



Center
on Rural
Innovation

Digital Economy Ecosystem Assessment Report: The Berkshires

2021 Cohort

Contents

Contents	2
Acknowledgments	3
Framework to Build a Digital Economy Ecosystem	5
Regional Overview	7
Assessment Summary	8
Ecosystem Model Assessment	8
Foundational Elements - Summary of Strengths and Challenges	8
Necessary Infrastructure - Summary of Strengths and Challenges	9
Direct Drivers - Summary of Strengths and Challenges	9
Recommendations: Growing Your Ecosystem	10
Potential Outcomes for Berkshire County	11
Pillars to Guide Next Steps on Your Digital Economy Ecosystem Building Journey	11
Next Steps:	13
Appendix A: Direct Driver Assessments	14
Assessing the Direct Drivers	14
The three stages of development for each direct driver	14
Scalable Tech Entrepreneurship Support and Incubation	15
Access to Capital for Entrepreneurs	18
Digital Workforce Development	21
Access to Digital Jobs	25
Inclusive Tech Culture Building	28
Appendix B - Local organizations by driver	31
Appendix C - Documents reviewed	32
Appendix D: Digital Economy Diagnostic for Berkshire County (separate attachment)	
Appendix E: LinkedIn Talent Insight Reports (two separate attachments)	
Appendix F: Benchmarks for Building Your Digital Economy Ecosystem (separate attachment)	

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1BERKSHIRE



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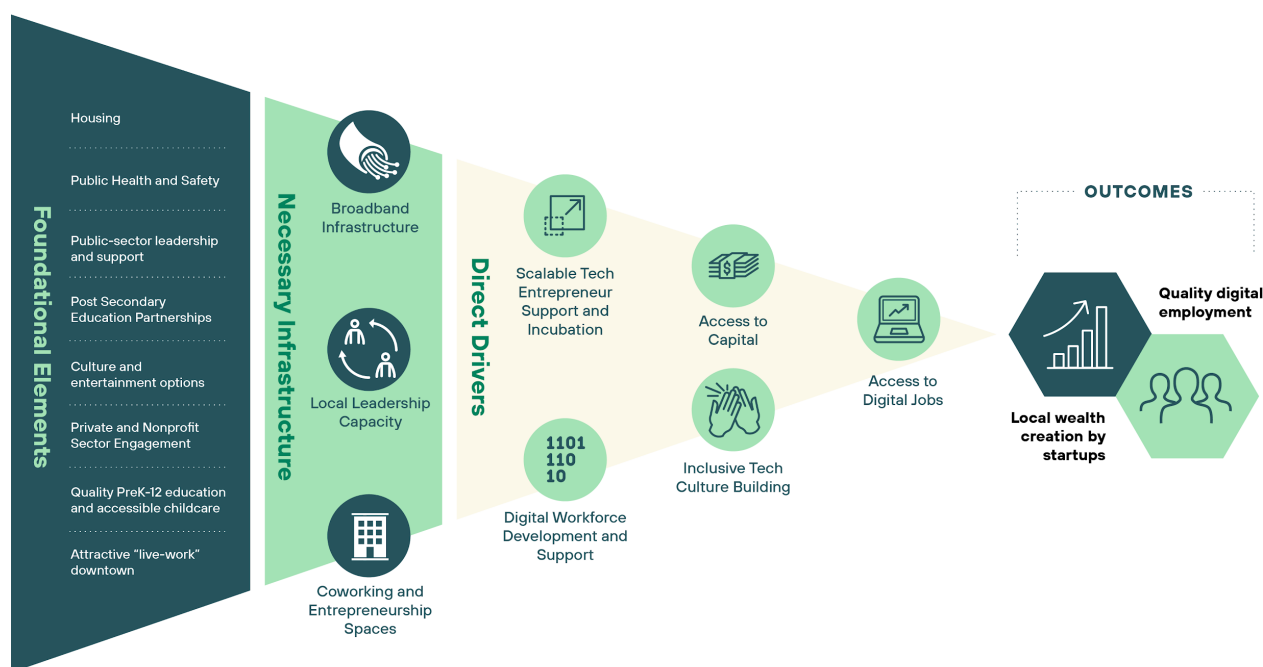
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Framework to Build a Digital Economy Ecosystem

A cornerstone of the assessment process is understanding a region's current state and position and its growth potential through our approach to digital economic development - which we call the CORI Digital Economy Ecosystem Model. This is done through a framework based on the underlying principle that healthy digital ecosystems offer promising and accelerated paths to broad based economic growth, the creation of high quality and durable jobs, higher productivity, and local wealth creation.

While the configurations of these elements, infrastructure, and drivers are unique and will vary by community, gaps or weaknesses should be thoughtfully considered and addressed to set these base conditions that can foster diverse and thriving digital ecosystems.

Our framework to approach digital economic development:



This framework includes the following components:

Foundational Elements

The structural elements of the environment that already exist in a community - e.g., housing, private/nonprofit sector engagement, attractive live-work downtowns, public health and safety, post secondary education partnerships, and more.

Necessary Infrastructure

The built/people infrastructure required to support digital economies - having adequate broadband, existing coworking and entrepreneurship spaces, and local leadership dedicated to leading this work.

Direct Drivers

The enabling factors for communities to successfully compete in the broader digital economy that build local capacity and provide access to digital jobs, capital, and workforce development and support. There are five identified direct drivers that our organization supports communities in working on as they build digital economy ecosystems.

Below is additional detail for each of the five direct drivers:

Scalable Tech Entrepreneur Support and Incubation

Fostering a dynamic and innovative environment and community for tech startup founders and aspiring entrepreneurs to connect and collaborate with local peers, established leaders from the business community, and access to labs, project shops, and other workspaces.

Access to Capital

Creating an environment where burgeoning entrepreneurs and startups have exposure and access to seed, angel, or more traditional funding mechanisms. This driver focuses on the funding necessary to ramp up operations, hire, and scale.

Digital Workforce Development and Support

Providing learning and development opportunities for local students and workers from across the career spectrum. This driver focuses on establishing and maintaining both traditional and non-traditional learning paths to provide the local digital economy with skilled and talented labor pools.

Access to Digital Jobs

Giving workers the necessary skills and technology tools to expand career opportunities from both a sector and geographic perspective. This driver allows access to higher-paying, tech-focused opportunities, be they to support local companies and ecosystems as well companies that may be located elsewhere.

Inclusive Tech Culture Building

Building a strong, inclusive tech culture and community through programming that encourages people from diverse backgrounds to participate in the digital economy. This driver focuses on ensuring that communities are strengthened through broad based involvement across racial, gender, socio-demographic, and other groups.

