

2019

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Appetite for Growth: Challenges to Scale for Food and Beverage Makers in Three U.S. Cities

Economic Development Quarterly
1–12
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DOI: 10.1177/0891242418808377
journals.sagepub.com/home/edq



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Abstract

Food and beverage (FaB) manufacturing represents a promising opportunity for small-scale “makers” and local economic development. The growth of entrepreneurial maker businesses can be understood in terms of segmentation of market demand, emergence of new intermediaries, and availability of affordable production infrastructure. Yet the ease of starting maker businesses stands in contrast with the challenges of achieving growth and scale as a manufacturer. Through semistructured interviews with 31 FaB makers in Chicago, New York City, and Portland, Oregon, the authors analyze the challenges facing maker–entrepreneurs in this sector. The authors find that the everyday character of food and the relative ubiquity of food production infrastructure helps makers get their start, but that the unique character of food inputs and distribution networks pose distinct challenges and opportunities as they grow. Economic development efforts to support FaB makers should focus on nurturing local demand, developing food-oriented intermediaries, and ensuring affordable production space.

Keywords

food and beverage manufacturing, maker movement, entrepreneurship, local economic development

The food economy represents an emergent area of interest for economic development practice in the United States. As one of the few areas of the domestic manufacturing economy that has avoided large-scale job loss in recent years (Levinson, 2017), food and beverage (FaB) manufacturing seems like an oasis of stability for local economies amid ongoing restructuring and change. Yet this dramatically understates the extent to which the food landscape is changing in ways that are opening new opportunities for small-scale, entrepreneurial ventures. Local and sustainable food movements are appealing to customers willing to pay a premium for high quality, distinctive products. Culinary attractions—from high-end bistros to food trucks—are recognized as part of the distinctive portfolio of urban cultural amenities serving both residents and tourists. Efforts to localize agricultural production through urban agriculture, and foster regional connections between urban consumers and peri-urban/peri-rural producers serves to strengthen regional multipliers (Schmit, Jablonski, & Mansury, 2016), promote food security, and support the local “consumption base” (Markusen & Schrock, 2009).

The growth of small-scale FaB production can be understood in relation to the “Maker Movement” in cities (Wolf-Powers et al., 2017). The Maker Movement has been fueled by several factors, including the fragmentation of consumer demand in favor of distinctive, artisanally and/or place-made products; new Internet and social media technologies for

connecting to customers and one another; increasing availability of rapid-prototyping technologies like 3-D printers and personal computer numerically controlled (CNC) machine tools; and new institutional forms such as “maker-spaces” for incubating new ventures (van Holm, 2017). Yet for all that is new about the maker economy, there is growing recognition of the importance that regions’ existing industrial assets—supply chains, infrastructure, workforce skills, industrial land inventories—play in supporting the growth of today’s “makers” into tomorrow’s manufacturers (Grodach, Connor, & Gibson, 2017).

In this study, we examine the opportunities and challenges facing food- and beverage-related makers in three U.S. cities: Chicago, New York City, and Portland, Oregon. Drawing on semistructured interviews with over 30 maker–entrepreneurs and maker-serving organizations across those cities, we analyze the role of demand conditions, institutional networks, and

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production infrastructure in facilitating and hindering food makers' growth. Our task here is to understand whether and how the challenges and opportunities facing FaB makers are similar to makers more generally, and how they are distinct.

We find that challenges of growth and scaling for food makers are similar in some ways to those facing makers more generally. The ease with which makers can start enterprises stands in direct contrast with the stubborn realities of business growth and expansion. Growth requires making significant shifts in production methods, organizational management, upstream and downstream relationships, and often location. Each of these represents a daunting task in itself; yet firms often wrestle with all simultaneously.

However, we find that opportunities and pathways for food makers to achieve rapid growth and scale are in many respects more accessible than for other types of makers. The everyday nature of food consumption and production makes it comparatively easy to get started, especially in places with a strong local food culture. And, the prevalence of wholesale distribution networks into food retail establishments (i.e., grocery stores) offers food makers opportunities to achieve rapid growth in sales, provided they can keep up. Growth is, however, ultimately a strategic choice that some firms make and others eschew. The prevalence of intermediaries to help growing companies navigate the complex world of supply chains, production capacity, and so forth has an impact on the ease with which food makers can begin the journey toward becoming food manufacturers. We conclude that economic development efforts to support food makers could help by nurturing local demand through support for local branding and market development efforts; developing food-specific intermediaries to provide strategic advice and technical assistance around supply chains, distribution decisions, regulatory issues, and connections with existing food manufacturers to provide at-scale production capacity; and maintaining affordable industrial land in cities.

Food and the Urban Manufacturing Economy

In recent years, FaB manufacturing has represented an outlier among U.S. manufacturing sectors for its relative consistency and growth. Although total U.S. food manufacturing employment barely increased from 2001 to 2017, its share of total manufacturing employment grew from 9.1% to 12.7% due to massive declines elsewhere in manufacturing (Levinson, 2017). However, this stability masks ongoing shifts within the industry. Although large establishments remain highly prevalent in food manufacturing, there has also been significant growth of small-scale food producers. Total value added attributed to FaB establishments under 50 employees increased by 23.4% in real terms from 2002 to 2012, compared with 7.1% for the industry overall.¹ And, the number of "nonemployer" establishments in FaB has exploded, increasing from

20,167 in 2000 to 52,771 in 2015, growing more than three times faster than across all sectors. Such FaB microenterprises totaled nearly \$2.2 billion in sales in 2015.² While this accounts for just over 2% of total industry output,³ it is indicative of the growing contribution of smaller FaB makers.

