

Supporting Rural Entrepreneurship

Prepared for the Maine Community Foundation
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As part of a strategic plan adopted in 2017, the Maine Community Foundation (MaineCF) wants to ensure that all entrepreneurs and innovators in Maine have the opportunity to bring their big ideas to life. To inform this work, MaineCF commissioned a review of national research on the impact of programs to support entrepreneurship, especially in rural areas, and interviews with individuals leading these programs in Maine.

Research Findings

Academic research on the impact of accelerators, incubators, makerspaces, and coworking spaces, especially in rural areas, is somewhat scarce. A review of reports and evaluations, which collectively synthesize decades of outcomes from programs nationwide, suggest the following best practices:

- **Good management** – Successful programs have a clear mission, are run by experienced staff, and evaluate their outcomes.
- **Rich networks** – Successful programs operate within regional and industry networks that help them connect participants with the expertise and resources they need.
- **Intensive, customized, in-person programming** – Successful programs offer sustained, intensive, in-person learning from peers, staff, and engaged mentors.

A fourth strategy, beginning to emerge, is the integration of these programs into broader, longer-term efforts to create an **entrepreneurial culture** throughout a community. This strategy shifts the focus from growing businesses to growing entrepreneurs and creating an environment in which they will choose to live. Incubators, accelerators, makerspaces, and coworking spaces are amenities within that environment.

Stakeholders Findings

These best practices are confirmed by interviews with fourteen individuals leading entrepreneurship and innovation programs in Maine (accelerators, incubators, makerspaces, and coworking spaces). Overall, they are optimistic about the potential to foster entrepreneurship through programs that are:

- **grounded** in an honest assessment of each community's assets
- **customized** to build on each community's strengths
- **appropriately scaled** and **strategically located**
- led by **knowledgeable, passionate staff** who are well connected within Maine's entrepreneurial ecosystem
- supported by a well-resourced **parent organization**.

Conclusion

These research findings and stakeholder conversations have allowed MaineCF staff to compile a detailed list of the attributes that are most likely to generate successful, sustainable accelerators, incubators, makerspaces, and coworking spaces. They have also illuminated common pitfalls to avoid. The resulting grant guidelines will combine learnings from decades of successes and failures nationwide with the latest insights of people working on the frontline of entrepreneurship and innovation in Maine.

Attributes of Successful Programs

Background

Organizations designing programs to support rural entrepreneurship have several decades of successes and failures from which to learn. The attributes of successful programs are fairly well understood, even if applying them in practice remains a challenge. This report lists these attributes, based on a review of recent scholarly research and interviews with over a dozen individuals leading programs in Maine. It does not include universal best practices for program management such as having a clear mission, hiring experienced staff, and evaluating outcomes. Nor does it include common infrastructure requirements such as high-speed internet. Where applicable, this report also lists common challenges faced by these programs. The “Evidence” sections suggest potential indicators of each attribute and challenge.

Entrepreneurial Communities

The most successful, sustainable entrepreneurship programs operate in entrepreneurial communities –places where local leaders understand and value the program’s mission, where likeminded organizations are eager to collaborate and share resources, and where entrepreneurs are plentiful. There are five attributes of an entrepreneurial community:¹

Attributes of Success

- ✓ **Entrepreneurial talent** – Innovative, energized people are the core element of entrepreneurial communities. This includes individuals building and growing businesses, as well as entrepreneurial civic and non-profit leaders.
 - *Evidence: Innovative business leaders engaged in the community; innovation in the delivery of public or non-profit services; good attendance at local entrepreneurship-oriented events; survey responses; presence of an engaged college, university, or technical school*
- ✓ **Entrepreneurial culture** – In entrepreneurial communities, entrepreneurs can find peers and others who embrace their ideas, tolerate their failures, and celebrate their successes.
 - *Evidence: Good attendance at local entrepreneurship-oriented events; survey responses; track record of business startups; community history of tolerance and openness*
- ✓ **Entrepreneurial infrastructure** – The resources entrepreneurs need vary but generally include connectivity, reasonably priced work space, access to skilled workers and business support services, and reasonable taxation and regulations.
 - *Evidence: Reliable high-speed internet; available real estate; proximity to complementary services such as SCORE, Small Business Development Centers,*

¹ For more detail, see “Energizing entrepreneurial communities: A pathway to prosperity” by the Center for Rural Entrepreneurship: <https://www.energizingentrepreneurs.org/library/prosperitypathway.html>

and research institutions; public institutions that actively support sustainable business development

- ✓ **Human development focus** – For long-term success, entrepreneurship programs focus on developing the skills of people, not businesses. They recognize that startup failures are a normal part of the entrepreneurial process.
 - *Evidence: Curriculum embedded within a philosophy of entrepreneurial skill development; mentoring; network building*
- ✓ **Youth engagement** – Developing a local pipeline of entrepreneurs, and residents who will eventually support them, plants the seeds of long-term success.
 - *Evidence: After-school and summer programs; makerspaces; internships; youth pitch competitions*

Challenges

- ✗ **Lone champions** – Individuals or organizations that are the lone champions for entrepreneurship in their communities face an uphill battle and are susceptible to burnout.
 - *Evidence: Lack of local collaborators and funders*
- ✗ **Small populations** – Sparsely populated areas without a critical mass of participants or mentors have difficulty sustaining programs.
 - *Evidence: Lack of program participants, mentors, and instructors; survey results; low attendance at entrepreneurship-oriented events*

Network Building

Successful programs operate within regional and industry networks that connect aspiring entrepreneurs with the expertise and resources they need. Network building plays a crucial role in cohering the disparate assets of rural entrepreneurial communities, which lack the density of talent and ideas that helps entrepreneurship thrive in urban areas. Active network building helps to foster connections between entrepreneurs, mentors, established businesses, and services providers.

Attributes of Success

- ✓ **Hub-and-spoke model** – An efficient statewide network connects trusted, knowledgeable champions in each region to state experts using a hub-and-spoke model.
 - *Evidence: For local champions - active connections with statewide groups, participation in statewide events, knowledge of state-level resources; For state experts – active connections with regional groups, expertise and/or resources clearly defined and marketed to regional groups, consistent assistance of regional groups*
- ✓ **Passionate, well-connected local champions** – Trusted, knowledgeable individuals and local organizations act as conduits of information and contacts, helping local entrepreneurs access regional and state resources.

- *Evidence: Documentation of qualifications; demonstrated passion; letters of reference from local entrepreneurs and community leaders*
- ✓ **Responsive, knowledgeable state experts** – Experts operating at the state level provide guidance and connections to local champions and entrepreneurs.
 - *Evidence: Documentation of qualifications; demonstrated success coordinating a statewide network; letters of reference from local champions*

Challenges

- ✗ **Funding** – Building and sustaining local and state networks takes time and energy, but this critical activity does not generate direct revenue.
 - *Evidence: Lack of budget for network building*
- ✗ **Burnout** – The unpaid work of networking, cheerleading, and fundraising by local and state champions can lead to burnout.
 - *Evidence: Lack of funding for staff time dedicated to network building; reduced participation in statewide networks and events*

Accelerators

Accelerators offer training, mentoring, networking, and sometimes capital to entrepreneurs selected through a competitive application process. Maine’s largest accelerators are Scratchpad, founded by Maine Technology Institute and the University of Maine, and Top Gun, run by the Maine Center for Entrepreneurs. The Gulf of Maine Research Institute and Maine Medical Center have internal accelerators aimed at turning research into for-profit ventures.

Attributes of Success

- ✓ **Highly qualified, engaged mentors and advisors** – Experienced, engaged mentors and advisors can help entrepreneurs through critical phases of business development.
 - *Evidence: Survey of mentor and advisor qualifications; letters of commitment; documentation of mentor and advisor expectations, including time availability*
- ✓ **Ample in-person meetings** – In-person gatherings deepen connections with peers, mentors, and program staff. These can be supplemented by virtual programming as necessary.
 - *Evidence: Schedule of meetings; available meeting space; high-quality reliable telecommunications equipment if necessary*
- ✓ **Strong alumni and investor networks** – Engaged alumni provide valuable feedback to program managers and connections for new participants. Strong investor networks help participants access capital and expertise.
 - *Evidence: Consistent alumni communications and gatherings; consistent investor networking*

- ✓ **Sector focus** – Where possible, sector-focused accelerators can provide more specific and useful resources, expertise, and networks to participants targeting a common market or utilizing a common resource.
 - *Evidence: A critical mass of potential participants operating within the sector; mentors and advisors with experience and connections within the sector; access to a resource that creates a unique comparative advantage within the sector (e.g., a natural resource)*

Challenges

- ✗ **Funding** – Without services or facilities to generate revenue, accelerators that lack a supportive parent organization must constantly fundraise to support their labor-intensive programming.
 - *Evidence: Lack of self-generated revenue other than donations and sponsorships; lack of a supportive and financially stable parent organization*
- ✗ **Small populations** – Rural areas generally lack the critical mass of startups needed for an ongoing accelerator. Programming must be more general to accommodate participants at diverse stages of development.
 - *Evidence: Lack of program participants, mentors, and advisors; market analysis and/or survey results*
- ✗ **Follow-up** – Providing ongoing support to accelerator graduates is desirable but difficult within limited resources.
 - *Evidence: Lack of staff and formalized plan to connect with and assist program graduates*

Incubators

Traditional incubators offer expertise and physical work space to tenants chosen through a competitive application process. Maine incubators include the UpStart Center for Entrepreneurship, the Maine Aquaculture Innovation Center, and the Union River Center for Innovation.

