DIY:

Hackerspaces, Collectives & Hubs

"The creative economy is as much about architects as it is about artists, programmers as it is about potters, it is beyond bohemians and includes brokers; stock, insurance, real-estate and more.

There is no greater resource than the creativity, innovativeness, and productive talents of our people."

Martin Prosperity Institute

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Introduction

The growth of art, design, creative practice and material culture in the mainstream has catalyzed the development of new spaces of creative production in the city. This can be seen in the emergence of hackerspaces, makerspaces, coworking spaces, collectives and community hubs. They are important spaces for collaboration by providing tools, resources, space and education for the creative communities they serve. However, with such a diverse range of creative practices, there is an opportunity for a variety of different types of spaces to address the specific needs of each community in terms of accessibility, affordability and overall goals. As these spaces are just emerging it is important for artists, designers, makers and other creative individuals to become leaders in mobilizing their community in the development of a space of their own. The following chapters aims to be a guide to outline the considerations in the planning of one's own creative space: community building, forming an organization, spatial planning and developing a financial model.

Each of these components will need to be tested in the process of forming an architectural space. The first component involves the research and development of a market or audience in which to design for. The second component involves planning the structure of an organization that will need to be created to enable individuals to collectively organize towards a central goal. The third component involves assessing the groups' basic needs and ambitions in the creation of their
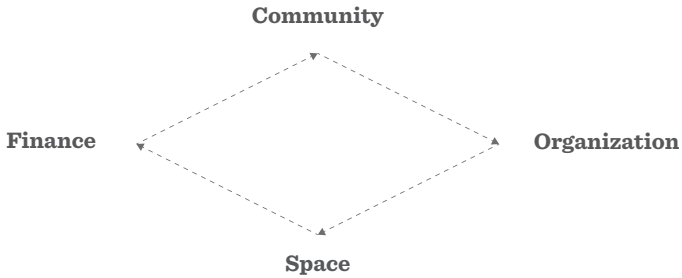
Figure 1   Four Pillars for Planning One's Own Creative Space

own space and towards the development of a design. The last component involves the planning of the space's financial model and plan for operational sustainability. Following the principles of design[1] and lean thinking[2] in the *urban prototyping methodology*, each of these components can be tested through an iterative process. Lastly, the design of a pilot project will allow for the testing of each of the four components together. Only by bringing theory into practice can real insights be gained towards the shaping of each of these core components.

Community Building

Community building involves the formation of a core group of individuals interested in a specific idea, activity or values before building a space. User needs must be understood before leasing or purchasing a physical space for the community. While space is often a central need for creative groups, there are also needs for services that can be provided more immediately from existing spaces or buildings in the city. Spaces in the city such as cafes, libraries, and public gathering spaces can be used to collectively organize and form the community around a common purpose or activity. It allows individuals to take advantage of spaces temporarily to test their spatial needs and to collectively organize.[3] This process begins to develop a decentralized user network that re-appropriates city space for their own productive use.

The development of an online community and the use of online tools can begin to build a network of individuals interested in coming together for a collective purpose. Informal groups using Facebook, meetup, or slack provide opportunities to build connections online that can later form into real physical connections and relationships. Community building requires the continuous interaction between individuals to establish a mutual connection and the possibility for further collaboration. This requires the growth in the number of interactions, an awareness of the skills individuals possess and the development of mutual trust to form working relationships and potential teams.

Figure 2   Community Building Process

Increase Interaction

The beginning stages of community development requires individuals to meet and interact around a common purpose or goal whether it's online or in person. Organizations require community builders to encourage interactions and to facilitate connections between individuals. Ultimately, it is through repeated interactions between individuals that may lead to the formation of long-lasting professional relationships. Community engagement can be measured through online metrics including views, likes, messages or connections on social media websites or number of attendees or repeat attendees to in-person community organized events. Casual

meetups, networking events or organizing a presentation around a related theme can provide the stage to encourage interactions.

Skills Network

Learning or sharing skills and knowledge provides an outlet to form deeper relationships and can lead to the formation of working teams or organizations. However, this can only be possible if individuals are aware of the skills that people have within their community network. While knowing each other's professions is common, understanding the skills and knowledge related to that profession and how it can be helpful to others is often not as well communication. For example, amongst artists there are different fields such as visual, digital media, performance, music, etc. and even within each field they work using different materials, mediums and processes. Creating events where individuals can showcase their skills or knowledge through presentations, workshops, exhibitions or project showcases can create an environment in which individuals can learn and share knowledge.

Build Trust/Relationships

Once a stronger sense of community is formed with increasing interactions between individuals, community growth can be further propelled as members become organizers to encourage others to participate in the community. If individuals can establish enough respect in each other's skills and develop a level of trust to work together, they will be more likely to form teams or organizations and, share their network

to build the community further. Competitions, hackathons or idea generating events that often require strangers to form temporary teams to work together for a short period of time on a project provides the opportunity to test some of these relationships.

The curation of a series of temporary events provide the opportunity to not only expand the community but to develop deeper connections by sharing knowledge, learning from others and working together as larger teams.[4] In some ways, the 'staging' of an environment similar to many educational institutions provides the opportunity to build connections through learning and testing working relationships. This process of community building sets the stage for an architecture of cooperation.

Forming an Organization

The planning of an organization begins to transform an informal community of individuals into a formal entity. Developing a strong team with a diverse set of skills which can contribute to the startup and continued operation of the organization is essential for success. Key roles include:

Visionary/ Leader

Strong communicator who can sell a vision and effectively bring together the right stakeholders to execute the community's goals.

Operations and Facilities

Exceptional planner who manages the budget, facilities planning and develops business and community partnerships.

Marketing/ Business Development

Building a profile and attracting new members to the space.

Community Builder

Facilitator that develops the programming and atmosphere that brings together the community to be more than just a workspace in itself.

Depending on the size of a community group, individuals may take on multiple roles while multiple individuals may form department teams. When just starting out it is important for individuals to be versatile to cover a variety of skillsets
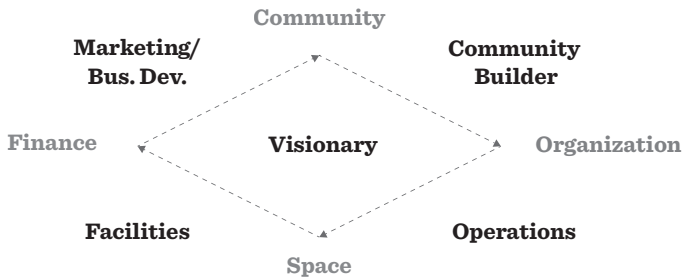
Figure 3   Key Team Members in Relation to Four Pillars

necessary to cover the operations of the organization.[5] Once a core team is established, the registration of the organized entity is often brought forth to outline the ownership structure, protect assets by separating individuals from personal liability and to determine the decision-making structure of the organization. Organizations can decide to remain informal and unregistered or decide to register as a sole proprietorship, partnership or corporation.