Regional Overview

Berkshire County, Massachusetts sits on the western border of the state and contains 2 cities and 30 towns, with an overall population around 124,944 (US Census Bureau, 2019). As you can see to the right, Berkshire County is long and narrow and is often described as containing sub-regions: Northern Berkshires, Central Berkshires, and Southern Berkshires. Pittsfield is the county seat, and is located roughly in the center of the county. North Adams is the second largest city in the county, and is located in Northern Berkshire County. Great Barrington in Southern Berkshire County, although smaller in population, is a cultural hub in the county with many arts and restaurant attractions, and many vacation homes. Resources vary across the county; Pittsfield is a major economic hub, while smaller communities across the county struggle to access similar services, resources, and employment opportunities. Additionally, with the strength of the tourism industry and second home ownership, there is a shortage of affordable housing for many people in the region. This, in turn, makes it challenging to recruit workers into the county.



Over the past 10 years Berkshire County has seen both population decline of 5% and the aging of the population - the median age of the county being 47 (Appendix D). The region's largest economic sectors are in lower growth, non-traded industries including healthcare, retail, and public sector (Appendix D). A challenge for this county is to attract more working age individuals, and to support the creation of digital job opportunities for these workers to fill. Although current employment in computer and math occupations is low, Berkshire County has higher shares of employment in tech-enabled industries than surrounding peer counties (Appendix D).

Although there is work to do to unify resources and development efforts across the county, Berkshire County boasts a number of community assets that position them strongly as a developing Digital Economic Ecosystem. The narrative shift is already occurring towards recognizing Berkshire County as a home for new economy opportunities and scalable startups thanks to efforts like the Berkshire Blueprint 2.0. Together, regional partners have created spaces and opportunities for entrepreneurs, makers, and creatives to gather, share ideas, receive support, explore business opportunities, and launch new ventures.

The following is a summary of the strengths, assets, gaps, and challenges of Berkshire County's digital economy in its current form.

Assessment Summary

Building a digital ecosystem in a rural region is not easy, and each community's approach should match their area's strengths. Based on quantitative and qualitative analysis, Berkshire County has many assets to catalyze and grow a dynamic digital economy ecosystem which are detailed throughout this report.

This effort was informed by three community asset mapping workshops with stakeholders, a digital economy diagnostic that quantitatively analyzed trends in the region, and a review of regional strategy documentation. The below summarizes the strengths and challenges of your digital economy's foundational elements and necessary infrastructure and then focuses on your region's strengths and assets, gaps and challenges, as well as potential solutions to develop your direct drivers. It then highlights four key areas to develop within the community as you build your digital economy ecosystem. Detailed assessment findings for each of the five drivers can be found in the appendix.

This report can also support the development of funding applications (such as the EDA's Build to Scale Venture Challenge), inform your region's broader economic development strategy, and be used as a basis to develop a place-based, bottom up digital economy strategy for Berkshire County.

Ecosystem Model Assessment

Foundational Elements - Summary of Strengths and Challenges

Strengths and Assets

- The Berkshires' vibrant creative economy is evidence that a variety of cultural and entertainment assets are present in the region.
- Strong local higher education institutions, including Williams College, Massachusetts College of Liberal Arts (MCLA), and Berkshire Community College directly in the region, with strong schools slightly further out of the county, such as UMass Amherst and Rensselaer Polytechnic Institute.
- Interagency collaboration and engagement with partnerships extending to both the private and nonprofit sectors; evidence of this collaboration is especially evident through the Berkshire Blueprint 2.0 work.

Challenges and Opportunities

- There is a critical shortage of affordable housing options in the region, limiting employers' ability to recruit and retain staff

Necessary Infrastructure - Summary of Strengths and Challenges

Strengths and Assets

- Emerging entrepreneurial spaces and programs including the Berkshire Innovation Center, EforAll, and Lever, Inc.

Challenges and Opportunities

- Although broadband availability in the region is well over 90%, usage rates lag most peer counties at just under 40% (Appendix D) The reasoning for this discrepancy between availability and utilization is unknown, but a variety of factors have been known to influence uptake, such as: price, customer service quality, and service reliability. However it should be noted that Berkshire County has included this issue in their CEDS and work is underway to continue to improve both services and accessibility of broadband across the region.
- The region has one existing coworking space (formerly three), however coworking and maker spaces in the region have not had a great deal of success due to low utilization, leading to some turnover in this area.

Direct Drivers - Summary of Strengths and Challenges

Strengths and Assets

- Berkshire County has many assets to leverage and partners to engage in strengthening your tech culture and ensuring its inclusivity (see Inclusive Tech Culture Building driver section below for details). The presence of local media outlets already publishing stories about local entrepreneurs and innovation spaces is a key strength to build upon as well.
- Scalable entrepreneurship support and incubation is one of the strongest parts of Berkshire County's digital economy ecosystem, with organizations such as Lever, EforAll, and the Berkshire Innovation Center providing programming to support and inspire local entrepreneurs.
- The entrepreneurship support programs noted above include structured access to capital for their participants, providing a pathway for entrepreneurs to scale their companies through direct connections to potential investors.

Challenges and Opportunities

- Berkshire County's main challenges are increasing the overall number of tech-focused and tech-enabled jobs available in the region, and ensuring that there is a skilled workforce base being developed locally to fill them. Pieces of a digital economy pipeline exist, but they need to be intentionally woven together to create a clear pathway all the way through.

- Local programming should include awareness raising for the existing entrepreneurial and tech career opportunities, to multiple pathways into digital skilling and workforce development resources, to connections with both local and remote employment, and/or into entrepreneur programs like the local incubator or accelerator programs.

Recommendations: Growing Your Ecosystem

As Berkshire County continues its planning and strategy-building process to grow a digital economy, four areas of focus are recommended to address the challenges and build upon your current strengths and assets.

1. **Engage the community in co-creating your tech culture.**

Start from the ground-up by focusing on inclusive tech culture building programs that increase tolerance for the risks associated with entrepreneurship, while re-branding tech as a regionally relevant answer to local problems. Foster interest in digital careers early, starting in K-12.

2. **Align tech ecosystem building work with regional industry clusters.**

Given the regional economic development momentum already behind the six priority industry clusters (Hospitality & Tourism, Healthcare, Food & Agriculture, Creative Economy, Advanced Manufacturing and Outdoor Recreation), consider building a tech horizontal band across these six pillars. This will allow you to leverage the existing leadership model, cluster hub committees, and data tracking. Another alternative would be to create a new hub specifically for a Digital Economy cluster, in line with the [Berkshire Blueprint 2.0's Focus Area #4](#).

3. **Implement robust digital skilling programs to meet the demands of employers.**

Programs should be designed for both traditional and non-traditional students that include real world work experiences. You can develop custom programs for the region or leverage regional or national programs and best practices. These programs will be most successful when they are informed by clear partnerships and mutual understanding between regional educators and employer needs, and program design is informed by the specific needs of your target populations.

4. **Connect digital skilling with entrepreneurship activities for a balanced ecosystem.**

Pair your digital skilling efforts with scalable tech entrepreneurship and accelerator programs at every opportunity. Consider creating a project shop, possibly through the BIC, that can build the resume of newly skilled digital workers from non-traditional backgrounds (e.g. displaced workers) while providing coding support to startups and regional employers alike. Leverage cross-sectoral partnerships to also ensure the relevance of any digital skilling programs to the tech skill demands of startups.