Attributes of Success

- ✓ **Experienced, passionate, connected managers** – Dedicated individuals and organizations that are well connected within Maine’s entrepreneurial ecosystem can connect tenants to vital resources and expertise.
 - *Evidence: Qualified staff; demonstrated passion for local innovation and entrepreneurship*
- ✓ **Adequate rental income** – Relying on rental income as part of an incubator’s business model requires having enough rentable space to accommodate market fluctuations and tenant turnover.
 - *Evidence: Rental market surveys; occupancy projections; scenarios that test partial occupancy*

- ✓ **Sector focus** – Sector-focused incubators can provide more specific and useful resources, expertise, and networks to participants targeting a common market or utilizing a common resource.
 - *Evidence: Documented interest among prospective tenants within the sector; qualified mentors and advisors with sector-specific knowledge and connections; evidence of a unique resource, such as proximity to the targeted sector (e.g., wood products, aquaculture)*
- ✓ **Proximity to sector** – Proximity encourages the ongoing exchanges and collaborations that build successful partnerships.
 - *Evidence: List of nearby businesses or business service providers that will collaborate with incubator tenants; letters of interest and support from them; proximity to a research college or university*

Challenges

- ✗ **Distance from target sector** – Maine’s experience with incubators tells a cautionary tale about locating facilities far from the sectors they intend to serve (e.g., the former biotechnology incubator in Fairfield).
 - *Evidence: Lack of nearby collaborator businesses and institutions*

Makerspaces

Makerspaces provide “makers” access to a range of high- and low-tech tools, training, and entry into a community of likeminded people. The best spaces connect lessons in design and technology with broader concepts of entrepreneurship and problem solving. Maine has numerous makerspaces, of varying sizes, in schools and libraries.

Attributes of Success

- ✓ **Experienced, passionate managers** – Good managers have the technical expertise to operate a makerspace and the teaching skills to connect it to broader concepts of self-sufficiency, collaboration, and entrepreneurship.
 - *Evidence: Demonstrated qualifications and passion of lead manager*
- ✓ **Adequate space and tools** – Having a variety of tools and activities helps to engage students of many backgrounds, with many interests.
 - *Evidence: Equipment and supplies that support a wide range of activities, from robotics to knitting*
- ✓ **Maker mindset** – The overall goal of a makerspace is to foster a do-it-yourself “maker” mindset.
 - *Evidence: Curriculum embedded within a philosophy of entrepreneurial skill development; statement of program philosophy*

- ✓ **Entrepreneurial mindset** – Connecting makerspace activities to business opportunities plants the seed of entrepreneurship in participants.
 - *Evidence: Business component such as a Makerspace Marketplace or online store; curriculum that incorporates entrepreneurship; statement of program philosophy*
- ✓ **Ties to the trades** – Connecting makerspaces to professional trades helps to engage students, businesses, and community members with a wide range of interests and backgrounds.
 - *Evidence: Partnerships with, and support from, local trade groups or technical schools*
- ✓ **Safety** – Safe operation of the tools and machinery in a makerspace is important for the safety of participants and the longevity of the program.
 - *Evidence: Documented safety protocols and ongoing training*

Challenges

- ✗ **Funding** – Aside from fee-based programming (such as after-school programs) and services (such as prototype development), most makerspaces do not have a sustainable funding source other than a supportive parent organization.
 - *Evidence: Lack of a supportive and financially stable parent organization*
- ✗ **Adults** – Getting adults to use makerspaces is a reported challenge for some programs; adults who do use the spaces may be hobbyists rather than entrepreneurs.
 - *Evidence: Lack of adult users focused on product development*

Coworking Spaces

Coworking spaces offer low-cost work and meeting space, and entry into a community of fellow coworkers. They are open to anyone who is willing to pay, which makes them distinct from incubators and accelerators. In the past decade, multiple individuals have opened coworking spaces throughout Maine.

Attributes of Success

- ✓ **At least 10 members** – About two-thirds of spaces are profitable or break even with 10-24 members;² having 50 or more members increases this portion to over 80%.
 - *Evidence: Membership lists; surveys of potential members; letters of interest or commitment from potential members*
- ✓ **At least 1,600 square feet** – About 75% of spaces with over 1,600 square feet are profitable or break even.
 - *Evidence: Space dimensions*

² See “The 2017 global coworking survey,” by online magazine [Deskmag](#).

- ✓ **Welcoming, knowledgeable staff** – Experienced staff create a sense of community, direct members to resources, and welcome newcomers.
 - *Evidence: Qualified, well-connected staff with demonstrated passion and the ability to work with diverse groups*
- ✓ **Programming** – Events, trainings, and social opportunities help members learn, network, and create a sense of community. These events also draw potential new membership into the space.
 - *Evidence: Program schedules, including presenters and topics; commitments from partner organizations; track record of hosting well-attended programs*
- ✓ **Co-location with other business services** – Locating coworking spaces near organizations that serve startups, such as Small Business Development Centers and chambers of commerce, can increase awareness of, and access, to these services among aspiring entrepreneurs.
 - *Evidence: List of co-located or proximate business services; commitments from partner service providers*

Challenges

- ✗ **Funding** – Standalone, for-profit coworking spaces in small communities often struggle for financial sustainability.
 - *Evidence: Lack of a parent organization to share capital and operating costs*
- ✗ **Attracting entrepreneurs** – Coworking spaces in Maine report low usage by entrepreneurs.
 - *Evidence: Lack of documented use by entrepreneurs and startups; lack of local startups*
- ✗ **Burnout** – Private individuals running coworking spaces report burnout from long, unpaid hours of work.
 - *Evidence: Sole owner-operators working many unpaid hours at the coworking space; lack of funding for support staff*

Accelerators, Incubators, Coworking, and Makerspace Programs in Maine

Summary of Key Informant Interviews

The document summarizes insights from fourteen individuals working to support entrepreneurship and innovation in Maine. Collectively, they oversee two accelerators, five incubators (existing and planned), four makerspaces, and five coworking spaces (existing and planned). Some of these are standalone programs and some are combined. The interviews occurred in July, August, and September of 2019.

Key Challenges

Funding

Overwhelmingly, funding was interviewees' most common challenge. People starting new programs discussed the search for startup funds, the quest to break even, and the dream of sustainability. People running established programs mentioned the challenge of finding stable revenue sources and keeping donors interested. Programs that own facilities or equipment have an advantage in generating revenue through rent or fees. Programs without those assets, namely accelerators, lack a stable revenue stream that does not require on-going fundraising by staff.

Interviewees who named funding as their top challenge were not necessarily running expensive programs. For a small, rural school or library, finding \$10,000-\$30,000 to start a makerspace is a significant undertaking.

Several interviewees mentioned the lack of funds for networking and ecosystem building (as opposed to facilities and programming), which they see as their greatest contribution to entrepreneurs in their communities. These activities take time and are essential to their work but do not generate revenue. One interviewee says that many private foundations are focused on traditional causes such as education and the arts; she wishes they would broaden their giving categories.

Of all programs, coworking spaces appear to be the least financially stable. Current demand for these spaces outside of Portland appears to be too low to support standalone, for-profit ventures. Many are being run by passionate individuals working without pay, or by managers paid by a parent organization. One space owner has concluded, "With the revenue a coworking space generates, you could either pay for space or staffing, not both."

Population Density

The scarcity of entrepreneurs, mentors, industry experts, and coworkers makes it difficult to build and sustain rural programs. This challenge was mentioned in some form by nearly all interviewees, even one operating in Southern Maine. By one assessment, rural communities can offer startup support, such as meetups and pitch competitions, but beyond that, "the model falls

apart.” Outside the Portland metro area, small communities lack the volume of entrepreneurs needed to sustain programs such as accelerators.