The following infographic offers a basic guide in determining which legal structure may be best suited for an organization. More information about business legal structures can be found on the Government of Canada website: https://www. ic.gc.ca/eic/site/cd-dgc.nsf/eng/home

Organizational Structures

Do you plan on being a for-profit organization?

No

Do you currently or would like to share space, tools, and/or resources in the future?

No

Yes

Do you want to legally protect each individual's contributions and assets?

No

Yes

INFORMAL

NON-PROFIT CORPORATION

Figure 4　Organizational Structures

Yes

Are you comfortable taking on personal liability if anything happens to your business or organization?

No

Yes

How many people are part of your organization?

1

2+

CORPORATION

SOLE PROPRIETORSHIP

PARTNERSHIP
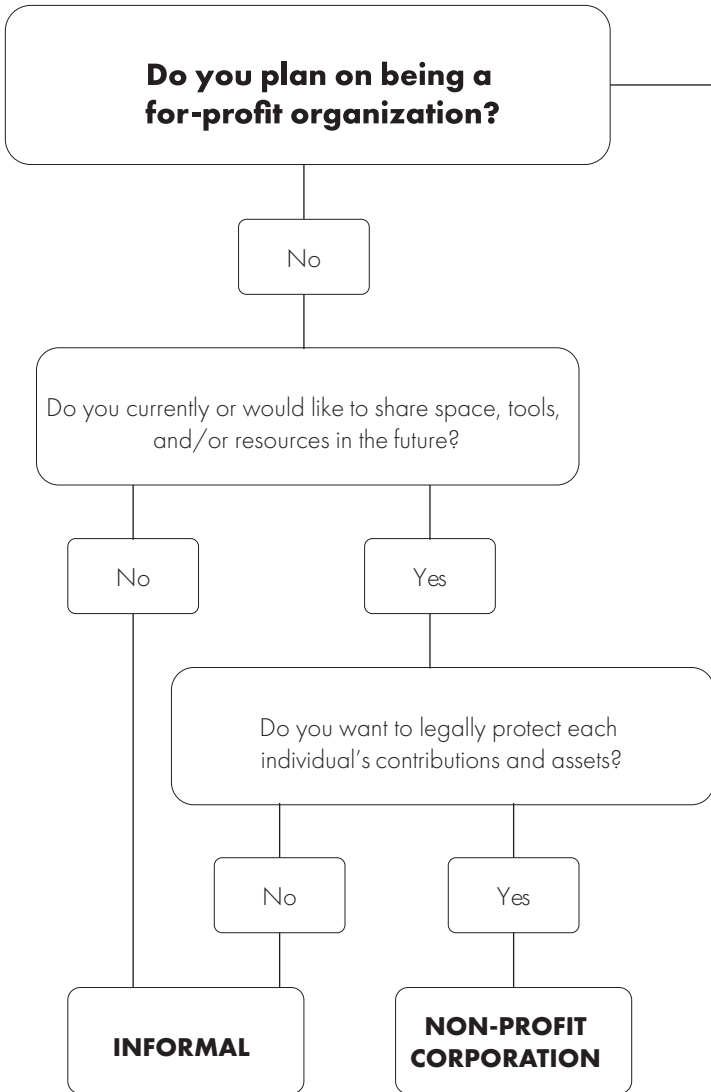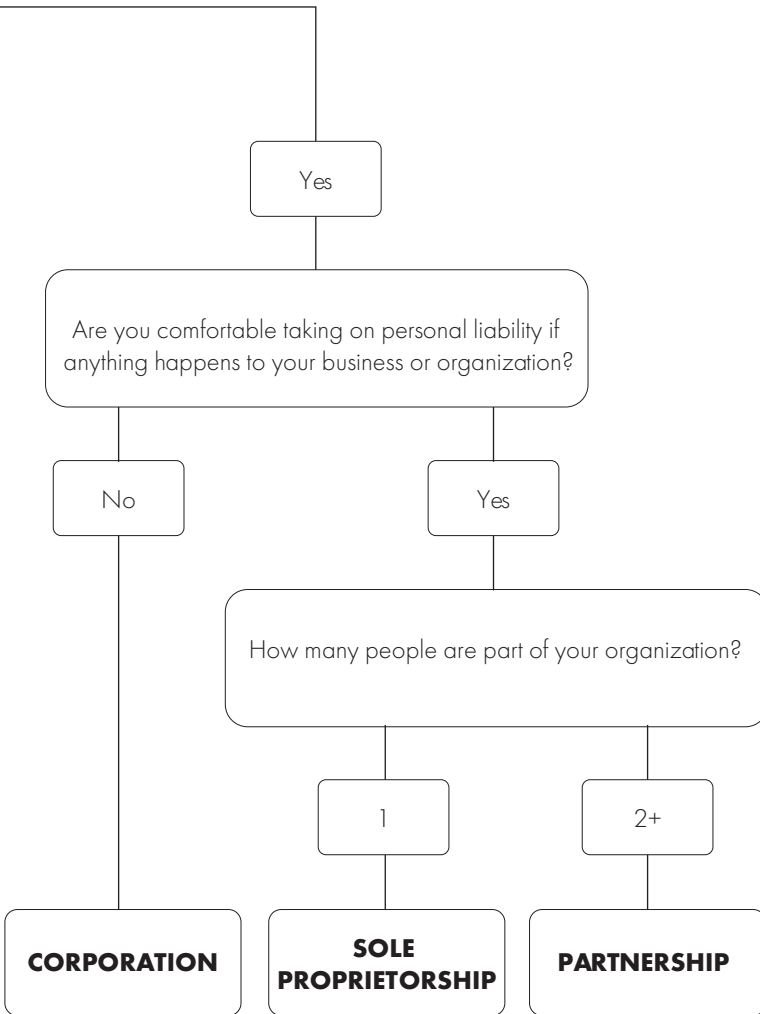
Ownership Structures

In forming an organization, the model of ownership over the assets and property needs to be determined. This is especially important as members contribute individual tools, equipment, or other assets for community use. Determining whether these assets remain under individual ownership or collective community ownership one of many considerations as multiple individuals come together as a group. The overarching ownership structure for the organization needs to be decided. The basic forms of ownership include personal, private or cooperative ownership.

Personal Ownership

Property and assets are owned by an individual and typically used for personal use and consumption. In informal creative groups the sharing of personal property may be considered because the relatively small scale of the community. However, as the community and number of users grows, individuals may want to distinguish their personal assets from their business or organization's assets or property to mitigate the risk of personal liability if anything harmful were to occur to an individual during its use. This can be done through the transfer of ownership by selling or donating such property to a corporation.

