

“Potentials for Community-Scale Production in Detroit”

**Sean Ansanelli
MSUP '13
GSAPP**

Abstract

While the city of Detroit has become infamous in recent years as symbol of urban decline, it once stood as an international archetype of industrial productivity. When attempting to formulate redevelopment programs, it is essential to re-examine the underpinnings of the production model that created both tremendous economic success, and subsequent vulnerability and decline. This thesis argues that rather than trying to recreate a scenario of productive superiority, Detroit can develop more resilient and community-oriented models of production. By looking at several such production models already occurring on the ground throughout the city, this thesis will attempt to outline an alternative trajectory for economic development.

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Introduction

The city of Detroit has become a national symbol of the dilemmas faced in community economic development throughout the United States. Only 1 of every 4 Detroit residents can currently find employment, the population has declined from a 1.8 million peak in 1950 to 700,000 today¹, and the city has recently been put under Emergency Management due to bankruptcy – thereby suspending local democratic governance². While Detroit stands out for its current dramatic state, the city also serves as a harbinger of future development trends more generally for post-industrial cities.

Despite these challenges, many development practitioners proclaim that Detroit can regain the glory days of the past³. During the first half of the 20th century, the city's economic vitality depended largely on the presence of large automobile factories from the Big Three car companies (earning Detroit the nickname, the “Motor City”). For decades, this arrangement provided accessible employment for a large middle class, and symbolized the productive capacities of American industry.

While the rhetoric of economic prominence can be appealing for a community facing challenging economic circumstances, it is crucial to understand why the previous model failed. Such an inquiry is not merely needed to find prior mistakes, but to question what “success” meant to begin with. While the causes for Detroit's economic decline and inequality stem from multiple causes, this thesis will focus on two problematic elements of the predominant production model – an industrial orientation based on maximizing production, and a model of wealth creation focused on narrow and increasingly concentrated individual returns. This arrangement has made Detroit extremely vulnerable to external change, and generated unsustainable forms of wealth.

First, it is important to recognize that while the past has been held up as an ideal for sustaining a large middle class, it was an exceptional circumstance conditional on specific technical and political market arrangements. With fewer global competitors and the need to sustain demand for products, the “Fordist” model of development predominant in Detroit relied upon sustaining the ability for workers to also consume products. Even this balance was only antagonistically maintained

¹ Detroit Future City – 2012 Detroit Strategic Framework Plan, p.11. With unemployment at 15.5%, Detroit is more than 50% higher than the national average -

<http://www.crainsdetroit.com/article/20100422/free/100429925>

² <http://money.cnn.com/2013/03/14/news/economy/detroit-emergency-manager/index.html>

³ While this sentiment is often expressed at development events, it is also more explicitly articulated in popular advertisements (See - <http://opportunitydetroit.com/> for example)

by the balancing powers of the state, corporate interests, and organized labor (Harvey 1991). Once new markets became available for labor and consumption, Detroit became expendable to the interests of greater capital accumulation for the concentrated ownership of the large auto firms⁴. Additionally, rather than creating advantages for all involved, the adaptation of more advanced automated technologies again primarily rewarded the owners of capital, while unskilled or semiskilled workers became increasingly irrelevant.

In many ways the automobile industry functioned as the literal economic motor for the city overall – with forms of development based around the goods produced (highways, single-family detached homes, individualized consumption) – and with the city reliant on tax revenues from wealthy firms to maintain vital public services. The type of wealth created also depended on continuous expansion and consumption – which has resulted in a steady raise in environmental and social destruction more broadly. While many observers have detailed the more obvious consequences of seeking to continuously maximize economic growth (Speth 2010), this system has also had more insidious effects of re-enforcing normative ideas that individualized consumption and accumulation are the only way to secure social well being.

Today, it still seems inconceivable to pursue local economic development without attracting substantial capital from private/corporate investment. Seeing no other means to provide for local needs, communities throughout the U.S. continually underbid one another in a “Race to the Bottom” line to attract private investment – relaxing social and environmental protections⁵. In Detroit, the promise of attracting the “creative class” and benefitting from appreciation in land values has been seen as the way forward for the declining city⁶, despite increased recognition that such strategies do not result in broadly shared benefits⁷. While recent strategies provide some additional stability - as they benefit from improving capacities of workers –

⁴ In his book “Origins of the Urban Crises: Race and Inequality in Postwar Detroit”, Thomas Surge details that between 1947 and 1963, Detroit surrendered more than a third of its manufacturing jobs to the surrounding suburbs, soon fleeing Michigan altogether for bargain-priced labor in the union-hostile South.

⁵ http://www.nytimes.com/2011/04/08/us/08states.html?pagewanted=all&_r=0

⁶ This vision is shared by mainstream development practitioners and the wealthy alike, as demonstrated by billionaire Dan Gilbert’s plans to redevelop Detroit, and the cities compliance with such visions – see: <http://www.nytimes.com/2013/04/14/business/dan-gilberts-quest-to-remake-downtown-detroit.html?pagewanted=all>

⁷ Indeed, even Richard Florida, the author of the “Creative Class”, recently conceded that, “On close inspection, talent clustering provides little in the way of trickle-down benefits. Its benefits flow disproportionately to more highly skilled knowledge, professional, and creative workers whose higher wages and salaries are more than sufficient to cover more expensive housing in these locations. While less-skilled service and blue-collar workers also earn more money in knowledge-based metros, those gains disappear once their higher housing costs are taken into account.” - <http://grist.org/cities/fallacy-of-the-creative-class/>

they simultaneously generate greater conditions of dependence and vulnerability, as the vast majority of essential material goods are made elsewhere.

Given Detroit's economic development history, however, many community-based organizations have a strong skepticism for current redevelopment proposals altogether. For generations, the promise of fostering job creation has been repeatedly evoked, but has often led to dependence, instability, and inequitable outcomes⁸. Moreover, many have come to recognize that the challenges facing Detroit are far more systemic, and have begun to question some of the most basic assumptions in development theory.

Rather than waiting for the trickle-down effects of economic growth, many community-based organizations have already begun to look beyond conventional development approaches. Many advocates describe the goal to “create livelihoods more sustainable than those that have disappeared.”⁹ Grace Lee Boggs, a ninety-six year old Detroit-based activist who has been intimately involved in nearly every era of grassroots organizing in the city perhaps summarizes the situation best. In “The Next American Revolution”, she writes,

Instead of trying to resurrect or reform a system whose endless pursuit of economic growth has created a nation of material abundance and spiritual poverty – and instead of hoping for a new FDR to save capitalism with New Deal-like programs – we need to build a new kind of economy from the ground up. That is what I have learned from fifty-five years of living and struggling in Detroit, the city that was once the national and international symbol of the miracle of industrialization and is now the national and international symbol of the devastation of deindustrialization. That is why so many people, especially young people, have their eyes on Detroit (Boggs 2012, 54).

It is the intention of this thesis, therefore, to provide a more thorough perspective of what an alternative production strategy might look like overall, and to explore how it could arise from already existing initiatives in Detroit.

⁸ For example, many residents cite the “Poletown” incident, in which former Mayor Coleman raised an entire working class neighborhood through eminent domain for a Chrysler factory that bore far fewer jobs than promised.

⁹ <http://www.yesmagazine.org/new-economy/work-reimagined-detroit-gets-creative>

Research Question:

How might current localized production schemes be linked to greater sufficiency in Detroit? In what ways could these arrangements foster more resilient allocation systems and more broadly held benefits?

Hypothesis

While exploring potentials for local production provide a useful perspective of alternative development trajectories, they are not in themselves adequate for addressing all local material needs. Many of the existing initiatives, however, likely have considerable space for further development in productive capabilities (toward more socially and environmentally oriented returns)¹⁰. The main impediment to developing these capabilities is not due to technical limitations, but rather a lack of conceptual frameworks for formulating a more comprehensive strategy.

Research Design

Preliminary Research

Preliminary research for this thesis consisted of reviewing existing literature on post-growth/steady-state economics to find discussions of urban planning, design, and development. I then conducted a second search for key topics referenced in the initial round of research. The secondary research topics included:

- Sustainability Theories and Standards
- Shared Resource Consumption Practices
- Cooperative Organizations and Commons Resource Management
- Decentralized infrastructure and Industrial Ecology
- Open Innovation and Community Supported Enterprises¹¹

In addition to a review of scholarly articles, also conducted interviews in these fields to gauge the rigor of my background research, and also to more effectively focus

¹⁰ For instance, the generation of goods and services while maintaining affordability, reduced ecological footprint, and meaningful labor.