Conclusion and Next Steps

Potential Outcomes for Berkshire County

Tying together these assets and strategically filling in the identified gaps will:

- Produce and retain homegrown tech startups that create new, higher than median income paying jobs for the region.
- Shift industry concentrations towards higher growth, tech-focused, and tech-enabled sectors.
- Attract and retain more tech workers with a desire for rural life.
- Bring back family-age expats or recent college graduates who had to move away for school that want to return to their home community.
- Create an inclusive, viable pathway for local kids and adults towards high paying tech employment or entrepreneurship.

Pillars to Guide Next Steps on Your Digital Economy Ecosystem Building Journey

Based on CORI's experience working with communities across the country, we have identified seven pillars that are commonly present in communities with successfully growing Digital Economy Ecosystems. Communities can benchmark their ecosystem-building progress using these pillars as a guide. New communities with gaps in these areas should focus first on building these elements as a foundation upon which to develop their Digital Economy Ecosystem building strategies.



These seven pillars are:

1. **Leadership Organizations.** The relevant conveners and connectors in the community to define and clarify roles, drive the workstreams related to the journey, and devise the execution path for the Digital Economy Ecosystem strategy.

2. **Steering Committee.** Identified by and inclusive of the leadership organizations, a committee or advisory group of cross-sector partners and stakeholders to collaborate through the participation planning process.
3. **Evidence-based Decision Making.** The process for collecting and analyzing data to understand the current state of the community, identify priorities and areas of focus, guide decision-making, and inform program development and resource allocation.
4. **Resources.** The essential human and financial resources required to ensure that strategies and plans progress towards execution and on-the-ground impact.
5. **Digital Economy Ecosystem (DEE) Programs.** The tailored set of programs and initiatives designed to address community gaps and needs and achieve strategic goals.
6. **Infrastructure & Facilities.** As gaps and opportunities are identified, the planning and execution on the creation of the physical spaces and other aspects of the built environment that will support the Digital Economy Ecosystem and innovation hub.
7. **Shared community vision.** The articulation of the shared priorities and goals for the Digital Economy Ecosystem and coordinating and expressing the community's commitment towards building a tech economy and an inclusive tech culture.

To guide your overall ecosystem building process, see Appendix D for benchmarks to work towards along your journey from assessment, to strategy development, to launch.

Next Steps:

As noted in the table below, Berkshire County has achieved the majority of the benchmarks associated with CORI's assessment phase of the Digital Economy Ecosystem Building journey. At this stage, we can confidently recommend that Berkshire County has the core capacity and assets needed to develop and successfully implement a DEE strategy, and strong potential to apply for an EDA Build to Scale Venture Challenge grant. Your community has met or is in the process of meeting all of the required benchmarks outlined in the table below for the assessment to proceed along the journey to the strategy development stage.

Benchmarks Key:	Completed	In progress	Not started
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Pillars & Benchmarks	Assessment	Strategy Readiness
Leadership organization(s)	Core team convened to drive assessment work Equips leadership organization(s) with data and context for engaging stakeholders to develop a DEE building strategy	Core team convenes a steering committee of stakeholders and shares the findings from the DEE assessment
Steering committee	Engages stakeholders and brings them to the table to develop DEE building strategy Identifies who isn't at the table but needs to be	Cross-sector steering committee representative of community demographics forms and regularly meets to develop DEE vision (core-team noted is part of this larger steering committee)
Evidence-based decision making	Define a data driven current state and build common framework for understanding and tracking DEE building progress	Leadership and steering committee can <ul style="list-style-type: none"> • Make a clear, data driven case for DEE investment • Begin collecting data about key ecosystem issues (e.g. learning more about existing remote workers)
Resources money & people	Creates case for investing resources in developing a DEE	Commitment of resources to start executing a DEE building strategy Core team able to dedicate .25 FTE to DEE building strategy development for approximately 8 weeks
DEE Programs infrastructure & facilities	Provides a framework for organizing existing programs into a DEE Clarifies gaps and areas for action	Programming gaps are identified and ideas are being developed for addressing those gaps

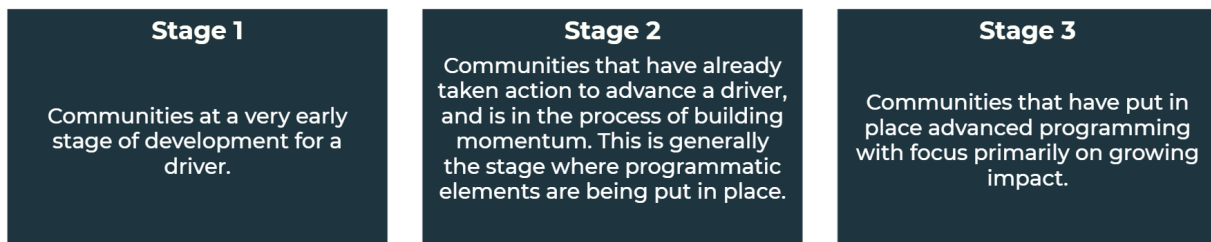
Appendix A: Direct Driver Assessments

Assessing the Direct Drivers

The framework used for this effort highlights five direct drivers, as detailed earlier in this report. These are at the core of building sustainable and thriving digital economy ecosystems to drive long term job growth, wealth, and prosperity. These five drivers are key to local wealth creation and increasing high paying, high quality, and “durable” tech jobs through the digital economy. This appendix includes a detailed assessment of each driver’s partners, assets, major gaps, and challenges. It then suggests some potential solutions to explore that could leverage your regional assets and fill the gaps.

The three stages of development for each direct driver

Each driver is examined across three categories to assess digital economy readiness and potential. Within each stage, programs or activities are identified that could be considered as your community becomes more ‘developed’ with their digital economy.



