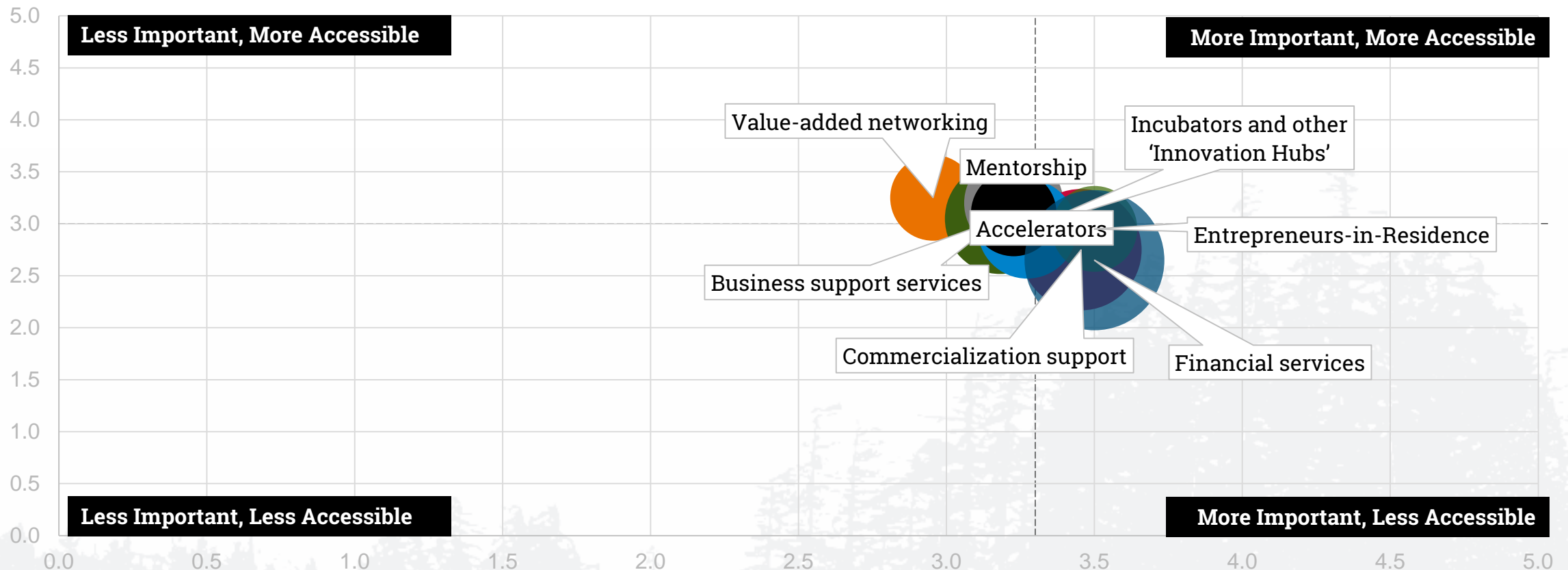
Access to risk capital was of greatest concern to participants of the focus groups and general survey. In addition, access to innovation support services (via mentorship, networking, subject matter experts, etc.) ranked higher for participants vs. Futures Commission Members, and issues of Business Climate the opposite. For both groups, physical infrastructure fell to the bottom of innovation elements on which to focus attention.



AVAILABILITY OF VALUE-ADDED SERVICES: DISCUSSION

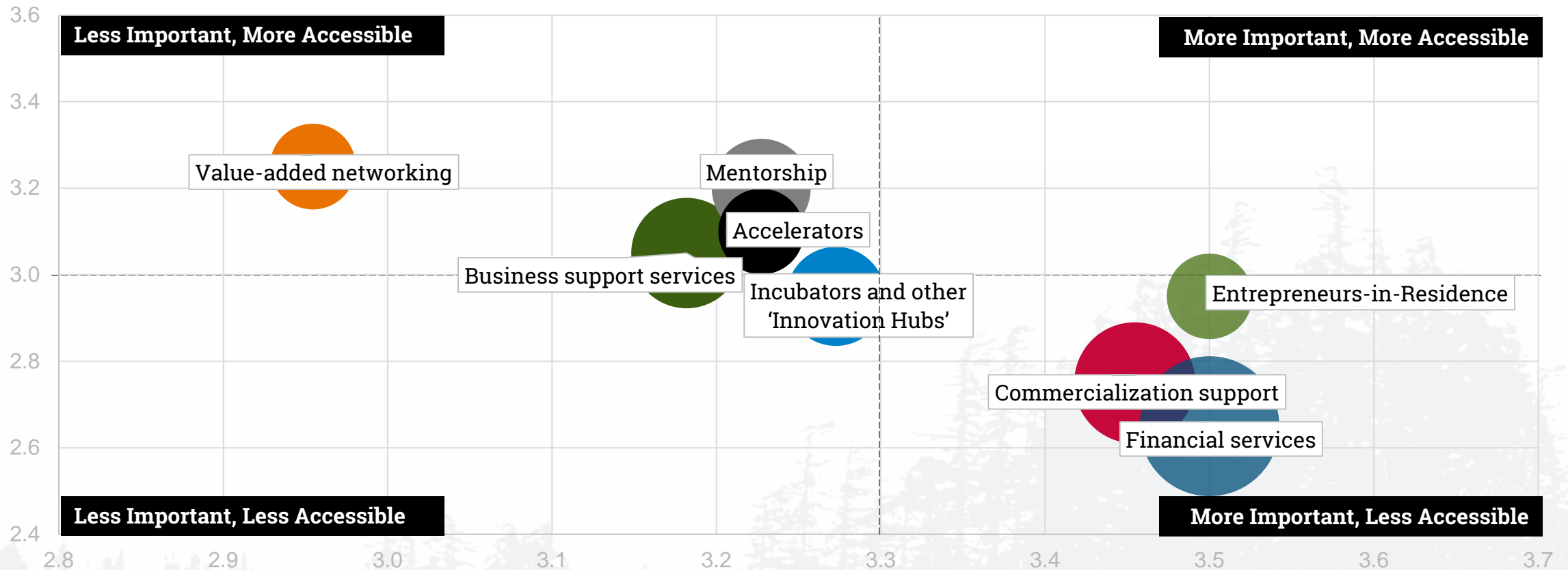
Evaluation of Value-Added Services in OR

Survey responses clearly indicate that while a wide variety of value-added services are considered important in developing a robust innovation ecosystem, there is concern these services are not as accessible as needed.



Evaluation of Value-Added Services in OR

When the eight service categories are examined more closely, **financial services, commercialization support, and EIRs** are ranked as most important and least accessible.



Key Takeaways: Entrepreneurial Services

1 Need to “think big”

- Disjointed/ siloed efforts, hampered by inconsistent state funding
- Activities are based in PDX and Willamette Valley with inadequate resources elsewhere
- Culture is not inclusive – a “who you know” mentality
- Tension between Innovation Ecosystem and Main Street efforts

2 Commercialization/technical expertise not readily available

- Expertise to support entrepreneurs in Metro areas is not readily available; support is non-existent in rural areas
- Resources that do exist are not effective - applied research efforts and rapid prototyping dollars are misapplied
- Commercialization facilities/equipment are difficult/expensive to access

3 Startups have difficulty accessing value-added business services

- 1 on 1 advising is expensive and difficult to access, especially in rural OR
- General webinars are available and prolific but when not coupled with customized advice, of little value.
- Oregon is organized around distributing information via social networks limiting access

4 Insufficient C-Suite talent/business acumen

- Few organizations have EIRs, and those that do have suffered financial setbacks and the funding is now at risk
- Developing an EIR program other than in software and B2C is difficult because of the lack of successful exits in other industry sectors. Concern that the requisite talent is not available.

5 Access to mentors is limited

- Organizations are not effectively creating mentorship programs, including network building, administration, and ongoing support, which requires resources and focus
- Mentorship is happening in silos which creates a fragmented process
- Traditional connectivity (physical proximity) is difficult to access in rural areas

6 Few physical localities provide real value-added services

- Concern that too many incubators, innovation hubs, accelerators are simply real estate plays
- Efforts are underfunded and are not effective/impactful
- Requires sector specific efforts to meet vastly different needs of startups

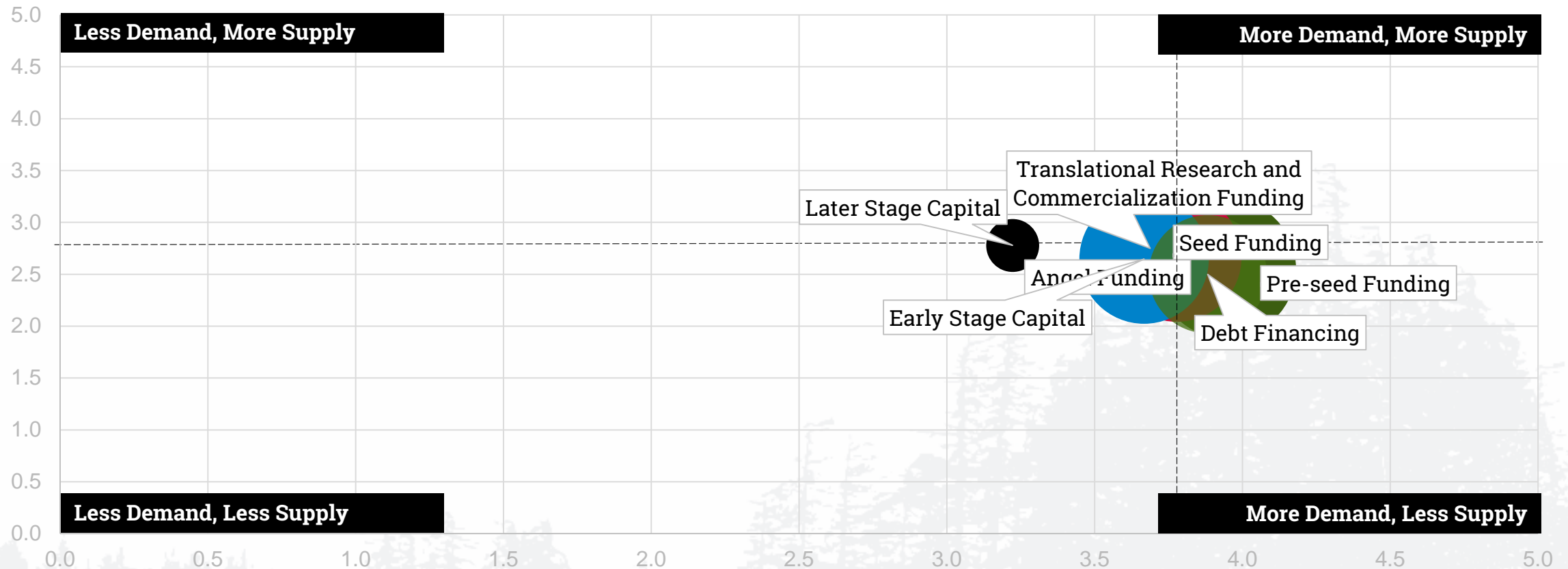
Preliminary Recommendations: Value-Added Services

