
NORTHWEST ARKANSAS EDGE FINAL REPORT

EXECUTIVE SUMMARY

Innovate Again, Innovate Here!

The **E**conomic **D**evelopment: **G**enerating **E**ntrepreneurs (**EDGE**) Program, funded by the Walton Family Foundation, was initiated to 1) assess policies, players and programs in Northwest Arkansas (NWA), 2) engage in pilot collaborative programs in entrepreneurship between Austin and NWA, and 3) develop a nationally distinctive strategy for entrepreneurship for the region. The program managed by the IC² Institute at The University of Texas at Austin (UT Austin) involved the following key activities, which are further detailed in Appendix 1:

- Four extended visits to the NWA region, each involving multiple IC² Institute staff;
- Conducting interviews with 64 regional stakeholders and 45 students;
- Engaging >244 residents in four Dialogue Sessions, including >185 unique attendees;
- Hosting 9 visitors from NWA for an Austin Immersion Experience including engagement with >27 Austin-region participants; and
- Provision of four reports: 1) Regional Assessment, 2) Regional Economic and Educational Benchmarking, 3) Dialogue Session and Immersion Visit Summary, and 4) Final Report.

From our experience over the past year, a rich history of world-leading innovation is expressed in the remarkable fine arts resources in the region, the anchor companies of Walmart, J.B. Hunt and Tyson Foods, the outdoor amenities offered to experience the natural beauty of the region and the collaborative spirit connecting five major communities. Innovation is a defining character of the region, and this legacy needs to be intentionally nurtured and grown through an entrepreneurial ecosystem. Thus, our final report theme is: **“Innovate Again, Innovate Here!”**

Despite a history of iconic examples of world-changing entrepreneurs in three distinct industry sectors, a nationally competitive entrepreneurial ecosystem has not evolved naturally in NWA. The region appeared comfortable in its current economic and cultural success, focused on stable organizational and societal structures, and fractured among five small cities. Residents generally desire to stay near work or home and not collaborate regionally. Many traditional company representatives and residents appeared uncomfortable with risky, chaotic, non-conforming nature of an innovation and entrepreneurship lifestyle. While producing a highly ranked and successful economy, these elements are not conducive for creation of an entrepreneurial ecosystem. Significant challenges exist for the region to achieve its entrepreneurial goals and these are further detailed in Appendix 2.

The region is at an important crossroads. Will innovation arise from the region again – from its anchor companies, from new entrepreneurial ventures, through university research – diversifying and growing the economy? Or will the region continue to lean on its anchor

companies as headquarter sites and watch as innovation is outsourced to and developed in other regions of the country. Opportunities exist to innovate the NWA region to create an **Innovate Again, Innovate Here** entrepreneurial culture offering the following:

1. Diversification and sustained growth of the regional economy;
2. Revitalization of the region through retention of youth for workforce;
3. Continual re-invention of a business community adapted to current opportunities; and
4. Increased regional coherence and collaboration.

We use a roadmap model with the creation of a vibrant entrepreneurial ecosystem as the destination for regional collaboration. To reach this destination, while focusing regional efforts, we recommend using two main roads in the form of two innovation clusters: 1) **Data science** related to retail, logistics, supply chain and mobility, and 2) **Food + Technology**. Both clusters benefit from regional strengths in the university and business sectors while the second offers synergies for engaging and supporting existing regional food, beverage, art and music ventures.

Through the EDGE studies, four underpinning needs emerged for strengthening the region's entrepreneurial ecosystem in pursuit of technology-based growth. Addressing these needs can function as landmarks for organizing action strategies and measuring the region's progress. These include the following:

1. Startup funding
2. University-industry engagement
3. Building careers and sustaining workforce
4. Region-wide entrepreneurial support

Key recommendations include the following:

- Startups and small business need expanded equity and debt financing options – recommended collaborative fund and banking finance strategies;
- Need for regional leadership in entrepreneurship – recommended “University on the Move” initiative for the University of Arkansas to form the “hub” for entrepreneurial activity in the region;
- Essential need to motivate and incentivize employees from regional anchor and vendor companies to actively engage in the entrepreneurial ecosystem – recommended open innovation and corporate innovation strategies to stimulate company and staff participation;
- Growth of “local” culture – recommended strategies for elevating food, beverage, arts and music sectors to support entrepreneurial goals;
- Advancement of local workforce – recommended strategies for regional engagement from training/degree programs, corporate internships and adaptation of elements of the *Campus Philly* model for the broader region to solve workforce needs.

It is our belief, that as NWA initiates a coordinated and intentional strategy to **Innovate Again, Innovate Here**, the truly unexpected nature of the region will be amplified and, the region will be positioned for long-term economic and social prosperity.

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RECOMMENDED REGIONAL ROADMAP

ROADMAP MODEL

IC² Institute has reviewed notes, survey comments, session summaries, and ideas emerging from the EDGE program research, Dialogue Sessions and Austin Immersion Visit experiences and interviews to propose an integrated regional roadmap to strengthen NWA's entrepreneurial ecosystem (Figure 1). We hope the **Innovate Again, Innovate Here** roadmap will motivate the region to seize the opportunity to grow this ecosystem in NWA, engage key players to join the process, motivate players to fill key roles, and take recommended steps for the program. This document describes the roadmapping process and then details recommended actions to enable the region to achieve goals including prioritized actions for immediate and medium-term deployment.

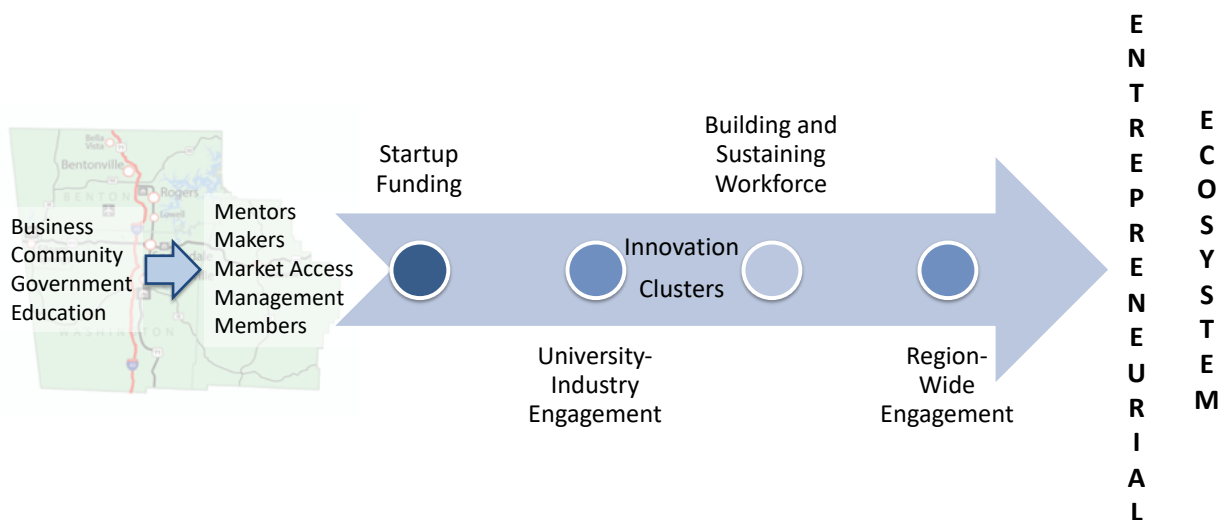


Figure 1 Regional roadmap model for NWA.