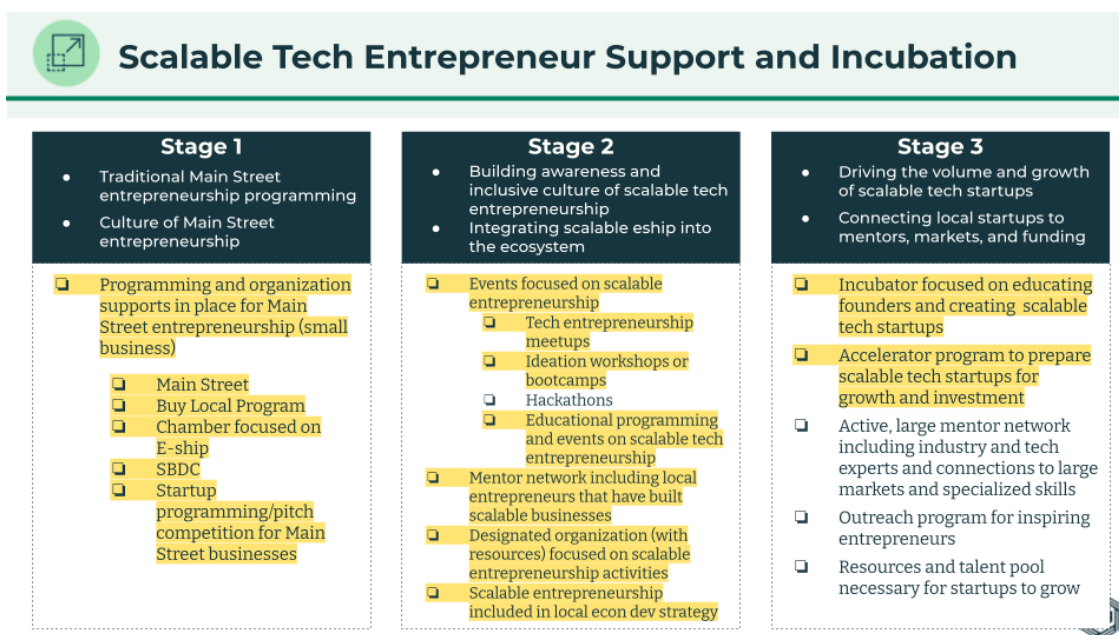
Based upon our assessment, we have scored your region’s stage of digital economic development per driver. Elements of each driver stage that are present in your community have been highlighted in yellow, and elements that are present but limited either in scope, accessibility, or visibility have been highlighted in light green.

Scalable Tech Entrepreneurship Support and Incubation

Stage 2.5

Key findings

Berkshire County is extremely well positioned to produce more scalable tech startups through a strong set of existing programs. The ecosystem has a mix of small business and scalable entrepreneur supports, with both EforAll and Lever providing accelerator and incubation opportunities, pitch competitions and mentorship. Given these enviable assets, Berkshire's main focus for this driver should be on continuing to attract residents into these programs, and ensuring that successes are broadcast widely to the community. Attention should also be paid to how the existing programs can be responsive to the needs of different demographic groups in the region to ensure inclusivity and equity, and to any gaps that might exist between existing programs that could be bridged through new offerings.



Assets & Partners to Engage

Overall Assets

- Lever and EforAll provide entrepreneurship support for various levels of startups. Lever is currently the hub for all things scalable tech entrepreneurship, and ecosystem partners will refer individuals interested in scalable business ventures there.
 - Lever's Challenge programs across industry verticals helps bring scalable entrepreneurship into many different business sectors in the region.

- EforAll offers a 12-week business accelerator, which includes a business development curriculum and pairing participants with mentors, as well as annual pitch competitions. EforAll Berkshire County's director, Deborah Gallant, has also developed additional programming in response to participant requests or needs as they participate in the standard programs, making EforAll's programming both responsive and dynamic.
- Williams College's Entrepreneurship @Williams provides student entrepreneur support, connections to alumni mentors, and events such as their annual Venture Pitch Competition.
- A range of different entrepreneurship events have taken place in the region, from speaker series to meetups, hosted by organizations like 1Berkshire and the BIC, among others.
- The Tech Impact Collaborative, is a partnership between 1Berkshire, the BIC, and OLLI, which hosts virtual events focused on leveraging technology for networking and innovation, as well as a virtual course series on emerging technologies.
- The Berkshire ecosystem's culture of warm referrals between organizations creates a "no wrong door" effect whereby individuals who express interest can be quickly drawn into the network of programs the region offers.
- The Team R3SET collaborative hosts events like the Idea Jam on Black Entrepreneurship in the Berkshires, providing opportunities for networking and surfacing the challenges by different populations of entrepreneurs in the region.

Gaps & challenges to address

- Currently participants in these entrepreneur programs are engaged through word-of-mouth networking, limiting community engagement to individuals who are either already interested in starting their own companies, or to individuals who know people who have gone through these programs. It is important that these opportunities are both visible and understood in the region, both for their ongoing success and their accessibility to the full diversity of the region.
- Existing pathways into these programs might not be easily accessible to all different population groups. There also seems to be some concern that the supports provided in the region currently are one-size-fits-all rather than taking into consideration the needs of different demographic groups, and tailoring resources accordingly.
 - This was a concern raised in the Black Economic Council's report out of the Team #R3SET Idea Jam, where it was noted that the Black entrepreneur community faces particular challenges when it comes to accessing capital and banking due to institutional and historic barriers to wealth accumulation and financial literacy.

- Assessment interviewees identified a concern that entrepreneurship events and meet-ups are often offered during times that are challenging for individuals on full-time work schedules.
- Startup success stories are limited and could be more visible in the community and reach into the talent pipeline at earlier ages/stages.

Potential solutions

- Focus on direct outreach efforts to engage people who typically face barriers to participation or are often underrepresented in tech so that they can imagine and consider the potential of pursuing a tech career or founding a startup.
- Ensure that existing programs have the representation and expertise needed to support historically excluded demographics, such as the Black entrepreneur community and immigrant entrepreneur community (especially when it comes to scalable entrepreneurship).
- Connect K-8 education programming to entrepreneurship events and successes. There are existing high school programs and events already in the community, so the next step is to extend bridges into younger age groups to build excitement and awareness early.
- Think about how to connect the emerging entrepreneurs coming out of local accelerators to the local tech talent pool you foster through your digital economy efforts in order to help retain startup entrepreneurs in the community as they are launching their business.

Stage 3 Case Study: Shenandoah Valley, VA

The Shenandoah Community Capital Fund (SCCF), located in Virginia's Shenandoah Valley, designed and established Startup Shenandoah Valley (S2V), a hybrid program that combines the strengths of accelerator and incubator models. It is the region's first online incubator-accelerator program for high-growth businesses. Companies selected take part in an eight-week implementation sprint with one-on-one virtual coaching, tailored mentoring, and support on all aspects of running a successful high-growth business – such as business model design, raising capital, recruiting and retaining top talent, marketing, and legal, among others. In addition, participant companies become part of an alumni network of the Valley's best companies and a growing entrepreneurial ecosystem. S2V is offered to participants at no charge and without equity requirements. (Updated 2021)



