

Made in **PLACE**



**Small-scale manufacturing
and neighborhood revitalization**



Smart Growth America
Improving lives by improving communities

About this report

Technological and economic changes have created new opportunities in small-scale manufacturing and the “maker” economy, presenting a chance for communities to make progress on several important economic development issues. Small-scale manufacturing can grow local entrepreneurship and small business, develop or enhance new and existing economic sectors, and revitalize downtowns and business districts. Using tools and case studies, this whitepaper builds the case for why economic development practitioners should be thinking about working with small-scale manufacturers, how to grow the sector, and the particular synergies that are created when locating these businesses in downtowns and mixed use centers.

This report is produced as part of a broader technical assistance program which includes the provision of direct assistance to communities. Funded by the U.S. Economic Development Administration, and conducted in partnership with Recast City, the assistance guides communities in reviewing existing policies and programs that support local producers to grow their businesses in target neighborhoods. Specifically, the selected communities received a community assessment, during which the project team conducted fieldwork in the local subject area, held in-depth interviews with small-scale manufacturers, and led discussions to coordinate efforts with local stakeholder groups. The four communities that received technical assistance are:

- Knoxville, Tennessee
- Lowell, Massachusetts
- Twin Falls, Idaho
- Youngstown, Ohio

The overall goal of this initiative is to help communities grow their small-scale manufacturing and help their community revitalization efforts. It takes explicit advantage of the fact that small-scale manufacturing can help downtown revitalization and in turn, small-scale manufacturing can benefit from and thrive in downtown locations. This whitepaper brings together lessons from the technical assistance cities and lessons from around the country and identifies **four actions** to put these ideas into practice in your community.

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Introduction

Throughout the 19th century, small-scale manufacturing grew in cities, towns and villages all around the United States. For these businesses, location and resources mattered: power sources, natural resources, and access to markets and people. These local assets created a manufacturing environment that was human in scale, and integrated into the fabric of their communities.

In the 20th century manufacturing transformed into a predominantly large-scale enterprise and moved out of neighborhoods and downtowns. Large-scale manufacturing became an incompatible use for neighborhoods and downtown areas due to its large physical scale, noise, significant freight requirements, and pollution. These factors ensured manufacturing's separation from neighborhoods and commercial centers into standalone facilities or industrial parks. This change also created high barriers to entry in the manufacturing sector because production only occurred in high-cost, large scale plants and produced thousands of units at a time.

Now, recent technological and economic shifts—such as access to online marketplaces, the ability to process sales on mobile devices, and affordable access to tools for smaller production runs—have lowered those barriers. These trends are changing what is possible in manufacturing, and point the 21st century economy back to this *new old* trend: small-scale manufacturing.

This new face of manufacturing allows many more people to produce and sell their own goods: costs of production are lower, tools are more accessible, space needs are smaller, production runs can be small and on-demand, and sales can start overnight. And similar to 19th century manufacturing, these entrepreneurs often benefit from being embedded in downtowns and neighborhood centers—and these areas also stand to benefit greatly from their presence there. Production is compatible with neighborhood uses, is interesting to see, and fits into small spaces. For communities, this presents a dual opportunity to simultaneously grow this business sector and contribute to neighborhood revitalization efforts.

Many local economic development strategies include support for growing and launching small businesses such as retail shops and professional services. However, small-scale manufacturing is often overlooked by local economic development practitioners—but can be an important piece of any economic development strategy and downtown redevelopment initiative. Similarly, the typical practice of mixed-use development includes retail, office, and residential to promote downtown revitalization, but rarely considers small production businesses as a complementary use. Plans often expel industrial uses outside of downtowns to suburban auto-oriented industrial parks.

But there are examples from around the country that are now turning this notion on its head, demonstrating that manufacturing businesses are not only thriving as a result of being on main street and in mixed-use districts, but are contributing to the character, appeal, and success of walkable neighborhoods.

How do small-scale manufacturing, downtowns and neighborhood centers support each other?

Small-scale manufacturing is emerging as an innovative strategy in today's neighborhood revitalization and economic development toolbox. And, these same businesses are finding that these locations can help them thrive. How are small-scale manufacturers and makers fitting into these spaces, and how can these same areas be fertile locations to grow the sector and reap economic benefits?

Communities that locate these manufacturers within existing downtowns or walkable retail areas benefit in many ways.

First, small-scale manufacturers can draw foot traffic and help to fill retail spaces that are difficult to lease or are vacant. The entrepreneurs that start these businesses quite often become powerful brand ambassadors for their cities and towns, highlighting the innovation and benefit of local production. The small scale-manufacturing sector is integral in building the small business community. Furthermore the sector provides an inclusive pathway and an opportunity for jobs for individuals that may have difficulty finding them in other sectors.