Few things embody the historical industrial base of cities more than food. Cities throughout time have served as production platforms for the agricultural hinterlands surrounding them, utilizing the agglomerative advantages of the urban core—infrastructure, labor, market access, innovative potential—to yield external economies of scale in food production and distribution (Jacobs, 1985). Food production famously propelled the industrial development of cities like Chicago, Minneapolis, and Kansas City in the late 19th and 20th centuries (Cronon, 1991). Even as truck transportation loosened the centripetal forces on urban centers in the 20th century, cities still retained food production as an important component of their manufacturing portfolio. Recent studies of U.S. manufacturing growth have shown strong regional market effects influencing food industry growth, pointing to the ongoing role of urbanization economies in supporting the industry (Adkisson & Ricketts, 2016).

For this reason, food is once again considered a good fit to the "postindustrial" urban manufacturing base. As urban incomes have risen and demographic diversity has increased, there is growing attention to "food culture" in cities, from high-end bistros to the resurgence of "street food" and street vending to the growth of ethnic markets (Agyeman, Matthews, & Sobel, 2017). At the same time, it has dovetailed with efforts to bolster regional food systems and food security by fostering connections between urban consumers and peri-urban producers through farmer's markets, farm-to-table restaurants, urban agriculture, community food hubs, and community-supported agriculture initiatives (Horst, McClintock, & Hoey, 2017; Schmit et al., 2016). Increasingly, food is viewed as both an essential urban amenity and a driver of "consumption base" development (Markusen & Schrock, 2009), creating opportunities for FaB "makers" to flourish.

Understanding the Maker Economy

The emergence of the "maker economy" in the past decade has captured the attention of scholars and popular observers interested in this new form of innovation and production (Anderson, 2012; Browder, Aldrich, & Bradley, 2017; Clark, 2014; Dougherty, 2012; Grodach et al., 2017; Stangler & Maxwell, 2012), as well as policy makers and practitioners interested in supporting these new entrepreneurial ventures as a pathway to revitalizing their manufacturing economy (Milstein Commission on New Manufacturing, 2014; National League of Cities, 2016). "Makers" can be defined as enterprises that integrate design with production to manufacture products for sale (Wolf-Powers et al., 2017). They

operate in diverse sectors of the economy, from technological gadgets such as wearable devices to traditional craft sectors like apparel and shoes to FaB products.

Research on makers suggests that many, although not all, wish to grow. Maker-entrepreneurs can be characterized in terms of three broad types: *micromakers* who prefer to remain small in scale, forgoing growth to maintain craft/artisanal production methods; *global innovators* who intend to grow but shed production activities over time in favor of design and branding functions; and *emerging place-based manufacturers* who intend to grow and achieve scale while retaining both design and production capacity in place. While each of three types of makers has something to offer economic developers, this last group is the one with the most potential to support job growth and community economic vitality. At the same time, we have found that maker-entrepreneurs of all types are commonly motivated by more than just a profit motive. They are often fueled by a desire to achieve social and political goals ranging from environmental sustainability and localization of economies, to promoting family-wage jobs for less-educated workers. The growth of maker-entrepreneurs generally, and within FaB manufacturing in particular, can be understood in relation to changing demand conditions, the role of intermediaries, and access to production infrastructure.

Demand Conditions. The maker economy has been influenced by several long-run consumer market trends. One has been the fragmentation of consumer demand over time—what Anderson (2008) has called the “long tail” of the demand curve. This has been fueled, on one hand, by the growth of Internet outlets that allow producers to reach niche markets in new ways, but also by the ongoing development of flexible production technologies that support product variety. At the same time, we have seen the growth of what Scott (1997) calls the “cultural economy” of products and services that convey cultural and symbolic meaning and “sign value” on their owners and users, often constructed through media, advertising, and branding. This allows makers to differentiate their wares from mainstream products in ways that sustain a price premium; however, this is most common in cities like New York where consumers with high levels of disposable income are found. Yet makers also appeal to consumers through indicators of social responsibility and benefit—for example, through products that are made in an environmentally sustainable or preferable manner, that support artisans and craft producers, and local economy and community more generally. Social media has made it easier for makers to relate and “tell their story,” putting a human face on market relationships that have become increasingly disconnected over time (Marotta, Cummings, & Heying, 2016).

Food is an area where consumer sentiments have opened new spaces for entrepreneurial makers to compete with established brands. There is growing political awareness of the

“moral economy” of food (Jackson, Ward, & Russell, 2009), which critiques the ongoing consolidation and political clout of industrial “agribusiness,” globalization, and delocalization of agricultural commodity chains, and unsustainable farming practices and questionable food and agricultural technologies (e.g., genetically modified organisms) and linkages to inequality by race, gender, citizenship status, and other axes of difference (Alkon & Agyeman, 2011). This has translated into growth opportunities for food entrepreneurs—from farmers markets to food trucks to maker-manufacturers to retailer—to differentiate their products based on their local and/or sustainable qualities. However, the ability of food makers to sustain and translate these qualities for broader audiences as they grow remains an open question.