¹¹ While this is not an exhaustive search list, it highlights some of the main search terms used.

research questions¹². I also looked at case studies in these areas more broadly – drawing insights in particular from U.S.-based projects through a combination of articles and telephone interviews. This research provided the rationale for the main case study subject areas chosen, and the selection of on-the-ground examples.

Case Studies

In addition to the primary subject areas mentioned above, case studies were also chosen given their explicit focus toward key criteria of equitable development, democratic management/ownership, low barriers to entry (grassroots), and active community engagement. These characteristics were mainly based upon organizational mission statements, involvement in broader social justice networks, and previous coverage in local and national publications.

Interviews were conducted primarily in person – with some done by email and telephone. While conversations often included more informal discussions, each interview was based on a template of questions to identify:

- Overall Objectives
- Challenges
- Institutional Supports and Networks
- Internal Organizational model
- Awareness of Broader Strategies
- Key Lessons and Thoughts for Future Improvement

Evaluation and Hypothesis

After conducting the interviews, I also conducted secondary research for fact-checking purposes, and to provide theoretical insights for findings.

While I did not attempt to find quantitative proof for my research hypothesis, my objective was to compare claims from secondary research to on-the-ground experiences. In this way, secondary claims could be reiterated with greater certainty, while any blatant inconsistencies could appear. By conducting a wider-range of interviews, I was also able to substantiate my assumption that the main barriers were to adaption of alternative development practices were mainly due to a lack of conceptual frameworks.

¹² I also incorporated interviews conducted previously this year, such as with the Champlain Housing Trust in Burlington, Vermont and the Dudley Street Initiative in Boston, Massachusetts.

Limitations

This research design had several limitations – both from the outset, and due to unforeseen factors.

To determine the broader community development landscape, for instance, or why the highlighted case studies were not receiving more significant support, I had intended to interview a greater amount of facilitating community development institutions – such as CDC's, Credit Unions, and city officials. However, establishing contact with these groups was quite difficult. This would be a key step forward for further research.

When developing the literature review, few sources seemed to deal with the specific issue of matching local production to greater degrees of local sufficiency – particularly with regard to the technologies described in this thesis (open-hardware and industrial ecology systems). While theoretical literature addressed certain topics, and conversations of Import Substitution Industrialization had many overlapping themes, the lack of comparable case studies (particularly at the city scale) limited the ability for comparative analysis.

Two particular data sets – on available technical skills and readily available salvageable materials – were unavailable. This data would have been necessary to develop more specific recommendations.

Lastly, while a more extended description of the technologies mentioned in this thesis may have strengthened the arguments of their potential, this seemed beyond the scope of this thesis and my own technical expertise.

Literature Review

Localization Strategies and Industrialization

“Localization” strategies have emerged in recent years as something of a counterpoint to economic globalization, offering scales of activity more conducive to democratic governance and environmental sustainability (Hess 2009). On the one hand, many have argued that localization strategies are essential to counter exploitive practices brought about by extreme wealth concentration and environmentally destructive practices (Mander and Goldsmith 1997). Locally-based ownership, these authors argue, is essential for accountability, and physical proximity is needed to check some of the most glaring environmental challenges (such as reducing carbon footprints). Other authors also argue that trends toward localization will likely emerge regardless in the coming years, as our current forms of development are predicated on the abundance of cheap fuel and displaced costs (Young and Princen 2012).

Localization arguments have also been advanced in the past – particularly with regard to industrial development. In the “Economy of Cities”, Jane Jacobs describes Import Substitution Industrialization (ISI) as a key strategy for creating diverse and vibrant localities. Jacobs claims that ISI strategies build up local infrastructure, skills, and general production capabilities. Moreover, other cities stand to benefit, both due to the general increased production, and by pursuing ISI themselves.

Many theorists have also detailed organizational structures that are more rooted in localities. In “Making Mondragon”, Whyte details the development of one of the most celebrated localization cases – the worker-owned cooperative cluster of the Mondragon Corporation in the Basque country of Spain (Whyte 1991). Through democratic worker-ownership, the cooperatives that make up the Mondragon are intrinsically tied to the overall wellbeing of the workers in the community – while also incentivizing more broadly shared local benefits. Recently, several community development practitioners have sought to replicate the success of the Mondragon experience in cities throughout the U.S. – largely focusing on an “anchoring” strategy to tie worker owned cooperatives to key local institutions, such as hospitals and universities (Alperovitz 2011).

Localization strategies, however, are also not without challenges. For instance, Kruger points out that ISI can function as a form of “rent-seeking”, as industries “chosen” by policy rather than markets could benefit from contracts without being efficient, and block other local competitors and innovations (Krueger 1974). This argument also reflects more general critiques that maintaining local

production neglects the need for completion to improve efficiency. These arguments will be addressed in the following section.

Alternative Models of Industrialization

In their work “The Second Industrial Divide”, Michael Piore and Charles Sabel argue that the current deterioration in economic performance of the global economy “results from the limits of the model of industrial development that is founded on mass production: the use of special-purpose (product specific) machines and of semi-skilled workers to produce standard goods.” Priori and Sabel go on to claim that,

The technologies and operating procedures of most modern corporations; the forms of labor-market control defended by many labor movements; the instruments of macroeconomic control developed by bureaucrats and economists in the welfare states; and the rules of the international monetary and trading systems established immediately after World War II – all must be modified, perhaps even discarded, if the chronic economic diseases of our time are to be cured (Priori and Sabel 1986, 4).

In addition to crises of current regulatory institutions being unable to find a workable match between the production and consumption of goods, the contemporary use of technology is misaligned given its potentials and current use. As they again explain,

Industrial technology does not grow out of a self-contained logic of scientific or technical necessity: which technologies develop and which languish depends crucially on the structure of the markets for the technologies’ products; and the structure of the markets depends on such fundamentally political circumstances as rights to property and the distribution of wealth. Machines are as much a mirror as the motor of social development (Priori and Sabel 1986, 5).

Priori and Sabel advance that our current choice is between the deteriorating mass production model, and a model of “flexible-specialization.” This same choice appeared at the beginning of the industrial revolution between mass assembly and craft, with the former prevailing merely due to political and cultural factors rather than any inherently greater efficiency in meeting demand. Moreover, with the increased use of computers and markets favoring customization,

While flexible specialization could make conventional large-scale corporations and mass production increasingly inappropriate, possibilities for localized

economies of scope and alternative institutional arrangements are also now being radically expanded by the open source movement. This movement is also having transformative effects on innovation structures, organizational models, and consumption practices.

Echoing this, authors have elaborated on the organizational advantages emerging through the adaption of open-source technologies. The open source software movement has also led to a shift in the processes and ethics for making things more generally. Through allowing code to be available to everyone, and encouraging modifications and reuse, the open source software movement has created an entirely new understanding of production dynamics. Legal theorist Yochai Benkler has pointed out that these practices, which he describes as “commons-based peer production” have been behind some of the most significant infrastructure for the internet – including the most complex data-storage and retrieval systems ever-created through p2p file sharing¹³, the Linux operating system, and Wikipedia – one of the largest and most successful collective knowledge bases ever created (all self-maintained/governed through voluntary and horizontal management structures) (Benkler 2007). While the low barriers to entry for informational production is part of this, these developments also demonstrate that when individuals are given access, and are free to pursue their passions, the results can rival those of conventional for-profit incentive structures.

Open-source inspired practices and modes of commons-based peer production can now be seen in a wide range of areas – from scientific research, to innovation platforms, to crowdfunding mechanisms and financial management (Tapscott and Williams 2009). The potential also exists to complete complex projects completely through open-collaboration – including input, design, evaluation, marketing, evaluation, etc. The culture of Making represents the adaption of these practices in physical production.