The benefits of small-scale manufacturing in neighborhood centers

Advancements in industrial technologies make small-scale manufacturing a strong alternative use in mixed-use corridors and centers. Small-scale manufacturers are cleaner and quieter, and more compact compared to traditional heavy manufacturing and thus can physically fit and be good neighbors. The small manufacturers benefit from existing infrastructure investments, access to retail customers, and proximity to transit, retail, housing, and a robust diversity of businesses and workers. For instance, a small manufacturer who fills a vacant storefront both attracts neighborhood residents to walk by and see production, and benefits from any existing foot traffic from other retailers or local transit stops. Additionally, manufacturing businesses benefit from being near each other. Small manufacturing business owners can help build a steadier supply of skilled labor, attract more competing suppliers, and encourage knowledge spillover between firms. This critical mass can only be achieved by allowing firms to locate in close proximity of one another, and near existing housing and commercial centers.

Small-scale manufacturing is an umbrella term that refers to all types of small businesses that produce tangible goods. This includes textiles, hardware, woodworking, metalworking, and 3D-printing. It also includes hardware prototyping, consumer product design and prototyping, breweries and distilleries, and local food production and packaging. The businesses may be consumer-facing or provide products to other businesses and often have 1-30 employees.

(Source: Recast City)

Small-scale manufacturers are also drawn to strong, dynamic places. These businesses often market and brand themselves by using the city, town, neighborhood, or even the building where they produce. Small-scale manufacturers, like many entrepreneurs, increasingly want to be in downtown or comparable areas to attract talent. They value quality of place as a critical factor when choosing their location.¹ The places they locate are not accidental—they identify strongly with the communities in which they work, sometimes developing locally made brand platforms such as Made In Baltimore and Cincinnati Made, becoming strong ambassadors for a place. Conversely a community's own brand can benefit when the city or community is associated with a cool, innovative, or original brand and product.

Creating a foothold for future growth

Communities around the country are changing zoning and city policies to accommodate these businesses downtown and in commercial centers because they are not only employers, they are destinations in themselves. Small-scale manufacturers can be among the first businesses in target areas for redevelopment before it's feasible for traditional retail to survive. Many of these businesses have more diverse revenue sources than traditional retailers—including online sales, business to business, or specialty orders. While most of these businesses are not necessarily dependent on foot traffic to be financially feasible, they can serve to help draw people to an area. Some small-scale manufacturers, like breweries, can also serve as stand-alone destinations, drawing an experience-oriented crowd.

Small-scale manufacturers create a unique amenity that can attract people to a new place. In addition to retail, restaurants, and cultural venues, small-scale manufacturers can give residents and visitors new reasons to come spend time in a neighborhood. As local products such as food, wood products, and textiles are made in core neighborhoods for the first time in decades, these businesses are destinations for customers to see firsthand where their products come from, and add to the connection with customers that is already driving the buy local movement.

Providing another attractive option to fill retail space

Many cities encourage ground-floor retail through zoning to support active street frontages and promote human-scale urban design. Yet there is not always adequate demand from existing retailers or service businesses to support ground floor retail, especially in the initial years of lease up in new development.

National changes in retail trends are exacerbating retail vacancies. Taken as a whole, the U.S. has more square feet of retail than demand. Traditional retailers closed hundreds of stores in the last few years, and analysts believe more will do the same over the next decade.² Meanwhile, online retailers like Amazon and other e-commerce platforms show no signs of slowing down.³

This changing retail landscape represents an opportunity for small-scale manufacturing to fill the gap in mixed-use districts and neighborhood main streets. Small-scale manufacturers are a different tenant type than traditional retailers or service providers, as hybrid businesses that can simultaneously be producers and main street retailers. They can thrive in locations that are not prime retail frontage, shapes, or sizes. A business may sell wholesale online, but can draw attention on a block through a formerly vacant store

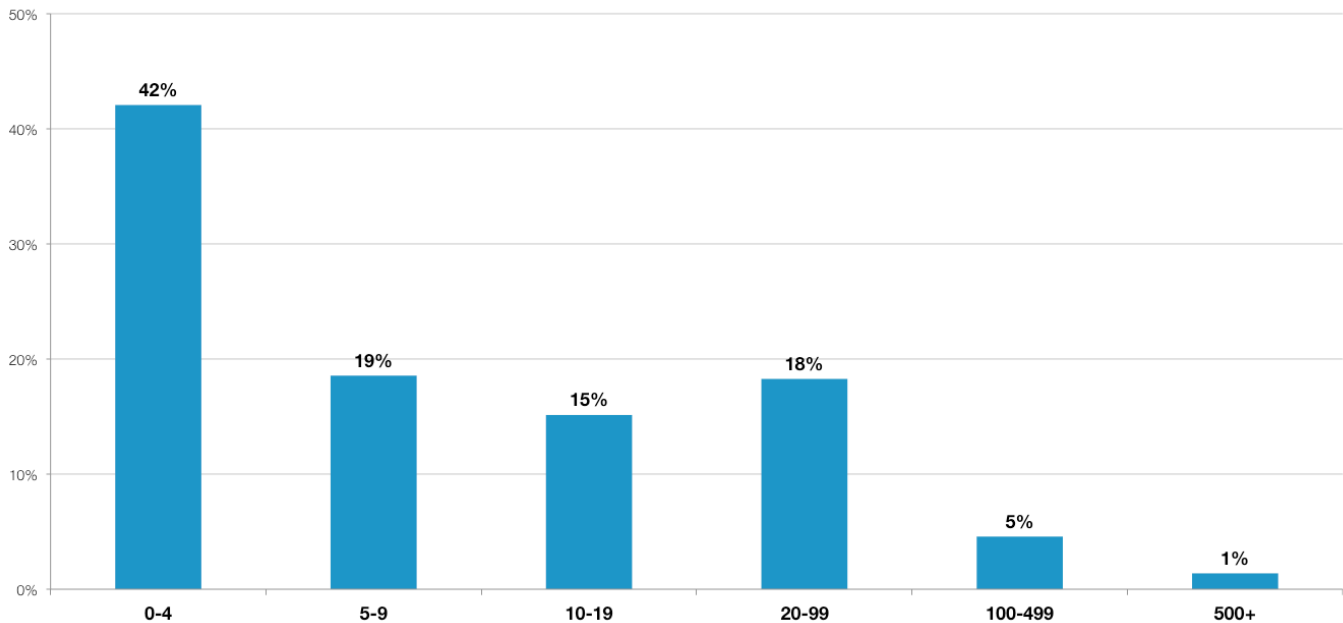
that now shows machinery and people at work. A collection of businesses can help to attract other retail investment in an area that has been neglected. In some cases, these businesses become an experience and destination of their own, anchoring the block or development.