THE NECESSITY OF A CLEAR DESTINATION

At the outset of this project, the goal or “destination” for this project was defined as “building an innovation or entrepreneurial ecosystem in NWA” as a new means to spur further economic growth, diversify economic base and improve regional resiliency. We suggest this destination of an entrepreneurial ecosystem be defined as a regional context involving collaborative relationships and actions taken by university, government, business and community groups that produce a social and economic environment that supports new company start, growth, exit, with successful entrepreneur re-engagement in company growth and value provided to all participants.

NWA has many characteristics of a strong technology and entrepreneurial ecosystem for which it should be very proud. However, when compared with leading U.S. entrepreneurial ecosystems, NWA lacks:

- Unified local business culture,
- Broad economic base,
- Support of the risk and change of a new business culture,
- Diverse and evolving population of technology-based companies,
- Local investment community,
- Diverse population engagement, and
- A uniting, regional vision promoting involvement from communities in the region.

Despite a history of iconic examples of world-changing entrepreneurs in three distinct industry sectors, why has a nationally and globally competitive entrepreneurial ecosystem not evolved naturally in the NWA region? Through our visits we found many citizens comfortable in the region's current status of high employment, strong economic growth, proximity to natural amenities, budding arts community and focus on local life experience. Yet the region's full potential is hindered by its polycentric nature and a citizenry and business community that are reluctant to move among them – preferring to remain near work or home. While producing a highly ranked and successful economy, these elements are not conducive for creation of an entrepreneurial ecosystem. In short, there is no driving crisis or need necessitating economic or cultural change, nor is there motive to initiate and sustain meaningful collaboration among the main and other community centers.

Thus, a longer-term, more vision-oriented approach should be taken that does not necessarily solve an existing problem so much as ensures that the region reaches its full social and economic potential. Without external or internal crisis, strong leadership and will are necessary to focus the region on this destination, mobilize participation and drive toward this goal. In spite of these challenges, we believe that the creation of an entrepreneurial ecosystem throughout the region, provides a worthy destination for investment of time, monies and effort.

THE ROAD: INNOVATION CLUSTERS

There are many pathways between any two points on any map. Before setting out toward the destination of an entrepreneurial ecosystem, one must first determine which road(s) to take. Through innovation clustering, “roads” or pathways can be chosen to create critical mass, regional distinctiveness and leadership by drawing in and retaining top talent, fostering capital investments and creating an environment for company growth. Following review of regional interviews, Dialogue Sessions and the Austin Immersion Visit data, we recommend the following priority areas for initial focus.

1. **Data Science** as applied to retail, logistics, supply chain and mobility;
 - a. Transition of anchor companies from product/service to technology companies focused on these four applications of data science;
 - b. *Plug and Play* collaboration to bring innovative data science companies to the region and link coastal funders to NWA;
 - c. Opportunity to grow proof of concept and market-entry collaborations with regional anchors and >1,500 vendor/CPG company cooperation;

- d. Demonstrated ability for startups to develop and scale up workforce and productivity aspects of this vertical in the region: Revunit and Movista; and
 - e. Existing accelerator and incubation programs in region.
- 2. Food + Technology**
- a. Collaboration with state-wide expertise and economic dominance of agricultural products;
 - b. Excellence of School of Agriculture and significant synergies with University of Arkansas (UA) nano-materials/multi-disciplinary scientists, College of Engineering, and College of Business;
 - c. Links to anchor core businesses of protein production and packaging, shipping and consumer facing retail;
 - d. Proof of concept laboratory facilities available in technology park facilities;
 - e. Potential integrative state-wide impact by UA through anchor and other companies in Arkansas; and
 - f. Expansion to possible “buy and sell local” initiative for food and beverage industry to support entrepreneurial culture growth.

Focus on these clusters offers the region opportunities for short-term wins to gain momentum, belief and cooperation from companies, community, civic leaders and the university. For success in each of these clusters, three key obstacles must be overcome.

1. Significantly more computer science, coding, and computer engineering graduates will be needed to supply workers to startups in the region. Without sufficient talent, startups will localize where talent and capital are readily available. The new UA data science degree will impact the workforce in the coming years, but the immediate issue to address is the current talent supply. Tethering NWA employment needs to existing, strong data science programs at other universities offers opportunities to recruit workers to the region.
2. A stronger collaboration between the Division of Agriculture and the University of Arkansas can be encouraged through the food + technology focus area. The opportunity for technology commercialization and economic impact across the state through food + technology projects is significant and work to create a team between these distinct institutions must be a priority. The time is now to “jump in” to this cluster or be left behind.
3. As previously noted and will be discussed in more detail in this report, anchor/vendor company engagement in the growth of entrepreneurship through collaboration, employee linkages and open innovation programs will be critical. The unique and large population of leading companies in NWA is the defining characteristic of the region.

In creating the recommended clusters, we note that other opportunities exist and can be successfully leveraged to speed realization of a cluster. These include the following:

1. Other technology areas should be monitored for potential regional economic investment. As noted, the excellence in nano-materials across the UA campus could be engaged in several technology verticals. Nano must be focused on application – as the first cluster, we suggest food + technology. Power electronics is also an area of excellence for UA research and innovation. Linking success in this vertical with accessible commercial application and equity funding vehicles can offer new opportunities for the region.
2. As noted in our *Initial Assessment Report*, coalescing the arts community from Bentonville to Fayetteville offers distinctiveness and possibilities to synergize

entrepreneurship with consistent flow and residency of creatives. However, art does not always lend itself to “team” as naturally as entrepreneurship. Thus, consideration of use of location or places and engagement strategies must be taken to use art to cluster artistic and entrepreneurial creatives together for regional synergy. Accessing art spaces for clustering events at reasonable costs is a logical and synergistic starting activity.

3. The entrepreneurship resources developed by the Sam M. Walton College of Business include multiple programs and two physical facilities to support UA engagement in the innovation ecosystem. These include the Brewer Family Entrepreneurship Hub and the McMillon Innovation Studio. These efforts have produced significant outcomes in the form of graduate certificates in entrepreneurship managed by the Office of Entrepreneurship and Innovation and successful team competition performances. Systematic engagement of students through the Hub and the Studio in these innovation clusters is strongly encouraged.

WHO IS TRAVELING? ENTREPRENEURSHIP IS A TEAM SPORT

Once a destination is chosen and the “route” determined, a key question is “who” will be traveling along the road together toward the destination. Entrepreneurship happens in the context of team. Based on historical experience, engagement of key players and influencers across key organizations in the region is essential¹. These organizations include:

1. Education
2. Government
3. Community
4. Business

But how do players and influencers contribute to building an entrepreneurial ecosystem where entrepreneurial ventures are started, grown and exited? From our experience, these regional organizations must collaborate to supply key participants to support entrepreneurial ventures through the following “team” roles:

1. Mentors -- Individuals who can support entrepreneurs through expertise, advising, and business introductions with one-on-one engagement;
2. Market Access -- Avenues allowing funding, proof of concept testing, initial market testing or full sales relationships for goods or products in local, regional, and global markets;
3. Makers -- Innovators who create new services, systems, products, or technologies;
4. Management -- Individuals with experience managing and running companies. These are particularly important for young inexperienced startup firms that are growing; and
5. Members -- Individuals with talent and expertise to join startups – either by leaving current jobs or after completing educational pursuits.