Interviewees working in sparsely populated areas report difficulty offering programming that is both substantive and relevant to enough businesses to attract a critical mass of participants. Scratchpad in Bangor has attempted to host targeted programs, for instance for female entrepreneurs, and has not been able to sustain them on a regular basis due to lack of participants. Another program mentioned the challenge of pairing mentors and mentees in a small community where residents have many overlapping relationships.

Outside of Portland, coworking spaces are also struggling to attract members. In addition to hurting their financial stability, this makes it difficult to create a sense of community and offer programming of value to their members. Several coworking operators say their members include very few entrepreneurs; most are remote workers or freelancers. One explained, “Our members are so diverse, we wouldn’t be able to offer programming that was useful to all of them, other than purely socializing.”

In contrast to incubators, accelerators, and coworking spaces, makerspaces can be scaled to rural areas with smaller populations. Several interviewees described thriving youth-oriented makerspaces in rural schools or libraries. The challenges in these areas seem to be cultural (explaining the purpose of a makerspace to board members, long-time staff, and the general public), and finding people with the STEM and entrepreneurship experience to manage the programs.

Internet Access

Fast, reliable internet access is a need throughout the state. One coworking space talked about the frustration of the Three Ring Binder fiber optic network running just one block away and not being able to afford the \$10,000 it would cost to access it.

Culture

Entrepreneurship is not well understood or valued in some areas. All interviewees are working to foster an entrepreneurial culture within their sphere, whether this is a school, library, community, or industry. Some have many partners in their work; others are lone champions. Many people talked about the need for more recognition of the value of entrepreneurship among the general public, business and non-profit leaders, philanthropists, and policymakers. The host of one rural entrepreneurship program noted that even the participants did not identify themselves as entrepreneurs. Another noted the fear in small communities of public failures. Youth leaders mentioned the challenge of helping teachers, administrators, members of school and library boards, and the broader community understand that makerspaces are more than machinery; they are places where students can develop the entrepreneurial skills to survive in the future economy.

Long-Term Business Support

Several interviewees mentioned the desire to continue helping businesses beyond the fixed timeline of accelerators and other training programs. These interviewees recognize that

startups need on-going support to overcome on-going challenges and setbacks. Staffing limitations make this type of long-term business support difficult.

Burnout

Nearly half of interviewees displayed or mentioned that they or their peers had experienced some level of burnout. Being a local champion takes energy, as does the unpaid work of networking, cheerleading, and fundraising required to build and maintain a local entrepreneurial ecosystem. Coworking spaces were flagged as being particularly energy-draining, since most are run by private individuals who are putting lots of time into them for little or no financial return.

One interviewee mentioned the emotional toll of working in community revitalization. They wish there was a network of people working on entrepreneurship from a community development angle, serving smaller entrepreneurs. In their experience, the Maine Associates Growth network is great for technical assistance but does not speak to community revitalization. “Revitalization work in communities that are dealing with loss of identity is raw, emotional work.”

Funding Sources

Most programs are piecing together revenue from various sources. There is some commonality in funding streams by program type. Grants from public and private sources are the most common source of startup funds.

Incubators own their facilities and equipment. Therefore, they can generate rent from tenant businesses and charge fees for services and equipment use. Other revenue comes from parent organizations (such as a university or state government) and grants. While some incubators in other states receive equity in startup grantees, this model is not being used by the programs interviewed for this report. One organization plans to launch an Incubator Without Walls by leveraging partnerships and programs that already receive funding, mainly from state and federal sources.

Accelerators receive income from grants and corporate sponsorships. One receives additional support from a university through staff salaries. Both accelerator interviewees mentioned how the amount of staff time devoted to on-going fundraising detracts from building their programs.

The **coworking space** owners interviewed started their businesses with private investments and, in one case, a grant from Maine Coworking Development Fund. Their on-going revenue comes from membership fees and meeting space rentals. One non-profit plans to open a coworking space in a building renovated with private donations and maintained through an endowment.

The two school-based **makerspaces** have different funding sources. One school paid for equipment and supplies entirely through grants, with staff salaries covered in the school budget. The other is funding renovations, equipment, and staff entirely within its budget. A community-run makerspace earns money through fee-based work for businesses, such as making prototypes. A library makerspace launched with grant funding and is working to transition to municipal funding.

Serving Rural Entrepreneurs and Innovators

All interviewees see themselves as offering unique and valuable support to entrepreneurs and innovators in their area. They identified six key aspects of their work.

Building Local Networks

Interviewees across all program types mentioned the value of convening likeminded individuals to exchange ideas, get advice, and offer moral support. People starting businesses gain insight and inspiration from more experienced entrepreneurs. Creating opportunities for them to gather and interact – through meetups, pitch competitions, etc. – is a valuable function of programs in remote areas. One interviewee noted that one of the main things that encourages someone to become an entrepreneur is access to someone they can relate to who has already done it. Therefore, building and showcasing local networks of entrepreneurs helps foster entrepreneurship within rural communities.

Connecting to Non-Local Resources

Program leaders serve as important connectors, linking local entrepreneurs to resources throughout the state. Interviewees highly value their connections to statewide organizations, such as the Maine Center for Entrepreneurship, Maine Technology Institute, Maine Accelerates Growth, and Coastal Enterprises, Inc., and recognize the expertise these groups bring to the table, especially for businesses looking to scale up and raise capital. They mentioned many instances of connecting local entrepreneurs with these resources.

Many interviewees like the idea of building Maine’s entrepreneurship support network on a hub-and-spoke model. One interviewee mentioned the Downeast Innovation Network as a good example of connecting resources within a region. Two interviewees mentioned the value of the Maine Accelerates Growth group phone calls for staying informed about what’s happening elsewhere in the state. One interviewee suggests having in-state trade ambassadors who would represent a region and help its businesses make connections in more populated areas, perhaps focused around a particular industry, such as food.

It is worth noting that one interviewee, who is an entrepreneur working in a rural area, said they had not experienced any shortcomings of thin networks because of SCORE and their local chamber of commerce. SCORE helped them with their business plan and their chamber organized events at which they met local business owners who offered advice on matters ranging from hiring and benefits to finding an accountant. For this business owner, strong local institutions had overcome the challenge of thin networks.

Expertise

Programs provide valuable business and industry expertise to startups. From business plans to marketing to supply chain questions, programs offer a broad range of technical assistance to aspiring entrepreneurs. In most programs, local staff have general business experience. If entrepreneurs need more specialized expertise (especially on raising capital or industry-specific topics), they help them connect with experts in other organizations.

Entrepreneurial Culture

Programs strive to foster cultures of entrepreneurship. Whether operating on the level of a school or a state, most interviewees value promoting entrepreneurship. A few articulated sophisticated visions of their programs' potential to help local residents gain self-sufficiency in the future economy. One admits that this goal is a response to serious challenges within their community: "You need to be desperate to start thinking differently."

One female makerspace manager noted the value of being a relatable role model for girls. Her program has all the typical makerspace equipment – 3D printers, laser cutters, robotics – plus materials for knitting, crocheting, jewelry making, and other crafts not always associated with technology. She encourages students to sell their creations in a "Makerspace Marketplace" and is considering starting an Etsy shop for them. She reports the ability to make money as a strong motivator for students in her rural community.

Centers of Gravity

Interviewees value having a physical center of gravity for entrepreneurial activities in their communities. Many see their mission as creating a visible hub for creativity and innovation. They place their work within a broader vision for community revitalization. They want to build a place where newcomers connect, ideas flourish, energy builds, and the community can see action and vibrancy.

Proximity

Many interviewees describe Maine's resources and services for entrepreneurs as being "Portland-centric." While recognizing the need to support the state's urban economic engine, they spoke of the difficulty faced by rural entrepreneurs looking to access these resources. They also discussed how rural entrepreneurs often do not fit the profile of a typical entrepreneur. They may be working another job, raising a family, or struggling with other financial or logistical limitations. For them, commuting to a faraway program on a regular basis simply is not possible. Most interviewees conveyed pride in their role as the providers of accessible, adaptable support to rural entrepreneurs.

Sustainability

Interviewees recommend the following attributes for creating sustainable programs in rural areas.