Growing small-scale manufacturing creates a resilient small business environment

Small business is key to not just local economic success, but national prosperity, accounting for two out of three net new jobs created in the U.S.⁴ Supporting a diverse variety of small businesses, across industry sectors, creates jobs for a diverse range of skill sets and wages, and helps buffer local economies from dramatic fluctuations in any one individual industry. Additionally, small businesses tend to keep money within local economies longer: local businesses reinvest nearly 50 percent of their revenue in the local community, versus about 14 percent reinvested from large chains.⁵ Strategies that seek to grow local economies from within by nurturing local businesses, often referred to as economic gardening, support local entrepreneurs to create companies and bring new jobs and business to a region. Nationally, strong regional economies are correlated with having many small businesses rather than a few large ones.⁶

Small-scale manufacturing businesses are a key piece of building the local small business sector. According to data from the Manufacturing Institute, over 75 percent of manufacturing businesses in the U.S. had fewer than 20 employees in 2014, as illustrated in the graphic below. Communities will benefit from strategies that include these small manufacturing businesses in local small business programming and placement efforts.

Percentage of manufacturing firms by number of employees



Source: Manufacturing Institute; Bureau of Labor Statistics

Building a more inclusive business community

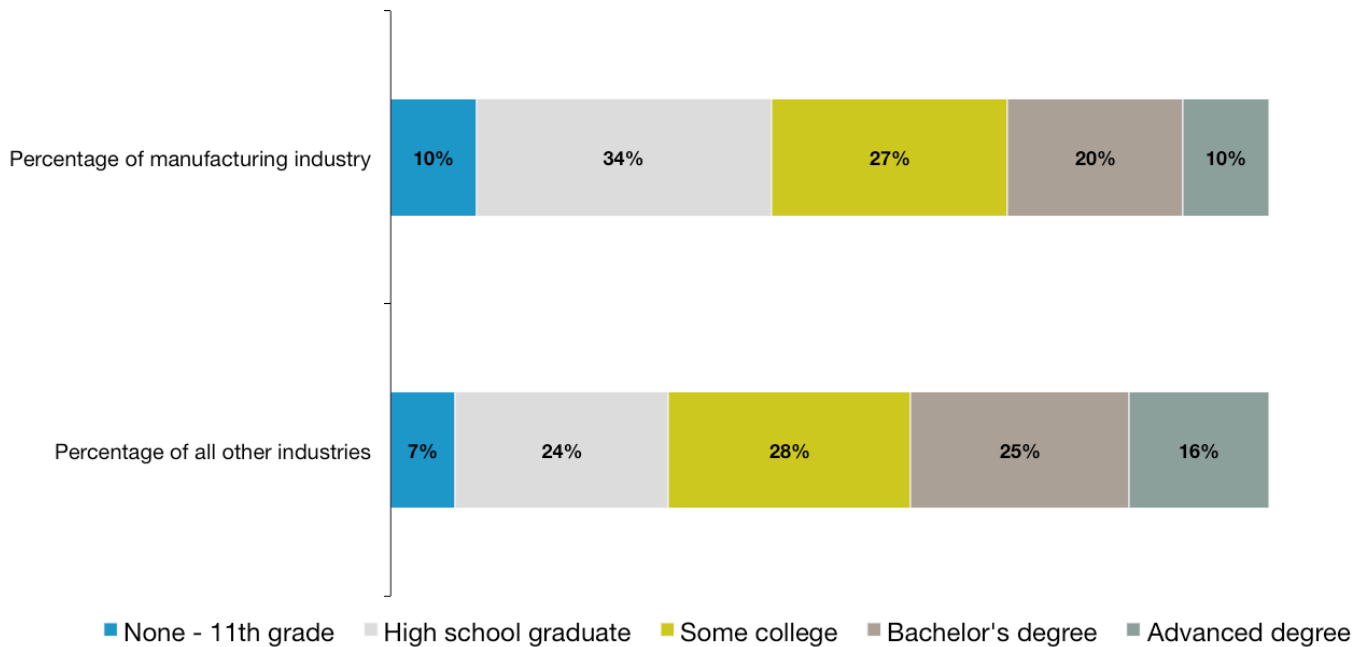
In addition to diversifying a local business ecosystem, small-scale manufacturing firms have the added benefit of expanding economic opportunity to a diverse range of residents. As a sector, small-scale manufacturing represents a diverse demographic population. Data show that small-scale manufacturing entrepreneurs come from a range of ethnic and racial backgrounds, and include men and women. For example, on Etsy, one of the largest platforms for makers and micro-manufacturers, 87 percent of sellers are women.⁷ Additionally, there is a growing trend of entrepreneurialism in immigrant communities: 28.5 percent of new entrepreneurs in 2014 were immigrants, up from 13.3 percent in 1999.⁸