- **Need to build/develop diverse partnerships across state/silos for 10-year plan to be successful.**
 - Plan needs to strike a balance between new initiatives, modified programs, and scaling promising models.
 - Whatever resources and developed/funded, they must be widely understood and accessible.
 - Programs must be held accountable with real performance metrics that are transparent.
- **Tie value-added services with sources of risk capital**
- **Service models must vary depending on community/region as well as industry sector**
 - Tension between innovation efforts and Main Street efforts – must resolve
 - Need to develop programs that effectively connect translational research with ideation/development/launch
- **See examples of statewide investments in innovation services in the Appendix**

AVAILABILITY OF RISK-CAPITAL: DISCUSSION

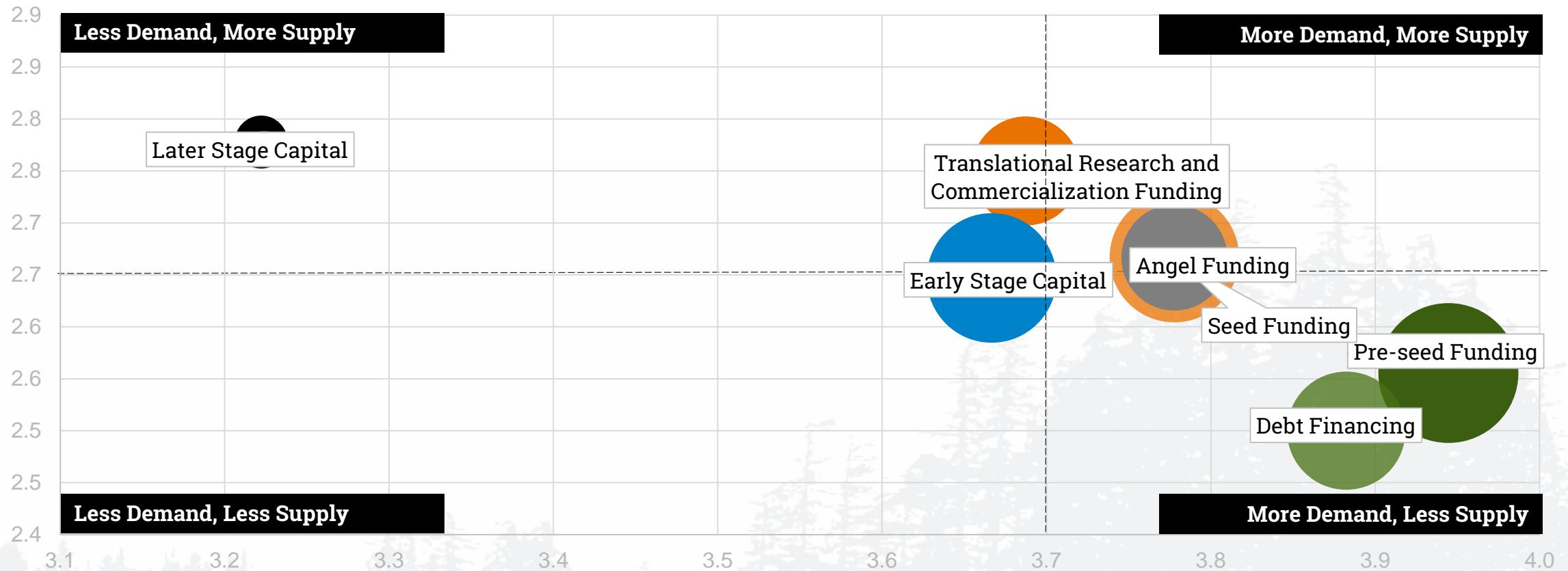
Evaluation of Oregon's Risk Capital

Survey responses clearly indicate that **demand for risk capital in Oregon outpaces supply** across the investment spectrum.



Evaluation of Oregon's Risk Capital

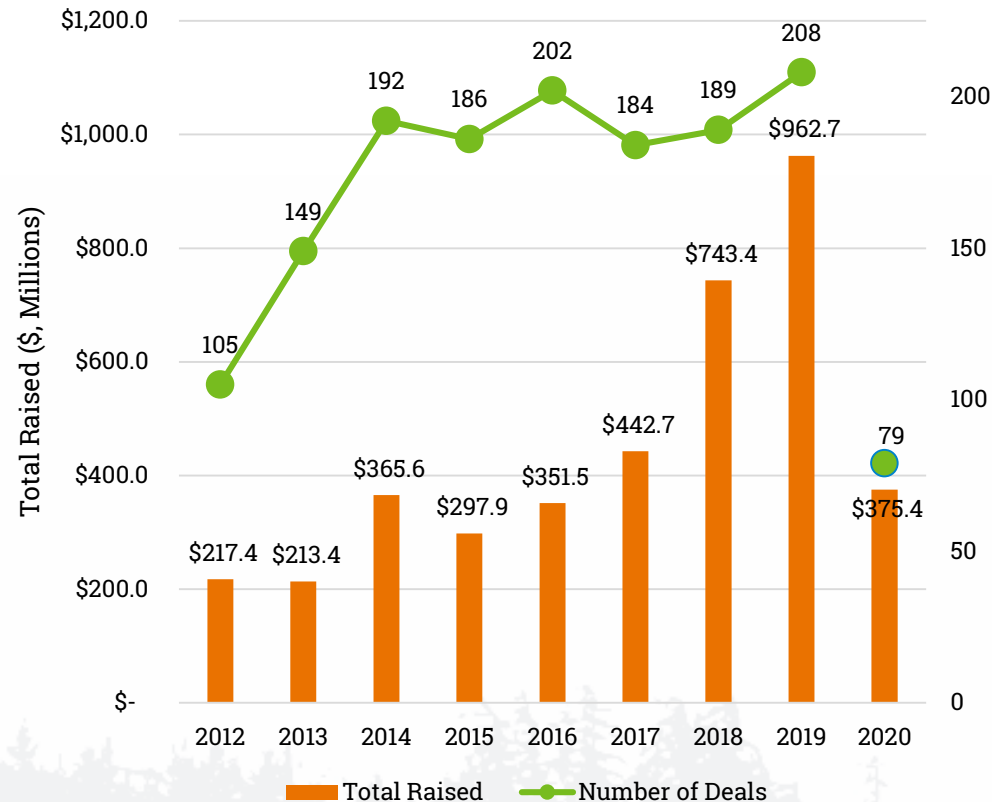
When examined more closely, pre-seed, angel, and seed funding as well as debt financing are highlighted as areas of significant concern while later-stage capital was viewed as in less demand and more accessible.



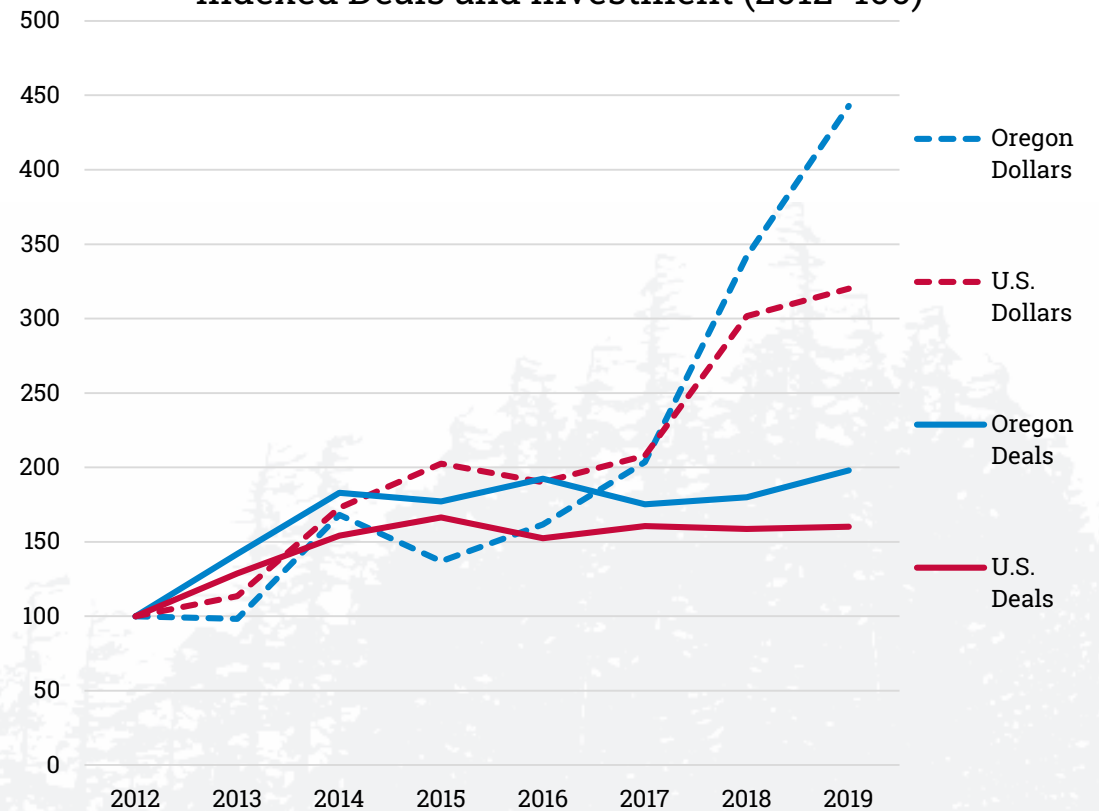
Growth of Oregon Risk Capital Outpacing Nation

From 2012 to 2019, Oregon experienced growth in risk capital dollars and deals that exceed the nation. In just two quarters, **risk capital investment in 2020 is greater than OR's annual totals prior to 2017.**

Risk Capital Deals in Oregon (2012-Q2 2020)



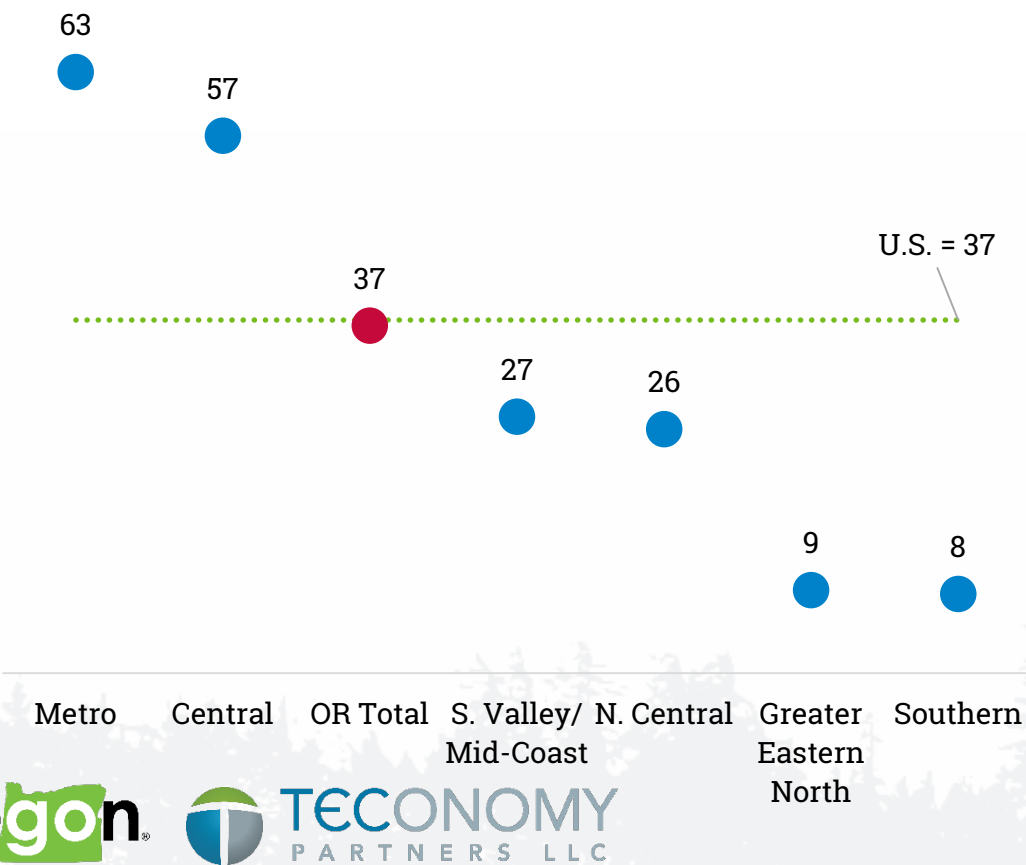
Indexed Deals and Investment (2012=100)