Private Ownership

A form of collective ownership whereby a group of people
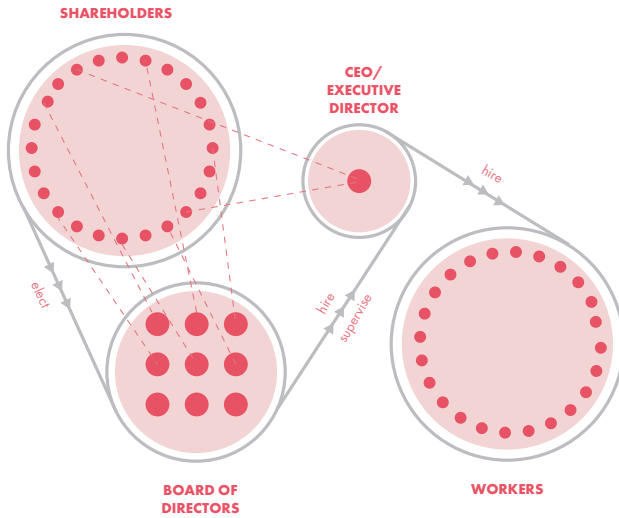
Figure 5   Private Ownership Model

control the use of productive property and assets that are used by employees usually for the purpose of generating profit. Private ownership legally designates the ownership of property by a non-government legal entity thereby separating liability from individual owners or shareholders. Owners may take the form of shareholders as capital contributors and may or may not have voting or decision making rights. Workers may or may not be shareholders in the organization and may be offered shares as a form of compensation or the opportunity to purchase shares.

WORKER OWNERS

hire

EXECUTIVE DIRECTOR

elect

internal members

external members

hire

supervise

BOARD OF DIRECTORS
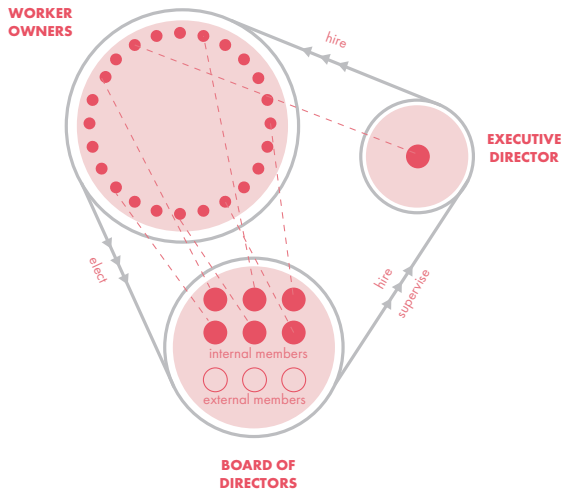
Figure 6   Cooperative Ownership Model

Cooperative Ownership

Cooperative ownership is controlled by worker-owners whether it be individual, collective or majority ownership or retention of voting rights by the workforce.[6] Originally developed in reaction to industrial capitalism and the insecurities of wage labour, this movement continues today through grassroots initiatives such as local food co-ops or creative collectives banding together for affordable space. While worker-members provide capital through membership fees and retained earnings, the basic principle in co-operatives is that voting and property rights are given to people who do the work and not to solely capital contributors. Any profit or

loss after normal operating expenses is assigned to members based on their labor contribution. Some co-operatives incorporate other structural characteristics that distinguish them from other operating practices such as making the organization's guiding principle such that profit maximization is not the primary goal.

Some important questions to collectively ask when deciding on the ownership structure include: Who are the owners or shareholders? Who are workers or employees? Is there a distinction between individuals in the organization or is everyone involved a worker-owner in the organization? How is ownership determined as the community grows? Individuals need to consider such questions because if the organization seeks to profit from what it produces it can determine which individuals personally benefit. Ownership can also play a role in determining who has decision making power or the ability to elect an individual on a board of directors to speak on their behalf.

Decision Making

Organizations will need to make many decisions regarding its day to day operations, how to spend its money and its overall goals and objectives but if there is a disagreement how will decisions be made? Establishing voting rights and the overall organizational structure sets the stage for the decision-making process.

Voting rights relates to ownership whereby the number of votes a shareholder typically corresponds to the number of shares he owns. Shareholders vote on who will make up the board of directors and on major policy, securities or operational decisions. In small organizations, every member may be on the board resulting in direct decision making whereas in larger organizations shareholders vote for individuals to represent them on board decisions.

The board of directors manage the daily operations and basic management of the company. Within this, there are various ways to structurally organize how workers form into teams and how the decision-making process works as an organization. Organizational structures can range from a direct chain of command in a hierarchical structure to complete freedom in a flat, self-managed organization and everything in between. The hierarchical, flat and holacratic structures will be further explored to describe the range of possible organizational types.
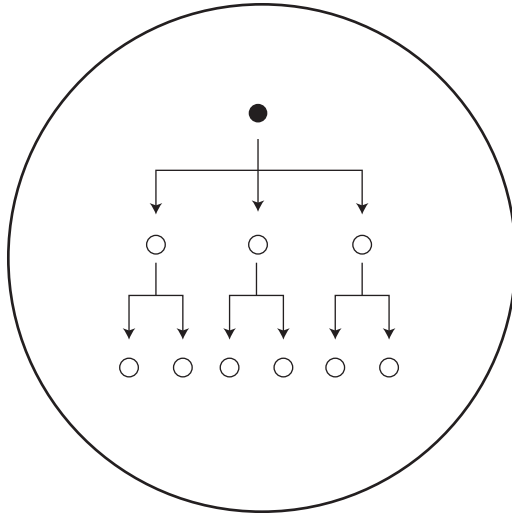
Figure 7   Hierarchical Organizational Model

<div align="center">Hierarchy</div>

Hierarchical organizations typically involve linear workflows whereby decisions follow a chain of command. This organizational structure became dominant during the industrial period with the standardization of product, use of assembly lines and special-purpose equipment that allowed unskilled workers to contribute to the finished product. Communication flows from top to bottom, from upper management to team leaders and to entry level workers. Collaboration is almost non-existent and workers are simply involved in the execution of tasks. While a hierarchical structure allows for a clear definition of roles between decision makers and executors, it also makes these organizations slower to react as decision
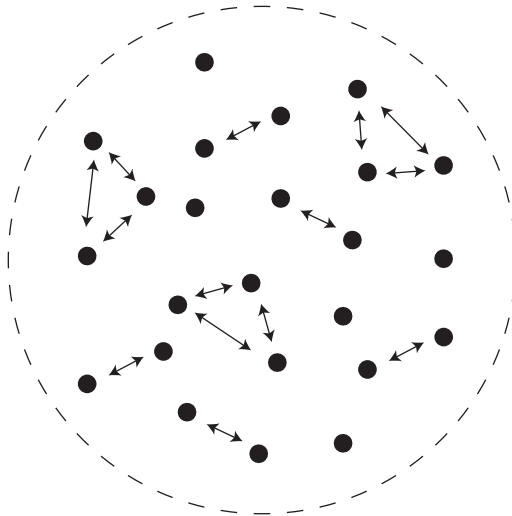
Figure 8   Self Organized Model

makers can become the bottleneck in the production process. In a fast-paced market, this makes companies more vulnerable to competition and difficult to adapt to changing market conditions.