Yet the outreach and assistance offered by local government often miss many of these business people. Additionally, the lack of access to capital sources is a major barrier to minority entrepreneurs. Local governments are recognizing the importance of bringing resources and assistance to underrepresented entrepreneurs from diverse cultural and demographic backgrounds, who may not know about programs, points-of-contact in local government or existing capital programs for small business. With continued public sector support and strong public-private partnerships, small-scale manufacturing can continue to serve as an entry point to capitalize on skills in the community, and empower residents to turn their skills into a business.

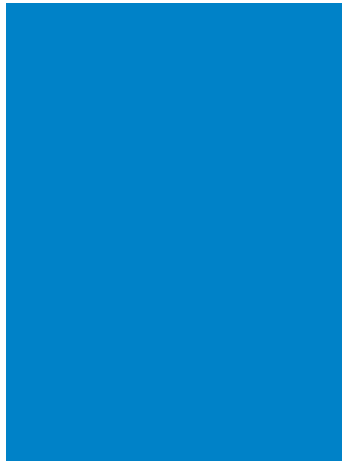
Job accessibility

Small-scale manufacturers also provide jobs with economic mobility across a variety of education levels. On the whole, the manufacturing industry employs an outsized share of workers without a college education. Such jobs are accessible to workers who are unable to access, or choose not to pursue, higher education. In addition, research from the Brookings Institution shows that advanced industries (which is inclusive of small-scale manufacturing) pay more than retail at every education level.⁹ In particular, for individuals without a college degree, manufacturing jobs pay higher wages than other industries when compared to retail, casino, call center or other service jobs.¹⁰ At the same time, new training programs are helping to build the pipeline of skilled employees who can jump into this field with exposure to different types of small and scalable production tools. With targeted support, the sector can help interrupt the cycle of poverty many families and communities face. A national survey of kitchen incubators, for example, revealed that a significant percentage of their tenants are women (61 percent), an ethnic or racial minority (32 percent), and/or come from low-income backgrounds (28 percent).¹¹ Even when facilities do not intentionally seek to build wealth in lower-income communities, they often do so de facto.

Percentage of educational attainment, by industry



Source: U.S. Census, 2016 American Community Survey



What kind of spaces does small-scale manufacturing need?

Small manufacturing integrates well with existing community development, but also has some needs specific to its sector. Economic development staff will need to understand who these businesses are within the local community in order to support their space and growth needs.

Most small-scale manufacturers fall into one of three categories:

Artisan industry

A business using small tools, light machinery, and hand tools. These businesses are most often consumer-facing and sell through a variety of channels, including online, at craft fairs or pop-up markets, and/or in a small storefront.

Small production

These businesses might provide contract production services to other designers and producers alongside production of their own items. These businesses may or may not be interested in scaling from this size. These businesses produce goods for both consumers and other businesses, and may sell direct to consumers and/or wholesale.

Small production and scaling

A scalable business with ownership that wants to grow. These businesses often work in textiles, hardware, or food/beverage, with some or all production on site. Some of these businesses may have a dispersed production model and use multiple contract manufacturers for specialized items.

Each category of businesses is often left out of local economic development strategies. These businesses hire locally, purchase supplies locally, and their owners or employees generally live within the community. While their space needs vary depending on product and business model, they all benefit from being closer to existing neighborhood centers and main streets. Additionally, some of the infrastructure small-scale manufacturers need fit well into community redevelopment projects.

Many local economic development departments provide services to help find space, address moving costs, and sometimes defray the first few months of rent or a major capital improvement for new local businesses to help get settled. Local government staff, chambers of commerce and community development corporations may serve this role. Each should consider how different spaces may be well suited for small-scale manufacturing businesses, and mesh this sector's needs into existing planning and economic development efforts:

Small storefronts for retail and production space

Some consumer-facing producers lease small workshops where the business can sell products and also do production on site. Many of these micro-retailers produce high value items with small equipment and choose to locate within neighborhoods. These businesses complement other storefront uses such as retail-only shops and restaurants, add vibrancy to the street front as people can walk by and watch products being made, and fill vacant spaces in commercial corridors.