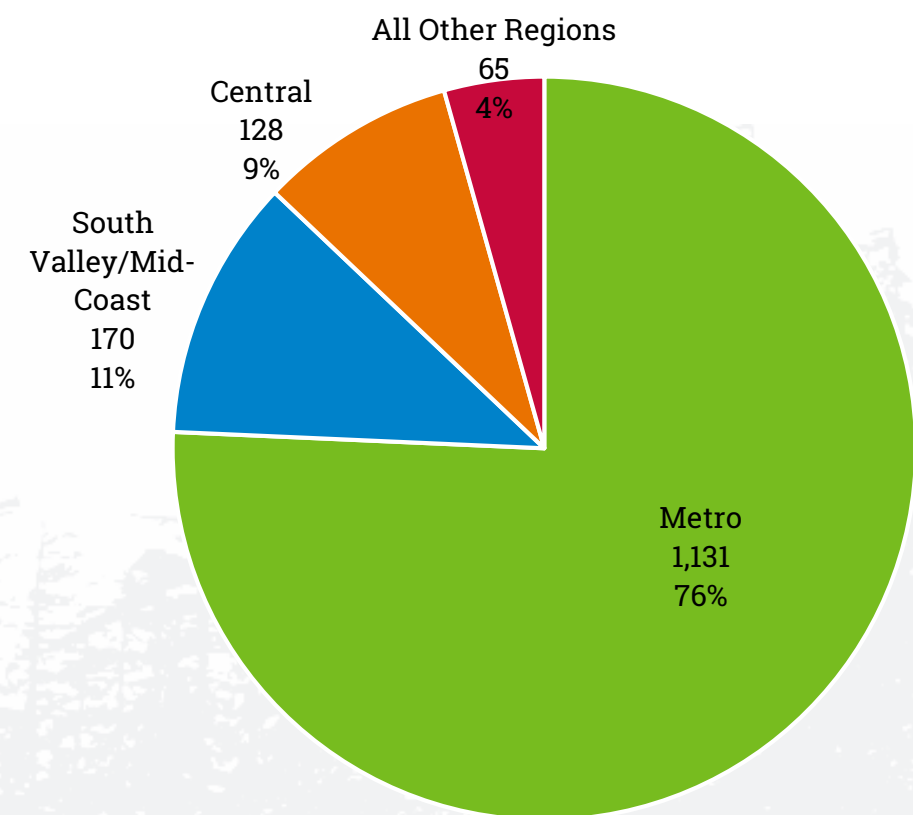
VC Deals Per Capita in Oregon on Par with Nation

Deals Per Capita in Oregon match the national average, buoyed by strong concentrations in Metro (63 deals per 100k residents) and Central OR (57 deals per 100k residents) – these two regions account for 85% of all deals in OR from 2012-Q2:2020.

Risk Capital Deals per 100K Residents (2012-Q2:2020)



Total Deals and Share of Oregon Total by Region

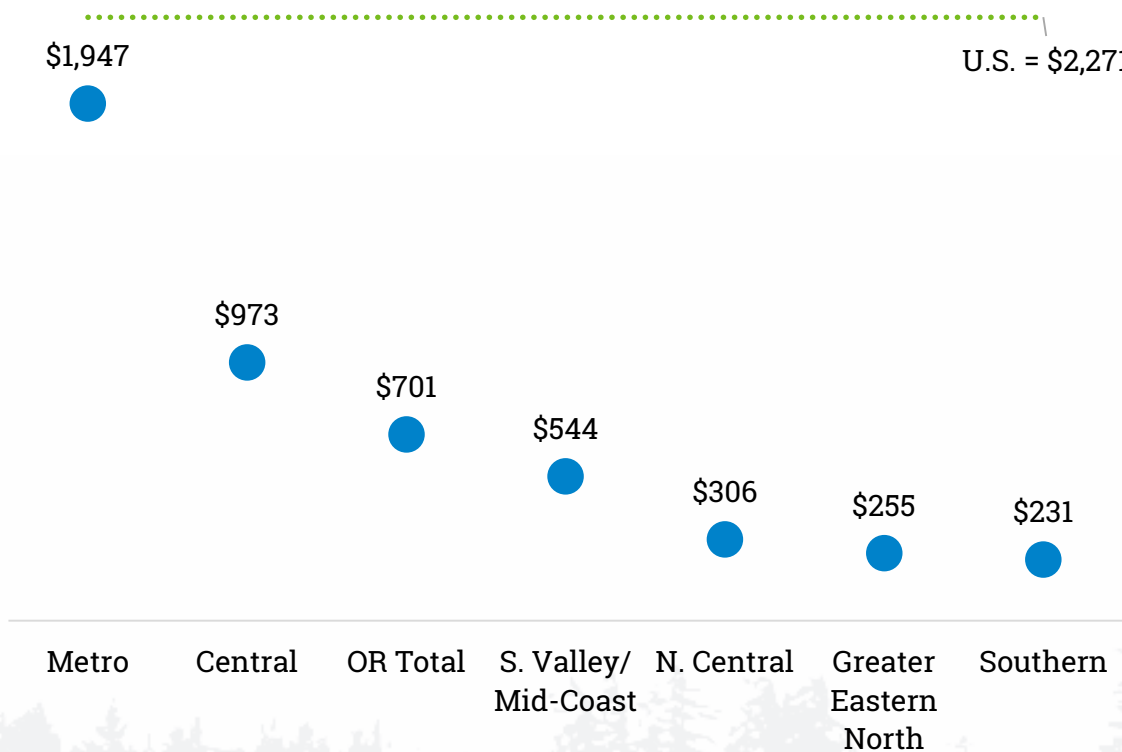


Source: TEconomy Analysis of OR Pitchbook Deals, 2012-Q2:2020

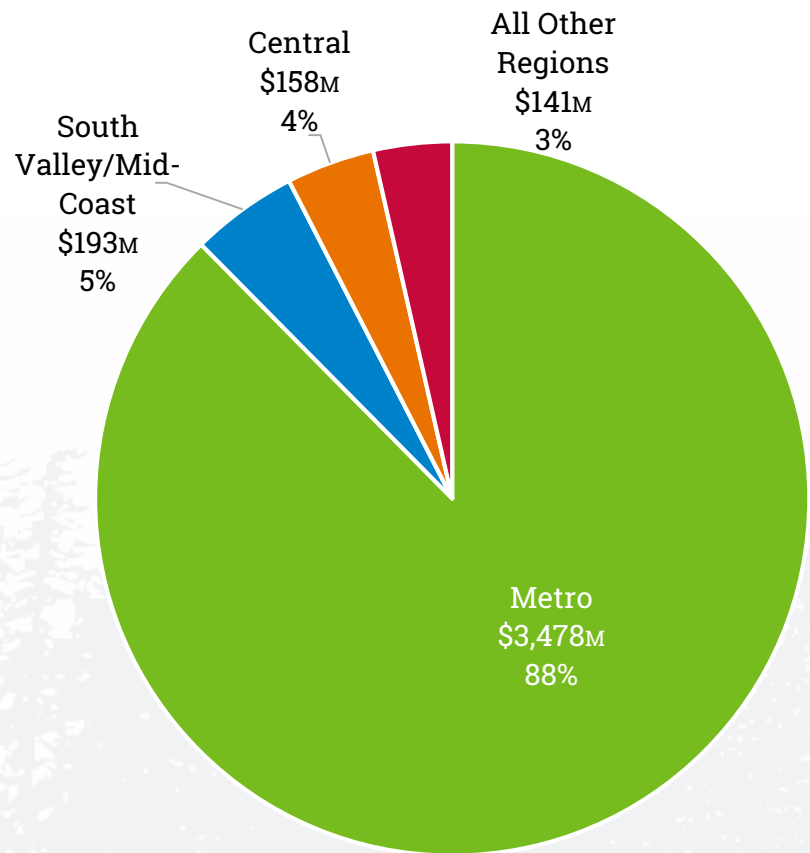
VC Dollars Per Capita in Oregon Lags Nation

No region in Oregon has a level of per-capita risk capital that is higher than the U.S. average.

Risk Capital Dollars Per Capita (2012-Q2:2020)



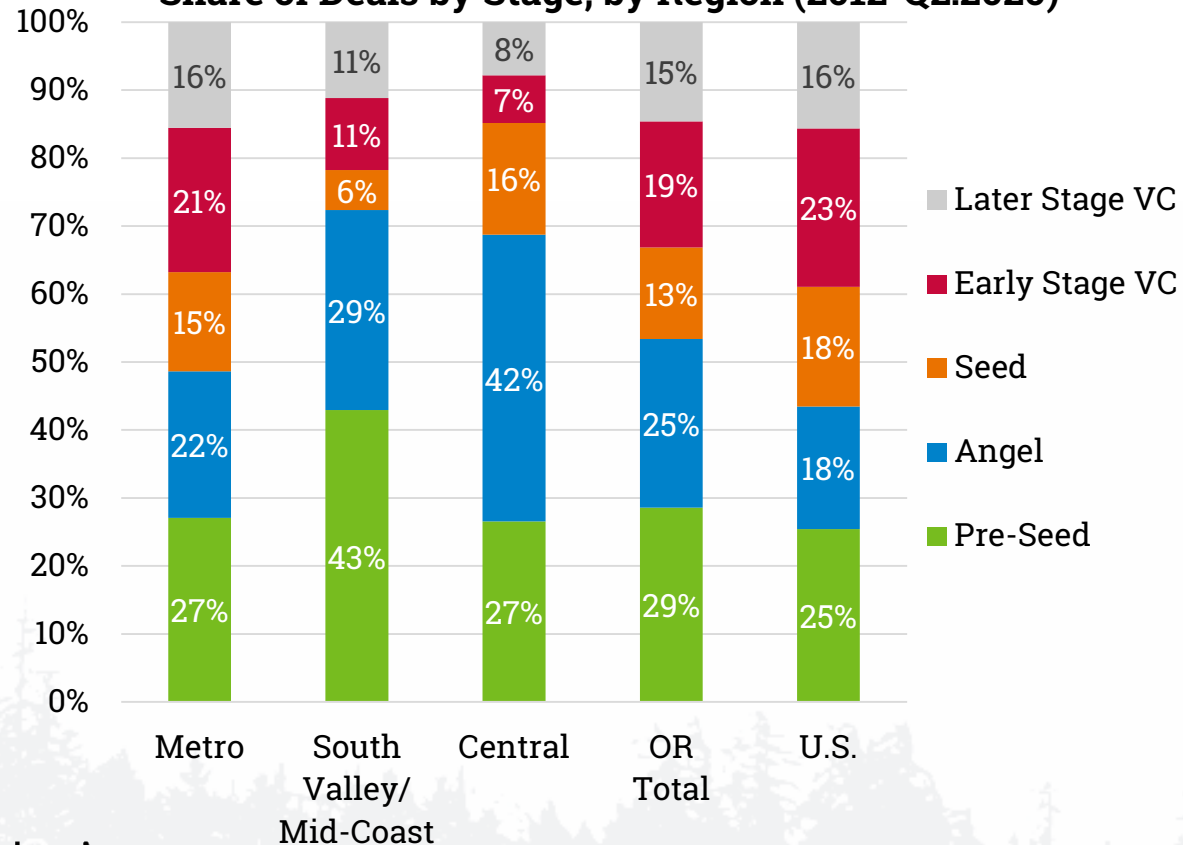
Risk Capital Dollars and Share of OR Total by Region