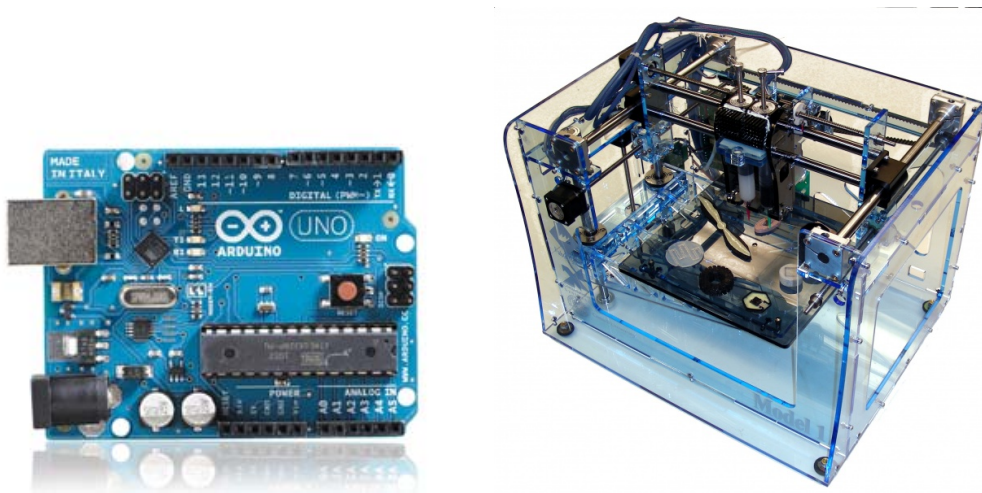
Through the combination of the cultural norms and communication channels from open source production, and increasingly available technologies for physical production, amateur maker communities have developed in virtual and physical space. Noticing the transformative potential of this emerging movement, publications like *Wired* have sought to devote significant attention to its development. Chief editor Chris Anderson even published a recent book entitled “*Makers – The Next Industrial Revolution*”, in which he proclaims that the movement will become the next Industrial Revolution. Anderson argues that such developments will allow for a new wave of business opportunities by providing mass-customization rather than mass-production (Anderson 2012).

These new modes of production are not only being enabled by new practices and norms, but also by emerging technologies (See Figure 1: Emerging Distributed Technologies). The most equipped spaces can also be described as “Fab Lab’s” – or

¹³ Here, the author is referring to peer-to-peer music exchange platforms like Napster and BitTorrent

production facilities that consist of a small collection of flexible computer controlled tools that cover several different length scales and various materials, with the aim to make "almost anything" (including other machines). These technologies of fabrication are becoming increasingly accessible, as interfaces are evolving for a broader user-base, and start up costs continue to decline – now roughly \$20,000. Fab labs hold tremendous potential for enabling new community development strategies. Again, as Gershenfeld describes, “for all the attention to the “digital divide” in access to computers between developed and developing countries... there is an even more significant divide in access to tools for fabrication and instrumentation”.

Figure 1: Emerging Distributed Technologies



Above are two key examples of emerging distributed technologies. The Arduino (left) is an open-hardware micro-controller that provides accessible programming for “intelligent” products. 3-D Printers (right) are capable of producing objects of various materials, including complex mechanical parts.

While many spaces utilize more conventional tools as well, more advanced technologies are becoming increasingly affordable and user-friendly. 3-D printers, which produce physical objects by layering materials such as plastic, ceramic, or even tissue¹⁴, perhaps most vividly demonstrate the potentials of more distributed technologies. While originally thought to be breakthrough for rapid prototyping of products (this alone being a tremendous innovation), 3-D printers have rapidly advanced to creating complex objects – such as an ultra-efficient vehicle in 40 parts rather than 1000’s, or the production of complex semiconductor chips a hundred times faster than the previous state of the art technology¹⁵. Experts proclaim that such technologies will eventually be on every individual’s desktop, but shared use from a community could be even more immediately attainable (and arguably more appropriate).

¹⁴ <http://www.3ders.org/articles/20130413-exploring-7-materials-with-3d-printing.html>

¹⁵ http://www.salon.com/2013/03/25/is_there_anything_3d_printing_cant_do/

In terms of learning and innovation, the open source and maker movements also offer new opportunities for broad-based participation. Arguing that our current education system is overly top-down and geared toward narrow specialization, many maker advocates emphasize that a more well-rounded and participatory experience is a more appropriate approach for human development. As Neil Gershenfeld explains,

The common understanding of “literacy” has narrowed down to reading and writing, but when the term emerged in the Renaissance it had a much broader meaning as a mastery of the available means of expression... Such a future really represents a return to our industrial roots, before art was separated from artisans, when production was done for individuals rather than masses (Gershenfeld 2007, 29)”

Enabling such forms of production also provides an interesting alternative to the division of labor doctrine espoused by Adam Smith. With excessive division of labor, individuals stand to lose comprehension for more complex systems, and large segments of the population are confined to repetitive tasks rather than having the ability to create. Indeed, while many have taken Smith’s idea of division of labor as a proxy for unequal talents among people, this is in fact very different from Smith’s original point of view, in which he describes “The apparent difference in natural talents between people is a result of specialization, rather than any innate cause (Smith 2009, 303).”

Lastly, many of the ideals and practices of the open source and maker movements reflect past arguments from the “appropriate technology” movement. Claiming that technologies should be suited to local conditions and knowledge, the appropriate technology movement advocated for designs themselves to be co-produced and understandable by local populations (Schumacher 1989). Similarly, other authors have claimed that in a development context (particularly in underdeveloped areas), strategies developed from a top-down perspective are largely inappropriate and unlikely to bring about improved conditions for the locality (Srinivas and Sutz 2008). Thus, enabling innovations to occur within and for local contexts are most likely to improve conditions for the locality.

Sufficiency-Based Development

What might a production system geared toward meeting local needs rather than continuous expansion look like?

While much work has been done in the field of Ecological Economics to critique growth-based development (Daly 1991), and some policy proposals have been developed (Daly 1997), overall conceptual frameworks and on-the-ground strategies are still strongly needed to formulate development strategies that can comprehensively avoid exploitive ecological and social practices. In the field of Urban Planning – which should play a key role in articulating settlement patterns and community development strategies not focused toward or reliant upon economic growth – there is a clear absence of work addressing the topic¹⁶.

In the “Logic of Sufficiency”, Thomas Princen attempts to outline an alternative management principle under the guiding rubric of “sufficiency”. Princen points out that many environmental regulatory regimes primarily emphasize cooperation and improved efficiency, but such organizing principles do not in themselves lead to a more sustainable form of development – essentially as such rationales can result in Jevons paradox. As an alternative, Princen argues that,

“Social organizing principles attentive to excess, to risks displaced in time and space, are desperately needed. Sufficiency principles such as restraint, respite, polluter pays, zero, and reverse onus have the virtue of partially resurrecting well-established notions like moderation and thrift, ideas that have never completely disappeared. They also have the virtue of being highly congruent with global ecological constraint, a congruence not shared by efficiency. By asking how much is enough, and how much work is too much, one necessarily asks what is excessive, what the risks are, not just in the short term and for immediate beneficiaries, but risks to those unlikely to realize these benefits, both for the immediate and long term (Princen 2010, 12).”

Princen goes on to detail several businesses and development practices that demonstrate how purposefully imposed constraints can yield much greater benefits for all parties involved. Even the idea itself though, while perhaps not yet fully articulated, provides a useful conceptual framework. As noted, the concept is not entirely new either. Marcus Wheeler points out that the goal of sufficiency for the city was a pressing concern even for the Ancient Greeks, who saw such a condition as vital to political independence (Marcus 1956). The nation of Thailand has also sought to establish the “Sufficiency Economy” as its guiding framework, emphasizing principles of moderation over maximizing growth (Noy 2011).

¹⁶ For instance, even research dealing with “growth” in the Detroit context exclusively focuses on growth of population and physical structures. See Dewar and Thomas - “The City After Abandonment”

The idea of sufficiency also allows us to think of what goals we might want to prioritize, and what type of development state we might want to eventually reach. Denis Goulet argues that the idea of development should mean nothing else if not the meeting of basic needs as quickly as possible, and that the pursuit of an abstract ideal of development is a kind of unattainable goal to begin with, a state of perfection that will continually be on the horizon (Denis 1995). Thus, while some may be fearful of defining a final state, this is not the objective of sufficiency – but rather to create the basis for greater equality and freedom.