Example: The Art Walk in Washington, D.C. leases micro-retail spaces to local artisan industries.¹² The 400-800 square foot spaces provide a low-cost option for businesses that want a storefront for both production and retail. The development includes apartments above the micro-retail, on a pedestrian walkway to a subway station. Businesses, such as textile producer Stitch & Rivet, can grow from smaller units to larger ones as their staff and production needs grow, all while adding energy and foot traffic to the area.



The Art Walk at the Brookland Metro station in Washington, DC. Photo courtesy of Monroe Street Market. <http://www.monroestreetmarket.com/>

Shared kitchen

Shared commercial-grade kitchens, or kitchen incubators, rent shared-use food processing and storage space to multiple food production tenants. These tenants are in the food processing, catering, wholesale or food retail sector. Shared kitchens allow food production businesses (like food trucks, small-scale catering businesses, or pop-up eateries) to launch with lower risk, and can significantly reduce the barrier to entry for low-income business owners. Expensive food production equipment and facilities are owned and maintained by the kitchen operator (for-profit and non-profit) and producers pay a fee to use the facilities.



Food being prepared inside the Common Wealth Kitchen Incubator in Youngstown, OH.

These facilities allow food producers to avoid the heavy costs of a brick and mortar location, to scale up, and also to comply with health department regulations. Over 50 percent of kitchen incubators are less than 5,000 square feet.¹³ Some kitchen incubators also offer assistance with business planning, marketing, and licensing. Many are mission-driven NGOs that promote business ownership in low-income populations.

Example: The Common Wealth Kitchen Incubator in Youngstown, Ohio grew out of a local community development corporation that previously focused on housing.¹⁴ The kitchen incubator is a non-profit and offers hourly leasing for tenants interested in using food processing and storage equipment. The facility also has a specialty thermal canning system that attracts users from around the country. The incubator is located in a 1930's building on a historic corridor within a residential neighborhood. The facility is clean and quiet, and is a good neighbor to the apartments on the second floor of the building and the residential neighborhood around it.

Industrial cowork buildings

Some multi-tenant industrial buildings provide workspace to small producers of varying size on a monthly or annual lease basis. Unlike usual shared-office or cowork models, these spaces are zoned to allow production uses. Such buildings are a key part of the local infrastructure for small producers. By offering built-out and safe space with flexible lease terms, tenants can expand their space along with the growth of their business. Industrial coworking spaces offer unique amenities like loading docks, freight elevators, and high ceilings to support small-scale manufacturing. They may also include shared conference rooms, office suites, and other business services specific to production-based businesses. They are often located near residential areas, on commercial corridors, or in transition areas between residential and heavier industrial uses.

Example: The Western Ave Lofts and Studios in Lowell, Massachusetts used an artist district zoning overlay to accommodate live-work space for over 300 small-scale manufacturers and artists in a historic fabric mill building.¹⁵ The mill has five floors of flexible use space where jewelry makers, textile production, soap makers, a local brewery/tap room and a mix of other businesses produce goods. This built-out space is essential for the city to retain these businesses and jobs within the community.

Makerspaces

Makerspaces offer a range of production and fabrication tools to work in wood, metal, textiles, electronics, 3D printing, and more for a membership or class fee. Makerspaces may focus on attracting the existing hobbyists in a community, provide tools and space for workforce training, or grow in response to a burgeoning artisan business community that needs access to more tools at a lower cost. Business models vary greatly in size and user type. Some makerspaces are large, for-profit ventures and others are community-based and fit into libraries and community centers. Users of makerspaces could be complete beginners to 3D printing, and others might be professional woodworkers who are looking to grow their business. In many cases, a makerspace can become a neighborhood focal point and community gathering space for youth and adults.



A 3D printer in the Knox Makers space, assembled inside of an old vending machine case.

Example: Knox Makers, in Knoxville, Tennessee is a non-profit makerspace that provides equipment and tools to members for a small fee.¹⁶ It provides tools to work with wood, metal, electronics, 3D printing, textiles, leather and laser cutting to its members. The space also hosts discussions and events on maker techniques and technology. Its goal is to be a community gathering place for engineers, entrepreneurs and hobbyists.

Incubator or co-op for industry-specific businesses

Some small-scale manufacturers graduate from a makerspace or a startup program and need a specialized place to produce a product at larger quantity. Accelerators and incubators are a key piece of the infrastructure to support them. They may offer production advice and business counseling in a specialized sector, similar to other incubators. They may also provide access to industrial-grade production equipment that allows these businesses to scale more rapidly and stay local. These facilities help to lower the cost and risk to scale, and offer expertise to increase the likelihood of success.

Example: Peabody Heights Brewery in Baltimore, Maryland is a facility that works with independently owned brewers to help them brew, bottle, label, and scale up their business.¹⁷ Brewers may have outgrown their garages or other smaller scale brewing facilities. The co-op has a master brewer with experience in large-scale brewing operations. The facility, a former soda bottling plant, has industrial grade equipment, delivery service, and charges contract brewers a fee per barrel of beer they produce. While the 50,000 square foot facility is the size of a standard industrial production facility, it fits well into the neighborhood and features a taproom that hosts events for neighbors and visitors.