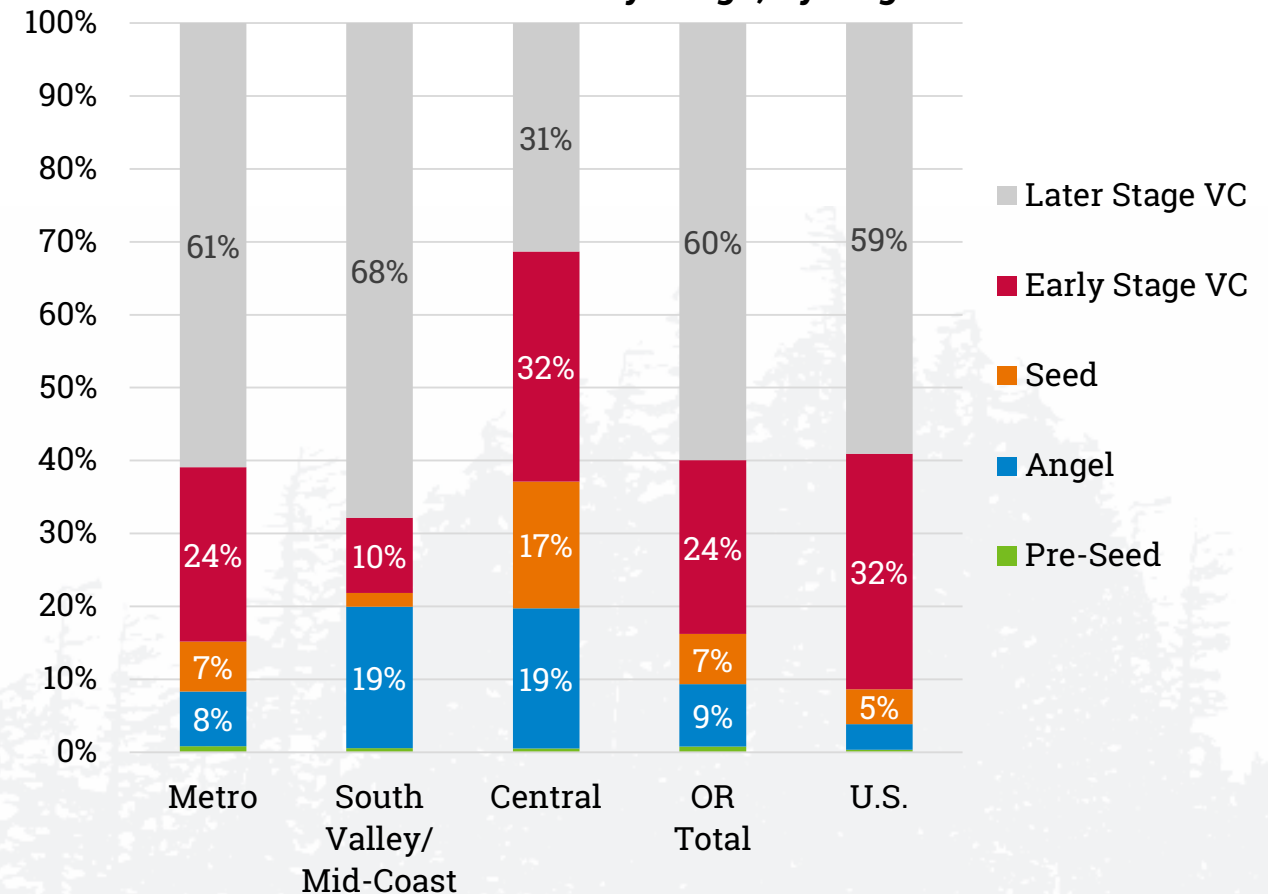
As a percentage of total investment, OR Funds more Pre-Seed and Angel deals than the Nation

Compared to the U.S., a considerably higher share of risk capital dollars and deals are happening at the angel and pre-seed stages. Later stage VC represents nearly 3/5 of funding in all regions but Central OR.

Share of Deals by Stage, by Region (2012-Q2:2020)



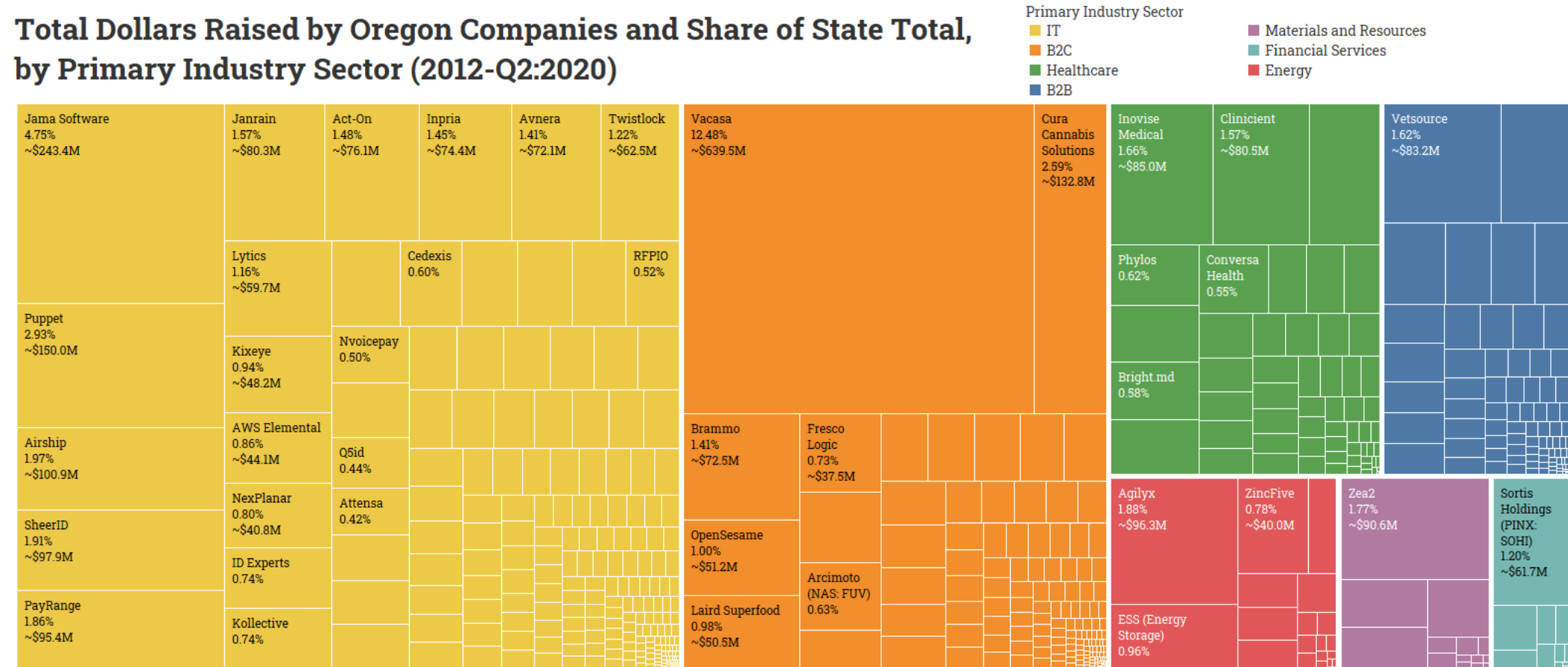
Share of Dollars by Stage, by Region



Capital Concentrating in I.T. and B2C Sectors

Among companies raising funds from 2012 through Q2:2020, **~70% were in IT (42.8%) or in Consumer Products or Services Sectors (27.4%)**. The top 5 companies were responsible for 24% of total funds raised by OR companies.

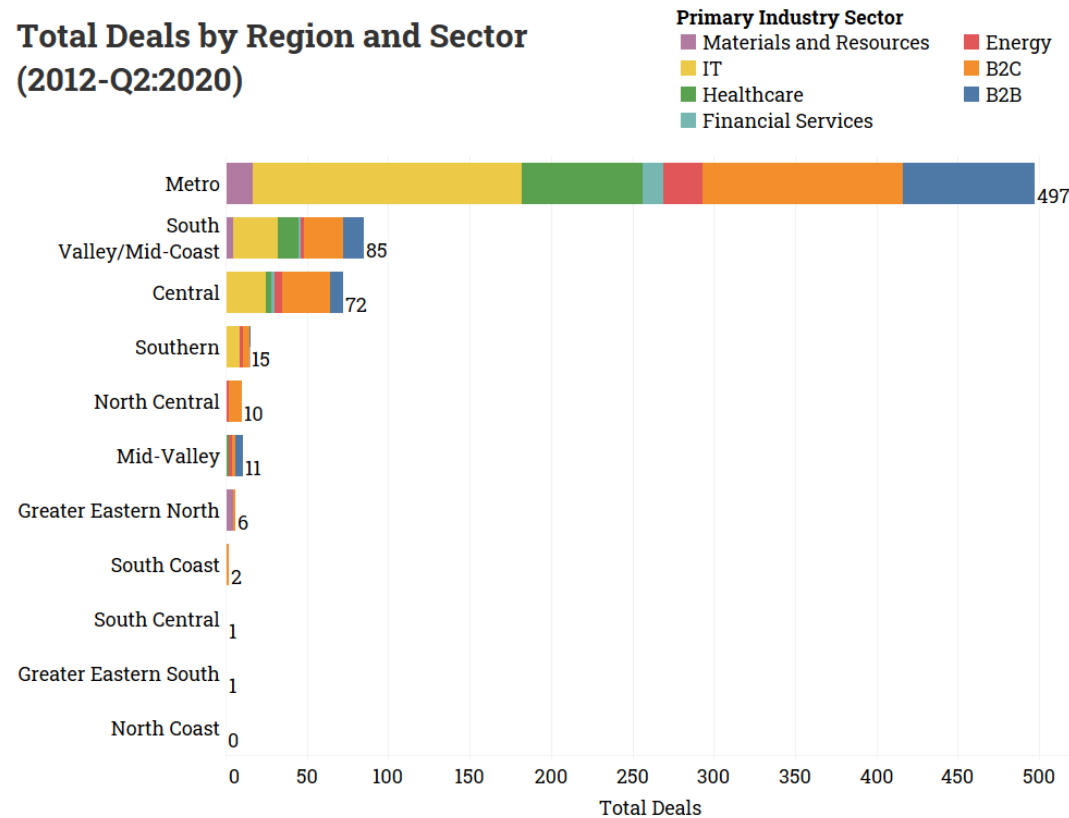
Total Dollars Raised by Oregon Companies and Share of State Total, by Primary Industry Sector (2012-Q2:2020)