In this regard, both practical and philosophical rationales have been similarly argued. Several theorists in ecological economics and critical geography have argued for land-use planning to establish a basis in the ecological carrying capacity of a region as an essential step toward creating truly ecologically sound development patterns – rather than just declaring any slight environmental improvement as “sustainable”, but creating measurable objectives for communities. Such ideas also relate to more socio-ecological arguments that have been put forth for several decades through the concept of “bioregionalism” (Thayer 2003). Bioregionalists essentially argue that people can only truly comprehend or realistically act upon environmental issues within a certain geographic proximity. Moreover, the responses to environmental problems must be locally specific, and the outcome of developing in accordance with regional characteristics can also create more unique and desirable places to live.

Lastly, beyond environmental concerns, alternative patterns of development embodied in more sufficient and distributed systems could provide a basis for more directly and effectively addressing issues of equity. As referenced earlier, the promise of future progress and growth allow equity issues to continually be pushed into the future. In addition, as Peter Marcuse points out, the creation of a “just city” requires going beyond distributional justice, and creating conditions to make patterns of inequality nearly impossible – embodied by what he calls “commons-based planning (Marcuse 2011).” Thus, many of the proposals offered through this thesis seek to develop upon this goal by creating more decentralized, sufficient, self-organized, and mutually beneficial institutional frameworks.

Broader Definitions of Wealth Creation

Many authors have also described that the goals of continuous expansion in production do not generate overall community wellbeing or equity. In “The Bridge at the Edge of the World,” James Gustave Speth has argued that the continuous pursuit of ever-more consumption has negative psychological outcomes and self-perpetuating cycles of dissatisfaction. As Gustav Speth explains,

Americans are substituting growth and ever more consumption for doing the things that would truly make us and our country better off. Psychologists have pointed out, for example, that while economic output per person in the United States rose sharply in recent decades, there has been no increase in life satisfaction. Meanwhile, levels of distrust and depression have increased substantially (Speth 2009, 72)."

Similarly, Robert Heilbroner explains that The issue is not, however, merely an individualized desire for more 'wants'. Rather, one major outcome of continuous growth is the encroachment of market relations into more spaces of everyday life, and a compulsory pressure to devote more of ones time to economic activities. As Heilbroner explains in "The Nature and Logic of Capitalism",

Much of what is called "growth" in capitalist societies consists in this commodification of life, rather than in the augmentation of unchanged, or even improved, outputs. The continuous emphasis on "time-saving" inventions or the unrelenting efforts of business to induce individuals to adopt new lifestyles are instances of this commodifying aspect of the self-expanding property of capital (Heilbroner 1986, 56)"

Overall, despite continuous economic growth, most of us now have to work harder to maintain a declining quality of life¹⁷. Thus, even those who don't bare the worst costs of growth are not even better off themselves. Alternatively, many theorists have begun to explore alternative ways in which "wealth" could be conceived.

While this idea of *homo economicus* has been widely critiqued, what is often taken for granted is the idea that individual economic actions bare discrete and isolated outcomes, rather than more diffuse effects. Alfred Marshall first described the "external economy" to be all such activities that occurs outside the individual firm or industry, including knowledge and expertise that develop socially in industrial districts¹⁸. Hardt and Negri point out that the term has been used increasingly frequently throughout twentieth-century economics literature, yet externalities are not incorporated into conventional economic analysis. They also note the increasing importance of such external activities - particularly the key role of positive externalities in immaterial production - even arguing that externalities play the most essential economic functions. In "Commonwealth", they state, "Rather than seeing the common in the form of externalities as "missing markets" or "market failures", then, we should instead see private property in terms of the "missing common" and "common failures" (Hardt and Negri 2011, 216)."

The key point is that by leaving such factors external to economic activity, immediate positive or negative consequences are overlooked in favor of eventual

¹⁷ Herman Daly "For the Common Good" (401-55)

¹⁸ "Marshallian External Economies" Economic Journal 103, no. 417

benefits through growth. In evaluating “local” economic development, issues such as scale and efficiency, are normally taken as a given for evaluating economic performance, yet these ideas are based in specific normative perspectives of human wellbeing (a narrow view of “efficiency”, for example, that seeks to externalize costs as much as possible). Also, while the original purpose of growth was for increased productive capacity through technological advancement, the potential for alternative local production systems is often overlooked. Rather than holding local development initiatives to standards for increased competitiveness in the global economy, the objective, alternatively, could be to maximize local economic autonomy, while building upon the diffuse benefits of such endeavors¹⁹.

¹⁹ The social dynamics and technology to foster such local autonomy (and solidarity) will be explored further below. Diffuse benefits could include democratic ownership, resilience, etc.

Detroit Case Studies

Throughout the city of Detroit, production models are already arising that seek to both meet basic needs as immediately as possible, and to rethink what development might mean altogether. This section will profile several of these initiatives in order to better understand current strengths and limitations, and what forms of community wealth creation might be possible in the near future.

For each section, potential models for further development will be suggested (referred to as “Precedents”) – drawing on related experiences of communities both nationally and internationally. Recommendations will be offered in accordance with perceived levels of adaption – from the more immediate, to the more idealistic.

Local Sourcing and Productive Land Use Strategies

With large tracts of Detroit land currently abandoned, many residents have already begun creating productive uses for the community. While many of these current initiatives focus on food production, the potential exists for more diverse agricultural sourcing and productive land use strategies. This section will explore some of these possibilities, with regards to how they might relate to greater sufficiency and production within local carrying capacity.

From Urban Agriculture to Productive Land Uses

The raise of urban agriculture and community gardens in Detroit serves as a key example of how residents have attempted to secure basic needs without merely waiting for conventional modes of economic development and welfare. Many advocates of the urban agriculture movement have emphasized that such initiatives instead create more multifaceted benefits. As Grace Lee Boggs describes,

“This movement (urban agriculture) is very clear about the tangible benefits of urban agriculture: it provides fresh nutritious food, beautifies neighborhoods, creates neighborhood social capital, advances neighborhood economic development, stabilizes communities, and provides sustainability. But it also provides concrete examples of alternative, value-oriented means of securing our livelihoods.²⁰”

²⁰ Boggs, Grace Lee – “The Next American Revolution”



A Detroit resident tending a farm in an abandoned lot²¹.

On the one hand, urban agriculture in Detroit has the potential to produce a substantial quantity of food for the cities residents. In a study conducted by the C.S. Mott Group at Michigan State University, it was found that roughly 44,000 vacant publicly owned land parcels – amounting to nearly 5,000 acres across the city – provided ample space for the production of a majority of Detroit’s fruit and vegetable consumption. Although the report noted that productive capacities depended on certain conditions (investments in season-extension infrastructure like hoop houses, space to store crops, and skilled farmers using biointensive techniques), just 570 acres could produce 70 percent of the vegetables consumed in Detroit and 40 percent of the fruit (2,100 acres would be needed for non-professional gardeners)²².

According to data from the financial website *Bundle*, the average Detroit resident spends around \$2,200 on food at home and in restaurants. If 70 percent of the fruits and vegetables were locally grown, this could amount to roughly \$63 million annually in the local economy²³. But many urban agriculture advocates, like Malik Yakini (Chairman of the Detroit Black Food Security Network), economic value is only one aspect. “Even if the gardening movement had no economic

²¹ Source: <http://www.cityfarmer.info/2008/12/11/gms-bust-turns-detroit-into-urban-prairie-of-vacant-lot-farms/>

²² <http://www.mottgroup.msu.edu/uploads/files/59/Growing%20Food%20in%20the%20City%20-%20Colasanti%20Litjens%20Hamm.pdf>.

²³ <http://grist.org/article/food-what-us-citydwellers-really-spend-on-food-and-drink/>

viability, just the fact that it's bringing people together for the common good is very significant," he said. "African-Americans in Detroit tend to have a sense of despair and helplessness that is a direct result of oppression. Producing even some of our own food restores a sense of power, a sense that we can shape our own destiny.²⁴"

Many of Detroit's urban agriculture projects receive support from a few key community-based non-profits. One of the most active and prolific organizations, *Greening of Detroit*, provides tools, compost, maintenance and farm training programs for the 1,200 registered gardens throughout the city. Such gardens can range in size from community supported agriculture and businesses plots that sell to the local market, to single-family plots²⁵.