Paid, Knowledgeable Local Champions

Local champions are critical to program success, and there was broad recognition that they cannot be volunteers. Nearly all interviewees mentioned local champions when they discussed their programs' origins and success. However, several also mentioned initiatives that had stalled or disappeared completely when energy waned. Nearly all interviewees said that sustainable programs need dedicated staff who are passionate and well connected within Maine's entrepreneurial ecosystem. Several interviewees stressed the need for them to be knowledgeable enough to provide quality business counseling, at least on basic topics.

Parent Organizations

Programs housed within a larger institution such as a university, school, library, or community organization benefit from more stable funding. Sharing staff, facilities, equipment, and other overhead expenses appears to help these programs achieve sustainability. Privately owned coworking spaces are the most financially insecure initiatives, while programs that receive funding from the State or a university are the most stable.

Stable Revenue

Finding a stable revenue source is a key component of sustainability for many programs. All programs mentioned funding as a challenge, but those with at least one reliable revenue stream were more financially stable. For instance, incubators have rental income; coworking spaces have membership fees; makerspaces can rent tools and machinery or provide fee-for-services (e.g., making prototypes). One makerspace has found success earning revenue through after-school and summer programs for children. Several interviewees suggested that entrepreneurship programs be operated by a parent organization, such as a university, library, or local development organization, to share the cost of overhead and staffing. Most interviewees agree that these are not for-profit initiatives.

Accelerators may be the hardest programs for which to find on-going funding since they do not have a facility or equipment that can generate income. Their programming is labor intensive, and they rely on constant fundraising. Interviewees mentioned the difficulty of raising funds, even for successful programs, because donors tend to like funding new initiatives.

Coworking spaces outside Portland are struggling to find a sustainable business model in the face of low demand. While operators are optimistic about the long-term future of shared work spaces, the demand does not yet appear to be high enough to cover the cost. One coworking owner suggested \$300-\$500 stipends for coworking spaces to organize programs or offer business coaching. “In a small town, that amount could make the difference between a space staying open or not.” One non-profit plans to open a coworking space in a building it owns and for which it has received a sizable endowment from a local business. It expects membership fees to pay for utilities, cleaning, and some of the cost of staffing the space.

Building Ownership

Owning a building helps programs achieve sustainability. Not only does it eliminate rent payments, it creates the opportunity to generate rental income and creates a sense of permanence. One accelerator manager reported that the program floundered for several months when it lost its original home and had to meet in coffee shops and other public spaces before finding a new, permanent location.

Adapting to Rural Entrepreneurs

Successful programs recognize the unique characteristics and constraints of rural entrepreneurs. Many interviewees have adapted their program delivery to accommodate rural participants. For instance, only three of CoVort’s eight weeks of programming are held on-site in Bangor. During the other five weeks, participants work from home. They have weekly goal setting phone calls and program staff visit them. Several interviewees see potential for greater

use of telecommunications to further increase program access in rural areas. A few see opportunities for current “Portland-centric” programs to open their events to a wider audience through videoconferencing. One interviewee suggests grants for local organizations to buy equipment and receive training on how to use it.

Several program managers mentioned the need to adapt programs to the unique characteristics of rural entrepreneurs. Compared with the stereotype of a young, urban go-getter, aspiring entrepreneurs in rural areas often have more modest expectations and aspirations for their businesses. They may face greater limitations due to work and family obligations. They tend to be more hesitant, less well connected, and have fewer resources to work with. One manager observed that scale up may take decades, not years.

Roles for Incubators/Coworking/Makerspaces/Accelerators

Most interviewees see potential value in all four programs, and think success lies in allowing each community’s unique assets and culture to shape its program. For instance, a community that can donate a building may design a different program from a community that lacks a physical space but can devote the time of an economic developer. Furthermore, programs should be designed around the strengths and skills of local champions. If the champions are a school superintendent and a technology director, then a school-based makerspace may make sense. If the community has a vibrant arts community, then an art incubator may be the best option.

Incubators

Many interviewees see potential value for incubators, although the type of programs they envision in rural areas vary from traditional incubators associated with academic and research institutions. In rural areas, most people envision incubators for small businesses that are ready to move out of their home but cannot yet afford a larger space. The growth potential of these businesses likely would be modest, although they would be valued by their communities, owners, and employees. For instance, Our Katahdin envisions offering retail incubator space in its building in downtown Millinocket. Tenants would have three to five years to test and improve their business, with the goal of eventually being able to afford another retail space.

Several interviewees see a need for public-facing, low-cost spaces where entrepreneurs can pilot business ideas. Renting a storefront is prohibitively expensive for many people who want to start a retail business. Right now, they test their ideas at farmers markets, craft fairs, festivals, and pop-up shops. One interviewee envisions indoor markets that would be open daily and provide entrepreneurs a cheap way to test their ideas without renting a storefront. Aspiring service providers could also use these spaces to meet with clients and learn from interactions with potential customers.

One aspiring rural incubator found demand among local college students, which is a model the founder thinks could work elsewhere. The program offers them summer work space, mentoring, networking, and advising.

Coworking

Some interviewees see value in coworking spaces as gathering places in rural communities. They see them as important convening points where newcomers to an area can plug into the local entrepreneurial ecosystem, and where members can network, exchange ideas, and gain inspiration. Other interviewees question whether space alone is enough to have a meaningful impact on rural entrepreneurship, a concern validated by the apparent lack of entrepreneurs using current coworking spaces. Regardless, there is consensus among people familiar with coworking spaces that currently there is not enough demand for them to succeed as standalone, for-profit businesses outside of Portland.

Makerspaces

All four interviewees operating makerspaces see their potential to build entrepreneurial skills among youth and connect with local businesses. Makerspaces introduce students to the design process and allow them to practice the persistence needed to become entrepreneurs. One makerspace even encourages them to learn business skills by selling their creations. Hands-on learning helps engage students who may not respond to other forms of instruction. One interviewee has gained support for his school's makerspace by connecting it to support for the trades, which are highly valued in his community. Of the four programs considered in this report, youth-oriented makerspaces appear to be the most scalable to rural areas.

Several interviewees said they had considered and ultimately rejected makerspaces because of a lack of clear outcomes and incompatibility with other program goals. They noted the differences between the adult users of makerspaces, who tend to be hobbyists who do not aspire to launching a product, and the more business-focused users of incubators and accelerators. They also mentioned logistical obstacles, such as the noise of machinery interfering with people trying to work.

Accelerators

Despite interviewees' general support for communities customizing programs to fit their unique assets, most acknowledged that there is probably insufficient demand for more accelerators in Maine. Despite wishing local startups had easier access to accelerators, most acknowledged that there are simply too few growth-stage businesses in most rural areas to fill slots in on-going programs. Interviewees had a few ideas for increasing access to and awareness of Top Gun and CoVort, but they seemed generally supportive of the pragmatic efforts these programs have made to be more accessible to businesses throughout the state.

Non-Duplication

A few interviewees expressed the importance of not duplicating existing efforts. One person said, "If the community already has cheap space and a Small Business Development Center, maybe you don't need a new incubator." Another stressed that it is already challenging to raise money for entrepreneurship programs in Maine and adding more could make this work even harder.

Choosing Communities

Interviewees identified the attributes of communities that are best suited to host accelerators, incubators, coworking spaces, and makerspaces. Most answered this question for the type of program with which they are most familiar. Answers varied somewhat based on whether an interviewee was thinking of, for instance, accelerators or makerspaces. The following categories emerged.

Population

Interviewees had mixed thoughts about whether there is a minimum population necessary to support programs for entrepreneurs. For instance, those most familiar with accelerators think only a few of Maine's largest population centers can support these programs. Interviewees most familiar with coworking spaces and community-based programs think any community with a library or coffee shop can do something. Successful programs are built on an honest and informed assessment of a community's strengths and weaknesses, and strategically leverage its greatest assets and capabilities.

Local Champion/Ecosystem Builder

Interviewees agree that successful local programs must have a person or organization that is passionate, dedicated, and qualified to become an ecosystem builder. These champions are often empowered by a knowledgeable and supportive governing body, whether that is a board or a town council. All interviewees recognize the critical role of knowledgeable people who care about local businesses, support them, and help them connect to local and non-local resources.

Space

A community must have an adequate, available facility to house these programs. Interviewees see value in programs owning their facilities to generate rental income. If that is not possible, then having free, long-term use of space from a public entity or non-profit agency is another good option to reduce costs.

High-Speed Internet

Fast, reliable internet is a necessity for nearly all programs or facilities for entrepreneurs and remote workers.

Collaboration

With most communities facing scarce resources, the key to success and sustainability lies in collaboration, both within the community and with other entities in Maine's entrepreneurial ecosystem. Collaboration allows local ecosystem builders to create programs by cobbling together resources from multiple community groups – the underused facility of one group, staff or volunteer hours from by another group, business connections offered by a third group, etc.