Role of Intermediaries. Makers are supported by existing and emergent institutional actors that intermediate and facilitate connections between makers and inputs to production, end markets, support services, and in some cases, to one another. This is not necessarily unique to the maker economy. There is a rich literature on the embeddedness of production activities in networks of institutional governance, especially in the context of “post-Fordism” where markets have become more volatile, flexibility has become more important, and large, vertically integrated firms have been supplanted by networks of webs of smaller firms (Benner, 2003; Piore & Sabel, 1984; Powell, 2001).

For smaller firms, the presence of institutional intermediaries greatly matters because it augments their limited internal resources (Doussard, Schrock, Wolf-Powers, Eisenburger, & Marotta, 2017). Innovation scholars have noted the importance of intermediaries in influencing the capacity of small- and medium-sized manufacturers to benefit from the research and development activity within large firms and research institutions, support skills development and workforce capacity, and navigate complex supply chains (Christopherson & Clark, 2007; Clark, 2014). Similarly, many entrepreneurship scholars have adopted an “ecosystem” approach that shifts attention away from the entrepreneurs themselves to the environmental conditions that make them both more likely to start up in the first place, and more likely to succeed (Auerswald, 2015; Mason & Brown, 2013; Motoyama & Watkins, 2014; Stangler & Bell-Masterson, 2015).

Within the maker economy, several new “maker-enabling” institutions have emerged to support their growth and development. Online retail platforms like Etsy (2016) have transformed the possibilities for freelance makers to tap directly into niche consumer markets across the globe, while at the same time, retail establishments, craft fairs, and “local brand platforms” like SF Made and Made in NYC have raised the visibility of local production both for consumers and emergent makers. Other online platforms like Makers Row attempt to help connect makers to one another to facilitate production relationships. But the most visible institutional

innovation of the maker economy has been the “makerspace,” which provides young people, adult hobbyists, and emerging entrepreneurs affordable access to production equipment and space and skills development opportunities (van Holm, 2017). Although many makerspaces serve primarily as educational rather than entrepreneurial spaces, some notable makerspaces like Portland’s ADX serve as focal points for both business incubation but also community building (Roy, 2015). This is emblematic of the “social entrepreneurship” ethos that exists in the maker economy, one in which many of the organizations founded to serve makers are entrepreneurial ventures in themselves.

There has been, however, comparatively little attention to sector-specific character of these new maker-oriented institutions. Some of them, such as The Hatchery in Chicago, focus specifically on FaB entrepreneurs, recognizing the unique market and regulatory challenges they face. Yet the relative importance of intermediaries by type (e.g., supply chain vs. workforce) and degree of formality at different stages of business growth remains poorly understood.

Production Infrastructure. Although many makers start as hobbyists in their home or a makerspace, achieving sustained growth and transition from maker to manufacturer depends critically on the presence of “legacy” production infrastructure within their community. This relates specifically to the material inputs of land, labor, and capital necessary to engage in manufacturing production, many of which are under direct threat from years of disinvestment and policy neglect. In many sectors like apparel and electronics, domestic (especially urban) production capacity was largely wiped out in the 1990s and 2000s, erasing both tangible sources of at-scale contract manufacturing options, but also intangible sources of occupational skill and industry knowledge (Clark, 2013). In recent years, urban scholars have sounded the alarm over planning efforts that diminish stocks of industrial land, especially in cities that have experienced waves of commercial and residential reinvestment in the urban core, which threaten the revitalization of urban production economies through displacement of both existing and emerging manufacturers as land costs grow (Chapple, 2014; Leigh, Hoelzel, Kraft, & Dempwolf, 2014). In this context, the contribution of what Gibson (2016) calls “material inheritances” to the growth and viability of makers and other cultural producers is receiving increasing scholarly attention (Grodach et al., 2017).

The relative employment stability of the broader FaB industry in the United States suggests favorable conditions for FaB makers to access legacy production and workforce capacities necessary to support growth. Yet whether there are meaningful spillovers between established, large-scale manufacturers and emerging makers remains largely unexamined. Also, they are unlikely to be immune to challenges relating to industrial land availability that have bedeviled makers and small-scale manufacturers in the urban environment.

Data and Method

In this study, we attempt to answer two related research questions that will help scholars and practitioners assess the economic development potential for FaB maker businesses. First, what conditions support emergence, growth, and scaling ambitions for FaB makers? Second, what elements of the local ecosystem and infrastructure are most important to FaB makers looking to grow and scale?

The findings here are drawn from a coordinated study of maker-entrepreneurs and maker-supporting organizations in Chicago, Illinois, New York City, and Portland, Oregon, with interviews conducted in two waves between April 2015 and January 2018. The first wave was conducted between April 2015 and April 2016 with funding from the Ewing Marion Kauffman Foundation metropolitan entrepreneurship research program (Wolf-Powers et al., 2016); a second wave of interviews took place between November 2017 and January 2018 and focused specifically on FaB makers. Because there is no unified database of maker businesses—indeed, many are too new or small for traditional business databases—we utilized a variety of methods to establish our sampling frame, including websites, media reports, placements in local markets and retail establishments, and referrals from maker-supporting organizations and makers themselves. To be included, it was not necessary for a business founder or owner to identify as a “maker”; the business simply needed to be designing and producing objects for sale. Within each of the three sites, we sampled from this list purposely to yield variety in terms of product type, company age, and founder characteristics. Overall, we interviewed representatives from 105 maker enterprises and 41 maker-supporting organizations across the three cities; 31 businesses were in FaB, which are the focus of this study. Where relevant, we draw on insights from the maker-supporting organizations, especially those with a specific focus on food maker businesses.