Mixed-use production space

Small-scale manufacturing businesses often scale from micro-retail or coworking space to their own facilities. Such businesses often mix well with other uses such as educational institutions and offices, or serve as a strong neighbor in retail districts. Businesses assume their own risk to lease space, renovate and operate as they grow.

Example: Shinola in Detroit, Michigan is housed in the same building as the College for Creative Studies.¹⁸ The design work, watch and watchband fabrication, and headquarters all operate in this shared use building. Shinola's work is complementary to the College's and they partner on student design workshops. The business helps bring more jobs to the neighborhood while also supporting the neighboring educational institution.



A group touring the watch-making floor at Shinola in Detroit, located in the same building as the College for Creative Studies. Flickr photo by the Center for Positive Organizations. <https://www.flickr.com/photos/positiveorgs/22911094602/>



How can your community encourage and grow small-scale manufacturing?

Based on experience with this relatively nascent sector there are four actions that local economic development agencies, chambers, local governments and others can take:

1. Find, connect, and support small scale manufacturers
2. Identify funding sources
3. Encourage small, light industrial space in local developments
4. Create cross-sector partnerships

1. Find, connect, and support small scale manufacturers

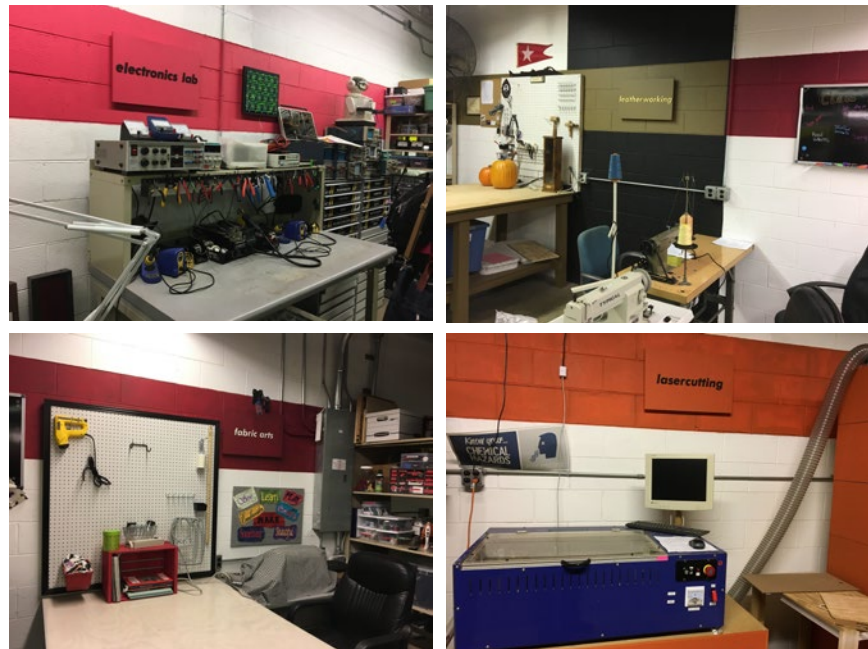
Many jurisdictions do not have a readily accessible list of small-scale manufacturing businesses or know who owns these enterprises. Economic development practitioners can build a database of small-scale manufacturing business owners to understand the locations as well as the types and sizes of spaces the businesses need. Communities will need to invest in purposeful outreach to identify business owners who are people of color, women, and from local immigrant populations, since these businesses are often not tied into the existing business networks. Outreach such as this will ensure that small-scale manufacturers know who to contact for financing, space needs, infrastructure issues, and city permits. Local attention also increases their likelihood of remaining in the community.

The community's economic development team can provide a number of different types of support and connections:

- Identify local, small production businesses through local fairs, markets, ethnic and religious institutions, and by hosting informal networking events in target neighborhoods.
- Recruit small-scale manufacturers to target retail locations in the community to support reinvestment and build up the attraction and energy in an area. Provide matchmaking services for potential tenants with local developers interested in this sector.
- Connect business owners to resources like commercial shared kitchens or makerspace facilities to expand their production at low risk.
- Provide small business training and entrepreneurship programs specific to the needs of production businesses, similar to those provided to other types of local businesses.
- Create a marketing brand for locally made products, with an online directory of participating manufacturers and products.
- Establish a one-stop shop either within the local government or at a partnering non-profit to ensure that small producers know where to go for help.

Case study – Knoxville, Tennessee

The Mayor's Maker Council was formed in 2016, designed to develop a shared vision for the region's diverse maker community; raise awareness of Knoxville's local maker movement and associated micro-economies; promote local goods and services; and address government policies and regulatory issues that impact maker businesses.¹⁹ The 15 members of the Maker Council are appointed by the Mayor, and represent maker businesses, developers, and community non-profits in the city. The Mayor sends a representative to all Council meetings, and the Council hosts an annual Maker City Summit to connect with maker business owners and support their work. The city partners with the Knoxville Entrepreneur Center and the Knoxville Urban League to create a one-stop shop of resources for small manufacturing business owners, startup trainings, a local Maker City brand, and to work together to connect with minority and women-owned businesses.^{20,21}



Spaces set aside for particular areas of focus in the Knox Makers space in Knoxville, TN.