Higher Education

Access to a nearby research institution, college, or university can assist programs in need of research, curriculum development, industry expertise, and training. This is most important for accelerators and incubators, but even coworking and makerspaces can benefit from the programming opportunities created by proximity to an institution of higher learning.

Furthermore, the students and family members of people working in higher education are reportedly a rich source of program participants and mentors.

Business Services

For programs that support growth-stage companies, it is useful for communities to be large enough to have the relevant services entrepreneurs need, such as an accountant and graphic designer.

Conclusion

Overall, interviewees are optimistic about the potential for well designed, appropriately scaled, strategically located programs to foster rural entrepreneurship. They emphasize the importance of honestly assessing each community's assets, building on strengths, and customizing program design. Programs should be led by knowledgeable, passionate staff who are well connected within Maine's entrepreneurial ecosystem. For long-term sustainability, programs will most likely require the support of a well-resourced parent organization.

Research Overview

Summary

In the 1960s, rural economic development efforts in the U.S. began to shift from recruiting new industries to growing existing industries and supporting small businesses. This movement gave birth to an array of programs aimed at fostering innovation and entrepreneurship.

Business incubators led the way. These facilities help young firms with high growth potential by lowering their costs and giving them access to capital and expertise. Over time, many variations of incubators have evolved, including “incubators without walls” and international incubators. Accelerators are boot-camp style programs that cultivate entrepreneurs through learning, mentoring, and networking. Makerspaces and coworking spaces are emerging as additional tools for aspiring entrepreneurs.

Rigorous research on the impact of these programs, especially in rural areas, is somewhat scarce. Makerspaces and coworking spaces are relatively recent phenomena, with a great deal of variations across facilities, and little data on outcomes. Evaluations of incubators and accelerators often suffer from selection bias, since participants are usually chosen based on their likelihood of success. Several evaluations that account for this bias find few or no lasting impacts for businesses and the surrounding communities. Nevertheless, these programs are widespread, well utilized, and generally enjoy broad political support.

This report lists the best practices identified by various reports on programs to support entrepreneurs, particularly in rural areas. The most common practices fall into three categories:

- **Good management** – Successful programs have a clear mission, are run by experienced people, and evaluate their outcomes.
- **Rich networks** – Successful programs operate within regional and industry networks that help them connect participants with the expertise and resources they need.
- **Intensive, customized, in-person programming** – Successful programs offer sustained, intensive, in-person learning from peers, staff, and engaged mentors.

A fourth strategy, beginning to emerge, is the integration of these programs into broader, long-term efforts to create an **entrepreneurial culture** throughout a community. This strategy shifts the focus from growing businesses to growing entrepreneurs, and creating an environment in which they will choose to live. Incubators, accelerators, makerspaces, and coworking spaces are amenities within that environment.

Introduction

This report summarizes the most recent research on programs to support entrepreneurs, with attention to incubators, accelerators, makerspaces, and coworking spaces, and programs in rural areas. It is not a comprehensive survey of the academic literature on these subjects. Rather, it highlights scholarly work that is representative of the larger body of research and most pertinent

to the Maine Community Foundation’s current project. It does not address entrepreneurship training in K-12 schools or post-secondary institutions.

Rigorous research on programs that support entrepreneurship is somewhat scarce. Evaluations and claims by program proponents can suffer from “selection bias”. This means that programs with an application process select the businesses most likely to succeed. If they are successful, it is unclear whether their success stems from the program or the pre-existing attributes that earned their entry into it. This report focuses on studies that try to control for this bias.

The first four sections of this report discuss various elements of an entrepreneurial ecosystem – incubators, accelerators, makerspaces, and coworking spaces. Each section begins with a brief description of the element. It is worth noting that “incubator” and “accelerator” are not always used consistently in economic development literature. In general, incubators focus on facilities and services. An example of this is the UpStart Center for Entrepreneurship in Orono, which leases space to start-ups and provides its tenants on-going training and technical assistance. Accelerators are generally cohort-based, fixed-length programs focused on learning, mentoring, and networking. An example of this is the Maine Center for Entrepreneur’s Top Gun program, which lasts four months. This report uses the term used by the author(s) of each study.

Howell and Bingham (2019) provide a useful comparison of incubators, accelerators, and coworking spaces:

Dimension	Accelerators	Incubators	Coworking spaces
Participants	High-potential start-ups	Startups	Startups, small businesses, freelancers, independent workers, remote workers
Amount of structure	High	Medium	Low
Application process?	Yes	Yes	No
Limited time?	Yes (program lasts 3-6 months)	Yes (typically stay 6-12 months)	No (tenants stay as long as they can pay rent)
Payment required	Takes portion of equity*	Fee for service (sometimes equity)	Monthly rent
Purpose	Rapid growth	Nurturing development	Space, community
Amount of resources provided	High (seed capital, intensive mentoring, training, service providers, co-working spaces)	Medium (mentoring, service providers, coworking space)	Low (space, amenities, and occasional events)

Source: Howell and Bingham 2019

*The accelerators currently operating Maine are not-for-profit and do not take a portion of equity. They raise money through sponsors, partnerships, and entry fees.

The fifth section of this report discusses the limited research available on rural entrepreneurship programs, and potential strategies for overcoming the inherent lack of people and resources in rural areas. The sixth section explores the concept of building entrepreneurial communities through sustained, comprehensive, grow-from-within strategies. Finally, the conclusion offers a very brief summary of the findings of the previous sections.

Incubators

Business incubators are physical locations run by a manager, or management team, that choose tenants through an application process (Lewis, Harper-Anderson, and Molnar, 2011). When the first incubator opened in 1959 in Batavia, New York, it was a novel alternative to industry recruitment, which was a dominant economic development strategy of the time (ibid.).

Traditional incubators target young firms with high growth potential and support them with a range of business resources and services, including physical space, technical assistance, shared or discounted business services, business counseling, networking, and other opportunities. Over time, many variations of incubators have evolved, including “incubators without walls”, virtual incubators, international incubators, and accelerators (ibid.). Today, according to Entrepreneur.com and data from the International Business Innovation Association, there are approximately 7,000 incubators and accelerators worldwide (Zwilling, 2016).

Impact

Despite the popularity of incubators, many evaluations show little or no impact on participating firms and their communities. Because of selection bias, it is often difficult to determine whether the success of graduate firms is due to the program or the inherent strengths that earned their admission into the program.

For instance, Stoken, Thompson, and Mahu (2015) compare 2,043 incubator firms with a random sample of comparable non-incubator firms. They find that incubator firms generated 49%-58% more jobs than non-incubated firms, yet they do not attribute this directly to the firms' participation in the incubators. Rather, they find that incubator firms had much higher use of services from outside the incubator (e.g., marketing, legal services, accounting, grants). This could signal two things. Either the incubator helped start-ups make connections to non-incubator services, or start-ups that successfully apply to incubators are also more likely to seek out (and receive) non-incubator opportunities.

Amezcuca (2010) considers whether incubators run by different types of organizations have different levels of success. He compares the outcomes of businesses in university, non-profit and for-profit incubators. Those graduating from non-profit incubators have lower failure rates than for-profit graduates, especially businesses owned by women and minorities. University incubator graduates tend to face more challenges after graduation, but the author notes this could signal that businesses incubated at universities are engaged in more risky ventures tied to commercializing research. Amezcuca finds no connection between the number of economic development agencies and business associations housed within the incubator (a proxy for networks) and firm outcomes.

Hicks and Faulk (2018) take a broader look, exploring whether incubators improve local economies. They find no connection between the presence of incubators and economic activity in Indiana's 92 counties from 1971 to 2015. The facilities had no statistical impact on total employment, average wages, or the number of individuals working as proprietors. They conclude, “Our results suggest no meaningful effect... for facilities incentives as a mechanism for improving economic outcomes in regions (231).” This study makes no attempt to measure

incubator quality. Therefore, it is possible that the positive impacts of some facilities are overshadowed by neutral or negative impacts at others.

In all, a 2007 review of 53 academic studies of business incubators worldwide concluded, "...it seems likely that business incubators have only provided minor stimulus for the individuals starting a business... [and] do not increase the likelihood of firm survival, innovativeness, and growth... (Tamasy 2007, 469)."

Best Practices

Incubators' lackluster results are not necessarily surprising given the complex, multidimensional task of starting and growing a business. The conventional wisdom about how best to support start-ups has evolved since the early days of these programs, which several of the above studies were evaluating. Today's incubators offer much more than facilities and capital.