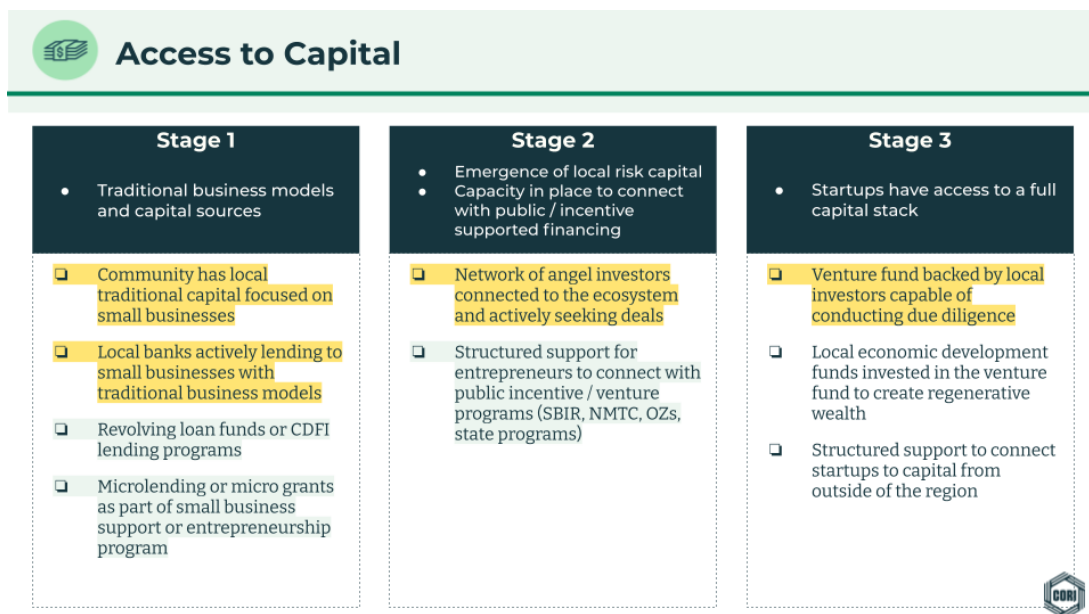
Access to Capital for Entrepreneurs

Stage 2

Key findings

Many of Berkshire County's entrepreneurship programs include structured access to capital within them. However, it is important to note that there are opportunities to make these types of funding more accessible and visible to the broader community in order to encourage entrepreneurship. There are two limiting factors when it comes to this driver in your community. The first is the lack of deal flow which impedes further development of stage 3 assets, such as a local venture fund. Secondly, there is a very limited range of very early stage financing solutions like microgrants, and to a lesser extent, small pitch prizes.

Note: The points highlighted in light green in the table below were programs that we found evidence of in the region but they were not included in regional strategic documents or easily found in online searches. In addition, interviewees indicated that there were gaps in accessing these particular resources.



Assets & Partners to Engage

- Capacity is in place to connect entrepreneurs with regional risk capital. There is already a network of investors engaged in the ecosystem with the Lever Angel Network (LAN), that are actively seeking deals.
- EforAll and Lever provide support and education opportunities to their participants about funding opportunities available to them, and about the investment process.

- There is a strong share of high income earners in Berkshire County who could be engaged as potential local investors if cultivated (see Appendix D)
- Milltown Capital engages in impact investing in the region, and they are already closely engaged with the ecosystem through their partnerships with both 1Berkshire, the BIC and Lever.

Gaps & challenges to address

- Although there is some evidence of microlending and microgrants, there is little integration of entrepreneurship programs with providing a microgrant or loan to support a startup's launch.
 - EforAll has done some work to help inform entrepreneurs about these types of funding resources, but with limited uptake from their participants.
- Lack of regional deal flow. While there are promising investor groups with a focus on tech, through Lever's network, the lack of deal flow for investment in the region remains a barrier to maintaining momentum with tech startup success stories to showcase across the County.

Potential solutions

- An education series available to the broader public about the funding opportunities available to entrepreneurs in the region. These educational opportunities are available for participants in EforAll and Lever, but there is potential for education series open to individuals who are not yet engaged in those programs.
- Engage more individuals in the entrepreneur pipeline in the region to increase deal flow.
- Create a program that provides entrepreneurs with access to micro-loans and/or micro-grants in sums larger than EforAll's Pitch Contests (cash prize of \$1k) but less than the \$25k offered by LAN, could provide essential risk capital to traditionally underserved entrepreneurs who may not have access to networks of friends and family that would typically support the bootstrapping phase.
 - One example of this would be to establish a micro-loan program with angels willing to invest \$10-20k per deal that is paid back in monthly installments and with a lower rate of return than a traditional equity investment. This could increase access to small business loans for promising early stage startups in cases where banks are unwilling to take on the risk.

Stage 3 Case Study: Durango, CO

The Southwest Colorado Accelerator Program for Entrepreneurs (SCAPE), based in Durango, Colorado, works with startups and early-stage companies to help launch and grow their business. The program has launched 43 companies which have raised more than \$25 million and created over 180 local jobs. The accelerator program provides education, mentoring, industry introductions and access to capital, including a network of 50+ accredited angel investors. (Updated 2021)



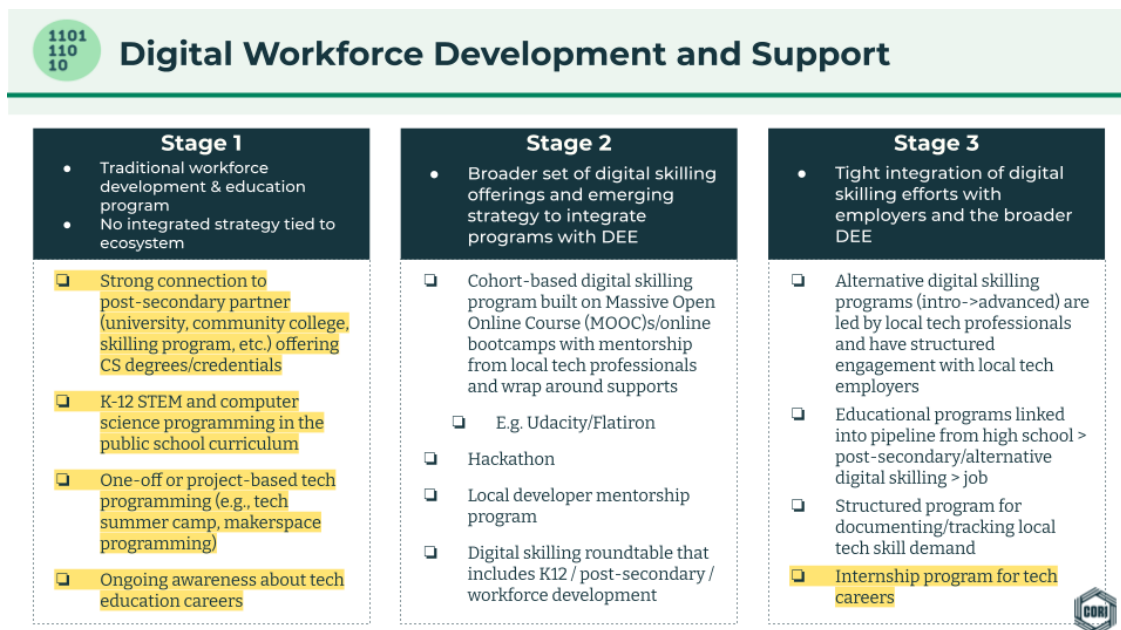
Digital Workforce Development

Stage 1

Key findings

Berkshire County has the educational foundations needed in the region to build a strong digital workforce development pipeline for anchor employers and emerging tech startups to meet their demand. STEM programs such as the Flying Cloud Institute's afterschool and summer camp opportunities, Berkshire Museum's summer coding classes, the BIC's BeTA Program, and General Dynamics' STEM challenge can all be leveraged to include computer science (CS) exposure and education for youth.