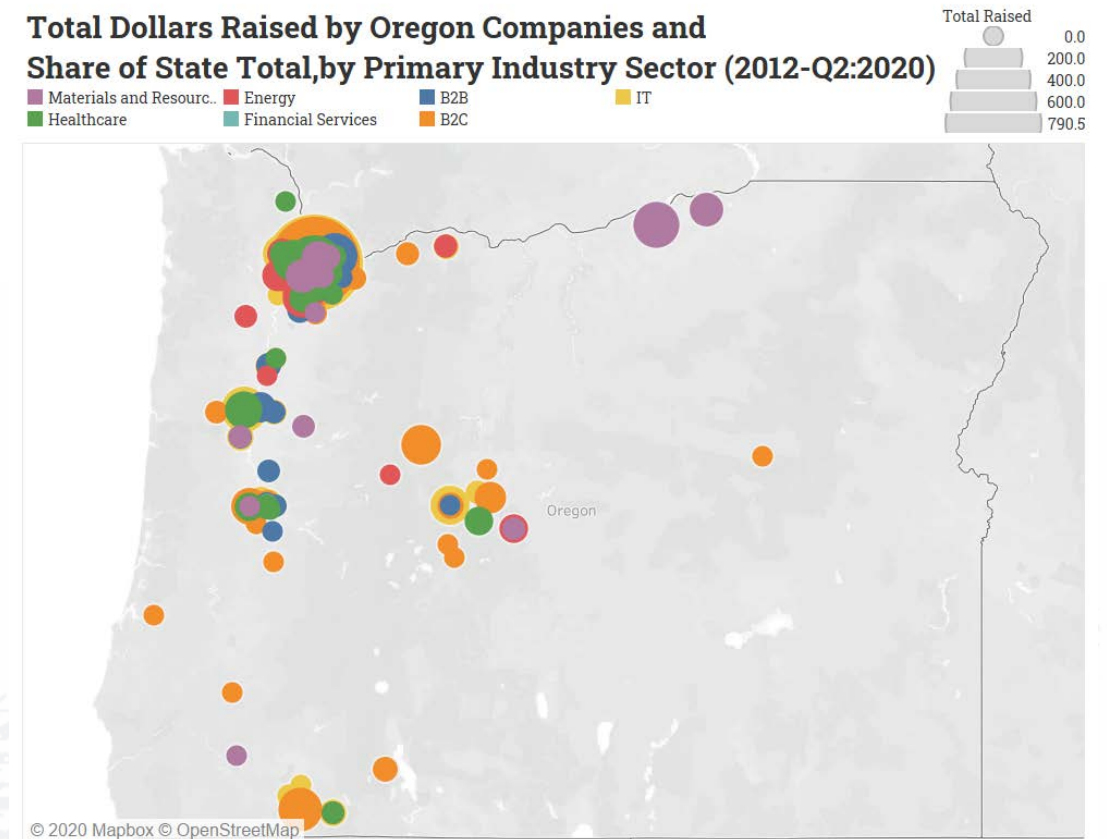
High-Value Companies Found Throughout Oregon

Although the **Portland Metro** was home to ~71% of total deals and ~88% of total dollars during the study period, a wide of strengths emerge in areas throughout the Willamette Valley and Greater Oregon.

Total Deals by Region and Sector
(2012-Q2:2020)



Total Dollars Raised by Oregon Companies and Share of State Total, by Primary Industry Sector (2012-Q2:2020)



Key Takeaways: Risk Capital

1 Inadequate funds for commercialization/translational research

- Lack of these funds limits the size of the “pipeline funnel”
- Lack of knowledge regarding what limited funding does exist and how to access it
- Concern expressed that there is no comprehensive statewide strategy to generate ideation/company formation from OR's research base

2 Demand for Pre-seed/Angel funding far exceeds supply

- Angels have moved further downstream and are not investing in Oregon firms or innovation in general
- With tightening of credit markets post Great Recession – this further limits capital availability within underserved markets

3 Seed funding hardest capital for OR entrepreneurs to raise

- With limited levels of funding, good opportunities go unfunded and companies leave the state
- Issue is even greater in rural and underserved markets
- Oregon Growth Fund is too small to be able to impact supply

4 Perception that few OR-based funds can invest \$2M+ rounds or lead deals

- Perception is that Oregon Growth Account has not effectively incented the growth of resident funds within the state
- There are few out-of-state funds with offices or remote partners in Oregon. Because Oregon funds can not lead deal – additional out-of-state investment lags

5 Debt funding/alternative funding models are not available

- Banks are too conservative and innovative companies typically don't qualify, and when they do, the debt tools don't meet their needs
- Working capital not available even to support good-producing sectors

6 Need for government intervention in earliest stages of capital stack

- Belief that there is a need for government to intercede at the earliest stages of the capital stack, serving as early sources of capital to generate additional deal flow for later private investment.

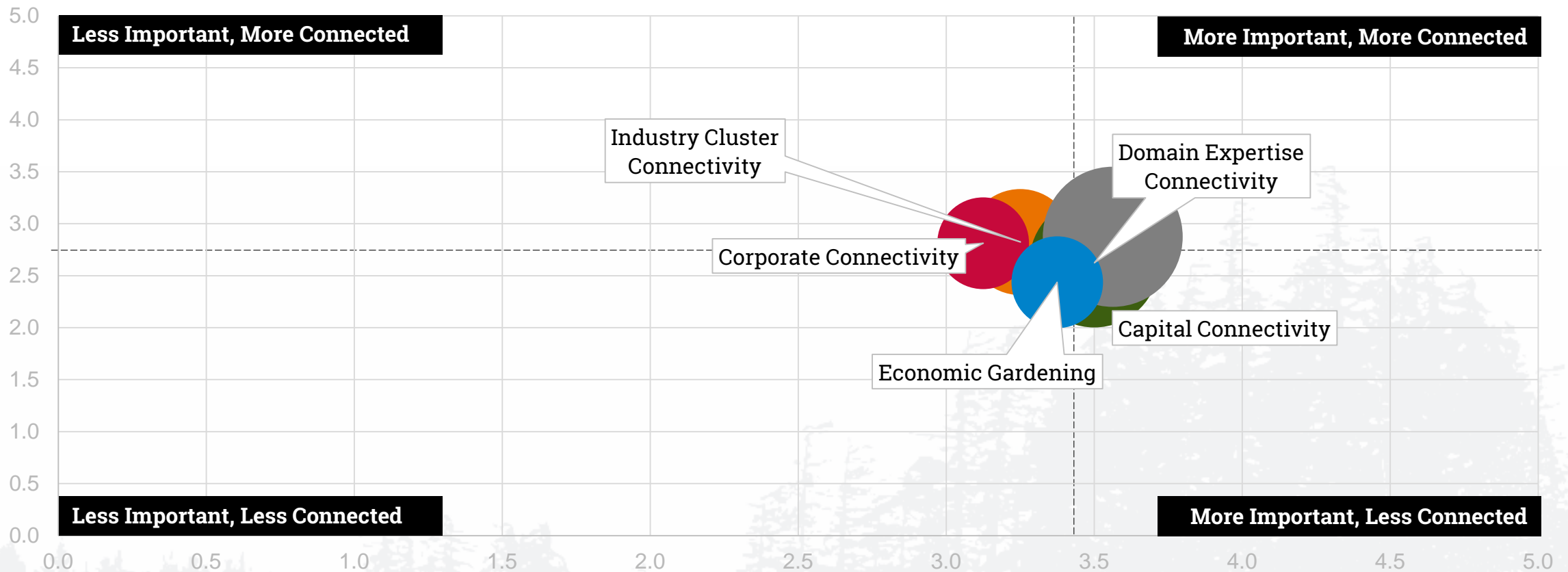
Preliminary Recommendations: Access to Risk Capital

- **Develop government programs/grants that intercede at the earliest stages of the capital stack, serving as early sources of capital to generate additional deal flow for later private investment.**
- **Develop models to get personal capital off the sidelines and out of CA and MA/NY:**
 - Need for incentives to encourage investment and connections
- **Develop models to incent out-of-state funds to be more active in Oregon deals**
- **Risk capital investments must be tied with value-added services**
- **Develop funds that are sector-specific, particularly for industry sectors that do not traditionally attract risk capital**
 - Develop alternative funding sources (revenue-based financing, forgivable debt, multiple levels of loans, convertible notes, etc.) for sectors that do not have the ROI that traditional VC requires
- **See examples of statewide investments in risk capital funds/incentives in the Appendix**

CONNECTIVITY OF EXISTING INDUSTRY CLUSTERS: DISCUSSION

Evaluation of Oregon's Industry Clusters

Survey responses clearly indicate that while a wide variety of means by which to connect to link Oregon's industry clusters with new innovations and entrepreneurs are considered important, there is concern these connections are not being made as readily as they should.



Evaluation of Oregon's Industry Clusters

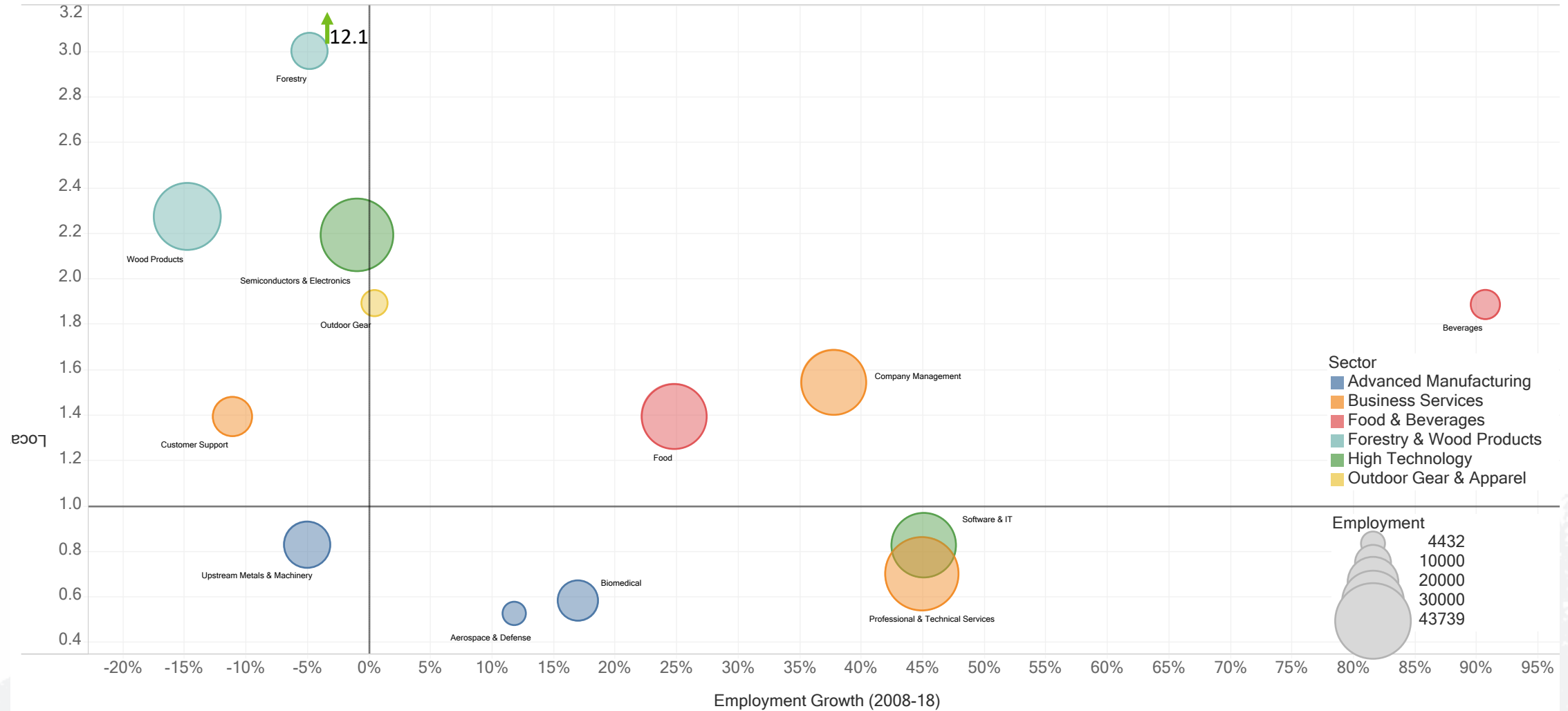
When the five connection points are examined more closely, **capital connectivity** and **domain expertise connectivity** are ranked as most important but not as connected as one would desire in a robust ecosystem.