The three research sites vary considerably in terms of size, market conditions, and industrial composition, yet each contained a critical mass of maker activity and “legacy” manufacturing infrastructure. Our research focused on the broader metropolitan areas, but in practice nearly all firms and organizations we identified and interviewed were contained within central cities.

We used a semistructured interview protocol that focused on the themes of company and founder background, production methods and processes, sales and market geography, and relationships with public, private, and nonprofit support organizations. We also asked interviewees whether they identified with the maker movement and how they conceived of it. Finally, we asked respondents to characterize their ambitions and plans for their businesses going forward. We produced detailed interview summaries and coded them thematically using a web-based qualitative analysis package,

Table 1. Food and Beverage Makers Interviewed by City Region.

City region	Count (share %)
Chicago	9 (29)
New York	13 (42)
Portland, OR	9 (29)
Total	31 (100)

Table 2. Food and Beverage Makers Interviewed by Detailed Industry (NAICS).

NAICS	Industry	Count (share %)
3119	Other Food Manufacturing	11 (35)
3118	Bakeries and Tortilla Manufacturing	7 (23)
3121	Beverage Manufacturing	7 (23)
3113	Sugar and Confectionary Product Manufacturing	3 (10)
3114	Fruit and Vegetable Preserving and Special Food Manufacturing	2 (6)
3115	Dairy Product Manufacturing	1 (3)
	Total	31 (100)

Note. NAICS = North American Industry Classification System.

Table 3. Food and Beverage Makers Interviewed by Firm Founding Year.

Founding year	Count (share %)
2007 or earlier	3 (10)
2008 to 2011	15 (48)
2012 or later	13 (42)
Total	31 (100)

conducting tests of interrater and intersite reliability to ensure consistency in analysis procedure.

Sample Characteristics

The 31 food maker businesses interviewed were distributed about evenly across the three sites (Table 1). Over 75% were in food-related sectors (North American Industry Classification System [NAICS] 311x), with the rest in beverage-related sectors (NAICS 312x); the largest share was in the “Other food manufacturing” industry (NAICS 3119), a residual category that includes snack foods, coffee and tea, spices and condiments, and other fresh packaged foods (Table 2). This reflects the fact that many small-scale food maker businesses are found in niche product sectors as opposed to food staples.

Not surprisingly, the businesses interviewed tended to be small and relatively new. All businesses interviewed were founded after the year 2000, with 28 of the 31 founded in 2008 or later (Table 3). The largest share—nearly half (15 of 31)—were founded between 2008 and 2011, during

Table 4. Food and Beverage Makers Interviewed by Firm Employment Level.

Employment level	Count (share %)
1 Employee/sole proprietor	7 (23)
2 to 4 employees	9 (29)
5 to 9 employees	6 (20)
10 or more employees	9 (29)
Total	31 (100)

Table 5. Food and Beverage Makers Interviewed by Market Characteristics.

	Count (share %)
Market reach	
Local	7 (23)
Regional	13 (42)
National	4 (13)
International	7 (23)
Primary distribution channel	
Wholesale	20 (65)
Direct to consumer	7 (23)
Business-to-business	4 (13)
Total	31 (100)

and immediately following the Great Recession. The overall average number of employees in the companies interviewed was 5.9, with just under one fourth (7 of 31) reporting only one employee (Table 4). However, this varied quite a bit between newer businesses and more established ones; among businesses founded since 2012, the average size was 3.7 employees, compared with 7.6 for those established in 2011 or earlier. For the most part, the businesses represented the primary livelihood for their founders, with only 3 of the 31 owners interviewed reporting that the business was their secondary source of income.

Nearly four out of five (81%) of the businesses reported that they were experiencing sales growth in recent years; the remainder indicated that sales were stable, with none reporting a decline in sales (Table 5). Nearly two thirds (20 of 31) reported that their primary market orientation was toward wholesale distribution, with smaller shares reporting direct-to-consumer (7) or business-to-business (4) as their orientation. In terms of market reach, the largest share (13 of 31, or 42%) reported that their markets were regional; less than one fourth reported that their market was primarily local, while an equal number reported selling their product internationally.

The founders of the businesses were about evenly split between men and women (15 each, with one mixed-gender set of cofounders; Table 6). And, most of the founders came from one of three professional backgrounds: business and finance (10), food service (8), or arts, entertainment, and design (6).

Table 6. Food and Beverage Makers Interviewed by Founder Characteristics.