To ensure that Berkshire County youth and adults have regional access to the digital skilling they need to participate in the workforce, it is critical to: build early awareness and access to CS programs for youth and young adults; develop alignment between regional employers, tech workers, and digital skilling programs to create a pipeline from K-12 to post-secondary/alternative digital skilling to a regional tech job; and establish two tracks of digital skilling programs in the region, including one track for traditional higher education, and another for shorter duration bootcamp or continued education courses. This range of skilling opportunities will allow you to capture a broad spectrum of students with different needs.



Assets & Partners to Engage

- Berkshire Museum offers a youth coding summer course, and Flying Cloud Institute offers afterschool and summer STEAM programming. This is a good way to build early bridges between the strong local creative economy and the burgeoning tech economy.
- The Berkshire E-Talent Accelerator (BeTA) program at the BIC offers opportunities for young people to connect with tech careers and industry professionals. It also helps with making tech employers more visible in the area.
- Lever's Berkshire Entry and Berkshire Interns programs bring talented college students and graduates to the region, and help attract talent into the pipeline. It provides the very useful function of making employers visible, and working with employers to identify training opportunities and entry level positions.
- Williams College offers computer science programming as well as their Entrepreneurship@Williams initiative, which allows students and alumni to access entrepreneurship resources.
- Per the Governor's report *Preparing For The Future Of Work In The Commonwealth Of Massachusetts*, digital skilling is on the state and region's strategic agendas. Focus on supporting entrepreneurship, innovation, and emerging industry clusters is also outlined in the region's CEDS as well as in the Berkshire Blueprint 2.0
 - As part of this state focus, Berkshire Community College is working with Achieve the Dream on building out Future of Work programming and readiness to help align their programming with emerging industry needs.
- Berkshire County's professional organizations could host roundtable discussions between regional educators and employers, such as 1Berkshire or the BIC, who already have experience convening many of these ecosystem partners.

"We've had a couple of people who went through our high school competition who now work for us...That's such a win...I love seeing it, it's been really cool to watch that kind of come full circle. I'd love to see more of that. I'd love to see our schools, you know, dive in even deeper into the tech fields," - Krystle Blake, General Dynamics

Gaps & challenges to address

- There is no integrated strategy within the region to align digital skills development along the education pipeline with industry needs or with digital startups as they emerge. There is a need to build regional awareness for K-12 students and adults changing careers about the potential for high paying, locally available tech jobs in the region.

- Adult alternative learning opportunities are not currently offered in the region that would target those transitioning to a new career pathway, or high school graduates who are not pursuing a traditional higher ed degree. That said, current work by MCLA to partner with Can Code Communities could begin to address this gap.
- Although there are clear state and region level priorities set around skilling future workers for innovative industries, the MassHire Regional Labor Market Blueprint Update primarily carves out Manufacturing, Healthcare, and Hospitality as priority occupation groups for the region, which will inform the programming developed by Berkshire Community College.
- While Berkshire does track employer demand through job postings, there is no easily accessible, formal or structured program focused on documenting and tracking local tech skill demand to then inform workforce development.

Potential solutions

- Build early awareness and access to computer science programs for youth and young adults. Start a youth camp or league focused on coding or information security that will encourage young people to start learning about these subjects and the career opportunities they provide.
 - Consider bringing a program like [Youth Coding League](#) to the area, and hosting championship events at the BIC.
 - Find ways to partner with groups already providing youth STEAM activities to broaden their reach and increase access in the region, such as the classes offered by the Berkshire Museum or the Flying Cloud Institute.
- Consider starting a Special Interest Group for OLLI students on emerging technologies, and link information about the Tech Impact Collaborative events to the OLLI homepages. The Special Interest Group could build off of subjects raised in Tech Impact Collaborative courses or speaker series.
- Build a digital skilling roundtable that includes K-12 (public and private), Berkshire Community College, anchor employers and entrepreneur spaces to ensure tight integration between emerging digital skills demand and workforce development.
 - Uncover current tech job demand to inform BCC's curriculum decisions and implementation of appropriate digital skilling efforts (e.g. coding camps).
- Look into different models of alternative digital skilling programs such as coding bootcamps across the region to find what works best for non-traditional students (e.g. coding bootcamps like [Code Labs One](#), or hosting cohorts of students participating in online nanodegrees and bootcamps like [Flatiron](#) that have no or little upfront cost to the student).
 - Build internship opportunities into all digital skilling programs as part of their curriculum with local employers.

- Develop a local developer mentorship program, linking students with experienced developers and other tech professionals in the region.

Stage 3 Case Study: Cape Girardeau, MO

Code Labs One is a local tech education and on-the-job training program provided by experienced software developers to adults in Cape Girardeau, Missouri. Their Full-Stack Web Developer program provides the skills, practical experience, and job readiness to prepare learners for high-salary, high-quality, entry-level software developer jobs. No prior experience is necessary, and scholarships are provided to those admitted to the program. Code Labs One continues to expand, offering learning opportunities to more and more communities. In recent months, the organization has also sought to improve its partnerships with higher education (e.g. Southeast Missouri State University, Udacity) and expand its youth programming to build awareness and skills (e.g. Youth Coding League). (Updated 2021)