A 2011 report on incubator best practices funded by the U.S. Department of Commerce found few predictors of successful programs beyond being well managed (e.g., having a mission statement), well-funded, and run by a non-profit organization (Lewis, Harper-Anderson, and Molnar 2011). The report recommends the following practices for services provided to incubator tenants:

1. Business plan writing and business basics
2. Legal assistance
3. Access to capital
4. Marketing assistance
5. Access to broadband high-speed Internet
6. Mentoring boards for clients with area business service providers
7. Close ties with higher education institutions (where possible)
8. Accounting and financial management services
9. Networking with other entrepreneurs, particularly other clients
10. Networking with area business community
11. Assistance in developing presentation skills
12. Assistance in developing business etiquette

Lewis et al. recommend the following management practices for incubators:

1. Conduct a feasibility study before starting a program
2. Develop a consensus-driven mission statement
3. Establish client entry and exit criteria
4. Collect outcome data
5. Provide networking opportunities between client firms
6. Establish effective tools to deliver support services
7. Build networks with area business services providers
8. Market incubators beyond the entrepreneurial community (i.e. embed the program in the fabric of the host community)

Accelerators

Most accelerators are boot-camp style, fixed-length programs that offer training, mentoring, networking, and sometimes capital to entrepreneurs selected through a competitive application process. The first accelerator, Y Combinator, started in Boston, Massachusetts in 2005 and was organized by a venture capital firm (Hathaway 2016). Since then, the concept has spread widely. The start-up-support company Gust identified 579 accelerators worldwide in 2016, of which 64.5% are for-profit (Gust 2016). Gust notes that some programs are evolving beyond fixed-length boot camps and following participants through later stages of growth. “New operating models have evolved immensely [sic], thereby blurring the lines between accelerators, incubators, and early-stage funds” (ibid.).³

Impact

Hallen, Cohen, and Bingham (2019) evaluate the results of four cohorts from three “top U.S. accelerators located in major metropolitan areas” in 2011-2012 (13). Using proprietary data, they compare the outcomes of businesses accepted into the programs and those almost accepted. They find positive, although mixed, results. The participants of most accelerators had better long-term results in terms of funding, web traffic, and employees compared to their “almost accepted” peers, but some accelerators had no effect or even appeared to hinder success.

Best Practices

To identify the attributes of successful accelerators, Hallen et al. (2019) study six potential learning mechanisms: peer networking, partner-organizing networking, professional experience, observation, peer problem solving, and “broad, intense, and paced (BIP) consultation” (30). Through interviews with 70 program participants, directors, mentors, and investors, they attribute the accelerators’ positive results to BIP consultation.

“**Broad, intense, and paced consultation**” refers to a style of learning in which the source of information (e.g., a mentor) is personally engaged, the content is broad enough to help learners think expansively, the duration and frequency is intense enough to allow for deep learning and reflection, and the consultations are paced in a way that encourages participants to make decisions and take action at appropriate times. Hallen et al. give examples of successful accelerators where participants met up to 75 potential mentors, or spent over 40 hours per week in “consultation-related learning” (33).

Hallen et al. conclude that the best sources of information change as starts-up move through stages: “...Entrepreneurs should source learning from mentors for discovery, highly experienced external advisors during evaluation and peers for exploitation (37).” In other words, mentors are best when entrepreneurs are developing their business concepts and peers are best when they are trying to execute them, for instance, to find an affordable marketing agency or new employees.

Because consultations (with mentors, staff, and peers) are identified as the source of accelerators’ beneficial impact, Hallen et al. caution that the model may not work in areas that

³ Hochberg (2016) sites Capital Factory in Austin, Texas and Amplify LA in Los Angeles, as two well established accelerator programs that shifted to on-going support without a strictly defined entry and exit timeline.

lack a critical mass of these individuals. “For policy makers or investors considering funding accelerators, our findings suggest they too should be cautious about rapidly expanding the accelerator form – particularly where available mentors and program directors may lack the depth of entrepreneurial and industry experience common to the accelerators in our samples (38).”

Unitas Seed Fund and Capria Accelerator Fund (2015) studied the outcomes of 78 accelerators and incubators worldwide to identify best practices. They compared the survival rates of graduate businesses and the percentage who acquired funding within six months of graduation. They found several significant attributes of the most successful “incubators” (their combined term for incubators and accelerators):

1. **Sector focus** - Incubators with the highest success rates were those focused on specific sectors. “By focusing on a specific sector, an incubator can be very specific not only about the start-ups that come into a program, but they can more efficiently specify which resources and networks are necessary for a start-up to succeed in a given sector. The outcome is a more capable focused team, mentors, advisors and investment group that all understand what it takes to be successful in that sector” (ibid., 8).
2. **Fixed start dates** – All successful incubators had a fixed start date for their programs, which usually ran three to five months; less successful incubators were more likely to have longer programs and open-door policies. “Streamlining a program can help incubators better allocate their time and resources in a more efficient manner. For entrepreneurs, a fixed and focused time frame in which to hit milestones provides an atmosphere of intensity and set expectations with deadlines that will ultimately define their success in a competitive world” (ibid.).
3. **Frequent in-person peer meetings** – The most successful incubators had their participants gather in-person more than twice as often as the least successful programs. “There is a rising trend of virtual incubation in the ecosystem, but the verdict is still out on whether a virtual program will be able to foster the same value-add as one that is sector focused and well-structured to engage participants in an effective manner” (ibid.).
4. **Deep mentor engagement** – The most successful incubators did not necessarily have more mentors per start-up, but their mentors’ level of engagement was ranked much higher than that of less successful programs. This indicates that quality, not quantity, is the key to successful mentoring.
5. **Strong alumni and investor networks** – Alumni can provide valuable feedback to program management and connections for new participants. The most successful incubators had higher levels of engagement with both alumni and investors.

Makerspaces

The term “maker” is widely attributed to Dale Dougherty, who launched *Make:* magazine in 2005, followed by a series of Maker Faires in 2006 (Anderson 2013). Those events were early milestones of a movement that celebrates do-it-yourself solutions, tinkering, discovery, and collaboration. Makerspaces are work spaces where makers can access a range of high- and low-

tech tools, training, and entry into a community of likeminded people. They are often located in schools, libraries, and other publicly accessible facilities.

Van Holm (2017) identifies four ways that makerspaces can benefit local economies: 1) promoting an entrepreneurial culture, especially in young people; 2) providing workspace and tools to small businesses; 3) providing workforce training in mechanical and design skills; and 4) aiding workforce retention by creating communities for creative people. Several people have celebrated the maker movement for democratizing access to high-tech machinery and potentially resurrecting manufacturing in the U.S. (e.g., Fallows 2016). The former makerspace chain TechShop claimed several successful startups, including Square (the mobile credit card reader) and Dodo Case (custom iPad cases) (O’Connell 2014). TechShop once led the makerspace charge, with ten locations throughout the U.S. and 9,000 members (Su 2017). It closed all locations and declared bankruptcy in 2018, due to its inability to find a sustainable business model (ibid.).

Impact

As a relatively new movement, there is very little research on the impacts of makerspaces on their members and communities. Hicks and Faulk (2018) find no connection between makerspaces and economic activity in Indiana, although their data includes very few years in which makerspaces were present. Van Holm’s assessment of nine makerspaces in Georgia (which had 30-50 members on average) leads him to conclude that their impact on the local economy is likely negligible. Van Holm cites the challenge of getting members to shift from tinkering with inventions and prototypes to the entrepreneurial task of starting companies and bringing new products to market. “...[Makerspace] managers have struggled to transform members into entrepreneurs, partially because members lack confidence in their own ideas and have even shown resistance to the idea of commercializing their hobbies” (171). These studies highlight the need to integrate makerspaces into a rich entrepreneurial ecosystem in order to realize their full potential impact on a local economy.

Best Practices

The *Makerspace Playbook* published by *Make:* magazine provides guidance to school and community leaders interested in makerspaces. It emphasizes that there is no set recipe for a successful space: “Makerspaces come in all shapes and sizes, but they all serve as a gathering point for tools, projects, mentors and expertise. A collection of tools does not define a Makerspace. Rather, we define it by what it enables: making” (Maker Media 2013, 1). They discuss seven dimensions of establishing a space, all of which are discussed in detail in the *Playbook*:

1. **Location** – The physical space should allow room for both group and individual work.
2. **Tools and materials** – These can range from old fashioned glue and hammers to 3D printers, laser cutters, graphic design software, and other high-tech tools.
3. **Safety** – Training and protocols are critical for creating a culture of safety.
4. **Roles** – Teachers, mentors, and students/members interact to learn, collaborate, and create together.
5. **Practices** – The overall goal is “fostering the maker mindset” (ibid., 21).