Performance of Targeted Industries

Industry	Rural	Est.	Emp.	LQ	% Change (2010-2018)
Forestry & Wood Products	*	2,142	47,163	2.79	-12.7%
Forestry	*	994	10,677	12.12	-4.8%
Wood Products	*	1,148	36,487	2.27	-14.8%
Food & Beverages	*	1,603	41,260	1.46	32.5%
Food	*	1,059	34,314	1.40	24.8%
Beverages	*	544	6,946	1.89	90.7%
High Technology		5,465	76,754	1.27	15.2%
Semiconductors & Electronics		528	42,869	2.19	-1.0%
Software & IT		4,937	33,885	0.83	45.1%
Outdoor Gear & Apparel		572	24,816	N/A	58.6%
Apparel & Footwear		326	19,242	N/A	90.5%
Outdoor Gear		246	5,574	1.89	0.4%
Advanced Manufacturing		1,546	35,056	0.67	4.4%
Upstream Metals & Machinery		399	17,405	0.83	-5.0%
Aerospace & Defense		58	4,432	0.53	11.8%
Biomedical		1,089	13,220	0.58	17.0%
Business Services		9,852	90,548	1.02	31.9%
Prof. & Technical Services		8,183	43,739	0.70	44.9%
Company Management		1,333	34,267	1.55	37.8%
Customer Support	*	336	12,543	1.39	-11.1%

Performance of Business Oregon's Targeted Industries



Key Takeaways: Cluster Connectivity

1 Within many sectors, people are not well networked or connected

- People do not frequently work on common issues. For example, workforce and talent development is not addressed systemically, and instead numerous one-off efforts prevail
- It was noted that without dedicated staff and funding, it is difficult to sustain efforts
- Concern that service providers that are attempting to connect industry clusters do not collaborate and are siloed

2 Efforts to connect domain expertise with entrepreneurs is lacking

- There is disparity in access to resources: some entrepreneurs obtain greater access to domain expertise than others based on their network
- Within rural areas, population density limits connectivity to domain experts

3 Minimal activity (and incentive) for large OR businesses to collaborate

- Lack of intentional connections/networking/beta-testing/first-customer efforts
- In rural areas, there may be greater corporate connectivity within industry clusters (food, agriculture, natural resources, and tourism) because of the need to work collaboratively

4 Critical to ensure that OR's manufacturing base remains innovative

- While Oregon has invested in OMIC and OMEP, concern expressed that other economic development incentives not aligned to assist 2nd-stage firms
- Shared-use facilities/collaborative research works best when focused around technology enablers instead of industry verticals
 - horizontals vs. verticals

Preliminary Recommendations: Industry Cluster Connectivity

- Focus on clusters/make investments in areas in which Oregon has a competitive advantage
 - Create/align entrepreneurial education programs that support these clusters
- Tie early-stage funding with value-added services/domain expertise
- Conduct Technology/Innovation Roadmaps that identify common issues and map resources to resolve
- Support independent NGOs that connect and support competitive industry sectors
- Foster connections through regional entrepreneur centers focused on specific end markets with attached funding vehicles for working capital access

DISCUSSION OF POTENTIAL ACTIONS

Emerging Themes from Initial Recommendations

1

Innovation plan needs to **build/develop diverse partnerships** across state/silos for 10-year plan to be successful

2

Focus investments in areas where OR has **clear competitive advantages**. Service models must vary depending on sector + region.

IMAGINING & INCUBATING
the Commercial Opportunity

DEVELOPING
New Products and/or Processes

LAUNCHING
Products/processes into the market and generating sales

GROWING/ACCELERATING
to generate economic returns

3

Government support should **intercede at the earliest stages of the capital stack** to help spur later private investment.

4

Tie value-added services and domain expertise with sources of risk capital.

5

Develop models to **incentivize capital (personal + institutional)** to invest in more Oregon companies + funds.

NEXT STEPS

Next Steps

FOCUS GROUPS 4-6

- **October 6th**: Regional + geographic Models
- **October 7th**: Diversity, Equity, and Inclusion Models
- **October 8th**: Emerging Market Opportunities

FUTURES COMMISSION MEETING #4

November 30th: Review/Discuss Strawman Strategies and Actions

FUTURES COMMISSION MEETING #3

October 27th: Review/Discuss Feedback from Focus Groups 4-6 and continue discussing potential actions

FUTURES COMMISSION MEETING #5

January 11th: Review/Discuss Draft Innovation Strategy

PUBLIC COMMENT

ADJOURN

Appendix: State Best Practices in Advancing Innovation Ecosystems

Ohio Third Frontier: From a funding standpoint, largest state effort that works to transform the state's economy through the accelerating the growth of regional innovation ecosystems.

In 2002, the State of Ohio launched what has become a \$2.1 billion, 15-year commitment to support technology-based economic development through the creation of the Ohio Third Frontier. The programmatic elements of the initiative have evolved over the years, and today the vast majority of investment is focused on fostering a robust entrepreneurial ecosystem.

Most Significant Components of Program:

- **Entrepreneurial Services Provider Program (ESP):** Provides high-value services and resources to effectively and efficiently advance early stage companies in order to create new jobs in Ohio, attract investment capital, generate product sales, and build sustainable Ohio businesses
- **Pre-Seed/Seed Plus Fund Capitalization Program (PFCP):** Increases the number of professionally managed Pre-Seed Funds investing throughout Ohio, and as a result, increases the amount of early stage capital being invested in Ohio technology-based companies

Both programs require a 1:1 match

Impact of OTF ESPs and Risk Capital Funds:

- 330 companies created
- 3,074 new jobs generated
- \$175 million invested (half state dollars and half private match)
- \$1.6 billion of follow-on funding attracted by companies within the investment portfolio
- \$1.6 billion in product sales/revenue generated by companies within the investment portfolio

Regional ESPs were Designed Similarly but have Met with Different Levels of Success Dependent Upon Sophistication of Regional Organizational Entity and Level of Regional Deal Flow.

- **Original model based on best practices from around the country as well as leveraged existing programs around the state that pre-dated initial OTF funding.**
- **Organizations must be non-profits and have strong local and regional participation in governance and oversight.**
- **Oversight by state is focused on specific performance metrics and return on investment analysis.**
- **ESPs are well networked, often sharing best practices, lessons learned, and deal flow as appropriate.**
- **Entrepreneurial services focus on direct hands-on assistance to high-growth technology companies primarily through mentor networks and entrepreneurs-in-residence.**
- **Because each ESP also has their own pre-seed/seed fund, companies within the portfolio often receive both services and risk capital investments.**

4 of the 6 original ESPs are still in existence while two were shuttered with new entities awarded designation in early 2017.

- **Original ESPs still in operation:**
 - Rev1Ventures – Central Ohio:
 - JumpStart – Northeast Ohio:
 - CincyTech – Southwest Ohio:
 - TechGrowth Ohio – Southeast Ohio:
- **ESPs created in 2017 to replace shuttered programs:**
 - ProMedica Innovation – Northwest Ohio
 - The Entrepreneurs Center – West Central Ohio

Ohio has been a leader in the capitalization of pre-seed and seed funds across the state, thereby increasing the level of risk capital available to early-stage firms and establishing Ohio as a leading location for early-stage investment capital.

- **Through the program, Ohio has successfully expanded the number of professionally managed, pre-seed/seed investment funds that support promising start-up technology.**
- **Funding is focused on providing investment capital in:**
 - New Pre-Seed Funds
 - Proven existing Pre-Seed Funds and/or to the management teams of existing Pre-Seed Funds
 - Existing and active Pre-Seed Funds that will provide capital to Seed Plus stage technology companies that have received professional seed stage financing and are progressing towards an institutional venture round
- **More than 44 funds have received investment since program inception.**
- **While each fund is managed separately, deals are often syndicated and the funds often have close ties to the ESPs.**

Ben Franklin Technology Partners: Longest standing state effort that supports regionally-based technology centers to transform regional economies through technology, innovation and strategic partnerships

Created in 1982 around four regionally-based advanced technology centers – now **Ben Franklin Technology Partners**:

- Southeastern PA
- Central and Northern PA
- Northeastern PA
- Southwestern PA: Innovation Works

Program focus:

- Investments in high growth potential, early-stage technology companies
- Direct business and technical assistance
- Fostering entrepreneurial infrastructure – investor networks, incubators/accelerators, entrepreneurial coaching and mentoring, translational research

Requires 1:1 matching funds from industry, regional partners, etc.

Does not fund:

- Basic Research ... applied research with industry okay
- Equipment purchases
- University overhead

2018 Performance Across BFTP Regional Centers:

- 2,041 companies assisted, including 155 new companies formed
- 2,016 jobs created by client companies, and 11,595 jobs retained
- \$3.5 billion in sales revenue generated by client company
- \$635 million in post-BFTP financing secured by client companies
- 471 new products and processes launched by client companies
- 189 patents and software copyrights awarded to client companies

Between 2012 and 2016, BFTP:

- Boosted the PA economy by \$4.1 billion
- Generated \$386 million in additional state tax receipts
- Generated 4,182 jobs in client firms
- Fueled 7,225 additional jobs beyond client firms
- Delivered a \$3.90 payback for every state dollar invested

The type and number of deals varies significantly by region.

Central/Northern PA

\$3.3M in 31 companies

Northeastern PA (2018)

9 new companies formed
480 new jobs created
5,488 jobs retained
202 new products +
services

Southwestern PA/ Innovation Works

\$92.5M invested
635 companies supported
60 exits
\$2.4B in follow-on funding

Southeastern PA (2019)

227 companies invested
\$4.6M invested (*\$200M since 1983*)
725 companies supported
583 jobs created
2,665 jobs retained

Programs are tailored to regional strengths and needs.