These roles (collectively referred to as the 5Ms) played by these individuals create a functional innovation team, but other resources, services or structures (funding mechanisms, accelerators, incubators, proof of concept laboratories, events, hackathons, broadband, incentive policies,

¹ *Raymond W. Smilor, David V. Gibson, George Kozmetsky, Creating the technopolis: High-technology development in Austin, Texas, In Journal of Business Venturing, Volume 4, Issue 1, 1989, Pages 49-67, ISSN 0883-9026, [https://doi.org/10.1016/0883-9026\(89\)90033-5](https://doi.org/10.1016/0883-9026(89)90033-5)*

etc.) are also necessary to enhance engagement and link the 5Ms with startups to decrease risk and increase probability of success.

The NWA region can theoretically draw upon significant talent from the anchor and vendor companies to fill the 5M roles. Engagement of these companies could offer differentiation and acceleration potential to the region's goals. From our experience this past year, this engagement is one of the regions' major challenges. Substantive collaboration by anchor and vendor companies in the entrepreneurial ecosystem dialogue has been relatively minimal.

The manner Micron, JD Simplot, Albertsons, WinCo Foods and other anchor companies engage in the 5M roles through the [Trailhead](#) organization in Boise, Idaho, to support the entrepreneurial ecosystem provides a potential model for NWA. In our experience, organizational “spillover” is the most effective manner to fill 5M roles. Spillover is a “bottom-up” strategy to influence anchor company culture through positive employee engagement in the ecosystem. A vibrant, entrepreneurial and “local” culture provides strong encouragement for employees to spend time outside of their company cubical or office. Examples of spillover roles include:

1. Successful entrepreneurs staying in region and filling roles of mentor, management or funder of new ventures;
2. Company employees engaging in mentoring and market access activities and being supported when maker, management or member roles are presented in the entrepreneurial community; and
3. University employees encouraged to act as makers or members of entrepreneurial ventures or mentors for technology pursuits of anchor/vendor/startup companies.

Through coalescing the 5Ms in the region around an innovation cluster (involving community, anchor and vendor companies, and other groups) and providing the necessary services and support structures, new companies can be birthed and grow within the region – and will not exit from the region in search of expertise, support, or funding.

KEY LANDMARKS ON THE ROADMAPS

We have proposed a destination – the creation of a vibrant entrepreneurial ecosystem in the NWA region – and suggested two roads or pathways be taken to reach this destination: 1) data science and 2) food + technology. Further, we encourage individuals from all organizations in the region and embracing entrepreneurship-based growth by playing one or more of the 5M roles. Once on the pathway to an established destination, what are the landmarks that should be visited? How can we measure whether we are on the right “road” and still journeying together?

We suggest actions addressing four underpinning needs in the region for the growth of an entrepreneurial ecosystem, especially one that seeks technology-based growth, be used as landmarks for measuring the region's progress toward its agreed destination:

1. Startup funding
2. University-industry engagement
3. Building careers and sustaining workforce
4. Region-wide entrepreneurial support

As one takes particular action and creates impact in each of these areas, progress is made toward the roadmap goals. Therefore, we have used these landmarks to organize specific

recommendations for actions to progress down the roadmap to the agreed destination. Related to each landmark, we will explain the rationale for recommendations when appropriate, provide recommendations and select actions for Immediate and Mid-Term temporal deployment.

ROADMAP RECOMMENDATIONS

LANDMARK 1: STARTUP FUNDING

IN-REGION FUNDING

The region faces a “chicken or the egg” challenge as it relates to startup funding. Startups in the region are starved for Seed and Series A funding (\$250,000 - \$2,500,000). However, to re-activate local funders and draw-in new funds from out of region sources, there is a need for 1) a larger group of qualified startups (deal flow), 2) who are led by experienced “exit-oriented” entrepreneurs (talent), and 3) that are connected with market players in the region (team) to reduce risk and grow value quickly. Further, growing small business in the F&B sectors will require access to low interest, low collateral loans to speed company start and growth. We suggest creating an Investor Council for the region composed of funding experts from around the U.S. who have experience with startups in the key areas outlined for innovation clusters. This council can be used as an advisory board to strategize best methods to link to external funders, cultivate in-region funders and link promising startups team (5Ms) in their chosen technology, region or business vertical.

This council may oversee and provide advice in working with the Central Texas Angel Network (CTAN) leadership to activate or build a local angel investment network. An expected timeline is 1.5 years and key steps are outlined in Appendix Three. Engagement with key funding sources in Arkansas should be a focus as well, including: Innovate Arkansas, Diamond State Ventures, programs associated with the Arkansas Development Finance Authority, Hayseed Ventures, New Road Capital Partners, and other groups. The fit to fund investment thesis, competitive nature of the venture investment opportunity, and amount of investment “dry powder” remaining in funds for investments must be considered.

TETHERING TO EXTERNAL FUNDING SOURCES

The investor council offers a proximal source for outside of region funding. Qualified deals can be socialized through the council to interested funds thereby accelerating possible seed and Series A funding events in and outside the region. Further, we support the *Plug and Play* collaboration project as described in the Austin immersion visit. This *Plug and Play* relationship offers the potential for five significant benefits to the region:

1. Increase in startup flow to the region, creating investor deal flow;
2. Engagement of regional anchor and vendor community with the entrepreneurial community;
3. Broadening of collaborative palette from retail logistics/supply chain startups to workforce and productivity startups over time offers creation of a stronger regional synergy with its innovation culture;
4. Establish a dialogue with local banks, LiftFund and other groups to develop new debt tools to reduce barriers for new business funding; and

5. Engagement of coastal investors in the NWA marketplace of startups and scale ups thereby benefiting locally launched as well as Plug and Play facilitated companies in the region.

For these initiatives to show multi-year, multi-deal success as envisioned (and not rapidly wane in interest on the part of companies or Plug and Play), the engagement of regional anchor companies and vendor companies in the project must be active, not just as judges or disconnected funders, but engaged at the 5M market access role: willing to join in market readiness activities, technology testing, entry of new software and hardware solutions and co-funding of top startups. This willingness is critical. NWA is not the only logistical and supply chain hub in the U.S. Startups and accelerators will pursue, engage and locate to regions that offer more than proximity – but offer active market access collaboration. This involves the regional anchor companies to revisit open innovation strategies in the region and incentivize home offices of vendor companies to view NWA as a source for innovative value and engagement. Without this active collaboration, the gravity of competitive funding and logistical hubs in Los Angeles and San Francisco, or supply chain/logistical hubs in Chicago, Memphis, Atlanta or Houston could be the more natural site(s) for re-location of data science companies in this key technology vertical.