6. **Projects** – Managers organize challenges or themes to spur creating thinking and collaborate.

Coworking

Coworking is a new practice that has grown quickly in the last decade, from an estimated 160 facilities worldwide in 2008 to over 22,000 by the end of 2019 (Foertsch and Cagnol 2013, Foertsch 2019). The term generally refers to places where people can rent shared work and meeting spaces. Coworking spaces have no application process and are open to anyone who is willing to pay, which makes them distinct from incubators and accelerators. The exceptions are niche spaces that target certain populations (e.g., women, immigrants) or professions (e.g., food, media). This openness means that coworking spaces usually have a diverse range of clients, including start-ups, small businesses, freelancers, remote workers, and transient workers. In addition to shared work space, coworking facilities offer membership into a community that often coheres through events, trainings, and social opportunities.

Impact

Since coworking spaces are another relatively new phenomenon, there is little academic research on their impact. Hicks and Faulk (2018) find little connection between the presence of coworking spaces and economic activity in Indiana's 92 counties, although their data includes only a few years in which coworking spaces were beginning to appear in that state.

In surveys and interviews of individuals working at a large coworking space in North Carolina (with over 800 members), Howell and Bingham (2019) find generally high levels of satisfaction with the facility. They note, "...preliminary findings seem to suggest that entrepreneurs value the community more than the actual space itself" (ibid., 15). Coworking tenants value the efficiency, flexibility, and legitimacy afforded by access to professional workspace at relatively low cost, without the worry of maintenance and operations. The benefits of the coworking community stem from connections made through coworking peers to new clients, investors, employees, and service providers; solutions to business challenges learned from coworking peers; energy and motivation gained from interactions with coworking peers; and social support for individuals who would otherwise work in isolation (ibid.).

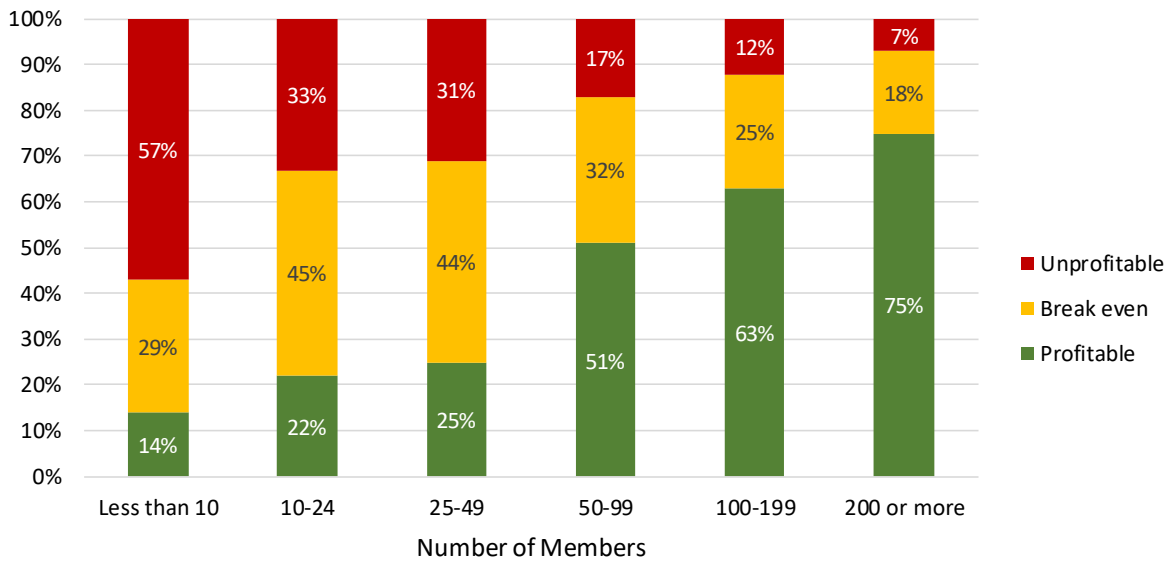
Profitability

The online magazine *Deskmag*'s annual Global Coworking Survey appears to be the most thorough source of data on coworking spaces and those who operate and use them. Its 2017 survey had 1,876 participants, of which 22% were in areas with less than 100,000 residents and 3% identified their communities as "rural". This survey is the data source for the following two sections.

In 2016-2017, 40% of surveyed coworking spaces were profitable, 35% broke even, and 26% lost money. There is a strong, direct correlation between size and profitability; the charts below show how profitability increases with a spaces' membership and physical size. Having at least 50 members and 500 square meters (about 5,000 square feet) appear to be the thresholds above which at least 75% of spaces break even or generate a profit.

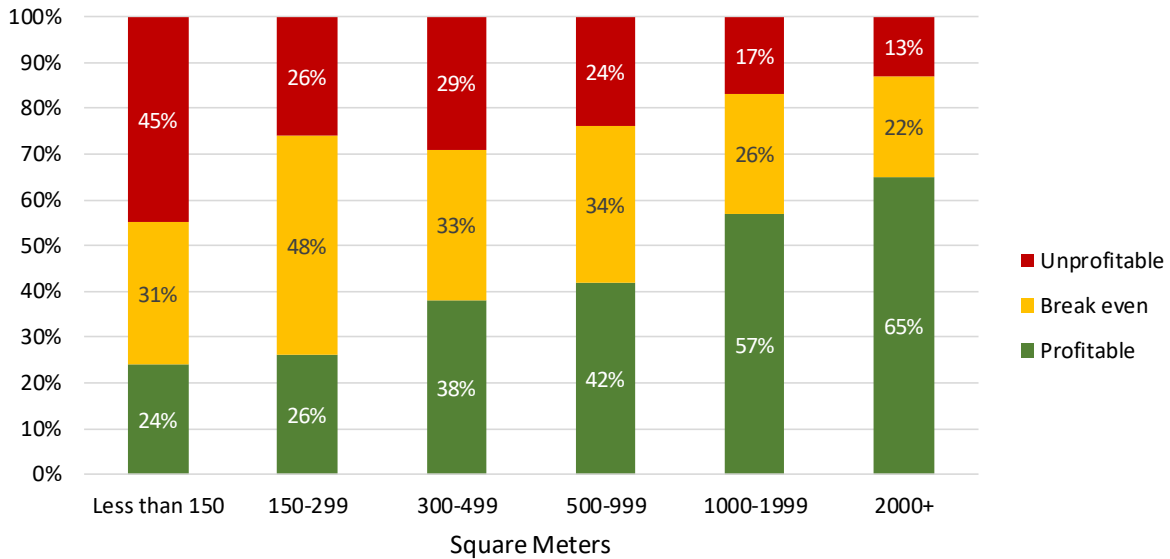
Few of the existing coworking spaces in Maine have reached these profitability milestones. Liz Trice, owner of PelatonLabs in Portland, profiled thirteen Maine coworking spaces for *Our Katahdin* (2019). Of those that provided data, none had 50 members and only one (Steel House in Rockland) had over 5000 square feet. Many reported financial difficulties and long unpaid hours for owner-operators. Based on her research, Trice writes that in Maine, “Coworking buildout costs are prohibitive, profits are low, and spaces are often run as low or no-profit businesses by people who need space for their own business or who are passionate about community development” (ibid., 33).

Profitability of Coworking Spaces by Number of Members



Source: Deskmag 2017

Profitability of Coworking Spaces by Size



Source: Deskmag 2017

Opening

In 2018, average planning time to open a coworking space was about seven months in 2018 (Deskmag 2018). Most spaces started with two full-time and one part-time staff members. Seventy-one percent of owners, (co)founders, or self-employed operators are men, compared to just 29% who are women. By contrast, 65% of employed operators or managers are women, compared to 35% who are men.

On average, coworking spaces that broke even in 2016-2017 took about thirteen months to reach that threshold. Twenty-nine percent broke even within their second year and 10% broke even after two years. Rent is by far the largest expense for most coworking spaces, accounting for 40% of costs in 2016-17.

Usage

In 2017, 83% of coworking individuals used coworking spaces in cities with over 100,000 residents. Just 9% were in places with fewer than 50,000 residents and 5% had fewer than 20,000 residents. The type of individuals using coworking spaces varies by community. Compared to large cities, coworkers in smaller communities are older and more likely to be married, have children, and work as freelancers. In cities with less than one million residents, members are less likely to be business founders. These variations may impact the benefits of membership in a coworking community. For instance, founders of start-up businesses may not find as many peers in coworking spaces in small communities than they would in a city.