<div align="center">Flat (self-management)</div>

Flat organizations eliminate hierarchy and the distinction between managers and workers. In this system, workers can see which projects are being worked on and join whichever project as they see fit. In addition, workers can start their own project if they can secure funding and build a team around that purpose. Some drawbacks to this system includes the development of informal hierarchies based on seniority as
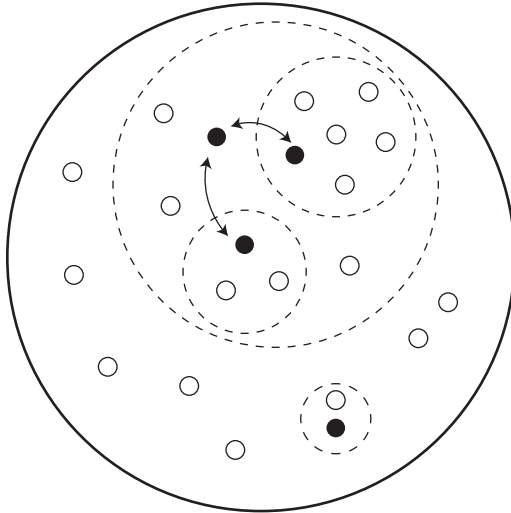
Figure 9   Holacratic Organizational Model

individuals who have worked at a company longer are often viewed as more senior and the potential for people to work in exclusive groups. Maintaining equality and a balanced power structure with individuals that have various skills and backgrounds requires a complex level of empathy, cooperation and collective understanding. Flat organizations rely on self-management and self-driven motivation and without a formal structure, issues of accountability and reliability can emerge. As a result, a flat organizational system may be best suited for smaller organizations that can easily communicate overall directives amongst one another.

<u>Holacratic (self-organization)</u>

Holacractic organizations involve the distribution of decision making to self-organized teams or 'circles'.[7] In essence, holacracy operates as a hierarchy of circles in which higher circles determine the purpose and expectations of its lower circle. At the worker level, roles are defined around the work rather than the people. As a result, people can fill several roles, often in multiple circles and such roles are updated by the team itself. Teams are self-organized with a given purpose but can internally decide how best to reach it. Theoretically, this allows holacratic companies a greater capacity to adapt to changing conditions. As holacracies are an emerging organizational structure with only a few large organizations over a thousand employees adopting it, it may be more difficult to implement without adequate coaching or training.

Amongst the hierarchical, flat or holacratic organizational structures, organizations can develop hybrid organizational structures that combine the principles of multiple types. For example, the hierarchical structure can take on 'flatter' organizational principles by opening the lines of communication between managers and workers to promote collaboration across various team. In addition, companies may incorporate self-managed teams for research and development or specific projects. Many organizations are taking advantage of hybridized organizational models to distribute decision making while still maintaining a level of hierarchy to keep individuals accountable for specific goals and initiatives. Organizations need to determine what makes most sense for them based on owners' motivations and comfort level for decision making or control. Future expansion and growth of the organization should be considered as
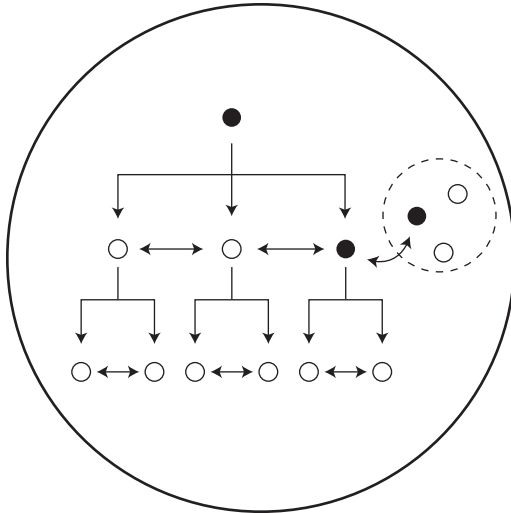
Figure 10   Hybrid Organizational Model

it may be difficult to change the organizational structure once already established. However, different organizational structure elements can always be implemented at a later time.

Spatial Planning

The planning of spaces involves the generation of a list of uses and spatial requirements that encompasses the community group's activities. Depending on the available spatial infrastructure in the city, program and space may be able to be tested outside ownership or leasing real estate. Abandoned or underutilized spaces in the city present an opportunity to test program and space through temporary events. A variety of temporary workshops or events can be conducted to test user, activity or business demand for a potential product, service or space.

In addition, user research should be conducted to understand how much individuals are willing to pay for their spatial needs if at all. These figures will determine the organization's operational income in comparison to current market rental rates. If the operational income is not sufficient to cover market rents then alternative sources of revenue must be considered to formulate a sustainable model. Alternative revenue sources include: renting to an anchor tenant (a more established company that can cover part of the space rental cost), workshops/events (alternative activities that generate revenue), equipment rental, memberships, etc. The Centre for Social Innovation, a successful organization that provides shared communal spaces, recommends a minimum ratio of 70% private to 30% common spaces to remain operational sustainable but still community driven. To ensure such a ratio, the scale of a building tends to require 15,000 to 20,000

square feet for the private spaces to offset the costs of the common spaces.[8] Finding comparable spatial models can act as inspiration or best practices that can be applied to new creative organizations.

Once a listing of spatial requirements is determined, if leasing or purchasing a property is the chosen path to move forward with then potential sites needs to be mapped out. These buildings can then be compared for their suitability based on criteria that addresses the community need. The following tools: a program sheet, map and site selection matrix have been included to assist in the spatial planning process. For small scale creative and maker communities, these tools can help in deciding and acquiring a space with little to no design intervention. For communities requiring more specialized spatial needs, this process will generate a framework to discuss the spatial needs of the community and potentially suitable venues for further design with an architect. For inspiration, communities should visit venues they aspire to have, interview managers of such spaces and compare this with their own operational capabilities.