	Count (share %)
Gender	
Male	15 (48)
Female	15 (48)
Multiple/mixed-gender founders	1 (3)
Professional background	
Business and finance	10 (32)
Food service	8 (26)
Arts, design, and entertainment	6 (19)
Other	7 (23)
Total	31 (100)

Findings

Food makers experience many of the same challenges to scale experienced by makers generally, but with some notable differences. We outline three dimensions of similarity and difference: the character of local demand, the accessibility of supply and distribution network intermediaries, and the role of production infrastructure. Although our intent here is not to compare the three sites directly, we call attention to the elements that tend to be variable across metropolitan regions. Our findings are summarized in Table 7.

Local Demand: Essential But Insufficient

Virtually every food maker interviewed started with a local customer base, and for the majority, the region remained their primary market geography. Many found that getting a toehold in local farmer's markets or food-related events like Smorgasbord in Brooklyn was relatively easy, in part because food makers were often active consumers in the local food scene and/or had connections with restaurants, food truck operators, or other artisanal food makers.

Every entrepreneur has a different story for how they recognized the potential for their product or service, but some patterns emerge. In a classic Jane Jacobs (1969) style of "creating new work," many food makers identified market possibilities as an extension of existing work. For example, a Brooklyn-based maker of hand pies and tarts started her business while working for a small company making artisanal jams, whose product became a key input into her pies. In other cases, it grew out of production for personal consumption, as in the case of a Portland-based craft brewer who, like many, began brewing beer as a hobby and eventually realized that he could make a business of it. Or in other cases, out of their personal recognition of market gaps, such as a Chicago-based producer of low-sugar, gluten-free snacks, whose own experience as having both diabetes and Celiac's disease (gluten-related autoimmune disorder) led her to realize how few packaged food options existed for

people like her. The everyday nature of food matters here, as we all consume—and often produce—food for our purposes, opening new possibilities to experiment and consider new possibilities.

Selling niche products at relatively high price points, which was almost inevitably the case for early-stage small-batch producers, requires access to customers with discretionary income, and often a normative preference for local and artisanal products. This was true for both food makers and nonfood makers. For food makers, getting in with a few restaurants or hotels, or local event planners, allowed them to "test run" their products without an extensive amount of marketing. A Portland-based hot sauce manufacturer noted that the company built its brand to a large extent by selling to local restaurants, where customers could try out the sauce with their meals, which subsequently drove supermarket demand. A New York maker of artisanal marshmallows noted that his business could likely only exist in a place like New York City with its wealthy population. Several noted that "local" branding—both informally but also formally through programs like "Made in NYC"—was helpful for them in being able to command a price premium relative to other, more established brands; while obviously helpful in those markets, it did not necessarily translate elsewhere.

Growing and scaling their market often meant finding some way to eat incrementally into the market share for the mainstream market leaders. A Portland-based maker of artisanal cocktail bitters described his dream as simply capturing "1% of (market leader) Angostura's business," but even this requires the ability to stand out from the crowd. A New York maker of barbecue sauce described the value of using a distinctively shaped bottle, even though this added to the price and made it more difficult to find companies to pack her product. In other cases, it meant "telling the story" of the producers (and often the farmers growing the ingredients), while attempting to reframe the broader value proposition around food pricing. A Portland maker of artisanal tortillas lamented the common complaint that their products are too expensive to sell broadly, especially to less affluent customers:

It's the same argument for rich White folk who will look at the tortillas and say that they cost too much. A lot of people think that organic food costs too much. And it's like, the problem is that the cheap food is all subsidized, and when you explain that to people, and they try the food, then they start thinking twice about their food patterns.

This was a common sentiment expressed by food makers—that a key to unlocking the market potential for their products was to tap into the latent discontent felt by many toward industrial agribusiness. Natural food markets and co-ops are great for getting in the door with those already "converted" on this front; getting to a broader audience meant a more fundamental project of education and outreach.

Table 7. Dimensions of Growth/Scale Challenges for Food Makers, Similarities, and Differences With Other Makers, and Relevant Regional Variation.

Dimension	Similarities to other makers	Differences from other makers	Regional variation
Local demand	<ul style="list-style-type: none"> • Tendency to start with local demand • Trade-off between niche position and market growth based on price point 	<ul style="list-style-type: none"> • Ubiquity of food leads to greater accessibility • Food culture as driver of both supply and demand • Limits to exportability for some products • Informed by broader critique of industrial agribusiness 	<ul style="list-style-type: none"> • Extent of “food culture” and organic/natural food • Size and character of customer base, especially high-income customers
Supply and distribution networks	<ul style="list-style-type: none"> • Scaling up requires significant change in relationship to suppliers—need for quality and consistency • Distribution into retail carries financial risk compared with direct to customer 	<ul style="list-style-type: none"> • Greater need for retail access to achieve growth • Fickle character of agricultural inputs 	<ul style="list-style-type: none"> • Character of food retail market demand—presence of restaurants and chains committed to local food • Local presence of distributors targeting artisan/natural products • Proximity/accessibility of agricultural inputs
Production infrastructure	<ul style="list-style-type: none"> • Availability of low-cost “makerspaces” facilitates start-up activity • Scaling up requires major shifts in production—technologies used, in-house to contract, sometimes geography 	<ul style="list-style-type: none"> • Ubiquity of basic production infrastructure for start-ups (e.g., commercial kitchens) • “Copackers” as infrastructure for contract production more common in food than other sectors 	<ul style="list-style-type: none"> • Presence of food-related incubators • Presence of existing food production infrastructure in region provides easier access to equipment and/or contracting capabilities • Cost/availability of industrial space

Getting beyond local markets posed significant challenges for some food makers whose products were less readily shippable. For example, a New York-based maker of tempeh (soy protein) characterized the logistical challenges of moving from fresh to frozen—essential for selling outside the local market—as “a business in itself.” This meant a more concentrated effort to expand market penetration within the region, which puts almost inevitable limits on growth potential. This condition lent itself to “micromakers” whose ambitions for growth and scale-up were more modest; simply achieving sustained, stable growth was enough for them.