Urban agriculture projects often arise as a means to stabilize abandoned property – a method of stewardship to counter the rapid deterioration in the form of illegal dumping, arson, etc. In the East Side of Detroit alone, 40 percent of the lots in the neighborhood are currently vacant (see figure below). Without securing direct permission from the city, many urban agriculture projects currently fall under a form of "squatting". As Margeret Dewer, author of "The City After Abandonment" explains, "In many of these cases, people have tried to legally acquire land adjacent to them. But the local government has little capacity to keep track of who owns what in neighborhoods like this. And these "squatters" aren't exactly trying to grab land that doesn't belong to them out of some opportunistic greed. Many of them are simply trying to control what happens around their homes."

²⁴ <http://grist.org/article/food-from-motown-to-growtown-the-greening-of-detroit/full/>

²⁵ From interview with Monica Tabares of *Greening of Detroit*

Figure 2: Vacant Properties on Detroit's East Side



In this map, vacant lots are shown as gray parcels, and the red properties are those that have been claimed as adjacent side lots by other property owners



In blue here, remaining residents have taken up multiple adjacent lots, sometimes as many as three or four:²⁶

Key Issues and Possible Next Steps

The recent comprehensive “Detroit Future City” plan has recognized that the cities landscape is not going to bounce back to anything near full occupancy anytime soon, and has thus called for a program of “planned shrinkage”. As part of this strategy, the plan has advanced connecting green spaces through a citywide network of green corridors, and establishing new land use types. Two of these land use types in particular are worth mentioning, as they seek to build upon both the urban agriculture efforts and the natural “rewilding” that is already occurring.

“Innovation Productive” areas are proposed as landscapes that “put vacant land to productive uses: growing food and productive forests, reducing maintenance costs, cleaning soil, generating new knowledge, and reshaping public perceptions of vacant land.”²⁷ Noting that in these spaces “working + productive” developments predominate, the plan suggest practices such as bio/phyto-remediation, aquaculture, and algae-culture facilities. “Innovation Ecological”, on the other hand, are areas where natural landscapes predominate – providing benefits of storm

²⁶ <http://www.theatlanticcities.com/housing/2013/04/sometimes-squating-good-thing/5319/>

²⁷ Detroit Future City plan, page 116

water management and crucial wildlife habitats. “Blue infrastructure’ provides clear economic benefits in reduced infrastructure costs, but fostering ecological connectivity is also a key strategy for creating healthy ecosystems and biodiversity (the latter being the most challenging issue in global ecosystem remediation)²⁸. Additionally, such diverse ecosystems could also provide a more pleasant environment for humans alike, as forest management techniques could prevent excessive tall grass and low laying shrub coverage in the area.

What is perhaps most notable about these strategies is that they begin to demonstrate the diverse forms of value that can be generated through ecologically integrated land use types, and how such activities overlap in mutually beneficial, and dependent forms. It is important to fully articulate such values, as the city’s support toward urban agriculture initiatives is already quite precarious. As Laura Lawson and Abbilyn Miller explain,

Community gardens are symbolic as much as they are material. How city officials approach community gardens says a lot about how they value citizen-led initiatives. Quick to invoke the virtues of gardening in times of crises, when the crises lessens, the state (in most cases, city government) often changes the story of the garden – it becomes land to be used as a resource for the “public good,” defined narrowly as a site for private development. Respect for the efforts of individuals to steward gardens requires taking such sites off the “vacant” property books and acknowledging them as valued community resources. City officials cannot rely on individual gardening efforts without offering some guarantee of continued land tenure and resources. Acknowledging and sustaining such efforts involve shifting out of the language of abandonment to that of community commons, a new “highest and best use.” These sites may serve as catalysts for community revitalization, or they may bring resources to a disenfranchised community. In either case, the resulting urban gardens link indelibly to the citizens who make the transformation and the land they have claimed.²⁹

Articulating how the productive capacities and integrated benefits of urban agriculture in Detroit could be extended is a key first step in fostering community-oriented production, but such developments also need to be linked to more secure and broadly shared forms of land tenure. The recent allocation of 170 acres of land to wealthy entrepreneur John Hantz has led to significant controversy in the city, as many residents worry the city is more content on facilitating land grabs for powerful interests than on serving the public interest. Many residents have claimed that while the city has promised to sell land surrounding Hantz’s proposed farm for

²⁸ See “Rewilding the World”

²⁹ Laura Lawson and Abbilyn Miller – “Community Gardens and Urban Agriculture as Antithesis to Abandonment: Exploring a Citizenship-Land Model” (in “The City After Abandonment”

the same price he received it (\$300 an acre), the city has thus far been unresponsive to their requests³⁰.

Several community-based organizations in the city have begun exploring the development of two Community Land Trusts as an alternative to such concentrated private land ownership – one near the airport and the other on the city’s eastside (the latter having some of the highest vacancy and foreclosure rates in the city). Such efforts, however, are in their very early stages, with no contact yet made to broader land trust networks or financing options developed³¹. Sharon Howell, one of the leading organizers and member of the Boggs Center to Nurture Community, explained that one of the main impediments currently is the inability to foster a broader coalition around the issue. While some efforts have been made to include the broader public in discussions of future land use, such as Jerry Paffendorf’s “Why Don’t We Own This?” project³², more methods are needed to connect CLT’s to greater community benefits, and to provide create more meaningful connections to the development process.

Given the current state of local sourcing and productive land use strategies in Detroit, I argue that three issues are essential to consider to further strengthen alternative production arguments:

Securing Basic Needs – Given the precarious state of Detroit’s public services and the lack of employment opportunities, the strategies above could be further developed to maximize procurement for basic needs through heavily localized sourcing.

Maximizing Use Value – If the city is to devote greater quantities of land to generating “use value” rather than “exchange value”, the uses generated need to go beyond ideological arguments and serve as an alternative means of generating local wealth and offsetting costs.

Fostering Stewardship – In order to build a broader coalition behind these strategies, and to ensure lasting maintenance of such commitments, alternative uses must be made more relevant to potentials participants.

³⁰ <http://green.blogs.nytimes.com/2012/12/10/vast-land-deal-divides-detroit/>

³¹ From telephone interview with Sharon Howell of the Boggs Center to Nurture Community. April 26, 2013.

³² This project is an interactive online platform that allows users to know about the status of properties in the city - http://www.huffingtonpost.com/2013/01/28/why-dont-we-own-this-detroit_n_2550299.html

Precedents

Growing Power

Located in Milwaukee, Wisconsin, “Growing Power” has become one of the most celebrated models for urban agriculture and community engagement in the U.S. What originally began as a modest agricultural education program for impoverished youth has evolved into an extensive operation for food production and community education – pioneering the use of aquaponic closed-loop systems, vermiculture, and permaculture in a community-development setting. One of the most noteworthy elements of the Growing Power project, however, is the way in which it became embedded within a broader community framework. While urban agriculture projects generally provide a space for heavily-local community-building, Growing Power has initiated community-wide compost drives, planted green roofs on municipal buildings, and offered training and volunteer programs to those outside the community. Such broad and proactive community engagement has allowed for a more diversified constituency and increased support from the city government³³.

Gaviotas

Gaviotas is an experimental ecovillage in rural Colombia that has pursued an ambitious forest regeneration scheme in the past several decades. Due to the initially challenging local ecological conditions, the members of Gaviotas developed a phased development approach to drastically increase biodiversity. Not only did this ecological regeneration strategy foster complimentary relationships among a diverse array of species, but it also developed high-value added products from the chemicals derived from the plants (such as resins, rubber substitutes, etc.). Gaviotas has also made provisioning for local needs a pre-condition to any subsequent export-oriented strategy. In addition, Gaviotas has demonstrated the effectiveness of closely linking ecological regeneration to everyday life and wellbeing, thereby providing crucial and lasting public support for maintaining healthy ecosystems³⁴.

Champlain Housing Trust -

While the Champlain Housing Trust (CHT) in Burlington, Vermont focuses mainly on housing, its model of securing land tenure under a Community Land Trust holds important lessons for Detroit. To stabilize neighborhoods facing substantial foreclosures, CHT strategically targeted key “anchor” properties to prevent further deterioration in the area. These properties then stood as hubs to further spread the CLT model. In addition, CHT also functions as a “one-stop-shop” for any housing

³³ <http://www.yesmagazine.org/issues/food-for-everyone/growing-power-in-an-urban-food-desert>

³⁴ See Wiseman, David – “Gaviotas: A Village to Save the World”

needs, thereby ensuring easy access for potential participants and greater exposure overall.