Spatial Program

Communities can develop a spatial program by compiling a list of activities, events or uses that would require space. Based on the number of people participating in certain activities at a given time or the types of furniture or equipment that will be used in these spaces, an estimated area can be assigned for such a use. A spatial program should be developed that includes an ideal scenario in which all spatial needs are addressed while also keeping the minimum requirements of non-negotiable types of spaces in the mix. The spatial program helps to create a dialogue amongst the community to establish a collective vision in more quantitative terms while also proving useful in developing a discussion if working with a designer or architect.

Program	# of Rooms	Per unit (ft²)	Total (ft²)	Description/ Notes
Lobby area	1	300	300	box office, concession, breakout space
Kitchen	1	800	800	gathering space for multiple user groups, industrial kitchen
Bar/café	1	150	150	potentially connected to lobby concessions and community kitchen
Main Theatre	1	3000	3000	225 seats, accommodates different seating arrangements
Incubation Theatre	1	2000	2000	150 seats, accommodates different seating arrangements
Rehearsal Hall (med.)	2	900	1800	
Rehearsal Hall (sm.)	1	600	600	
Multimedia Space	1	2000	2000	
Gallery/Gift Shop	1	300	300	
Green Rooms	2	200	400	
Sound Production	1	300	300	
Dressing Rooms	2	50	100	
Safe Area	1	20	20	secure money storage
Laundry	1	30	30	
Loading	1	200	200	direct loading on street level
General Storage	1	100	100	
Open Office Space	4	800	3200	fits 10 workstations (8' x 8')
Studios	20	400	8000	private office or studio spaces
Workshop	1	800	800	woodworking shop, open workspace for set design
Private Storage	1	200	200	
Apartments	12	120	1440	for incoming artists
Private Kitchen	3	150	450	
Private Bathroom	3	30	90	
Total Net Square Footage (NSF)			26280	
Total Net Occupiable Square Footage (NOSF)			34164	+30% Circulation
Total Gross Square Footage (GSF)			**38332**	+10% Mechanical + 2% Exterior Walls

Figure 11   Example Program Sheet

Site Mapping

Mapping is a useful tool that can allow multiple stakeholders in the community to identify potential sites for a creative space. Individuals may decide to conduct their own search as professional services may not be financially incentivized enough to actively look for spaces. Oftentimes, searching for potential sites can be as simple as calling to inquire based on a sign on a building or talking to community members to find out who the landlord of a particular building so you can speak to them directly about your community initiative. In addition, contacting the city may be helpful to see if they have any information about available building inventory.

The site selection process varies depending on the needs and factors a community deems important. Narrowing down a list of factors that are both qualitative and quantitative will assist in narrowing down a list of potential sites.
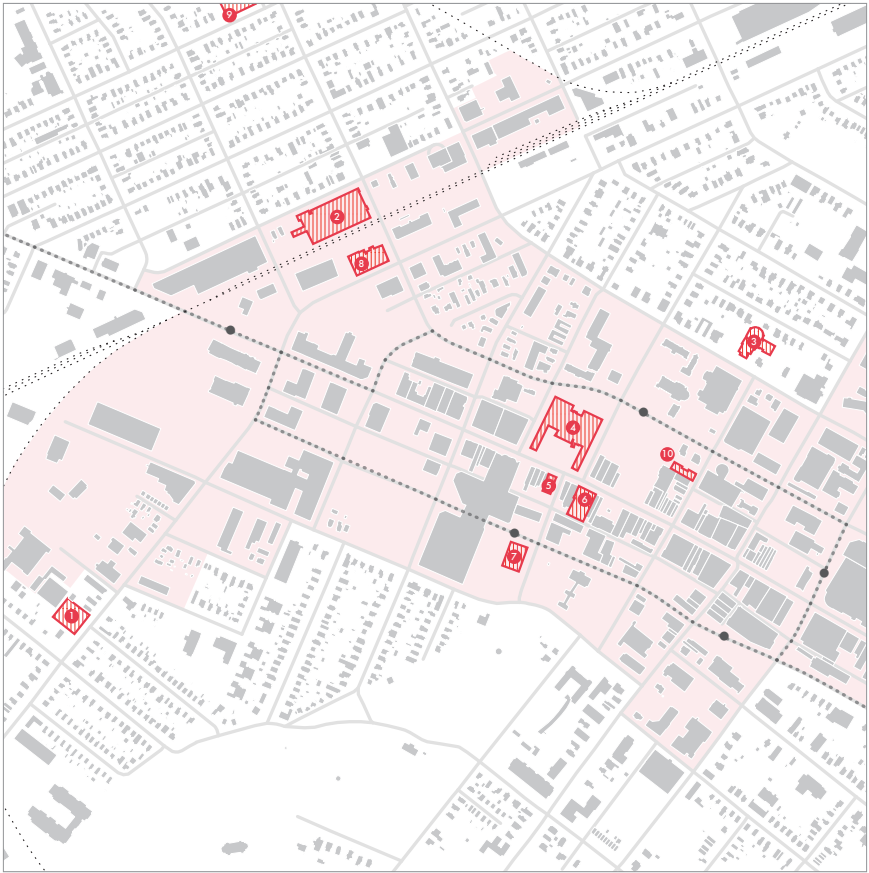
Figure 12   Example Potential Sites Map- Downtown Kitchener

1. 154 Victoria St. S.

2. 283 Duke St. (Boehmer Box)

3. Zion United Church

4. Kitchener City Hall

5. Public Utilities Building

6. 165 King St. (Budd's)

7. 44 Gaukel

8. 60 Victoria St. N.(Rumpel Felt)

9. 152 Shanley St. (Electrohome)

10. 48 Ontario St. (Legion)

Site Selection

The following site selection matrix was created in the context of a creative coworking space or hub in downtown Kitchener. A list of potential sites was created through online research, personal exploration in the city and through interviews with creative individuals in the community. The site selection factors were generated based on interviews with artists and creatives in the region, a report on the community stakeholder engagement process for the creative hub in Kitchener as well as reports from other community shared workspace hubs such as the Centre for Social Innovation as listed in the appendix. Through these various conversations and reports, two prominent criteria for locating a site for a creative space emerged: location and the character of the building.

The main variables for location centre around the issue of accessibility, the space's ability to connect to its direct community and for it to have the potential to reach a broader audience. For the case of this study, accessible space is identified as within a 15-minute walk from a public transit stop. In addition, being able to connect to the community and broader audience relies on the proximity to other amenities and services that can generate activity around the creative space as complimentary program uses.