Central/Northern PA

- Big Idea Contests for companies
- Business StartUP boot camps for business ideas in concept or pre-revenue stages
- Business services network
- Shale Gas innovation and Commercialization center
- eMarketing Learning Center

Northeastern PA (2018)

- Incubator at Lehigh University
- Seed fund
- Targeted services to manufacturers: strategic & technological support and 1:1 matching grants for applied university-industry research (up to \$50k per year for 3 yrs.)

Southwestern PA/ Innovation Works

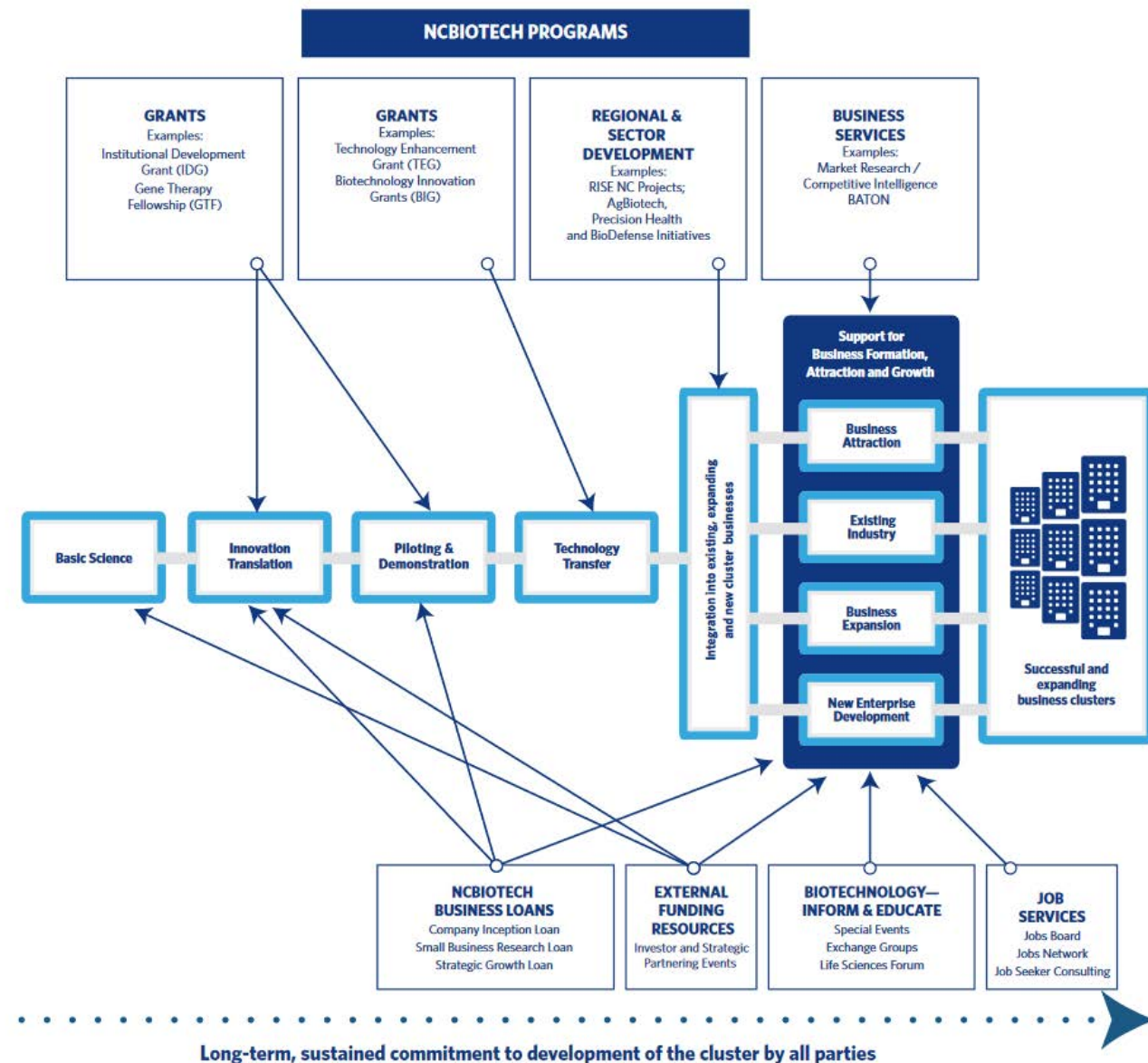
- AlphaLab Accelerators
- Seed fund
- Riverfront Partners Series A Fund
- College Internships
- Agile Innovation in Manufacturing w/ connections to univ centers of excellence

Southeastern PA (2019)

- Mentor Connect
- Technology Acceleration Fund (\$50k)
- Seed fund
- FabNet for rapid prototyping (\$10k grants)
- Digital Health Initiative

NCBiotech's Vision is North Carolina: a global life science leader for three decades.

- **Organization Structure:** Private, non-profit; HQ in Research Triangle Park plus regional offices in 5 cities.
- **Funding & Size:** Funded by NC General Assembly with 2016 state appropriation totaling \$13.6M.
- **Services:** The Center awarded \$7.5M in 2016, evenly split between loans and grants; seek to support and connect the life sciences ecosystem across the full "TBED" chain (see next slide) via:
 - Grants to invest in early-stage innovation, incentivize collaborations, commercialize technologies
 - Loans to support company inception, small business research, strategic growth
 - Regional and Sector development including through technology-focused initiatives; regional initiatives forging networks and partnerships
 - Acting as a gateway for companies interested in locating in NC
 - Providing both Jobs Services and Business Services



Significant Impacts in Growing North Carolina's Biotechnology Industry

- **Strong job growth:**
 - **One of the nation's largest, fastest-growing life science industry clusters** at more than 75,000 jobs,
 - **Job growth up more than 50% since 2001** and with a total economic impact for the industry estimated at \$83B in 2016
- **Impacts of specific NCBiotech programs:**
 - **Loan program to early-stage companies:**
 - Since 1989, made business loans to 204 companies; 107 companies currently active employing 2,544 workers with estimated revenues of \$2.5B generating:
 - \$3.8B in economic activity in NC
 - Create or support 10,390 jobs
 - Generate estimated \$98.4M in states and local tax revenues
 - **Since 2008, the Center has assisted in efforts to attract or retain 77 major life sciences employers**
 - **Impact of the most recent 25 companies assisted in recruitments or expansions** in 2017-18 found these companies have potential to create 3,080 jobs at projected levels

*Source: 2018 Evidence and Opportunity: Impact of Life Sciences in North Carolina, by TEconomy Partners, LLC.

The North Carolina Biotechnology Center: Regional Offices & Services

- **NCBiotech has promoted/extended regional life sciences development and its programming across NC by opening 5 regional field offices, beginning in 2003.**
- **Regional offices do not operate their own programs but extend out the programmatic offerings of the Center. Offices include:**
 - Eastern Office (Greenville)
 - Greater Charlotte Office
 - Piedmont Triad Office (Winston-Salem)
 - Southeastern Office (Wilmington)
 - Western Office (Asheville)
- **Regions are staffed by an Executive Director and Regional Coordinator, and supported by *Regional Advisory Committees***
- **Services:**
 - Regional offices act as *referral source* to NCBiotech programs/services
 - Host a range of events, e.g. networking, open houses, showcases
 - Focused on individual “projects” related to company relocations, expansions, recruitments, attractions
 - Acting as collaborators/partners with regional research institutions, companies, investment groups, universities and other workforce development entities, etc. to promote regional life science industry

Georgia Research Alliance 30 Year History of Creating A Sustained Mechanism to Advance Research, Commercialization and Start-ups



- Industry-led non-profit that directs state investment in new research capacity, Guided by strategic technology roadmaps
- 75 GRA Eminent Scholars recruited; GRA maintains ability to influence recruitment of open Eminent Scholar positions
- Since its formation in 1990, GRA has leveraged \$649 million of state funding into:
 - \$4.9 billion of direct federal and private investment in Georgia
 - \$1.2 billion in venture investment for GRA-backed startups
 - 1,300 new jobs in scholar labs, and 1,539 professionals employed at GRA-affiliated firms
 - 160 new companies, generating \$155 million in revenue

GRA Ventures

- Started in 2002 to develop companies from Georgia university research
- Multi-phased approach: Identify promising technology, conduct due diligence, support proof-of-concept, fund start-up
- Since 2010, advanced to market 300 distinct university technologies with grants totaling \$27 million
- Provided \$12 million in low-interest loans to more than 50 of the most promising companies



GRA Venture Fund, LLC

- Unique public-private collaboration started in 2009 to create a privately managed, The GRA Venture Fund, LLC
- The state's commitment includes both capital investment and income tax credits for private investors.
- The Fund is a mix of private (83%) and state (17%) investment that raised over \$45 million.
- Targets companies that have participated in GRA Ventures commercialization program
- Fund's early-stage investments have helped catalyze \$460 million in outside venture capital –leverage > 20:1.

Georgia Tech Advanced Technology Center is one of the nation's longest standing technology incubators

Created in 1980, and Recognized by Forbes among the “incubators changing the world”

Program focus: *coaching, curriculum, events and connections that build an entrepreneurial community:*

Multiple levels of engagement with entrepreneurs:

- **Educate members** – targeted to *1st time entrepreneurs* with concept ideas
 - Proven and sequenced entrepreneurial hands-on, experiential boot camp curriculum starting every third week
 - Access to coaching from broad range of mentors (serial entrepreneurs, SMEs in specific business functions)
- **Accelerate members** – *early-stage companies* that have developed a minimal viable product and have at least one full-time staff person. Curriculum and services offered at this level are designed to accelerate customer acquisition and product development.
- **Signature members** – More intensive, milestone-driven services for *emerging company* with an in-place leadership team that is screened by ATDC for how unique and defensible the core product or service is; the potential for the business to scale and receive funding; the domain expertise and full time commitment of the team; plus our ability to add value through ATDC's programming and **coaching**.

Specialized Services for Accelerate and Signature members

- Access to ATDC's incubator ... ~100 companies
- ATDC Investor Connect ... access to dedicated program manager and an Angel-in-Residence
- SBIR Advisory Services

Key Success Metrics

Heralded:

- 170+ companies graduated
- 90% of ATDC companies are successful after five years
- \$12B revenue generated by ATDC companies in Georgia



ATDC is seeking to help technology entrepreneurs succeed in their own communities

In recent years, ATDC has reached across the state to bring its programs and resources, co-locating in existing physical start-up facilities – typically non-profit, entrepreneur-led sites

- **ATDC focuses on:**
 - Workshops and networking events – ATDC pays sponsorships to local start-up facilities and does programming
 - Bootcamps tapping ATDC's curriculum and teaching mentors
 - 1:1 Coaching and mentoring
- **Challenges are:**
 - Finding a critical mass of entrepreneurs who will stick with program in outlying communities
 - Hard to find investors
 - Hard to find mentors
- **Success measures – still an emerging approach. Track:**
 - Attendance at workshops and events
 - Membership development – rising levels of Accelerate members (more than 100 active members)
 - 1:1 Coaching hours booked

Regional Offices:

- **ATDC HQ (Atlanta)**
- **Alpharetta**
- **Athens**
- **Augusta**
- **Forsyth County**
- **Peachtree Corners**
- **Savannah**

LaunchTN's goal is to make Tennessee the best place in the Southeast to start and grow a business

Started in 2012 as a public-private partnership focused on coordinating and supporting all of the state's entrepreneurship-related activities.