While many of these issues are familiar to makers more broadly, what makes food makers different is the sheer ubiquity of food and food production. Everybody eats and drinks; most people cook and shop for food; and many have worked in food production, retail, or service. The everyday quality of food makes it somehow more accessible to people—easier to envision where one could start.

Intermediaries: Supply and Distribution Networks

Moving from a “micromaker” to an emerging food or beverage manufacturer involves major shifts in a business’ upstream relationships to suppliers and downstream connections to markets. Both are heavily predicated on the existence of networks, as the informational requirements are extremely high and generally beyond the capabilities of the typical small-scale maker. Yet without making those connections, the prospects for growth are dim.

It is broadly true of small maker and manufacturing businesses that sustained growth requires achieving scale economies in the procurement of critical inputs. As batch sizes grow, makers can work their way closer to the underlying producer of the inputs rather relying on wholesalers or even retailers, which can yield substantial price reductions. However, what sets food makers apart is the general fickleness of food inputs, especially fresh inputs like fruits and vegetables, which often requires a significant effort to ensure that quality and consistency are not sacrificed along the way. This is especially true where a food maker’s market niche and/or price premium are predicated on a somewhat unique or distinctive product or flavor profile, or organic or nongenetically modified (GMO) ingredients. A Portland condiment manufacturer described opening drums of tomato paste and “tweaking” them to get the right flavor, and the difficulty of finding a supplier to grind horseradish root, which the owners had previously done themselves in-house, but said,

It’s like mustard gas. It took us almost a year to find someone who could do it because of the noxious gases but also because of the equipment needed to get the right consistency.

Makers reported that trade shows were often helpful in finding new suppliers, but word of mouth was even more helpful. A Chicago energy bar company said that a contract manufacturing partner advised them of sources they may not have known about, which allowed them to bypass more expensive distributors:

They said, “oh you should go talk to (company) for your cleaning solution, or [company] for your oats.”

For some, a commitment to supporting local agricultural producers meant that growth was exciting but posed challenges to those relationships. A New York pasta manufacturer described his company’s deep commitment to grain farmers upstate but went on to say that as the company has grown, he has been exploring farm communities in other regions with an eye toward moving at least some production nearer to those communities. In other cases, the uncertainty of sourcing meant bringing production in-house. For the New York tempeh maker, the culture they used was only available with one or two local distributors, which put them at risk if they were out for a time. As a result, the founder worked for 2 years to develop his own culture in-house.

The process of connecting with distributors and retailers was often equally mystifying for food makers. Again, this is a common challenge experienced by makers, but one that is particularly acute for food producers given that grocery stores represent the primary channel through which people purchase food. Simply put, there is no Etsy for food and distribution through networks of food retailers represented the clearest pathway to sales growth.

The ongoing restructuring of the food retail industry represented both a significant challenge and opportunity for food makers. On one hand, the consolidation of major supermarket chains over the years has made it increasingly difficult to get a foot in the door without being able to deliver substantial quantities at low prices. However, alongside this trend has been the growth of supermarket chains—both regional and national—attempting to differentiate themselves by catering to an increasing customer interest in locally produced items. Whole Foods, in particular, was identified as an important pathway onto the shelves, due to the chain’s pledge to source a defined share of its items from local areas. Similarly, Portland food makers identified locally based New Seasons Market as an important testing ground. In some cases, the grocery stores would help steer them toward a distributor to “pull them through.” Several makers noted that retailers provided them feedback about what types of products were likely to sell and which ones were not, helping to make choices about where to focus their production efforts.

But access to grocery retailers often represented a mixed blessing for food makers. When placed side-by-side with other products, it is more difficult to maintain a price premium, as a New York condiment maker explained,

To grab shelf space, you have to be at the right price. [. . .] I can’t be charging \$3 more than my competitor. And, this is also critical in terms of getting into other geographies [due to the cost of freight].

Managing the sales growth can be a challenge. One Portland company described the “order-maggedon” it faced when the region’s largest grocery retailer started placing orders for its product. The need to ramp up production to meet this demand introduced cash flow problems. In some cases, the retailers offered support, such as Whole Foods’ Local Production Loan program, but for makers of fresh foods, in particular, the expectation that they will buy back expired products introduced even more risk into the equation. Some makers expressed that the rigors, stresses, and low-profit margins of selling through grocery wholesalers and retailers simply was not worth it to them and have opted to remain small as a result.

Again, the challenges of building upstream and downstream networks to facilitate growth are not unique to food makers. Yet the nature of agricultural inputs, the heavily intermediated character of distribution networks, and the shifting terrain of food retail, makes the task somewhat trickier for food makers. The prospect of getting shelf space in a major retailer creates the potential to achieve rapid growth—provided the makers can keep up.