Recommendations

Securing Basic Needs

To secure basic needs, the development of CLT's could be connected more explicitly to the "work-live" arrangements mentioned in the Detroit Future's Plan to maximize heavily localized procurement and self-sufficiency. Indeed, by connecting these two strategies, the tax revenue lost from decommodifying real estate can be compensated by reducing costs with off-grid infrastructure systems. The procurement of food and basic living materials could be secured by decentralized systems at the household-cluster level – providing an alternative type of basic welfare distribution.

Frameworks can also be developed to ensure that the distribution of productive spaces are equitably distributed, and reducing possible negative externalities. For instance, if not properly planned for, local agriculture could contribute to patterns of sprawl in the city. Also, while activities like composting or raising livestock should surely be encouraged (particularly given the loose enforcement of zoning rules and opportunity for experimentation), these strategies need to be made within the context of the surrounding urban fabric – fostering positive connections rather than nuisances.

For implementation, the strategies mentioned above could serve as extensions from existing urban agriculture locations and forms of squatting. A type of urban homesteading assistance program could provide key support, and serve as a transition point into a more comprehensive network. While current land reclamation can often occur due to lack of enforcement, scattered projects could consolidate under protective structures like the land trust model. For this, an open-participatory online network could provide a crucial means to establish a more substantial coalition behind the cause³⁵. This network could also serve as a "one-stop-shop" for homesteading and livelihood issues, similar to the CHT structure.

³⁵ Currently, the main organizing initiatives for CLT's in Detroit have significant barriers to entry, as organizers are reluctant to disclose information on potential strategies – thereby greatly limiting momentum. This network could begin as something similar to the "Why Don't We Own This?" project.

Maximizing Use Value

As the section above described a more thoughtful approach to the distribution of ecologically productive spaces, the beneficial connections between practices could be greatly expanded. Detroit could adapt the strategy pursued by Gaviotas, for instance, by growing bio-materials, rather than just food, within ecologically mixed production spaces. For example, bioplastics could be grown and used at local hospitals³⁶, or as inputs for local manufacturing. While the growing of such materials face similar economic challenges as local food production (in that imports would be cheaper), technical barriers are actually significantly diminished with the sourcing of materials, as extensive soil remediation is less crucial. Additionally, such local sourcing would have more broadly distributed benefits, not only by lowering carbon footprints, but by phasing out harmful and environmentally destructive products like petroleum-based plastics.

While ecologically productive uses were eluded to in the Detroit Futures plan, a key first step would be to further detail the types, potential products, and benefits in more detail. Local sourcing of materials could also be more explicitly incorporated in the land use strategy. Additionally, the overall message of leveraging community-controlled spaces for as much use value (rather than only aesthetic or rhetorical gestures), could serve as a catalyst for further grassroots mobilization, and a means to articulate alternative proposals.

Fostering Stewardship

While the Detroit Future's Plan provides a loose outline of how current green spaces could be connected for a network of ecological corridors, this strategy could be elaborated so that systems for biodiversity and green infrastructure overlap with agricultural production (thus, seeing the two objectives as interactive rather than separate systems). To sustain such an ambitious land-use strategy, planners would play a key role in communicating the value of the endeavor and in enrolling broad-based participation. On the one hand, the beneficial offsets and connections of the land use strategy could be more clearly articulated and promoted to enlist general support³⁷. On the other hand, once detailing a more thorough strategy for such an

³⁶ http://www.ilsr.org/wp-content/uploads/2012/04/SBCGuidelinesforSustainableBioplasticsMay2009Vers1.0_001.pdf - Institute for Local Self-Reliance

³⁷ For instance, while "eco-services" can reduce general infrastructure and healthcare costs, such benefits are generally not legitimately accounted for or acknowledged in land-use planning.

agro-ecological system, individual properties owners or managers can be incentivized to create symbiotic productive uses (whether through tax breaks or increased forms of “social credit”), and CLT’s could foster optimal uses as well.

Lastly, much like the Growing Power project, each initiative in Detroit could seek to maximize integrated programming potentials. For example, a standard community garden could be connected to green/blue infrastructure, educational opportunities, agro-materials research, etc. This way - in addition to maximizing alternative uses as described earlier - as the space becomes more integral to the broader functioning of the community, attempts to merely sell property to the highest bidder will become increasingly difficult – particularly with a more diversified constituency utilizing the space.

The recommendations outlined above are not without their challenges. While securing initial funding is somewhat obvious, other barriers are more insidious. For instance, while the sourcing of materials is economically comparable to local food production, the use of materials like hemp or bamboo for real goods holds a backward or “tree-hugging” connotation to many. More significantly, however, with the overlapping goals of ecological regeneration, strategic clustering of resources and development, and the effective allocation of locally grown products, some kind of coordinating body is needed (as market-based strategies would neither encourage such initiatives or foster the overlapping types of benefits). At present, it remains highly unclear as to what might work to form such a coordinating network in the city.

Overall, greater local sourcing and more strategic productive land use strategies would make Detroit far less vulnerable to external volatility, and less dependent on private capital. Rather than requiring continuous monetary support to be sustainable, these strategies could provide greater means for internal regeneration and operate through distributed stewardship. The benefits generated through an improved environment and shared land management would also be more broadly shared,

Including locally sourced materials could help to make this concept more tangible, and also increase the alternative value produced.

Manufacturing and Innovation

The city of Detroit in particular is greatly in-touch with the potentials of production, given its history as manufacturing juggernaut, and as a result, many community groups are already very active in exploring new modes of production. This section will detail several of these projects, as well as what trends are emerging for alternative, community-scale production.

Hackerspaces and Community-Scale Production

During the mid-1980's, spaces began to emerge across Europe where computer hackers could convene for mutual support and camaraderie. In the past few years, the idea of fostering such shared, physical spaces has seen rapid adaption by the diverse and growing community of "makers", who seek to apply the idea of "hacking" to physical objects, processes, or anything else that can be figured out and improved upon. Some 1,100 hackerspaces have now been established, and can be found on every continent (See Figure 3: Hackerspaces in America)³⁸.

Hackerspaces.org describes a hackerspace as a "community-operated physical space where people with common interests, often in computers, technology, science, digital art or electronic art, can meet, socialize, and/or collaborate.³⁹" Such spaces can vary in size, technology available, and membership structure (some being even completely open), but generally share highly community-oriented characteristics. Indeed, while the term "hacker" can sometimes have negative connotations, modern hackerspace thrive off of assimilating diverse viewpoints (and openness) – these often being the only guiding principles in otherwise highly informal organizational structures⁴⁰.

³⁸ <https://www.youtube.com/watch?v=WkiX7R1-kaY>

³⁹ <http://en.wikipedia.org/wiki/Hackerspace> pulled March 25, 2013.

⁴⁰ <http://andrewrschrock.wordpress.com/tag/hackerspaces/>

Figure 3: Hackerspaces in America



Hackerspaces currently listed on hackerspaces.org

In recent years, the city of Detroit has emerged as a hotbed for hackerspaces and other DIY (“Do-It-Yourself”) experiments. Several hackerspaces can already be found throughout the city, and several more are currently in formation⁴¹.

Of course, Detroit’s attractiveness for such projects can be partially attributed to cheap real estate, allowing aspiring hackers to acquire ample space for experimentation. Some observers have also ascribed this kind of making and tinkering as a characteristic in the residents of Detroit’s DNA⁴². Indeed, while this might at first sound like a mere figure of speech, many spaces harness the substantial intergenerational knowledge available in the city, and the area continues to attract like-minded individuals.

Hackerspaces (or “makerspaces”) can be found in more commercial forms⁴³, but the vast majority of spaces are self-organized and non-profit. For example, “OmniCorp” hackerspace operates off of member fees (\$95 a month) to cover rent and new equipment – everything from laser cutters to welding tools. OmniCorp also hosts an “open hack night” every Thursday in which the space is open to the general public. Potential members are also required to attend at least one open hack night prior to a consensus vote by the existing members for admittance – with no prospective members yet being denied.

⁴¹ While not all are listed online, hackerspace can be found via word of mouth, and new spaces are emerging to fill a variety of local needs – from music production to cultural empowerment.