Focused on four goals:

- Boosting entrepreneurship
- Increasing technology commercialization from the state's research institutions
- Increasing the amount of venture capital investment in the state
- Elevating Tennessee's national profile as a hotbed of entrepreneurship and innovation.

Organization Structure: Non-profit 501c3 governed by a 22-member Board of Directors composed of some of the state's leading entrepreneurs, investors, innovators and community leaders.

Funding & Size: Funded primarily by State of Tennessee, FY 2018 revenues of \$5.33 million

Current Programs:

- **Diverse set of entrepreneurial support programs focused on:**
 - **Entrepreneurs**, including The TENN Master Accelerator, 36/86 Tech Event
 - **Researchers**, including Innovation Exchange, SBIR/STTR Microgrants, and Co.Starters+Researchers program
 - **Investors**, including INCITE Co-Investment Fund and Angel Tax Credit
 - **Students**, including University Venture Challenge and Internship Programs
- **LaunchTN Network:** modeled after San Diego CONNECT Springboard, offers early-stage companies in life sciences and energy industry access to expert mentors.
- **Entrepreneur Centers:** network of regional Entrepreneur Centers that connect start-ups with mentors and investors to move from concept to market. ECs are public-private partnerships.

LaunchTN is different from the other case studies that are examples of strong state initiatives that then partnered with region's. In Tennessee, the initiatives began at the regional level and have been leveraged to create a systemic statewide model.

Key LaunchTN Success Metrics:

- Entrepreneur Networks: Served 2,225 startups in FY19, creating 146 jobs and raising \$96.3M in investment capital
- 5,140 female and 2,280 minority participants engaged by programming.
- Mentor Networks: 117 mentors, supporting 44 companies, who went on to raise a combined \$34M in capital and grants.
- \$3.3M leveraged by Angel Investment Tax Credit, with \$1M credits pending.
- SBIR Microgrant awardees have overall success rates near 50%, compared to the national average of <20%

- **Throughout the early 2000s, a culture of entrepreneurship and innovation was developing in Tennessee's urban centers driven by local initiatives, including:**
 - Memphis Bioworks + EPICenter
 - Nashville Entrepreneur Center
 - Technology 2020, supporting Oakridge/Knoxville
 - Company Lab (Co.LAB) in Chattanooga
- **To help catapult the regional momentum, Tennessee Governor Haslam made "investing in innovation" one of the four key components of his statewide economic development strategy.**
- **As part of this effort, the state's economic development department worked with entrepreneurs, venture capital investors, technology transfer officers and other key stakeholders to develop a comprehensive plan leading to the creation of Launch Tennessee.**

Supported by the Michigan Economic Development Corporation (MEDC), Michigan is home to 21 SmartZones, distinct geographic locations throughout the state that help technology-based companies, entrepreneurs and researchers access necessary resources and assets.

- The 21 SmartZones include technology business accelerators that provide various services including business development mentoring, feasibility studies, business planning, entrepreneurial training, market analysis, technology assessments, technology mining and more. They also facilitate the commercialization of technologies developed at Michigan universities by partnering with tech transfer offices.
- The Gateway Representative (GWR) Business Incubator Program was developed in 2015 in response to the need for a key point of contact at the SmartZones who is experienced in working with high-tech startups and understands the statewide high-tech entrepreneurial ecosystem.
- GWR is responsible for introducing tech companies to the local ecosystem, recruiting and developing companies, helping with fundraising efforts and federal grant support, and connecting companies with available resources.

Key SmartZone Impacts:

From 2015-2018, SmartZones Gateway Representatives:

- helped 231 companies form
- served 1,695 companies
- created 730 jobs
- retained 4,223 jobs
- assisted companies in raising over \$286 million with an additional \$125 million in sales.

In fiscal year 2019, SmartZones Gateway Representatives:

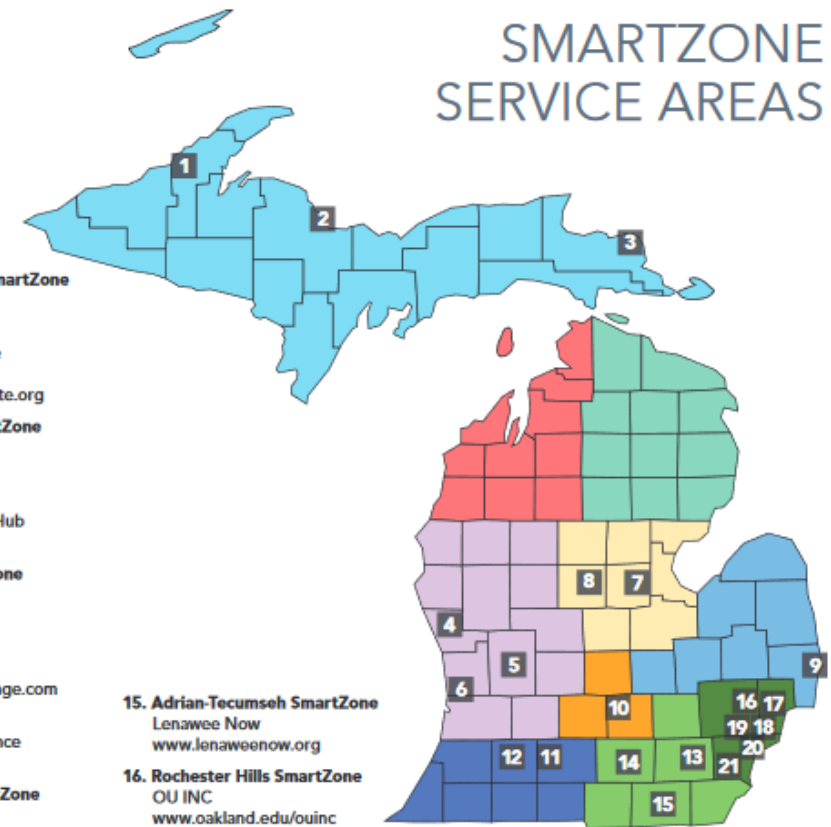
- Served 645 companies
- Created 111 companies and 342 new jobs
- Retained 1,845 jobs
- Secured \$135 million in follow-on-funding
- Saw a \$485 million increase in new revenue

SmartZones

- 1. Houghton/Hancock SmartZone**
MTEC
www.mtecsz.com
- 2. Marquette SmartZone**
Innovate Marquette
www.innovatemarquette.org
- 3. Sault Ste. Marie SmartZone**
Sault Ste. Marie EDC
www.saultedc.com
- 4. Muskegon SmartZone**
Muskegon Innovation Hub
www.gvsu.edu/mihub
- 5. Grand Rapids SmartZone**
Start Garden
www.startgarden.com
- 6. Holland SmartZone**
Lakeshore Advantage
www.lakeshoreadvantage.com
- 7. Midland SmartZone**
Midland Business Alliance
www.mbami.org
- 8. Mount Pleasant SmartZone**
CMURC
www.cmurc.com
- 9. Port Huron SmartZone**
St. Clair County EDA
www.startunderground.com
- 10. Lansing SmartZone**
Lansing Economic Area Partnership (LEAP)
www.purelansing.com
- 11. Battle Creek SmartZone**
Battle Creek Unlimited
www.bkunlimited.org
- 12. Kalamazoo SmartZone**
WMed Innovation Center
www.med.wmich.edu/node/373
- 13. Ann Arbor SmartZone**
Ann Arbor SPARK
www.annarborusa.org
- 14. Jackson SmartZone**
Enterprise Group of Jackson
www.leanrocketlab.info
- 15. Adrian-Tecumseh SmartZone**
Lenawee Now
www.lenaweenow.org
- 16. Rochester Hills SmartZone**
OU INC
www.oakland.edu/ouinc
- 17. Sterling Heights SmartZone**
Macomb-OU INCubator
www.oakland.edu/macombouinc
- 18. Troy SmartZone**
Automation Alley
www.automationalley.com
- 19. Southfield SmartZone**
Southfield Centropolis
www.centropolisaccelerator.com
- 20. Detroit SmartZone**
Techtown
www.techtowndetroit.org
- 21. Huron Township SmartZone**
Pinnacle Aeropark
www.hurontwpdta.com

REGIONS

- | | |
|--|---|
|  Upper Peninsula region |  East Michigan region |
|  Northwest region |  South Central region |
|  Northeast region |  Southwest Michigan region |
|  West Michigan region |  Southeast Michigan region |
|  East Central region |  Detroit Metro region |



SmartZones also connect researchers, entrepreneurs, and other technology-oriented businesses throughout the state with a wide range of economic development resources and support.

Entrepreneurial Assistance and Capital Support:

- **First Customer Program:** The First Customer Program assists startups and small companies with identifying critical gaps in business development, marketing and sales. The program can support, with matching funds or talent, in addressing areas required for a client to acquire their first customer in a current market or when diversifying into a new market. For more information, visit the [First Customer Program website](#)
- **Business Accelerator Fund (BAF):** The Business Accelerator Fund (BAF) is available to participating business accelerators in Michigan's statewide [SmartZone](#) network. These funds are used toward the delivery of highly specialized services to their clients that are not otherwise available from these business accelerators. Participating business accelerators engage third party specialists to help advance the client's path to commercialization, company success, and economic impact for the state of Michigan.
- **Tech Startup Stabilization Fund:** The \$3 million Tech Startup Stabilization Fund supports early-stage tech startups in Michigan that are being impacted by the COVID-19 outbreak.
- **First Capital Fund:** Entrepreneurs should consider the First Capital Fund as their first investment choice as the First Capital Fund provides "genesis" funds (up to \$150,000) to new technology companies at the earliest stages of commercialization in the State of Michigan
- **Pre-Seed Fund III:** supports entrepreneurs and technology startups across Michigan through capital support, coaching, assistance with grant funding and more. Funding amounts may be awarded for approved applicants through the fund in the range of \$100K to \$250K.
- **Emerging Technologies Fund (ETF): The Michigan Emerging Technologies Fund (ETF):** designed to expand funding opportunities for Michigan technology-based companies in the federal innovation research and development arena by providing match dollars (of up to \$25,000 for Phase I and up to \$125,000 for Phase II) to eligible Small Business Innovation Research (SBIR) or Small Business Technology Transfer (STTR) proposals.

University Funding

- **University Early Stage Proof of Concept Fund – ADVANCE:** This university early stage proof of concept fund, administered by Michigan State University, is designed to provide a pipeline of de-risked technologies and fundable startup opportunities for further advancement.
- **Technology Transfer Talent Network (T3N): The Technology Transfer Talent Network (T3N):** a statewide university network designed to support, through key talent programs, the commercialization of university technologies through licenses and startups.
- **Michigan Translational Research and Commercialization (MTRAC) Program:** Five Innovation Hubs across the state, in key technology areas, (AgriBio, Life Sciences, Advanced Transportation, Advanced Materials, Advanced Computing) support projects from all institutions of higher education, hospital systems and nonprofit research centers.

Key Impacts: Business Accelerator Fund:

Since October 2014, the Business Accelerator Fund has served 464 high-tech startups and helped to create 51 new companies and 500 full-time jobs. Those companies secured more than \$20 million in federal funding, nearly \$80 million in venture capital and angel investments, and collectively increased sales by \$65 million.