The variety and growing market for new food technologies has been surprising, especially around meat alternatives, finished foods, meal services. The value is simply illustrated by Beyond Meat, Inc.'s \$3.8B IPO in May 2019. Food + technology, investment has grown rapidly over the past four years driven by IPO's – as noted above – as well as significant product and company acquisitions². Funders range from angel investment groups to larger venture funds, including First Round Capital, Draper Fisher Jurvetson and New Enterprise Associates as well as specialty F&B investors³. Further, most large food companies (preparation, packaging and raw materials) have begun to invest through venture capital funds or directly using internal investment arms. This Crowdfunding offers another route for F&B companies to obtain first funds in. CircleUp, Kickstarter, and CrowdedCube have helped launch dozens of F&B companies. The ability to use e-commerce to support engagement with larger company or customer-facing channels provides faster revenue options and less share with “middle” players. Indeed, companies like Revere and Brandless have launched successful direct-to-consumer strategies⁴.

In our external view, it would make sense for NWA anchor companies to consider collaborating together to create a regionally-focused fund for data science and food + technology to support open innovation and regional goals. This is a complex action step – involving many management structures – and cultural change. Thus, the recommendation is made but not put on the priority timeline below.

² <https://www.cbinsights.com/research/food-beverage-startup-investors/>

³ <https://www.mydrinkbeverages.com/top-venture-capital-funds-for-food-and-beverage-industry>

⁴ <https://www.cbinsights.com/research/food-beverage-startup-investors/>

RECOMMENDED IMMEDIATE ACTIONS

- Create and convene the investor council.
- Regardless of a decision about creating an investor council, move forward with activating and building a vibrant local Angel network through CTAN collaboration.
- Support the Plug and Play initiative and engage anchor and vendor companies to actively participate.
- Engage banks, LiftFund and other seed-funding strategies to link low interest, low collateral loans with engagement in business management mentoring and performance metrics.

RECOMMENDED MID-TERM ACTIONS

- Create annual events highlighting accomplishments in each key cluster.
- Develop relationships with key funding groups outside the region in food + technology sector.
- Ensure industry supports projects requiring collaborative engagement between the School of Agriculture and University of Arkansas.

LANDMARK 2: UNIVERSITY-INDUSTRY ENGAGEMENT

“UNIVERSITY ON THE MOVE” INITIATIVE

In our evaluation, the key institution to catalyze the necessary cultural changes in the region is the University of Arkansas (UA). UA has yet to realize its potential to connect regional and State-wide industry with its: 1) academic and research expertise, 2) the full-palette of potential entrepreneurs on-campus linked to regional resources, and 3) its technology commercialization activities. All of these assets can strengthen the innovation quotient of regional companies or produce new technology-based startups. The new initiatives catalyzed by the Walton Family Foundation gift to UA to strengthen technology transfer and economic development provides the perfect time, funding access and motivation to transform UA into the regional engine it could and should be for entrepreneurial culture growth. To this end, we propose a **“University on the Move”** initiative to create outreach activities catalyzing many of the innovation and social clustering goals suggested for the region. If embraced, UA could act as the entrepreneurial hub for the region through providing services and support leveraging student and faculty engagement.

The University on the Move initiative requires UA to go to sites where key players and innovators exist throughout the region and provide “hub” services, including:

1. Collaborative learning environments;
2. Student and researcher-engaged hackathons;
3. Industry-fitted internships;
4. Industry-engaged educational capstone projects and presentations;
5. Outwardly facing technology commercialization and research funding strategy;
6. Engagement with leading out-of-region accelerators, such as *Plug and Play*, to draw in startups and funders to thrive in the region.

These innovative activities should be provided through an “off-campus” model, one within easy walking or driving distance from major employment and/or living centers, to complement UA’s current “on-campus” approach. Through active community engagement, the team sport of entrepreneurship can be played through physical collision of faculty, students, innovators, mentors, market providers, management, facilities, and funders who can form functional groups to solve problems or commercialize innovations.

The University on the Move initiative would provide intentional outreach to regional companies and communities to form greater cohesion and support of regional innovation and entrepreneurship. However, to be successful, anchor and vendor companies must adapt their practices to think and act innovatively in NWA, and not solely through out-of-region innovation centers and “innovate through acquisition” models but through more in-region open innovation practice.

“UNIVERSITY ON THE MOVE” INITIATIVES ON CAMPUS

As UA officials and other visitors to Austin learned, commercialization is complex and even universities with reputations for success, like The University of Texas at Austin, experience friction in their processes and produce fewer outcomes than desired. UA can learn from these challenges and proactively create a seamless “entrepreneurship track” by the following actions:

1. Creating an entrepreneurship committee with leadership from all Colleges and Schools, to ensure cross-campus engagement, and representatives from company and entrepreneurs in the region;
2. Constructing a School/College cross-cutting entrepreneurship minor perhaps patterned on the UT McCombs’ School of Business model;
3. Exposing faculty to community, business and technology mentors;
4. Engaging with the Blackstone Foundation for a Blackstone Launchpad to be located in the McMillon Innovation Studio. Collaboration with the Austin Technology Incubator can link to Blackstone for a co-funding model for campus cross-cutting undergraduate programming program.
5. Involving local company employees with university researchers through seminars, Professor of Practice and Industry Affiliate programs around key clusters;
6. Socializing technology transfer and entrepreneurial options with faculty and students (graduate and post-doctoral scientists and engineers especially) through intentional and proactive programming including synergies with I-CORPS Site programs.
7. Funding technology transfer and economic development essential functions as part of protected university fund sources and not fund solely off unspent royalties or soft money approaches.
8. Recognizing faculty and student innovators through community events and campus awards;
9. Engaging strategically with the Arkansas Research and Technology Park to stimulate deep tech venturing in the region;
10. Providing support for non-curriculum-based programs that support students following a class or invention disclosure, and link them to next program need and strategy through McMillon Innovation Studio and Brewer Family Entrepreneurship Hub services.

“UNIVERSITY ON THE MOVE” INITIATIVE IN THE REGION

There are significant gaps present among the business community, civic groups and the campus. Each works in its own campus space. However, UA has the most to gain through active engagement with the community actively by creating programs that are in the “backyard” for regional anchor/vendor companies and the startup communities spread among NWA communities. We suggest that UA deliver community content through engaging in sites that entrepreneurs and business mentors already frequent or in which they naturally cluster. New interfaces are needed, not new buildings. For example, RevUnit in Bentonville could host UA events before 8 AM or after 5 PM in the evening as not to disrupt normal company activities. Such sites can host, among other programs:

1. UA professor seminars;
2. Regional hackathons;
3. Student pitch events;
4. Mentoring sessions; and
5. Short-course educational programs.

By being out of Fayetteville or UA Global facilities, but being “in” the community, UA will become a (if not the) convening force in the community and an innovation hub for local companies. The polycentric region spread along ~35 miles of highway needs a steady, reliable organization to link the community together. UA offers the stability, diversity of programs and talent, and synergistic values to be that organization.

INDUSTRY-FACING UNIVERSITY COMMERCIALIZATION PROGRAMS

The challenge for UA commercialization and economic development is a significant one, but it is not unique. As previously noted, all universities and research facilities face similar challenges. Commercialization involves taking intangible assets without demonstrable market feasibility and value, and converting those assets through commercialization deals (sponsored research, licensing and new company creation) into value streams for the university and society as a whole. This challenge is exacerbated by 1) the unpredictability of the sources, types and technology verticals associated with innovations; 2) the time frames required to experience return on the investment (directly in markets, through recursive revenue or company monetization), and 3) the lack of control the university has on actual realization of products and services in the market and return. These challenges are illustrated in Figure 2 below.