	48 Ontario (Legion)	44 Gaukel	283 Duke Street (Boehmer Box Factory)	154 Victoria Street S.	165 King Street (Budd's)	32 Weber Street W. (Zion United Church)	Public Utilities Comission Building	60 Victoria Street N. (Rumpel Felt Factory)	152 Shanley Street (Electrohome)
Location	●	●	●	●	●	●	●	●	●
Accessible by transit (15 mins)	●	●	●	●	●	●	●	●	●
Proximity to the downtown core	●	●	●	●	●	●	●	●	●
Proximity to personal and professional amenities	●	●	●	●	●	●	●	●	●
Proximity to other cultural assets	●	●	●	●	●	●	●	●	
Available parking	●	●	●	●		●		●	
Building									
Currently vacant or partially vacant	●	●	●	●	●	●	●	●	●
No known environmental assessment issues	●	●	●	●	●	●	●	●	
12,000 - 20,000 sf	●	●	●	●	●	●	●		●
Potential for immediate occupancy		●	●	●	●				
Regional or municipal ownership	●	●						●	
Potential for expansion (addition, vacant adjacent space)	●	●						●	
Potential for third party operator & leasehold improvements	●	●							
Natural light	●		●	●					●
A sense of history and spirit to the building	●		●			●		●	●
Interesting aesthetic features; exposed brick/beam, high ceilings, etc.	●		●						●

Figure 13   Example Site Selection Matrix

Financial Model

One of the biggest challenges in developing a creative organization is in determining how a community can financially sustain a space especially when cost recovery rather than profitability is the primary goal. Often, spaces do not necessarily fail from a lack of community need but from a lack of understanding of their working business model, the framework in which the organization is generating revenue. Creative spaces require a balance of supportive services that can bring in revenue to sustain operations while also creating room for services that may fill a huge community need but have limited financial return.

The creation of a viable business model is essential for the success and long term sustainability of a creative space. The business model canvas is a strategic template to map out an organization's business model. Using the business model canvas, organizations can develop a hypothesis about the perceived challenges of potential customers and the unique value that is presented in the proposed solution. These assumptions can then be tested by developing a minimum viable product (MVP) which is described as the most basic product or service that can be made to quickly test one's hypothesis. Essentially, the process involves putting an idea or theory into practice to gain insights through real world interactions. The testing of the MVP is used as a learning process to move closer to a clearly defined problem and solution. The business model canvas is continuously adapted
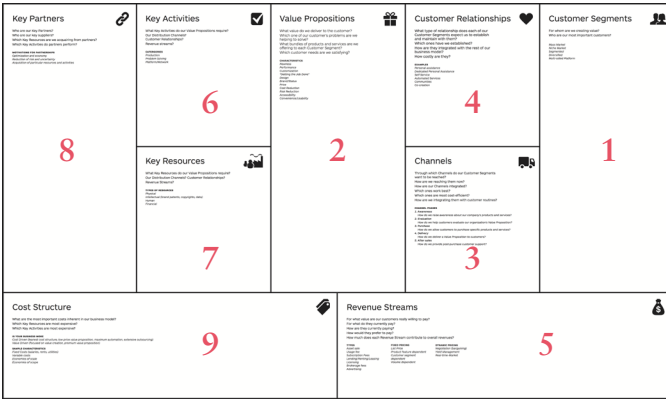
Figure 14   Business model canvas by Alex Osterwalder

as new information emerges from customer interviews and testing of early version of the product, service, or space. For example, an organization may think their community requires a great number of specialized spaces for events, workshops and workspace but if tested they may find that their community may desire a single more flexible space that can incorporate a variety of uses. As a result, this process is very applicable in participatory design in the engagement with community members to determine the organizational and programmatic model of a more permanent space.

Generating Revenue

Creative spaces can provide variety of different services and spatial amenities to generate revenue. Existing creative spaces use a combination of the following concepts in their business model:

Private Office Space

The rental of private office spaces to smaller organizations can provide a stable source of revenue while also promoting the colocation of creative organizations that can grow the community.

Dedicated Desk

The rental of a permanent desk space in an open office can be a more affordable option for small organizations with the convenience of not having to move from day to day.

1 HR

Drop-in/Hourly Desks

A desk space is provided for an allotted number of hours per month. This may be ideal for transient workers or individuals that don't work at their desk every day of the week.

Event or Meeting Space

Providing rental space for events or meetings can generate additional income while extending the organization's reach to the community. Monthly board meetings for non-profits or local meetups may be looking for venues for infrequent events.

Memberships

Hackerspaces and makerspaces often follow a monthly membership model to provide various levels of access to tools and equipment.

Workshops

Workshops, tutorials or events can also be used as an opportunity to generate revenue while also leveraging the skills and knowledge of the community that makes up the creative space.

Tool and Equipment Rentals

Specialty equipment is often too expensive for the average consumer but can be purchased if multiple individuals and organizations pool together resources. Depending on the

needs of the community, creative spaces can rent out tools, audio visual, or virtual reality equipment for hourly, daily or weekly use. Balancing equipment inventory, rental demand and usage in the space itself is of particular importance.

Consulting

Some creative spaces operate with a core for-profit business venture that does consulting or other types of work that supplements the creative space offering to the community.

As there are numerous options for a space to generate revenue, it is critical to understand one's core audience and market to determine what people are willing to pay for and if this can pull in enough revenue to remain operational. The use of the business model canvas can aid in the process of developing the best suited business model for one's own organization.

Accessing Capital &Financing

The decision between leasing or owning and occupying a space is often determined by an organization's ability to access the necessary capital and financing. If the organization is just starting, obtaining traditional mortgage will be difficult with little financial record showing successful operation over the course of several years. Obtaining financing through private investors is an option but requires significant relationship building and connections to suitable individuals willing to take on the risk of supporting a new venture. As a result, organizations with no pre-existing assets or major investor backing will often initially lease space as a tenant in a building. Organizations may need to budget for leasehold improvements, capital infrastructure investments, costs of rent during build-out and vacancy before full occupancy. A variety of capital fundraising options are available towards leasing or purchasing a property:

Sponsorships
Sponsoring involves the supporting of an event, activity, person, or organization in exchange for increased awareness or brand building through marketing or advertising materials for example. Sponsorships have also been attributed to physical spaces in the naming of rooms or buildings.

Capital Grants
A sum of money given by a government, corporation, foundation, or trust to an organization to purchase buildings,

land, equipment, etc., or to make improvements to them.

Operating Grants
A sum of money given by a government, corporation, foundation, or trust to an organization for recurring expenses (salaries, utility bill, health/general liability, simple office supplies, etc.)