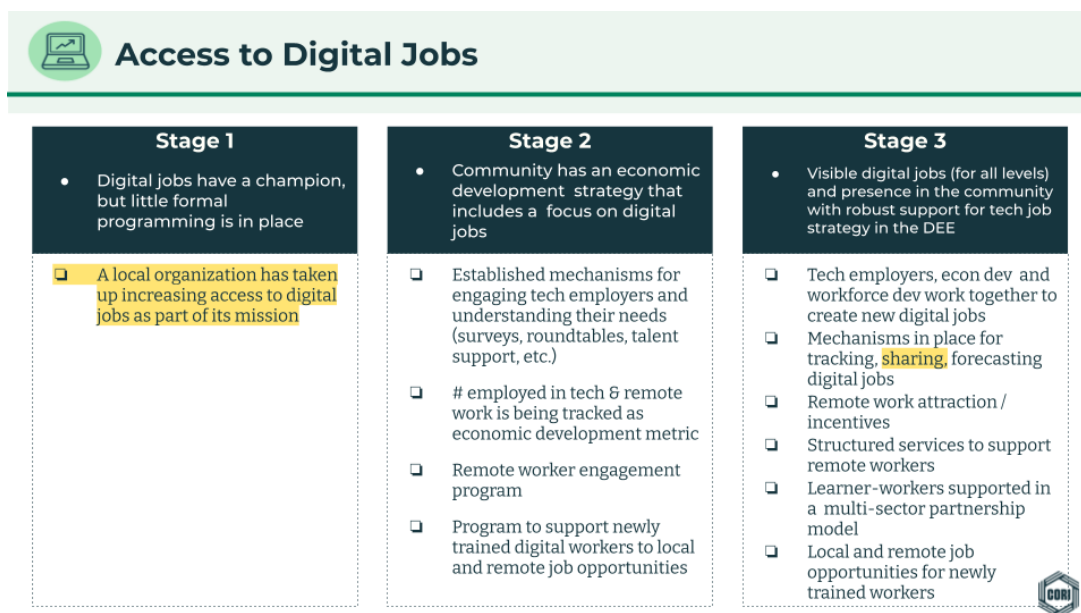
Access to Digital Jobs

Stage 1

Key findings

Berkshire County boasts an impressive array of tech-enabled and tech employers with a good number of digital jobs in the region - our LinkedIn Talent Insights report showed a self-reported 1,103 professionals in tech or tech-enabled jobs in the county (Appendix E). While this is an excellent start, in order to be assessed at a higher stage, the region will need to focus more intentionally on specific strategies to increase visibility and access to those digital jobs, including: tracking of employer needs, remote worker engagement and attraction incentives, and forecasting for future tech jobs. There is already valuable momentum in the region when it comes to connecting talent with regional employers, and the next step is to create a clearer focus on the tech sector in order to increase the visibility of these opportunities and draw potential employers to the region.

However, highly skilled positions are often filled by non-local talent, and startups in need of highly skilled workers may be pushed to leave the region to find them. Creating tight alignment between the workforce development initiatives and the needs of local employers will build a more highly skilled local talent base that grows with the industry locally over time.



Assets & Partners to Engage

- 1Berkshire has a large membership of engaged professionals and employers. The organization would be a great starting place to begin collecting metrics and data about local tech companies and tech workers. Having this data available to help bolster future grant applications is incredibly useful and could be used to help identify trends unique to Berkshire County, or trends occurring across the Country.
- Berkshire County also has several local job boards like 1Berkshire's Jobs Thing and MassHire who are able to promote information about new jobs hitting the market. The Jobs Thing even has listings broken down by industry or experience level.
- There are a number of strong local tech employers ranging in size in the region, including: Electro Magnetic Applications (EMA), Dive Technologies, United Aircraft Technologies (UAT), SolaBlock, Team R3SET, edgi learning, Lenco, General Dynamics, Guardian, VidMob, Berkshire Health, Thimble, and Surf6 Motion.
- There are already a number of job opportunities and tech professionals in the region.
 - LinkedIn data indicates there are 1,103 digital tech employees. This number only represents the major employers of digital tech talent, and many other businesses with smaller digital tech teams are also present in the region (Appendix E).
 - Indeed data shows that there are 223 tech job postings within 50 miles of your Berkshire County at the time of this report.

Gaps & challenges to address

- Lack of community member awareness about the potential opportunities in tech-based & tech-enabled jobs. Although there are a number of tech and tech-enabled employers in the region, tech does not seem to be part of the regional identity, nor are many of these employers well known in the community.
- The issue of lateral retention of the tech workforce came up in a number of discussions. Although there are a number of tech-related employers in the region, there is a sense that tech workers don't have many opportunities to find work at similar skill levels within the region, and so if they are unhappy with their current position they are at high risk of leaving the region altogether. Understanding the prevalence and scope of this trend will be important to increasing the "stickiness" of the Berkshire ecosystem, and how to keep a skilled workforce in the region.
- 1Berkshire is not currently tracking the number of tech jobs as an economic development metric, nor is tech workforce (supply & demand) being tracked as an economic development metric by any ecosystem partners.
- There are currently no established mechanisms for engaging tech employers and understanding their needs, though 1Berkshire's partner network is a good starting point for understanding demand and who to reach out to given their work with regional employers and on The Jobs Thing job board.

Potential solutions

- Engage in strategic conversations with employers about current and future demand for digital skills
 - Survey employers across the region to identify current numbers and types of tech jobs.
 - Host a series of roundtable discussions between K-12, post-secondary schools, other skilling programs, tech worker community and other job seeker support organizations.
 - Increase awareness of the importance of digital jobs to the region's economic well-being amongst the public and private sector.
- Build in the capacity needed to track the number of people employed in tech, as well as remote workers, in the region and include it as an economic development metric for the region.
 - Building a strong remote work culture and community could help with retention of people who want to move up but not move out of the community.
- Link any digital workforce development efforts with entrepreneurship programming to ensure that as these entrepreneurs begin standing up their businesses they have access to local talent pools to help develop and staff their projects.

Stage 3 Case Study: Cape Girardeau, MO

Cape Girardeau is building a thriving and diverse entrepreneurial ecosystem, and at its heart is Codefi. Codefi is deeply engaged with regional and local employers in informing their training program, Code One Labs, and connecting skilled residents with jobs in the Rural Source Employment Network. In addition, Codefi continues to explore new ways of engaging local businesses to bring outsourced tech work back into the local market. Since its inception, Codefi has supported 50 startups that have created 250 jobs, and has launched multiple training initiatives beyond Cape Girardeau fostering local job creation in in-demand digital jobs. (Updated 2021)



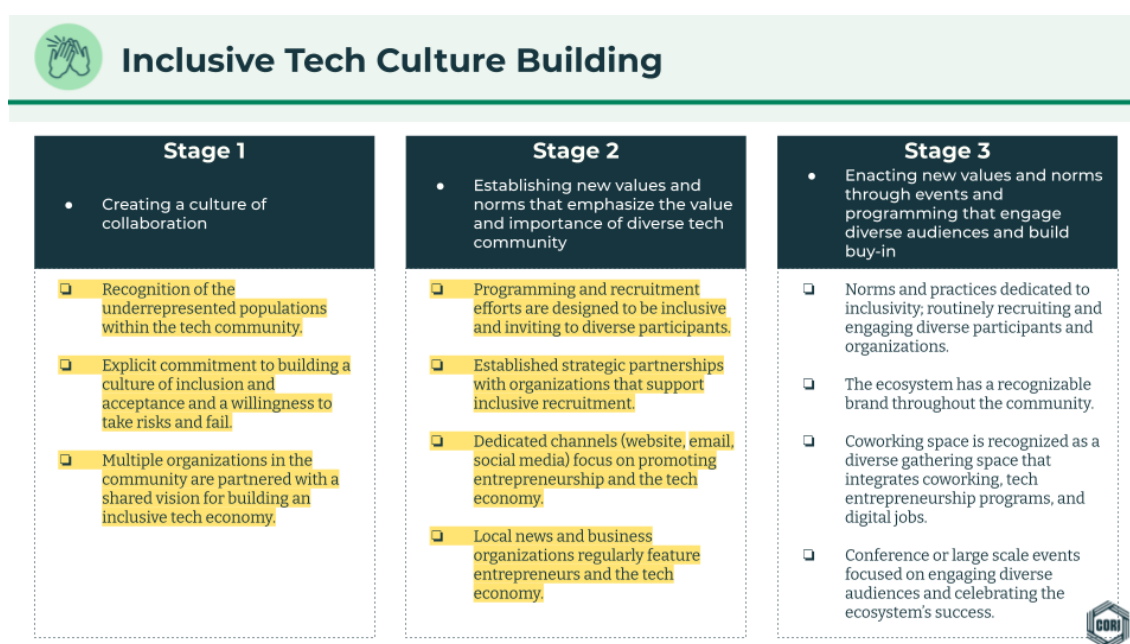
Inclusive Tech Culture Building

Stage 2

Key findings

To build a thriving digital economy ecosystem in a rural community you need the talents, perspectives, and ideas of the full diversity of the region to create the best chances for success. Berkshire County benefits from a tight network of ecosystem partners who really strive to create accessible pathways into regional resources. There is recognition of the many groups of Berkshire residents who might benefit from these initiatives and programs, or who stand to lose out if they are not included.