From the collective experience of AUTM, UT Austin, and the IC² Institute’s work across the U.S. and world, UA can improve commercialization outcomes through prioritization of on campus resources with translational resources at the Technology Park and region-wide entrepreneurship initiatives. Details are provided in Appendix Three.

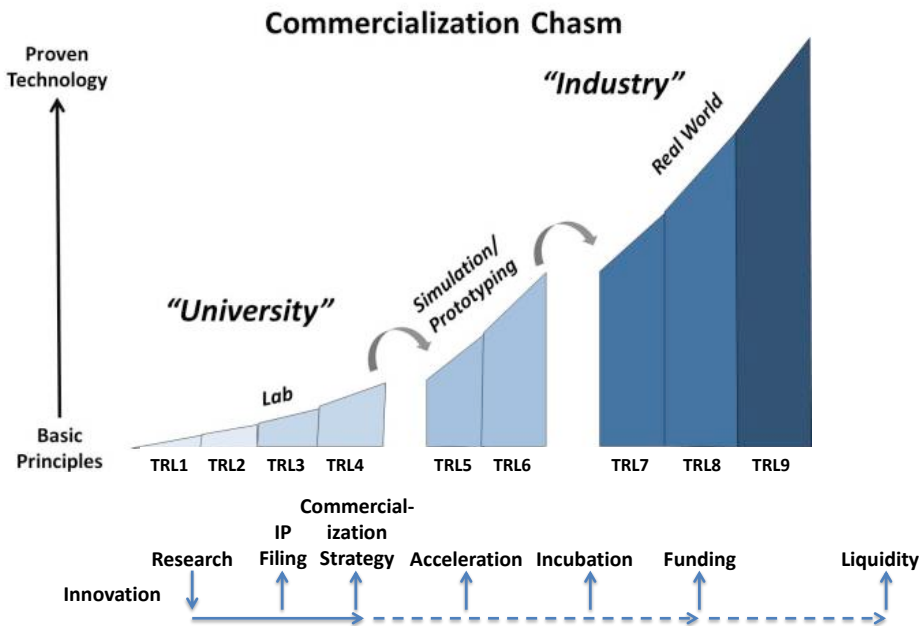


Figure 2

The challenges involved in university commercialization of technologies⁵. Activities moving innovation to exit are illustrated on the “x” axis to orient roles that universities and companies have in this process.

ANCHOR COMPANY OPEN INNOVATION PROGRAMS

The distinguishing business features of NWA are the presence of the three key anchor companies and the 1,500+ vendor community. Those, however, have been insufficient as catalyzing forces for recent entrepreneurship. The vendor community in NWA does not conduct research and the three large anchor companies have followed the common corporate strategy of innovating by acquisition. Further, two of the companies do not have their innovation centers in the region. The innovation quotient of the region reflects the lack of corporate innovation in the region as well. There is a risk that the NWA sites will come to resemble operational centers only, leaving research, development, testing and other high spillover jobs out of the area. Longer-term, both the vendor companies and anchor companies will need to participate in the 5M roles and create deep links with UA through in-region open innovation programs. A different approach is required for building an entrepreneurial community.

To facilitate that change in mindset and perception, we recommend that UA offer as part of its “University on the Move” four types of open innovation programs to stimulate regional innovation and engagement of key anchor and vendor companies (with further details provided in Appendix Three):

1. **Inside-Out Hackathons:** Internal innovation or idea-bank programs: Modeled after the Human Dimensions of Organization master’s degree at UT Austin, a program can be built that incentivizes employees of anchor companies to identify key problems, product limitations or product production/supply chain limitations and “hack” potential solutions for proof of concept investment.

⁵ <https://alopexoninnovation.com/2013/09/10/innovation-diffusion-from-university-rd/>

2. **Outside-In Hackathons:** Key product or services areas are chosen for a hackathon-based approach. The key will be to use the industry affiliate program format offered by UT Austin Office of Industry Engagement to 1) lower IP risks for companies, 2) encourage UA student and faculty engagement, and 3) provide a motive for companies to fund the hackathon activities. Hackathon problems will be focused in a technology vertical to involve multiple companies in the anchor/vendor community. Internal employees will be encouraged to participate and join UA students and possibly faculty to create solutions that can be “licensed” to companies through predictable and pre-defined strategies.
3. **Employee Innovators Program:** The overall innovation processes in anchor/vendor companies in the NWA region must be changed – so that employees “think innovatively” and understand the essentials of evidence-based entrepreneurship. The IC² Institute program with USAA Insurance company is a model. This program provides: 1) methodology to “say no” to internal projects, 2) motivation to create an innovation culture in the company home office linking marketing and engineering, 3) enhancement of the value and directionality of internal innovations in companies, and 4) opening company employees to external “voices” and customer engagement – all enhancing open innovation outcomes.
4. **Employee Mentorship Programs:** Encouraging employees to act as mentors in regional startups and university innovation programs through 1) approval for work credit up to 4 hours per week for mentorship activities, and 2) providing student loan forgiveness for employees based on a set dollar amount per hour/per month spent in community mentorship activities.

RECOMMENDED IMMEDIATE ACTIONS

- Review and modify, but engage in some aspects of the University on the Move model.
- Create an entrepreneurship committee and move to provide integrated, seamless knowledge of entrepreneurship resources on campus.
- Engage the industry affiliate model around an innovation cluster – data science or food+technology – to explore what model works for regional companies, faculty and students.
- Launch one open innovation hackathon event with an anchor company including a program to encourage anchor company employee participation as entrepreneurial mentors.

RECOMMENDED MID-TERM ACTIONS

- Explore creation of a Blackstone Launchpad on the UA campus.
- Create a professor innovation studio to catalyze engagement of faculty and student innovators with industry mentors on campus.
- Launch an entrepreneurship minor across the UA campus.
- Engage in outside-in hackathon activities to increase campus-industry collaboration.

LANDMARK 3: BUILDING CAREERS AND SUSTAINING WORKFORCE

The region faces many challenges regarding workforce (See Appendix Two for more details). If an entrepreneurial community is to be grown in NWA, the region must recruit and retain the talent needed to start and lead these companies. Further, regional anchor and vendor companies can be important sources for mentors, management, and even company management and members as non-corporate career paths are considered and chosen. Several key initiatives are suggested to strengthen regional workforce to support entrepreneurial ecosystem development.

LINKING STUDENT TO REGIONAL EMPLOYMENT NEEDS

From our interviews with many participants in the region, current students at all the educational institutions should be offered a portfolio of internships.⁶ The benefits from internships are well documented, both for students and employers. Employers in the region primarily treat internships as extended interviews that can increase the conversion rate of post-graduation placements. Students with internships have a longer opportunity to consider an employer's ecosystem, and become more informed about possible occupational roles and directions available to them. Of course, internships at major employers often have different characteristics than internships at smaller firms, non-profits, and governments in terms of staff involvement, oversight, and compensation. If internships are to be useful for both large employers and smaller firms in NWA, then thought should be given to incentivizing smaller firms to offer internships, perhaps by offering partial scholarships to tech firms that would offset part of their out-of-pocket and in-kind staff time costs. We have noted that startups benefit greatly from student interns through the Texas Venture Labs and **FAST**Forward programs. Further, students learn about startup culture and opportunities through this experience.