Private Debt Financing
In order to grow its business, a company may require taking on debt to finance a potential opportunity or the means for expansion. The company borrows asks potential lenders for funds and in turn, the lending institution receives interest payments in addition to repayment of the contractual loan amount. This allows for the company to access capital to expand their business even if they may not have enough cash or assets on hand. [9]

Mortgage
A mortgage involves an individual or business that finances the purchase of a real estate property by borrowing capital from a lending institution and contractually negotiating a predetermined set of loan payments. Over time, the borrower repays the loan in addition to interest until the property is fully owned. Accessing a mortgage allows organizations to make large real estate purchases without paying for the full
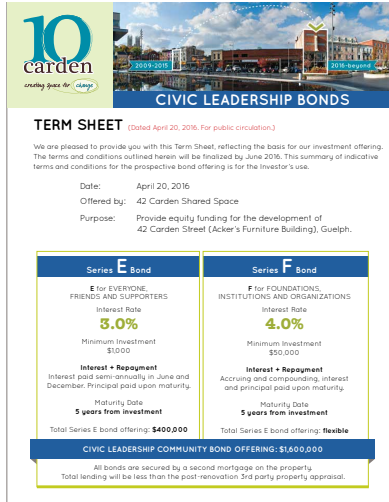
Figure 15   Community Bond Offering from 10 Carden in Guelph

property's assessed value up front.[10]

Community Bonds

A community bond is an interest- bearing loan that is accessible to unaccredited investors and can only be issued by nonprofit organizations.[11] This finance model was developed by the Centre for Social Innovation, a non-profit organization providing affordable co-shared workspace for social entrepreneurs and organizations. The community bond was developed to provide an alternative means to source capital by leveraging the assets of its community. Non-profits typically depend on large corporate entities and governments to provide capital funding which is either relatively limited or

may not align with their social mission. At the same time, the average individuals that make up the non-profit community organization are limited in their ways to contribute to either volunteering or through modest donations. The community bond enables donors and volunteers to become community investors to create a space out of community necessity by leveraging the assets of the community.

Organizations may have to leverage a combination of fundraising options to raise enough capital to get a space off the ground. Local business centres, banks, and institutions can provide access to professionals to help aid in the process of obtaining business programs and other governmental support. For a more sophisticated capital fundraising project, connecting to financial, legal and fundraising professionals will be required to provide a more detailed strategic guidance and direction.

Revenue		
Arts		
Federal and/or Provincial	600,000	
City of Kitchener	50,000	
Foundations	50,000	
Corporate Donations	25,000	
Individual Donations	20,000	
Social Innovation		
Ontario Trillium Foundation Capital Grant	150,000	
Foundations	150,000	
Corporate Donations	120,000	
Individual Donations	40,000	
Design and Digital Media Technology		
City of Kitchener	100,000	
Corporate Donations	200,000	
Individual Donations	30,000	
Financing		
Community bonds	600,000	
Mortgage	975,000	
Total Project Revenues and Financing	3,110,000	
Expenses		
Building	1,500,000	
Construction	1,200,000	
Design allowances and contingency @ 15%	180,000	
Consultants	120,000	
Project Management @ 5%	60,000	
Community Development	30,000	
Fundraising Expenses	20,000	
Total Project Expenses	3,110,000	
Surplus/(Deficit)	0	

Figure 16   Example Capital Budget

Notes
Cultural Spaces Canada Program of the Department of Canadian Heritage. As part of the 2016 budget, the federal government announced that over the next two years, it will be investing an additional $168.2 million in cultural infrastructure.
Make It Kitchener- Encourages the intersection of art and industry
A number of Canadian charitable foundations make capital contributions to arts projects including the Ontario Trillium Foundation.
support from local businesses
support from local community
Provincial grants that broaden access, improve community spaces and promote energy efficiency to achieve a priority outcome.
McConnell Social Innovation Fund (up to 150,000 for 2 years)
United Way Waterloo has previously expressed interest in a community hub
Make It Kitchener- Support creative clusters such as music, film, performing arts, and design
Business letters in support of digital media hub
Individual letters in support of digital media hub
initial raise to secure mortgage
based on mortgage with 35% down payment on building cost
requires updated electrical, mechanical, structure, elevator
includes architects, engineers (mechanical/electrical, structural) and cost consultant
covers overhead and managing capital project
staffing for ongoing community input during development process
includes cost for fundraising materials and events

Revenue		
Private offices- $24 p.s.f./yr	93,600	
Permanent Desk- $350/month	79,200	
Hot Desks- $200/80 hours	57,600	
Affordable Creative Studios- $12 p.s.f/yr	30,000	
Retail- Café- $24 p.s.f./yr	16,800	
Event space bookings- $250/ day	45,000	
Meeting Room bookings- $20/hr, $125/day	22,500	
Common Area Maintenance(CAM) $0.3 p.s.f/ yr	2,130	
Taxes $1.3 p.s.f/ yr	9,230	
Ancillary fees ($50 permanent memberships)	1,400	
Total Annual Revenue	357,460	
Expenses		
Interest and principal on mortgage	81,600	
Property taxes	14,755	
Heating and cooling	32,640	
Hydro	25,500	
Water	2,400	
General Maintenance	15,000	
Cleaning	2,000	
Security	1,000	
Maintenance salary	30,000	
Management overhead	50,000	
General Staff	80,000	
Administrative expense	2,000	
Legal	2,000	
Insurance	10,000	
Capital reserve allowance	4,000	
Contingency	4,000	
Total Annual Expenses	356,895	
Surplus/Deficit	565	

Figure 17   Example Annual Operating Budget

Notes
28 permanent desks @ 80% = 22
15 hot desks @ 80% = 12
utilities paid by tenant
50% occupancy (180 days)
50% occupancy (180 days)
fees paid by tenant
fees paid by tenant
annual fee for permanent memberships
$975,000 @ prime(2.70) + 3%, 20 year amortization
(based on taxes from surrounding buildings)
based on 24 cubic feet of natural gas per sq. ft @ 0.16/m3
based on 20 KWH p.s.f. @ .15/KWH
based on 1.5 cubic meter/ 1 sq m @ $2
allocating 1-3% of property value to maintenance

Developing an Intervention

Drawing from the principles of design and lean thinking, the development of a pilot project provides an opportunity to incorporate physical spatial experimentation as part of the ideation process. A design hypothesis is formulated using a temporary space, event or intervention to test any assumptions before investing into expensive or more permanent infrastructure. These exercises will show the application of lean practices and a participatory approach to design in architectural development. Specific tactics engaging with the maker, artist and design community will be generated through a series of community, programmatic and spatial experiments. Through this process, practices can mitigate the risks of investing into fixed assets by leveraging the existing spatial assets in the city. The urban prototyping process involves the following steps:

1. Research- Identify and understand the problems for who you are designing for. (Interviews, literature reviews, etc.)

2. Define- Synthesize research into a specific design problem.

3. Ideate- Hypothesize and develops ways to address the defined problem.

4. Prototype- Design and build a project or prototype that can be developed quickly with as few resources as possible.
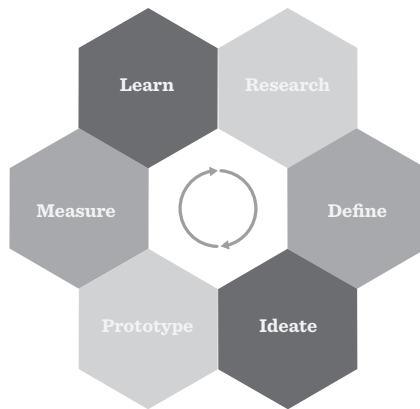
Figure 18   Urban Prototyping Methodology

5. Measure-Identify key factors to measure performance of the prototype and gather feedback from users.

6. Learn- Analyze the collected data and feedback to improve or re-evaluate the problem and solution.

The process is iterative and oftentimes non-linear, meaning as concepts are proven and validated or if they fail, many of these steps will be revisited. The aim is to identify key learnings that will inform future iterations and design decisions in the project or space. Using this methodology, temporary action or events establish a bottom-up approach to the building of a creative space for designers, artists and makers in the city.