Production Infrastructure

Makers of all types face difficult choices when confronted with the need or opportunity to grow the scale of their business. Making is inherently about the iterative process of creation and production, which lends itself to labor-intensive efforts to prototype new products and then work out the “recipe” in small batches. While this artisanal process is important to the identity of makers and their products, it runs headlong into the imperative to achieve scale economies and meet the growing needs of customers.

For food makers, the barriers to entry with respect to production can be astoundingly low due to the sheer ubiquity of food production infrastructure. This includes the home kitchen, of course, which often serves as the “test lab” for makers’ new ideas and inspiration for starting their businesses. However, food safety regulations ultimately require food makers to produce their goods in commercial kitchens, which are relatively easy to find in large cities, although often at a prohibitively high price. Several food makers indicated that they started out producing in the kitchens of bars and restaurants operated by friends or acquaintances during off hours; this was particularly common for entrepreneurs with a background in food service. The emergence of food incubators, like Organic Food Incubator in Long Island City Queens⁴ and The Hatchery in Chicago, have catered to this population. Like other makerspaces, these food incubators provide more than just affordable space; they help in navigating the regulatory process and making connections with suppliers and distributors.

But scaling up from small batch to longer runs means making hard choices about production methods, and often

where production takes place. Intermediate scales of production can be difficult to achieve and sustain. For the Portland cocktail bitters maker, this meant experimenting with production equipment:

We started out using 1-liter mason jars but have since moved to the “brew craft stage”—we have adapted brewing equipment. Eventually we hope to have our own specialized equipment, but it simply doesn’t exist. We also had a brief “fusti stage” (equipment used for infusions) but that didn’t work. [. . .] We learned that the recipe didn’t scale linearly. We were trying to fulfill a big order from [local grocery chain] and we made our first batch and it didn’t turn out right, so we had to scramble and go back to our mason jars and we barely made our deadline.

More often, though, food makers turned to larger, more established food manufacturers to help them produce their product, especially where canning, bottling, or other packaging are required. “Copackers” are the food industry’s equivalent of contract manufacturers or job shops—they provide smaller makers with the infrastructure needed to produce at scale. Seven of the 31 food makers interviewed were working with a copacker at the time we interviewed them. While some viewed the copacker relationship as a transitory step, others viewed it as a strategic choice. For the Portland hot sauce manufacturer, the downsides of working with a copacker—such as less control over the production process—were outweighed by the reduction in financial risk associated with investing capital in specialized equipment. Indeed, the experience of working with a copacker was not without its challenges. The Chicago energy bar maker described his experience working with a larger industrial bakery that produced muffins:

They couldn’t see the value in a low-volume, high-price product like mine. [. . .] They were used to seeing a thousand muffins fly off the production line, and even though I was paying [the contract manufacturer] more to handmade our bars and he was probably making just as much, he couldn’t wrap his head around it.

Growth meant having to seek out new locations for production and storage, which represented a considerable challenge for many food makers, especially in hot real estate markets like Brooklyn and Portland. This can affect how makers assess opportunities for growth, as this New York maker of preserved fruits and vegetables lamented:

I grew up in Williamsburg on N. 8th street. Back then, there were all sorts of food factories around there—bagels, matzos, etc. I didn’t think it would be hard to do regardless of what I chose. But real estate was so expensive. Sometimes five times more than other parts of the country. Rents are just a different area. Right now, Bushwick, Williamsburg, Greenpoint is untouchable. We are therefore growing slowly because otherwise we would have needed to invest \$25,000 to \$50,000 in a space.

Several makers noted the trade-offs between their urban location and cheaper spaces on the urban periphery, or in other regions altogether. In addition to higher rents, urban locations require higher shipping costs and logistical challenges in acquiring inputs from rural agricultural producers, especially for makers working directly with small-scale farms. As production scale grows, the headaches of getting trucks in and out of the urban core increases dramatically. But moving out has its distinct disadvantages. The New York condiment maker noted that when she began working with a Boston-area copacker, the Whole Foods stores in New York stopped labelling her products as “local,” which dampened her business somewhat. She hopes to move production back to New York but has struggled to find a copacker with the right mix of cost and capabilities.

While food makers share many of the same challenges as makers more generally, it is fair to conclude that the potential to experience growth and scale—should they seek it out—is somewhat greater and more accessible for food makers. The everyday, near-ubiquitous nature of food and food production makes it remarkably easy to get started at small scale through farmer’s markets or other local food events, especially in places like Brooklyn and Portland with vibrant food scenes. Increasing efforts by food retailers to meet the demand for local products creates the window of opportunity for food makers to grow up quickly, provided they can scale their production in response. This points to the importance of intermediate-scale production options in cities, especially through copackers and other types of collaborative production arrangements, which allow food makers the opportunity to grow without significant investments in plant and equipment.

Conclusion: Harvesting the Economic Development Potential of Food Making

FaB represents one of the most promising sectors within manufacturing for entrepreneurs to grow a business and for economic developers to grow a local economy. While it lacks the cache of high-tech, advanced manufacturing sectors, food making is highly accessible and builds on long-term market trends in favor of local, sustainable, and distinctive consumption. FaB production supports what Markusen and Schrock (2009) call “consumption base” growth, in which the redirection of local consumer spending in favor of products and services with high local content—both material and labor inputs—supports regional growth, even without additional export activity, by increasing multipliers on existing spending. Although the likelihood that emerging FaB makers will supplant global food giants is slim, it is reasonable to believe that some, if not many, will grow to enjoy sustained market niches beyond their local economy, and with it bring significant increments of quality job opportunities and income for the communities where they operate.