Recommendation: Consideration should also be given to the concept of a “startup intern” fund.” Such a fund could provide partial funding for startups in the form of interns. Startups normally do not have the resources, either time or money, to support interns, and might also receive gifts from individuals and companies to support internships for entrepreneurial startups.⁷

Besides developing a broader array of internships and co-ops, consideration should be given to conducting an analysis of recent graduates' retention rates in NWA. This analysis should utilize the normal data sources such as alumni records and surveys as well as the use of LinkedIn data. At least one organization that used surveys previously has determined that LinkedIn data provides both more accuracy and more data about recent graduates. Comparing NWA data over time to a number of other regions would pinpoint how well the region is progressing in student retention and how well new initiatives such as increased internships are affecting retention rates.

⁶ Internships here are defined as including cooperative work-study opportunities as well. Co-ops often are viewed as internships but for longer time periods and other than during the summer months.

⁷ Another option that has been implemented in the Philadelphia region involves a variation to normal internships: a fund that is supported by major employers to assist other companies to hire interns. The rationale for this approach is that the financial supporters, major employers, will eventually benefit from having more talent in the region, even if they choose not to have interns immediately. We do not know if such an approach could be implemented in NWA.

Recommendation: Perform ongoing analysis of UA, John Brown University and NWACC graduate retention and relocation activities.

Another possible way of affecting retention and increasing the likelihood of better matches for students and employers would be to allow UA degree students to participate through the UA Global Campus courses that are primarily professional certification. Students may benefit from classroom interaction with possible future colleagues as well as learning more about local employers and skills being used by employees. Professionals taking the non-degree course, they may be able to identify possible interns and/or future co-workers. Another possible change in UA courses may prove helpful for university-industry engagement: allowing auditing of regular degree courses by professionals by reserving several spots for non-degree students.

Recommendation: Identify innovation/entrepreneurship offerings the Global Campus can offer professionals from anchor and vendor companies in the region as part of the University on the Move initiative.

Based upon comments from some IT industry professionals, John Brown University computer science graduates are very good and a source of talent that is often overlooked. More research is needed to confirm this. However, review of open job postings from Indeed.com show >600 jobs in data and computer science fields in NWA. If this is true, additional efforts might be devoted to increasing the supply of these graduates. This would provide the region with graduates from a curriculum that is up-to-date with employers needs and ensure that the number of local CS graduates is greater than the 120 graduates from UA. Longer-term high-tech talent supply may benefit from closer examination of what is occurring with STEM students in NWA. One workforce administrator believes that only 400 STEM students matriculate at UA and NWACC from an initial pool within NWA of 1200. What happens to the other 800 is unknown as no systematic analysis has been conducted. Perhaps the NWA Council staff in conjunction with a group of local high school administrators might address this.

Another source of IT talent is the latent workforce of high school students who do not necessarily wish to attend a four-year university or who do not need that depth of education and training to obtain a good IT job. NWACC is a key for this, and until the supply from NWACC meets current needs, private-public cooperative training programs might be supported with organizations such as the Northwest Arkansas Council.

In addition to focusing on locally educated graduates, regional employers, of course, might be encouraged to hire talent from universities in nearby regions. NWA may prove appealing as a locale compared to Stillwater, Norman, Lawrence, and Manhattan to cite a few examples.

Recommendation: Work with anchor, vendor and start companies to create estimations of numbers of employees needed with a given set of skills/training/or degree. Link this analysis across UA, John Brown and NWACC programs and capacity to determine key deficits and hidden resources for company hiring. Deficits can be addressed by tethering engagements with near regions to relocate to NWA.

INSIGHTS FROM CAMPUS PHILLY

A final workforce and talent initiative might be more innovative and higher risk. Many of the Campus Philly activities are designed in conjunction with students. It may be that small amounts of funding could be provided to UA, NWACC, and John Brown University student groups to support a pilot program of regional information, internship, and career-oriented activities for other students. Further, this could be logically extended to universities providing high demand graduates in data and computer science in Missouri, Kansas, Oklahoma, Louisiana and even Texas. By creating a collaborative model where companies with internship and hiring needs are regularly linked to university placement efforts, more fitted and fluid identification and recruitment of talent can be established. This model would utilize students' ideas about the region for the benefit of the region and employers. Once again, UA can take the lead through the University on the Move initiative.

Key offerings are:

1. Engage with regional anchors and vendors to provide “starter” funding for the initiative as well as attendance to regional internship and employment events.
2. Plan events, work with Entrepreneurial Support Groups in Region to provide updated, centralized NWA entrepreneurial ecosystem calendar presentation, social media coverage and web-services.
3. Activate entrepreneurial culture, including food, beverage, art and music groups to support internship and employment events involving all educational institutions.
4. Use the innovation cluster concept to create an event each year surrounding cutting edge thought in these areas to draw faculty, industry and students together to think, vision, and act.

RECOMMENDED IMMEDIATE ACTIONS

- Work with UA, NWACC, John Brown University, and multiple employers to design a portfolio of internship programs that meet students' needs, educational requirements, and employers' short- and intermediate-term staffing objectives. Consider potential sources of local and national funding for new internship initiatives, including a region-wide internship fund which could be accessed by start-ups, non-profits, and local governments.
- Create a fund for student internships in startups.
- Analyze existing alumni data in comparison to that of other regions, and if necessary, obtain new data that would serve as a baseline for measuring progress over the next ten years.
- Review the suitability of establishing a Campus Philly-type entity and more importantly, the potential of some of their activities for NWA.

RECOMMENDED MID-TERM ACTIONS

- Determine the need for additional IT and food tech training programs oriented to students who do not plan on attending post-secondary degree-granting institutions immediately after high school.
- Perform an analysis about the workforce and academic choices of STEM high school students in NWA.

- Undertake some type of data collection effort to acquire information about the number of vendor companies and their workforces in NWA as well as data on time-in-region and other characteristics of the employees.
- Consider providing very limited small grants to university-based student groups that offer creative employment-oriented programs for existing NWA university students.

LANDMARK 4: REGION-WIDE ENTREPRENEURIAL SUPPORT

The NWA region is a great locale for families because of its livability and many amenities. Its predominant values are also an excellent place for those seeking second and third job positions. The quality arts offerings, hiking and biking trails, natural beauty and other attributes are extraordinarily important for many reasons and are highly valued. However, they are not, primary drivers in entrepreneurial, Millennial and GenX recruitment. What was most frequently communicated to us and that coincides with our experience of other entrepreneurship hubs were the strength and the “local” flavor of the food and beverage industry, the social connections driven through arts and music, the diversity of jobs offered, and general excitement that engages singles and young families. The franchise, big-box, strip mall offerings that dominates most non-downtown regions of NWA cities does not encourage retention and engagement of the target age-groups. Thus, an integrated view of amenity building is critical in coming years to build an overall culture for entrepreneurship in which to thrive.