2. Identify funding sources

Often local and regional economic development agencies lack funding programs to support small-scale manufacturing businesses. Lenders, both public and private, may not be familiar with businesses that manage supply chains and product delivery, or micro-enterprises with small margins. Community development corporations may not be familiar with how to finance coworking facilities for multiple small manufacturing businesses.

Local governments can create programs that connect small producers to micro-lending, and invest in buildings that provide low-cost space for local producers or a product-based incubator or accelerator. Local and national banks' small business banking sectors can also be valuable partners. These partners can work together to create a series of funding programs:

- Create or repurpose a municipal revolving loan program to offer small businesses low-cost loan terms that they may not receive with a short credit history.
- Leverage federal community development block grants (CDBG) to fill financing gaps in shared production facilities or startup training programs that benefit under-represented populations.
- Build a network of local banks that are committed to local small business growth and connect successful small-scale manufacturing businesses to this group.
- Initiate an entrepreneur loan fund targeted to minority- and women-owned production businesses, potentially in partnership with business training or financial literacy programs where needed.
- Employ U.S. Department of Agriculture programs in small towns to fund food business incubators and makerspaces. Consider programs such as the Value-Add Producer Grant or other Rural Development program funding sources.
- Utilize the U.S. Economic Development Administration Public Works and Economic Adjustment Assistance Program to fund infrastructure improvements, site acquisition, rehabilitation and equipment for small manufacturing. These funds have been used to fund “Made In” branding programs, business incubators, and commercial kitchens.
- Provide Tax Increment Financing (TIF) or Payment in Lieu Of Taxes (PILOT) awards for a development's commitment to below market lease rates for small manufacturing businesses in target locations.
- Help to connect Community Development Finance Institutions (CDFIs) with small-scale manufacturers. CDFIs have experience funding unconventional borrowers to help small businesses meet their goals.



Case study – Lowell, Massachusetts

While local banks are often interested in funding local small businesses, they are not always able to do so. The City of Lowell, MA brought several local banks together to create the Lowell Development & Financial Corporation (LDFC).²² The structure of the LDFC allows local banks to reduce their risk by pooling funds to support local businesses, including small-scale manufacturers. Companies are only considered for LDFC funding once they graduate from the University of Massachusetts Lowell's iHUB accelerator or the EforAll small business training program in order to provide the banks with a vetted pool of businesses.^{23,24}

3. Encourage small, light industrial space in local developments

Small-scale manufacturing businesses need affordable space to produce their goods. This often means that jurisdictions must be proactive to protect existing light industrial space in target locations and to encourage new small production space in redevelopment and new construction projects. Local land use policy and financing must support this outcome. Communities will benefit from policies that keep small production within neighborhoods to retain good middle-income jobs and the vibrancy that comes with this business type.

- Ensure that existing commercial zones and building codes allow artisan manufacturing businesses. Add an artisan manufacturing definition to the local land-use code if needed.
- Create an incentive in target zoning areas to develop a minimum square footage of ground floor micro-enterprise space for small manufacturing businesses. For example, an incentive might be to provide a density bonus in exchange for development of affordable space for production within a new mixed-use project or reuse of older industrial properties central to the community.
- Develop an overlay zone to protect existing industrial buildings from conversion to other uses, or create a district designation that both protects these uses and allows for live-work space and some commercial development.
- Consider zoning that allows office and retail development on vacant industrial properties if new development includes a minimum square footage of new light industrial development as well.
- Work with private developers to redevelop surplus city-owned properties with a requirement to include a minimum square footage for small-scale manufacturing businesses.
- Connect community development corporations or private developers to new market tax credits (NMTC), historic preservation tax credits (HPTC) to reduce the cost of redevelopment for a project.

Case study – The Production, Distribution, and Repair zone in San Francisco, California

The Production, Distribution, and Repair zone allows new office construction in underutilized industrial lots when new light industrial is built as well.²⁵ The city developed this policy to address the lack of light industrial properties left in the city, and created a financial incentive for developers to add to the building stock. The first project using this zoning is 100 Hooper, a partnership between private developer Urban Green Devco and SFMade's non-profit real estate development arm, PlaceMade.^{26,27,28}