⁴² <http://www.fastcocreate.com/1682411/meet-the-makers-rebuilding-detroit-by-hand#1>

⁴³ For example, a recent chain “Techtown” has recently set up on the outskirts of Detroit, offering access to machinery to former autoworkers in the suburban Dearborn neighborhood

A visit to one of OmniCorp's open hack nights reveals the vast variety of activity and energy existing in the space. In the main common room alone, activities range from experimenting with sound installations, to learning to program Arduino boards, to building speculative "oloid" shapes just for the sake of it. Projects were generally undertaken for three different reasons – as a learning opportunity, for artistic development, or craft-based entrepreneurship. With a general atmosphere of support and mutual, participants in the space are continually encouraged to help others. In addition, many of the members were also heavily involved in community projects.

Other hackerspaces in the city are more directly focused toward community improvement. Recently initiated "Ribbon Farm" hackerspace has gone from focusing on cultivating a stationary physical space to engaging with the community through pop-up venues. While these workshops have previously focused on various DIY projects (such as "making your own mini-helicopter"), Ribbon Farm has recently launched a community-centered project called "Pain Pitch". The idea of Pain Pitch is to have community groups and individuals explain their problems to a group of hackers who can then collaborate to find a solution. While the program is still in its first stage, it has so far been met with enthusiasm from community groups and hackers alike.

One of the most active community-focused initiatives in the city is the Mt. Elliot Makerspace⁴⁴. Jeff Sturges, former MIT Media Lab Fellow and Co-Founder of OmniCorp, started the Mt.Elliot project after previous experience working with the Sustainable South Bronx Fab Lab⁴⁵ and the hackerspace NYC Resistor. At first, his aim was to replicate the MIT Fab Lab model on a smaller, cheaper scale in Detroit.

⁴⁴ Sturges prefers to use the term "makerspace" for this more directly community-oriented variant, and argues that the term can serve as an overall descriptor for hackerspaces, FabLabs, etc.

⁴⁵ A Fab Lab is generally equipped with an array of flexible computer controlled tools that cover several different length scales and various materials, with the aim to make "almost anything".



Workshop on the anatomy of printers at Mt. Elliot Makerspace

The Mt. Elliot Makerspace now offers youth-based skill development programs in 8 areas – Transportation, Electronics, Digital Tools, Wearables, Design and Fabrication, Food and Music and Arts. This range of activities is meant to provide not only something for everyone, but a well-rounded base knowledge of making to all participants. The multidisciplinary objectives are also further encouraged by large interior windows between the woodshop and computer stations – a design meant to counter workplace silos.

While the center receives some foundational support (although, Sturges is aiming to make the space more self-sustaining in the future), the space also derives significant support from the local community. The location, for example, is in a church basement provided by an enthusiastic minister who has embraced the novel approach to youth engagement offered through ‘making’. The space has also attracted a more diverse crowd than just young hobbyist, with retirees being heavily involved in mentoring and overall operations. One retired machinist even took it upon himself to build the entire woodshop.

Sturges emphasizes that tapping into existing or emerging community energy is essential for such a place to thrive. This strategy makes outreach more effective, and it also allows the project to dovetail with existing support networks and positive energy. Every week, Sturges attends church group meetings, where he often needs to explain key concepts, but is encouraged by the interest he has received in turn.

In the two years since the makerspace has been in existence, Sturges estimates that some 10,000 Detroit kids have been exposed to the possibilities contained in technology and entrepreneurship – by means of the makerspace itself, through open hack nights, and via a stand set up weekly at the Eastern Market. While also eager to get back to more regular making himself, Sturges sees this as just the beginning. Working with Blair Evans, a local superintendent and director of a new community Fab Lab called “Incite Focus”, plans are currently being finalized

to create additional makerspaces throughout the city, and to connect the youth-based programming directly to school curriculums.

Key Issues and Possible Next Steps

As mentioned earlier, the growing interest in and development of hacker/makerspaces has been explained in part as a result of the growing “maker” movement. Indeed, even President Obama has alluded to the importance of these emerging technological possibilities. In his 2013 State of the Union Address, Obama stated,

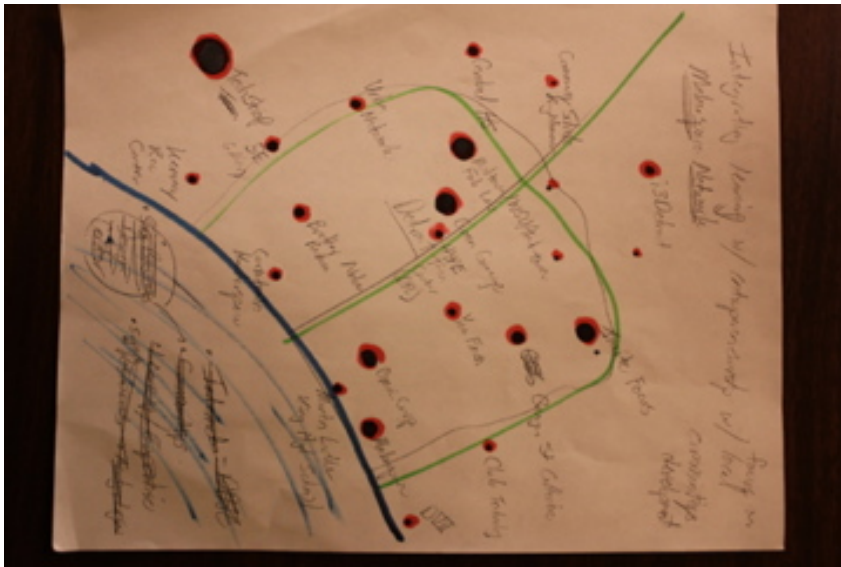
“There are things we can do, right now, to accelerate this trend. Last year, we created our first manufacturing innovation institute in Youngstown, Ohio. A once-shuttered warehouse is now a state-of-the art lab where new workers are mastering the 3D printing that has the potential to revolutionize the way we make almost everything. There’s no reason this can’t happen in other towns.⁴⁶”

But could these trends signal something more significant than new business opportunities or the ability to gain a competitive edge for economic growth? Could these emerging practices and technologies actually transform development models entirely, making conventional competitive frameworks, mass production, and the concentration of economic power increasingly irrelevant? How might current maker-based initiatives in Detroit enable a new stage of manufacturing?

Collaborating with Incite Focus, the Boggs Center, and a range of other community organizations, Jeff Sturges is now seeking to create a “resilient network”, similar in nature, he explained, to the wireless mesh networks the Detroit Digital Justice Coalition are seeking to create in low-income Detroit neighborhoods. Makerspaces could thus serve as key community infrastructure. Right now, he has three additional sites in mind: the HYPE teen center inside the main branch of the Detroit Public Library, Detroit Community Schools in the Brightmoor neighborhood, and 5E Gallery in Southwest Detroit. Sturges emphasizes that makerspaces are a way to concentrate public and private resources to make Detroit a fertile ground for raising the next generation of innovators. Through the “resilient network”, ordinary people could gain access to the different technologies at each site and circulate ideas throughout the city (See Figure 4: Detroit Resilient Network).

⁴⁶ <http://www.whitehouse.gov/the-press-office/2013/02/12/remarks-president-state-union-address>

Figure 4: Detroit Resilient Network



A rough diagram by Jeff Sturges showing the locations of existing and emerging makerspaces throughout Detroit.

While current on the ground efforts exhibit clear positive community-building effects, real transformative potential would entail consideration of the following:

Employment Opportunities – How could the evolution of makerspaces create means for livelihood for local residents, and how could these jobs be different from the past?

Products and Innovation – What really could be produced through a community-scale manufacturing model, and how might processes of innovation be alternatively formulated?

Precedents

Global Village Construction Set

Launched by the Open Source Ecology project, located outside of Kansas City, Missouri, the GVCS aims to create a “civilization starter kit” with plans for 40 machines “essential for modern life”. With objects ranging from 3D printers to brick-pressers, the OSE project has begun developing prototypes and has made the plans freely available for all to download, collaborate, and improve upon. Already,

the project has created almost a fourth of the machines – including a tractor for 1/5 the cost of the market rate and with comparable quality. The open toolkit has also increasingly taken on a life of its own, as participants from all over have begun spearheading projects. Additionally the products themselves are designed for continual improvement and flexibility rather than designed for obsolescence to ensure feature purchases.