Particular groups have traditionally had higher barriers to entry into the tech economy in the region, and these are groups that should be engaged as participants and active drivers of the digital economy from the start of this work. These groups include: women (making up only 23% of the regional tech workforce, Appendix E), dislocated workers from industries hard hit by COVID (hospitality and tourism), the growing Berkshire immigrant population, Black Berkshire residents, and more. Any inclusive engagement of these groups will require a concerted effort on the part of all regional stakeholders.



Assets & Partners to Engage

- Local media channels exist, and are already highlighting digital economy players and wins. 1Berkshire regularly holds press releases to inform local news outlets of success stories and local innovation news. Local Media Outlets include: iBerkshires, The Berkshire Eagle, Berkshire Edge, and The Berkshire Record.

- Many strong partnerships already exist between organizations with different bases, such as:
 - 1Berkshire's collaboration with the Berkshire Immigrant Center to gather data on immigrant-owned businesses in the region to further supports.
 - The Blackshires and Black Economic Council's work with #R3SET, who have partnered with EforAll to provide virtual entrepreneurship learning opportunities.
 - Flying Cloud Institute's Women in STEM programming.

Gaps & challenges to address

- Our LinkedIn talent report shows that the tech workforce in Berkshire County has a 48% gender gap (26% female v. 74% male).
- The sentiment "It exists...but you have to know where to find it" came up in many interviews, indicating that while there are many resources and potential touch points, there still is a lack of visibility of and inroads into some of these initiatives unless you're already interested in the subject or are a go-getter by nature or are part of a group that historically engages in these activities.
- While there is an impressive strategic planning infrastructure for Berkshire County, and one that includes specific callouts to support innovation and entrepreneurship as economic drivers, the tech economy doesn't have its own lane or visibility within the regions' priority industry clusters.

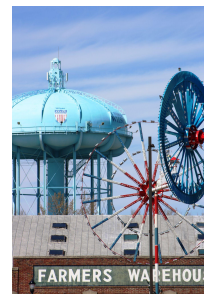
Potential solutions

- Articulate a broader community vision for why it's important to build an inclusive tech culture, and engage regional partners in this vision-building process to ensure that underrepresented groups are participants and drivers of your digital economy strategy and programs from the ground up.
- Leverage your media outlets to start publicly celebrating success stories at all stages of the entrepreneurial journey, as well as digital skilling and tech worker success stories. Showcase remote workers who have moved to the area or tech workers who have returned home from college to build a life there. Make sure that you are regularly including diverse voices and success stories to show wide representation from the region.
- Find and promote multiple front doors to your digital economy for your community members to walk through across the region. This could include:

- Finding ways to link together education or afterschool partners through unified programming, or a cross-county field trip series that features innovation spaces across the region.
- Creating a unique digital space that can be accessed by any community member from across the county that will manage and support community members within the digital space. This could be a new landing page on 1Berkshire's website, such as those that currently exist for each priority industry cluster.
- Leveraging learnings and best practices from community partners who are already serving the needs of key demographic groups to increase access to the digital economy across the region at various existing businesses. This will also help to engage different target audiences.
 - Consider arts organizations, the Berkshire Immigrant Center, the Blackshires group, Berkshire Black Economic Council, Team #R3SET, etc.
- Building tech or scalable entrepreneurship elements into non-tech events, and promoting these events without the mention of tech in outreach materials.
- Engage in proactive outreach tailored to currently underrepresented or historically excluded segments of the population. Build ongoing evaluation and continuous improvement into your events and programs; that includes measuring attendance and retention of underrepresented groups in your offerings.
- Find tracks either within or across existing regional industry clusters to build engagement and alignment with digital ecosystem building efforts.

Stage 3 Case Study: Traverse City, MI

Traverse City is host to a startup incubator and coworking space called 20Fathoms which houses a diverse group of business owners, connects these owners with entrepreneurship mentors, and runs various entrepreneurship programs. One of those programs, Financial and Business Basics (FBB), is a New Mexico Community Capital program that provides foundational business courses to Native American entrepreneurs using innovative, and culturally-connected, methods. Arrowhead Incubator, a Traverse City nonprofit that works to advance Native American small businesses, partnered with New Mexico Community Capital and 20 Fathoms to bring the program to Michigan. The FBB program is unique in the wrap-around support provided that helps remove barriers for the Native American population of the region to participate and have success in the program. The Michigan program was facilitated by three Native American women working to increase financial, business, and technical skills allowing participants to create potential businesses for themselves as well as provide life-long skills. (Updated 2021)



Appendix B - Local organizations by driver

Organizations that are focused on each particular driver through their work:

	Inclusive Tech Culture Building	Access to Digital Job	Digital Workforce Dev.	E-ship Support	Access to Capital
1Berkshire	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Berkshire Community College	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Berkshire Immigrant Center	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Berkshire Innovation Center (BIC)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Berkshire Museum	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Berkshire Black Economic Council	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Blackshires	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
EforAll	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Flying Cloud Institute	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
General Dynamics	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lever, Inc. & Berkshire Entry/Interns	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Local tech employers	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Massachusetts College of Liberal Arts	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
MassHire Berkshire Career Center	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
McCann Technical School	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Osher Long Life Institute	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SBDC	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Taconic High School	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Team R3S3T	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Williams College	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Appendix C - Documents reviewed

["Berkshire County Comprehensive Economic Development Strategy \(CEDS\)." Berkshire Regional Planning Commission.](#) December 2017.

["2020 Annual Report: Berkshire County CEDS 2017-2022."](#) Berkshire Regional Planning Commission. December 17, 2020.

["The Berkshire Blueprint 2.0: A Shared Economic Vision and Plan for Action."](#) Prepared for Berkshire by Michael Kane Consulting, Stephen Michon Future Works, Judeth Lorei, Marty Jones. 2019.

["Preparing for the Future of Work in the Commonwealth of Massachusetts,"](#) Prepared by McKinsey & Company. July 13, 2021.

["Berkshire Regional Workforce Skills Planning Initiative Regional Blueprint."](#) Masshire Berkshire Workforce Board. Shannon Zayak. 2020.

["The 2020 Berkshire County Success Report — Entrepreneurship: A Report of Black Economic Empowerment in the Berkshires."](#) The Berkshire Black Economic Council, R3set Enterprise. 2020.