The findings of our research, based on interviews with FaB makers in Chicago, New York City, and Portland, Oregon, contributes to a growing body of economic development scholarship that attempts to move beyond the hype of the “maker movement” toward a more empirically informed, granular understanding of the possibilities and limits for new forms of manufacturing innovation and production to take root in the urban and regional environment. As a qualitative inquiry, our research has attempted to tease out the processes and dynamics underpinning the experience of maker-entrepreneurs as they make their way in the world. Future scholarship could focus on the applicability of our findings to other contexts—whether they be other cities, regions, or countries with different environmental conditions, other sectors within the “maker economy,” or populations of entrepreneurs (e.g., women, populations of color). Similarly, our findings complement large *N* studies of both firms and places by “ground truthing” relevant categories of analysis and identifying points of policy intervention.

To that end, our findings suggest several ways that economic development efforts can ensure a supportive environment for FaB makers, especially those with an appetite for growth. While some of these steps are particular to food makers, others are broadly applicable to makers who aspire to become place-based manufacturers.⁵ Our recommendations are organized in relation to our three-part framework of demand conditions, intermediaries, and production infrastructure.

First, local economic development can nurture local demand through place-branding efforts like “Made in NYC” that raise awareness on the part of consumers about locally made products. Supporting other types of low barrier-to-entry events such as farmer’s markets, food trucks, and festivals can also be helpful in raising visibility, especially in places that do not enjoy an established “food culture.” These can be linked with microenterprise programs like the Portland-based Hacienda CDC’s Micromercantes program that helps emerging entrepreneurs, especially from disadvantaged populations, take advantage of these market opportunities.

Second, economic development efforts can develop and strengthen intermediaries that provide emerging food manufacturers—especially those looking to grow and scale—with strategic advice and technical assistance around supply chains, distribution networks, finance and capital access, production capacity, and regulatory requirements. This includes helping them to access at-scale suppliers, wholesalers, and customers who can support their growth. Moving from peddling pickles at the local farmer’s market to selling at scale through supermarkets around the country means simultaneously wrestling with each of these challenges, any one of which could pose a roadblock to growth. While existing small business and manufacturing assistance programs like Small Business Development Centers and the Manufacturing Extension Partnership have some of the tools and knowledge to support emerging manufacturers, our research suggests that the world of FaB is unique in ways that require specialized expertise. Food-specific business

incubators and other technical assistance programs like Oregon State University’s Food Innovation Center are examples of the kinds of intermediaries that can help small-scale entrepreneurs make the leap, for example, by connecting with at-scale copackers and helping with food labeling and packaging.

Finally, economic developers and urban planners need to ensure that industrial land is available and affordable in their communities, both through preservation of existing industrial land inventories from commercial and residential development pressures, and through proactive efforts to work with nonprofit or socially oriented for-profit developers to develop industrial spaces that are accessible to makers at different stages of their lifecycle. This need is especially acute in cities like New York City and Portland that have experienced significant increases in real estate prices and redevelopment pressures on industrial land inventories in recent years. Although incubators, commercial kitchens, and other shared spaces are important for food makers in getting started, as they grow they need affordable spaces of their own where they can produce and distribute. While this is not necessarily unique to food makers, the importance of urban demand and agglomeration to food makers means that accessibility and visibility are closely connected. Suburban and exurban industrial parks offer clear advantages to large, at-scale manufacturers but less so to smaller producers.

Acknowledgments

The authors wish to acknowledge the contributions of Charles Heying and Annie Levers to early stages of the research. They also thank Yas Motoyama for his early support, Jennifer Clark and Nichola Lowe for their ongoing feedback and support, and four anonymous reviewers for their helpful comments.

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The author(s) disclosed receipt of the following financial support for the research, authorship, and/or publication of this article: The authors acknowledge the financial support of the Ewing Marion Kauffman Foundation metropolitan entrepreneurship research program (project #20140778), which funded the initial round of field research for this study.

Notes

1. Authors’ calculation based on figures from U.S. Census Bureau, Economic Census, 2002 and 2012. Totals for NAICS 311 (Food) and 312 (Beverage and Tobacco); data for NAICS 3121 (Beverage) unavailable. Figures adjusted for inflation based on Chain-Type Price Index for Value Added by Industry for FaB and tobacco products, Bureau of Economic Analysis (BEA), U.S. Department of Commerce.

2. Figures from U.S. Census Bureau, Nonemployer Statistics series, 2000 and 2015. Totals for NAICS 311 (Food) and 312 (Beverage and Tobacco); data for NAICS 3121 (Beverage) unavailable.
3. BEA, Gross Output by Industry, 2015.
4. Since the time of interview, Organic Food Incubator has moved to Bloomfield, New Jersey.
5. Elsewhere (Wolf-Powers et al., 2017) we have offered policy and planning recommendations organized around the maker typology discussed in Section 2 (i.e., micromakers, global innovators, emerging place-based manufacturers).

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