INTEGRATED AMENITIES

As previously noted, there is a lack of social clustering happening among regional cities and often within regional cities. NWA residents tend to cluster near their homes, businesses or place of faith. However, social clustering is key to the culture of entrepreneurship. Innovators seek an experience through integrated collisions of city, community, university and industry participation in the entrepreneurial culture. This culture and the growing regional identity around social gatherings will support employees of anchor companies and vendor enterprises to consider staying in NWA when a transfer is proposed. Integrating anchor/vendor company employees into the innovation culture gives them access to technologies, startups and innovators that can engage them in alternative employment opportunities. We propose the following strategies below and detailed further in Appendix Three:

1. We suggest a longer-term effort to create an entrepreneurial culture through linking in a “buy local” ethos into the communities to support locally owned and culture integrated food, beverage and music establishments.
2. This focuses the food side of the food + technology cluster as a tool for local culture building and communication.
3. Innovate hike and bike trails to not just be places of exercise, but sites for social clustering and engagement through food, beverage or “gear” shopping sites.
4. Create a regional “Community Crawl” where key downtown sites offer food and beverage and are visited on a Friday or Saturday evening by entrepreneurial community members to hear local startup pitches and dialogue about regional collaboration. This strategy differs from a traditional “Startup Crawl” where events center on a once/twice a year event and center on a single site to see startups. This approach offers a regularly scheduled, rotating approach where pitches can be used to draw in attendees, but is focused on stimulating inter-community mixing, mentorship and creativity.

5. Develop an entrepreneurial daycare service or credit strategy to mitigate the problem identified by numerous young parents about the high cost for daycare, which has effectively limited their engagement with high risk, lower initial pay entrepreneurial activities.
6. Increase the use of arts and culture sites to provide access twice a year for social events at minimal cost for regional events. These include Crystal Bridges, the Momentary, UA School of Art and other resources.

ENTREPRENEURIAL SUPPORT GROUPS

The NWA community and regional leadership are deeply engaged in supporting the budding entrepreneurial ecosystem. However, this rush to lead in entrepreneurship from various players has a downside. A quote from a NWA entrepreneurial leader:

“The startup ecosystem is crowded with people and consultants trying to spin up new initiatives. All these are well-intentioned but everyone wants participation from the big 3 (WMT, Tyson Foods, JBHT). It’s hard for them to separate signal from noise, and I think that prevents their full participation in the events that matter.”

This quote characterizes our experience, with entrepreneurial support creating competing programming and making diffuse requests for support from the “same” players. Focusing and coordinating activities in the region is key. There are four primary sources of innovators or entrepreneurs in the region: 1) the University of Arkansas students and faculty; 2) community innovators; 3) corporate employees, and 4) innovators moving to the region. The provision of support as a subsidy for new company creation and growth is a great service, but one not well reimbursed by the participant companies. Advanced funding models need to be considered. Support groups should focus on their role to providing events and activities that link funders of the region and regional startups to funding.

A number of discrete actions may also be undertaken as detailed below and in Appendix Three:

1. Determine the role of Startup Junkie and Grit Studios in light of the University on the Move strategy – where UA provides more regional hub activities. This is a dialogue to understand how non-academic organizations can speed makers and startup access to mentors, management and market access.
2. Also, with the University on the Move initiative, we suggest these entrepreneur service groups focus efforts on community and re-locating innovators until university startups “exit” the campus into the community.
3. Local foundation support could provide grants among private groups to collaborate and not compete creating a continuum of activity and support for innovators and startups throughout the region.
4. Entrepreneur service groups, the Northwest Arkansas Council, and the local media also could devote more attention to capturing local startup stories and startup activities using traditional and social media.
5. In general, more emphasis needs to be placed on entrepreneurship within the region and more visibility about NWA entrepreneurship needs to be shared outside the region.
6. Creation of a regional Startup Week event where entrepreneurs, their journeys and impacts would be another option.

ROLE OF THE NWA COUNCIL

RESEARCH

The research provided by the Northwest Arkansas Council surrounding workforce requirements, supply challenges, educational initiatives has been critical. As the entrepreneurship initiative is launched, new on-going research projects are required. While the Council need not conduct the research, their support and involvement would be important. We believe research is needed on the following:

1. Entrepreneurship activities in the region: A comprehensive database needs to be established as a baseline for measuring entrepreneurship over time in the region. This database needs to incorporate data from local governments, foundation-supported groups, commercial entities, state government, and federal agencies and departments. Development and maintenance of the database should be performed by an in-region entity, perhaps by a university-based applied research group at UA. An alternative approach would be to undertake this through the NWA Council, relying primarily on interns who can offer data acquisition and analysis support. Two local governments indicated in interviews that they lack staff to compile their small business data on a regular basis. Having interns at the NWA Council, UA, or at the local governments would provide data that otherwise would not be included in more macro sources.
2. Company innovation attitudes and programs: Besides having better metrics on the number of NWA entrepreneurs, companies and open innovation engagement, there is a need to understand how innovation is viewed and engaged by 1) management and 2) workers in the various company demographics in NWA. A survey, perhaps in conjunction with various focus groups, as well as additional interviews with entrepreneurs would provide this information. This would be another component of the entrepreneurship baseline that could be tracked over time. One important component of this baseline would be to document changes in companies' product and service offerings.
3. Continued workforce supply and demand analysis: The studies provided by the NWA Council "Building Careers and Sustaining Workforce in NWA" Dialogue Session IV provided insight into the supply and demand challenges of STEM jobs in NWA. Continued dialogue among educational providers, entrepreneurs and company managers to align student degree programs with regional job needs/expectations will be critical. Continued monitoring of baseline and changes that occur over time will be essential.

OTHER ACTIVITIES

While many of the recommended actions for entrepreneurship, university-industry engagement, and workforce talent are "bottom-up" approaches, it is absolutely necessary that a "top-down" complementary strategy be continued and expanded. We believe the Northwest Arkansas Council is the entity to do that by actively gaining agreement and engagement of the regional anchor companies and vendor enterprises in the regional entrepreneurship initiative.

A number of new activities need to be studied at a minimum, with an eye toward some of them being implemented. We suggest the Northwest Arkansas Council:

- Establish designated contacts at each of the anchor companies and major vendor enterprises for university and entrepreneurial ventures.
- Become more involved in supporting regional bus services picking up a consistent location and providing WiFi to shuttle participants up and down Interstate 49 to

entrepreneurial events at no cost to travelers. A model could be the [CARTS](#) system linking rural to urban Texas regions.

- Engage computer science and basic coding needs by supporting Northwest Arkansas Community College coding certificate programs.
- Determine if the airline carriers will adopt a consistent “name” for reservations, in lieu of the current practice of Bentonville and Fayetteville, which leads to confusion and is certainly poor branding.

RECOMMENDED IMMEDIATE ACTIONS

- Establish and maintain baseline for entrepreneurship: numbers of companies, products and services, and attitudes of regional employers.
- Create designated contacts at key employers.
- Support data science and coding training.
- Create annual Startup Week and provide regional awards for top performing entrepreneurs and small businesses.

RECOMMENDED MID-TERM ACTIONS

- Daycare credit analysis and engagement.
- Regional bus service support.
- Build culture “zones” at trailheads to increase social cluster around outdoor amenities.
- Improve consistency in naming of Regional Airport Reservations.

CONCLUSION

This Final Report seeks to create a roadmap linking the components in Northwest Arkansas together to address key challenges while pursuing a pathway toward creating an entrepreneurial ecosystem. We hope this roadmap helps the region realize its full potential to **Innovate Again, Innovate Here!** The findings, conclusions, and recommendations presented here have been drawn from empirically-based benchmarking (provided in past reports), qualitative data from immersion visits to Austin and NWA, and a comprehensive set of interviews, focus groups, and dialogue sessions in the region with key stakeholders and students. It is the hope of the research team that this report has contributed to a deepening dialogue around the important role that technology-based entrepreneurship can play to diversify, spur longitudinal development and increase the resilience of the Northwest Arkansas economy in the decades to come.