Evergreen Cooperatives

Influenced by the Mondragon Cooperative Corporation mentioned earlier, organizers in Cleveland, Ohio have sought to replicate the model through developing a large-scale cluster of worker-owned cooperatives connected through an overall cooperative financial and managerial institution called the “Evergreen Cooperative”. The Cleveland Model has also chosen to focus on “green” industries specifically, thus further spreading the benefits of their efforts to the broader community. In the past several years this initiative has been underway, it has already had tremendous success – growing three viable worker-owned cooperatives employing over 50 people with high paying jobs and benefits⁴⁷. One central element of Evergreen’s strategy is to utilize the purchasing power of local anchor institutions such as universities and hospitals, which is estimated to be around \$3 billion⁴⁸. The initiative has successfully convinced these anchor institutions that sustaining the local community is in their own self-interest as well, and has produced a manual to assist other cities in pursuing this strategy⁴⁹.

Quircky

Located in Manhattan, New York, Quircky is a young company that “crowdsources” product ideas, design, and development. Through a highly graphic-based online interface that allows participants at all levels to self-organize around projects, Quircky is able to pull in needed knowledge as needed and effectively match to promising initiatives. The incentive structure grants all participants a percentage of profit corresponding with the percentage of work they contribute. By providing some guarantee of return for sharing a good idea, but balancing this reward by subsequent work provided, Quircky also encourages open-innovation – thereby providing an alternative to conventional IP barriers and incentives for maintaining secrecy among individual innovators⁵⁰.

⁴⁷ <http://www.yesmagazine.org/issues/the-new-economy/clevelands-worker-owned-boom>

⁴⁸ Alperovitz, Gar – “America Beyond Capitalism”

⁴⁹ Alperovitz, Gar – “Leveraging the Power of Anchor Institutions”

⁵⁰ <http://www.fastcompany.com/3004345/quirkys-combination-shelf-success-crowdsourced-test-market-and-innovative-inventors>

Recommendations

Employment Opportunities

Current small-scale, craft-based entrepreneurial activities already occurring in makerspaces could be extended to a greater range of participants and products through flexible, collaborative product development along the lines of the Quircky model. This open structure and the scope of online demand could be complemented by access to productive capacities through the ‘resilient network’ of makerspaces (whereas in the current Quircky model individuals are left to their own devices, or products are developed at the companies headquarters).

While such entrepreneurship could function as a first step to prove the viability of small-scale/open production, the model could evolve into something similar to the Evergreen Cooperative strategy. First, spaces and technology could be financed through a common fund, allowing for greater security than a voluntary user-fee model. While CDFI’s could develop more conventional loans for such “common infrastructure”, they could also develop new financing options – such as estimating individual spending on products over a given period, then purchasing the machinery necessary to make these items as a more effective form of bulk purchasing.

Like Evergreen, the network of makerspaces could produce for local anchor institutions – but creating actual goods in addition to services. While the costs of local procurement might at first seem greater, they are balanced out not only by the increased community stability, but also by cutting out the middleman in the production of goods through local sourcing and manufacturing. Additionally, the products themselves could be made of more benign materials.

Products and Innovation

As the “resilient network” of makerspaces evolves, an online matching system could be developed – beginning with the ability to locate specific machinery between spaces. This could then evolve to match needed material inputs to local sourcing possibilities – functioning as a two-way stream of communication so that productive capacities are calibrated to local sourcing possibilities. Knowledge and skills, drawn from local employment service agencies and unions, could also be connected to particular projects and problems.

With an improved inventory of knowledge and skills, materials, and productive capacities, current efforts to “crowdsource” community problems to hackerspaces could be made more effective. These efforts could also be tied to incentive structures given a more robust support network (described above). Moreover, by engaging in more broad-based open-problem solving, Detroit makerspaces could gain mutual support from disparate communities in a range of issues (where local knowledge or skills might not be adequate for instance).

Through a more coordinated network, innovations toward improving basic living conditions could be given top priority for resource allocation and other rewards. Much like the GVCS or Gaviotas, addressing basic needs first would make the community as a whole more resilient and subsequently capable of choosing development trajectories. Addressing these challenges at the local scale would also more effectively harness local knowledge for the development of appropriate technologies – with the promise of greater long-term efficiencies. Community-oriented production could function in nearly complete contrast to current market dynamics – rather than making communities dependent on products, efforts would be focused on reducing the need for new inputs.

Lastly, through open collaboration, flexible technologies, and flexible labor allocation⁵¹, many of the inefficiencies of previous ISI attempts could be addressed. For instance, Detroit would not be limited to its own knowledge for innovation, but could fully leverage open-production networks. Additionally, aside from allocation of awards by percentage of participation, a flexible community-scale production system could dynamically reduce or increase the need for particular services, rather than preserve them merely for the sake of maintaining jobs.

Again, these recommendations are not without significant challenges. Some of the technologies described still need years for maturity, and therefore makerspaces need to endure a period of experimentation, with a more limited range of products at present. Still need improved means of learning/using. Sourcing of materials would not much more research, and some materials may not be locally available

While these considerations are still somewhat speculative, planners could play a key role in preparing for and even enabling these possibilities. Many parallels can be drawn to the recent embrace and support for local agriculture initiatives – as both movements pose to generate similar benefits through greater sustainability, community-building, etc. Also like urban agriculture, makerspaces and open-technology often stand at odds with current market logic, but pose to transform how

⁵¹ The latter being accompanied by a far more robust safety net for basic needs described earlier

we think about production and consumption altogether. By advocating for greater support and facilitating coordination, planners could help to support current initiatives, and reach more transformative potentials.

Conclusion

This thesis has attempted to outline a rough trajectory for alternative community-scale production possibilities in Detroit. While a more comprehensive proposal would require greater quantitative analysis and organizational strategic planning, this thesis represents a first step in developing a conceptual framework for a community-scale production system.

Overall, this thesis aimed to demonstrate that:

- Local production systems could provide far more resilient alternatives for the procurement of essential goods than conventional economic transactions.
- Concentrations of wealth and power from current economic practices could be replaced while maintaining claimed benefits.
- A sustainable production system could be most conceivable and obtainable within a context of localized sourcing and production.
- The benefits of access and diversity could be equally maintained by a community-scale production system.
- Ideas of 'value' overall could be demonstrated to have more diffuse and overlapping benefits.

It is my claim that the initiatives described above also could provide an alternative to how we currently conceptualize economic development overall. If an individual were able to produce basic needs at the household level, gain access to the means of production for discretionary goods at a reduced costs (through bulk-purchase and DIY local craft), and locally-sourced materials were used for public goods, a high degree of autonomy could be gained from the conventional global economy. As mentioned earlier, this could have benefits of reduced vulnerability, lower ecological footprint, and greater potential for democratic decision-making in the economy. Additionally, at the local scale, overlapping benefits (positive externalities) can be more effectively planned for and perceived by participants, increasingly the likelihood that individuals could embrace "full cost" accounting measures (rather than seeing the cheapest possible product as the best).

Additionally, while ideas of local-sufficiency, flexible-specialization, and open source production have their unique strengths, the combination of these theoretical

trends create new way to conceptualize problems. For instance, while community-scale production could serve as a means to secure more stable internal production and employment, it could also potentially allow for freedom from conventional employment. Increasing sufficiency for basic (and some basic needs) could provide an ideal compliment to open-source production (as security of intellectual property would not be needed for a livelihood) – allowing for all to benefit from distributed innovation

Additionally, this thesis has focused on production not just because of the need for real goods essential for basic livelihoods, but also because the act of production is in itself potentially transformative. Urban agriculture have long since claimed that the movement is as much about this sense of empowerment as it is about producing food. Similarly, with the maker movement and community-scale production, the transformative experience that occurs when people begin to figure out and create things themselves is highly visible. On the one hand, going beyond pre-made solutions encourages problem-solving more generally. On the other hand, by embracing collaborative processes, makers also become much more accustomed to working with others – even drawing mutual support and inspiration from one another.

The city of Detroit is ideally suited to recreate what production could mean – given its past experience and contemporary experimentation. Rather than trying to attract capital, or secure a space in the “race to the bottom line”, Detroit could become a leader in new modes of development overall.

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