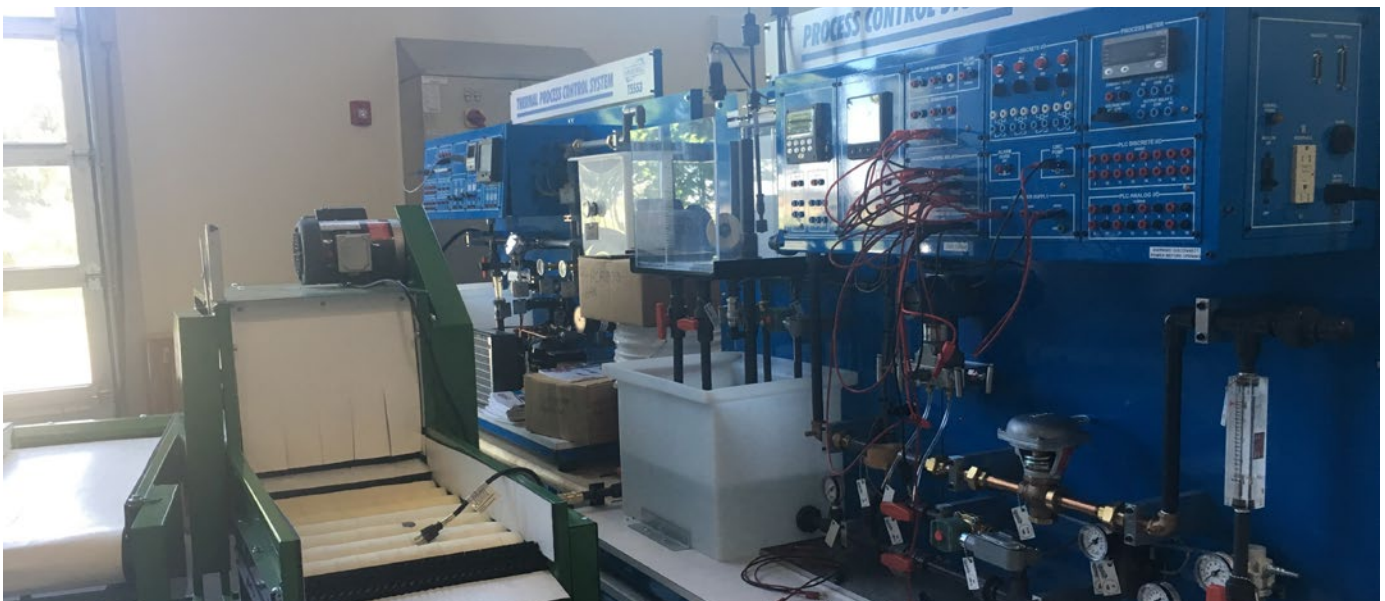
4. Create cross-sector partnerships

For small-scale manufacturing to succeed, partnerships need to be forged throughout the private, philanthropic, and non-profit sectors. Economic development professionals can convene these stakeholders and develop goals to support small-scale manufacturing, identify training needs, and bring additional partners to the table. Anchor institutions, community colleges, local Urban League chapters, workforce development programs, and cultural and ethnic institutions can all serve key roles in this process.

- Engage local non-profit organizations that work directly with businesses owned by people of color, women, and local immigrant populations to build an inclusive network and services.
- Build a partnership with anchor institutions that commit to purchasing a minimum percent of supplies or services from the local small-scale manufacturing community.
- Convene local philanthropy and corporate investors to support makerspaces, apprenticeships, and workforce training programs with placements in local manufacturing jobs.
- Partner with community colleges to offer vocational training that includes industrial manufacturing tools as well as entrepreneurship programs for the trades.
- Work with workforce development programs to help small-scale manufacturers find local hires, and showcase manufacturing employment opportunities through internships, events, and school trips.

Case study – Twin Falls, Idaho

When Chobani announced it would be bringing hundreds of jobs to its \$100 million dollar yogurt facility the College of Southern Idaho's (CSI) workforce development team sprang into action. The region already had low unemployment rates and difficulty filling positions in the booming manufacturing and food-processing sector. To get ahead of the incoming jobs, CSI's Applied Technology & Innovation Center (ATIC) partnered with manufacturers to identify and design applied curricula and facilities that would prepare students for positions in local industries.²⁹ The ATIC is now home to classrooms and labs equipped with state-of-the-art manufacturing and food processing facilities and provides students with hands-on training with the same equipment they use on the floor in their future careers.



Conclusion

Small-scale manufacturing has emerged as a way to tie opportunity to place, and can fill a key missing piece in local economic development.

Every place has its own history of skills and capacity. Understanding how to build on that legacy, while keeping up with a dynamic labor market and a changing built environment, are critical challenges facing communities in the 21st century. The tools in this paper represent a range of solutions to better integrate small-scale manufacturing into existing economic growth and revitalization efforts. Communities of diverse sizes, industries, and market conditions can find success by aligning manufacturing with neighborhood revitalization—but regardless of context, these efforts will be more successful if they include an explicit and deliberate focus on including and harnessing the talents of all their residents including communities of color and different ethnicities who may not be connected to traditional economic development infrastructure.

Finally, while this paper is intended to provide guidelines for local action, the small-scale manufacturing sector continues to grow. New practices will continue to emerge that can be added to the local toolbox. In the meantime, communities in the vanguard need to establish a framework that connects manufacturing opportunities with other local goals and priorities. They will also benefit from collecting data to measure performance, where possible, to empower their efforts. Continued action can support an environment conducive to a healthy, independent local manufacturing community.

Notes:

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