APPENDIX 1: DETAILED PROGRAM DELIVERABLE SUMMARY

ECOSYSTEM ANALYSIS

1. Regional Assessment
 - a. Regional visit of five days by team of four IC² Institute scientists
 - b. Conducted interviews with >64 regional stakeholders
 - c. Initial Visit Report submitted June 2018
2. Regional competitiveness studies
 - a. Economic benchmarking study:
 - i. From 49 regions analyzed, 10 were selected as core regions for benchmarking comparison. These included three regions viewed as aspirational, not similar.
 - ii. Seven key metrics assessed.
 - b. Educational benchmarking study:
 - i. From a set of 63 U.S. universities, 23 comparable universities were chosen for benchmarking.
 - ii. Eight key metrics assessed.
 - c. EDGE: University and Regional Benchmark Study submitted July 2018
 - d. Presentation of Findings to Walton Family Foundation

ECOSYSTEM ACTIVATION

1. Conduct four Dialogue Sessions:
 - a. Sessions Subjects:
 - i. Dialogue Session I: Startup Funding.
 - ii. Dialogue Session II: University-Industry Engagement.
 - iii. Dialogue Session III: Regional Innovation Clusters.
 - iv. Dialogue Session IV: Building Careers and Sustaining Workforce.
 - b. Student Engagement Sessions:
 - i. Northwest Arkansas Community College: 14 students.
 - ii. University of Arkansas: 31 students and post graduates.
 - c. Four Expert Speakers:
 - i. Kerry Rupp, General Partner at True Wealth Ventures.
 - ii. Anupam Srivastava, Treasury Managing Director and Investment Committee Member, Intel Capital.
 - iii. Michael Harvey, COO, Northwest Arkansas Council.
 - iv. Deborah Diamond, Ph.D., President, Campus Philly.
2. Attendees:
 - a. Regional panelists engaged in Dialogue Sessions: >32.
 - b. Total attendees to Dialogue Sessions: 244.
 - c. Total unique attendees to Dialogue Sessions: 185.
 - d. Attendee numbers did not count students, walk-ins or those unable to register by email.

ECOSYSTEM COLLABORATION

1. 3-Day Austin Immersion Visit for nine (six contractually required) NWA representatives.
 - a. NWA Community Stakeholders:
 - i. Dr. Matt Waller - University of Arkansas, Dean of the Sam Walton College of Business.
 - ii. Dr. Stacy Leeds - Vice Chancellor for Economic Development and Dean Emeritus & Professor of Law.
 - iii. Nelson Peacock - President and CEO, Northwest Arkansas Council.
 - iv. April Seggebruch - Executive Vice President Product and Operations, Movista (UA startup now local scale up company).
 - v. Michael Paladino - Co-Founder, RevUnit (Bentonville scale up company).
 - vi. Joe Saumweber - CEO and Co-Founder, RevUnit (Bentonville scale up company).
 - b. Walton Family Foundation:
 - i. Yee-Lin Lai - Program Officer, Home Region Program.
 - ii. Louise Epstein - Director of University Partnerships.
 - iii. Karen Minkel - Director, Home Region Program.
 - c. Four Roadmapping Sessions:
 - i. Industry Clusters.
 - ii. Industry-University Collaboration.
 - iii. Company Funding Access.
 - iv. Workforce/Talent Recruitment and Retention.
 - d. Engagement of 27 Austin-region participants for dialogue and engagement with NWA visitors.
2. Roadmapping Report
 - a. Supplied in summary during final Austin Immersion Session.
 - b. Submitted with Final Report.

FINAL REPORT

1. Final Report
 - a. Citing previously submitted reports.
 - b. Roadmapping goals and recommended actions.
 - c. Appendices.
2. Dialogue Session Agenda, Feedback and Attendees

APPENDIX 2: KEY REGIONAL CHALLENGES

A second part of forming effective teams is understanding challenges facing the region. Our continued studies confirmed the challenges defined in the Initial Report (see Report for details) provided to the WFF. These include:

- **Distance** – separating regional participants physically and relationally;
- **Dilution** – focusing efforts on key innovation clusters and accessing key talent, funds and experience to the region necessary for commercialization outcomes;
- **Demand** – linking funding and talent access and retention with entrepreneurial focus and deal flow
- **Draw-in/Engage** – creating opportunities for anchor company, vendor community and the university to collaborate and contribute to entrepreneurial goals.

Our quantitative benchmarking and qualitative studies confirmed the findings of others emphasizing the well-described strengths of the region. However, our focus was on activities and relationships supporting economic diversification through entrepreneurial activities in the region. From our studies, three significant concerns emerged related to the entrepreneurial goals of the region:

1. Workforce Elasticity
 - a. The region shows “full” employment status.
 - b. The region has a small size of working age population compared with benchmarked regions.
 - c. The educational attainment and graduate retention rates of the region are low compared with benchmarked regions.
 - d. The region shows a significant, and unusual, decline in self-employed proprietors in a thriving economy.
 - e. Finally, as Northwest Arkansas Council employment and graduation studies revealed, the region is producing adequate to excess of most engineers and scientists to be metabolized into regional job openings. In contrast, computer-related jobs openings are far in excess (~3.5X) of local graduates.
2. Innovation Capacity
 - a. The university shows bottom third ranking with regards to total research expenditures and federal grant research expenditures compared with comparable institutions.
 - b. The region shows a remarkably low invention rate and commercialization outcomes when compared with benchmarked regions (10th of 11 regions compared).
 - c. The Big 3 and vendor companies do not house research and/or development in the region – thus innovation is not brought to or out of the region. The sites focus on headquarter management, operational, and short-term, stock-impacting business activities.
 - d. The startup activity in NWA tops that of the state, but is low compared with benchmarked regions and neighboring states.
 - e. Funding access follows startup activity as being low compared to most benchmarked regions.

3. Entrepreneurial Collaboration Culture

- a. There is a notable lack of engagement of anchor companies (Walmart, Tyson Foods and J.B. Hunt as well as the >1,500 supplier and/or CPG companies) in the NWA entrepreneurial culture. Similarly, we noted little engagement by these entities in the EDGE program.
- b. Many actors in the region seek to support startups in the region providing similar services and activities. This results in numerous, uncoordinated and undistinguished requests to large companies and other groups to engage entrepreneurial community. This is perceived by many observers in the region to lead to less large corporation engagement.
- c. The University of Arkansas has historically focused on graduate student entrepreneurship and competition-based funding acquisition strategies. The growth of UA's entrepreneurship culture and engagement of undergraduates, faculty and other groups at scale offer new opportunities for culture growth.
- d. There is inadequate collaboration between the entrepreneurial communities in NWA, leaving each community lacking in one or more areas: innovators, mentors, market access and management talent.
- e. Students will consider locating or staying in region if diversity of employment opportunities increases and regional lifestyle supports their needs.

This report seeks to create a roadmap linking the components in Northwest Arkansas together to address key challenges while pursuing a pathway toward creating an entrepreneurial ecosystem.