Information technology is the most common profession of people using coworking spaces, accounting for more than one in five members in 2017. The table below shows professions representing at least 5% of members.

Profession	Percentage of Members
Information technology (programming, software engineering, web development)	22%
Public relations, marketing, sales, advertising, communication	14%
Writing (journalism, writer, copywriter)	9%
Consulting	6%
Business development (including founders)	6%
Design (graphics, web, products, gaming)	5%
Research (science, data, analytics)	5%

Source: Deskmag 2017

Rural Programs

There is very little academic research on the attributes of successful incubators, accelerators, makerspaces, and coworking spaces in rural areas. A report by the National Business Incubation Association (NBIA) concludes that best practices for rural and urban incubators are the same (Appalachian Regional Commission, 2013). These include collaborating within a regional network, having managers who are highly knowledgeable about the business development process, and having a client advisory board that includes at least one incubator graduate. “Best practices for rural and urban incubation programs do not differ. However, there are unique challenges to operating a rural incubation program, including fewer local resources and a smaller pool of potential clients” (ibid.).

This observation is not surprising; lack of resources and people are the same factors inhibiting all business activities in rural areas. Today’s knowledge-based economy favors places with large, dense populations, where ideas and innovations can grow and flourish (Gabe 2018). Entrepreneurship and innovation ultimately come from people and rural states lack people.

One of the NBIA reports’ authors summarizes the shared attributes of successful rural incubators as follows (Lair, 2013).

- Most are **nonprofit** entities that partner with other nonprofits and for-profits to provide services.
- Many are organized as **networks**, and all utilize regional support networks.
- They have **experienced** managers who spend the majority of their time directly interacting with clients.
- They have staff who **share** responsibilities with other economic development organizations to increase entrepreneurial access to resources and decrease costs and duplication.
- They adhere to many industry **best practices**.
- They have clearly identified **missions** and program **goals**.
- They are **market-driven** and **mission-focused**.
- They collect outcome **data** to evaluate program effectiveness and publish these data to promote the incubator’s value.
- They focus on **sustainability**, minimizing reliance on public funding and maximizing income from rent and services.

- They provide clients access to **capital** – through internal loan funds and equity funds or linkages with capital networks.
- They cultivate **community** support and require that the community is invested in the program.
- They are committed to **evaluating** existing programming and services and ensuring continual improvement.

Renee Kelly, Assistant Vice President for Innovation and Economic Development at the University of Maine, proposes a network solution to the fundamental challenge of ruralness: “Maine can help overcome its density challenge by building local networks with strong ties for innovation and entrepreneurship and then connecting networks with deliberate brokering throughout the state, thereby expanding an individual business’ or entrepreneur’s network substantially through a trusted intermediary (Kelly 2014, 32).” Kelly highlights the Blackstone Accelerates Growth initiative that sought to create and connect a network of entrepreneurial hubs throughout Maine. That work continues as the Maine Accelerates Growth initiative. NetWork Kansas employs a similar approach. This nonprofit serves as the hub of a network of organizations, institutions, and public agencies supporting entrepreneurs throughout Kansas.

One challenge to designing programs for rural areas is the highly diverse nature of “rural” communities. Some are small and remote; others are larger and connected to nearby cities. Some have natural or cultural amenities; others do not. John Lettieri, co-founder of the Economic Innovation Group, observes, “The true fault line is not between rural and urban communities but rather between communities that are highly connected and those that are isolated. Increasing the connectivity of rural communities in terms of access to infrastructure, global markets, capital markets, the Internet, and human capital is essential for their future success” (Lettieri 2017).

The Center for Rural Innovation uses three criteria to identify rural communities with the greatest potential to succeed in today’s economy: access to broadband internet service, available real estate (or locations within New Market Tax Credit tracts or Opportunity Zones), and proximity to a selective four-year college. Executive Director Matt Dunne says these criteria are based not on empirical evidence but on the organization’s informed assessment of which communities have the most potential to overcome the known challenges facing rural areas (Dunne 2019). Using these criteria, the Center has selected nine communities nationwide in which to invest and it hopes to evaluate the effectiveness of its approach (ibid.).⁴

Entrepreneurial Communities

Some organizations working in rural areas are moving beyond targeted programs for startups and exploring more holistic approaches to building entrepreneurial ecosystems. The Center for Rural Entrepreneurship, a non-profit think tank formed by the Kauffman Foundation and the Rural Policy Research Institute, says, “Entrepreneurship development has evolved from a focus on programs and entrepreneurial support organizations to a systems approach that incorporates the broader community (Macke, Markley, and Fulwider 2014, v). This movement recognizes the underwhelming results of decades of isolated investments in traditional incubators and other

⁴ The Center’s fourth criteria was the existence of a local nonprofit to lead the initiative.

targeted programs. The Center advocates for initiatives that focus on growing entrepreneurs (not their businesses) and developing communities in which they will choose to live.

The Center identifies five attributes of an entrepreneurial community:

- **Entrepreneurial talent** – Innovative and energized individuals building or growing businesses, as well as entrepreneurial civic and non-profit leaders
- **Entrepreneurial culture** – A community where entrepreneurs can find peers and others who embrace their ideas, tolerate their failures, and celebrate their successes
- **Entrepreneurial infrastructure** – The resources entrepreneurs need vary but generally include connectivity, reasonably priced work space, access to skilled workers and business support services, and reasonable taxation and regulations
- **Human development focus** – Entrepreneurship development means developing people, not businesses
- **Youth engagement** – Developing the pipeline of entrepreneurs and residents who will eventually support them

Spigel (2017) suggests eleven attributes of entrepreneurial ecosystems, grouped into three categories: cultural (discussed above), social (networks, mentors, etc.), and material (infrastructure, services, etc.). He argues that these attributes can develop in tandem, but, “policies and programs designed to encourage entrepreneurship struggle in the absence of an underlying community of other entrepreneurs, advisors, and workers who provide support above and beyond what the programs supply. These programs would not be successful without supportive social and cultural attributes” (55).

Iowa’s five John Pappajohn Entrepreneurial Centers (JPEC) embrace a similarly comprehensive strategy, offering training and support for K-12 students, college students, entrepreneurs, and even university faculty. Executive Director David Hensley says, "Iowa JPEC believes an entrepreneurial center must be comprehensive in nature to build and grow a successful entrepreneurial ecosystem - across campus, the state of Iowa, and the world" (2019). Similarly, Erik Pederson, Vice President of NetWork Kansas, says, “I am convinced that a ‘grow your own’ mentality is the most viable alternative for rural communities to thrive and in some cases, survive” (2017).

These recommendations align with those from the Appalachian Regional Commission’s (ARC) Entrepreneurship Initiative (Markley et al. 2008). From 1997 to 2005, ARC invested nearly \$43 million to stimulate entrepreneurship throughout Appalachia. Based on extensive trial and error, they arrived at the following “lessons learned” for practitioners (ibid., 89)

- Successful entrepreneurship initiatives had sparkplugs or **local champions** that provided leadership for these efforts.
- **Local capacity** was a key to success.
- Program self-sufficiency (**sustainability**) and success went hand in hand.
- Entrepreneurship development was recognized to be a **long-term** process.
- Successful projects **altered** their goals and approaches as conditions warranted.

- **Partnerships** and **collaborations** were important to success.
- Successful projects **celebrated** and **shared** the story of their success.

For people designing a program, they offer the following lessons (ibid.):

- Practitioners and entrepreneurs have unique **local knowledge** that can be applied to program design and subsequent program refinements.
- Successful initiatives brought together **related investments**, in this case, other regional economic development or entrepreneurship-related investments.
- Building a broader base of support for entrepreneurship investments requires continued efforts to “**make the case**” to local leaders.
- Programs can be improved by embracing long-term and locally-driven **evaluation** of program outcomes and impacts.

Conclusion

There is no silver bullet strategy for supporting entrepreneurship in rural areas. The available research suggests that isolated investments in facilities and short-duration programs are unlikely to have a meaningful impact at the community level, although they may help some individuals and startups. The most successful incubators and accelerators provide entrepreneurs and young companies with personalized, high-touch services from experienced staff and engaged mentors. These programs are likely harder to create in rural areas with low densities of people and resources. Comprehensive, long-term efforts to help rural communities grow entrepreneurs from within are likely the most promising strategy, although these require coordinated and sustain effort from local leaders. Incubators, accelerators, makerspaces, and coworking spaces are likely best thought of as pieces of entrepreneurial infrastructure that help to create entrepreneurial communities.

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