Urban Prototyping Canvas

Adapted from the Business Model Canvas[12] and the Lean Canvas[13] by Alex Osterwalder and Ash Maurya, the Urban Prototyping Canvas combines the theoretical approach of creating a business model within the framework of an organization's event or architectural project.

The Urban Prototyping Canvas is divided into a nine-box graphic template that can help illustrate the conceptual design process as team members move from conceptual design to project implementation to analysis for future iterations.

Problem

A clear description of the problem needs to be defined to eliminate wasted time, money or effort on building out a project that doesn't set out to achieve a clear objective. Understanding why these issues are deeply important to the target audience is essential in formulating appropriate design responses.

Audience

Identify the specialized needs and characteristics of the specific segments of your audience. If there are multiple key audience groups then outline each specific problem that needs to be addressed as part of the solution. A better understanding of your audience will lead to a better understanding of their problems and the specific problem the project can address.

URBAN PROTOTYPING TEMPLATE

Problem	Audience	Solution		Activities/Resources	Funding	Cost
What are crucial problems faced by your audience?	Who is your target audience? Identify several audience groups your solution is geared toward.	What is your solution to your audience's problem?		What key activities or resources does your solution require?	For what value are your customers willing to pay?	What are the most expensive costs inherent in your solution?
	2				How much does each revenue stream contribute to overall funding?	What are the costs associated with the key resources/activities?
1	Unique Value Proposition	**4**		**6**	**7**	**8**
	What makes your solution different than existing ones?					
	3					

Partners		Metrics	
Who are your key partners? What activities and/or resources do they help you acquire or assist with?		How will you track your solution's performance or success? (attendees, engagement, revenue generated)	
5		**9**	

Figure 19　　　　　　Urban Prototyping Canvas

<u>Unique Value Proposition</u>

Consider projects especially local ones that have been done in the past and analyze the key lessons that they gained and what new value can be created with a new project. The unique value proposition combines both the problem and solution that helps to market your project to your audience.

<u>Solution</u>

Determine a series of possible solutions that address the outlined problems and bring unique value to the audience while keeping in mind past projects that have been implemented successfully or unsuccessfully. These solutions will be narrowed down as you talk to members of the target

audience and learn if you proposed solutions provide any value or solve any of the problems they encounter. These interviews will validate the initial hypotheses about key audience groups, problems, solutions and proposed value before physical prototyping even begins. The goal is to eliminate resources being put towards hypothetical solutions that have not been validated by your key audience. By talking to your audience understanding their problems first, constructing a market and a following prior to the building of the project, there will be a greater chance of success. By engaging with your audience, potential individual partners and partner organizations will emerge which will help market your project and help with its implementation. Once the solution has been narrowed down, the design of a minimum viable project(MVP) should be built using the least amount of resources, time and logistical capabilities to quickly test and learn through its creation.

Partner Organizations

In order for the organizing team to focus on their core competencies, it can be strategic to form partnerships with key individuals or organizations that have existing experience in engaging with your audience and have already built a strong community to support them. Ensuring there are mutual goals and beneficial outcomes to everyone involved is important to the project's success.

Activities/Resources

Determine the most important activities and associated resources that are needed to bring value to your audience.

Focus on core activities and resources that are essential to building the minimum viable project. These resources can be human, financial, physical or intellectual.

Funding

Projects require income in the form of grants, sponsorship, advertising or generating a revenue stream from your audience. Together this will form a basic budget that can help determine the scale, site and program of the proposed project.

Costs

Research the costs for essential activities and resources for the proposed project. This is where the development of an MVP is critical in narrowing down costs and allowing a project prototype to be quickly built and tested with limited financial risk involved.

Metrics

Determine key points of measurements that are important to your project and help indicate if the solution has achieved quantitatively and/or qualitatively. This could range from number of attendees to revenue generated to community growth through social media.

The Urban Prototyping Canvas is an iterative process that will continuously change as more information is learned from engaging with your audience and solutions are validated or discredited. It is important to continuous measure and analyze the outcomes of any projects to understand and learn

how future projects could improve based on the established goals. The Urban Prototyping Canvas is a tool that community members can use to begin to illustrate the planning process to important stakeholders and partners and to quickly chart out a course to bring a project into action.

What's Next?

Oftentimes, organizations are more than capable to independently start up their own space with little to no professional guidance. For more complex initiatives that involve the acquisition of more capital-intensive projects, more time is required to develop the appropriate strategy regarding community, organization, space and finance. In each of these categories, further research and development should be conducted in conjunction with local organizations, services and professionals.

Community

Finance   Organization
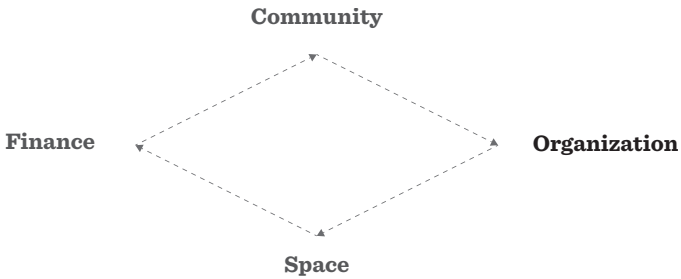
Space

Figure 20   Four Pillars For Planning One's Own Creative Space

Community

Connect to other creative organizations, develop partnerships and find possibilities for collaboration and cross promotion to further each organization's mission and objectives.

Organization

Connect to legal professionals to discuss details of the legal structuring of ownership, voting rights and registration of an organizational entity. Local business centres have access to professionals for little to no cost. Legal professionals may offer a short consultation session for free to answer any preliminary questions.

Space

Connect to an architect. With a basic program and potential venues in hand an architect can work with an organization to refine spatial needs and assess viable sites. Services can range from conducting a design charrette to facilitate a community discussion that can lead to preliminary design concepts to development of feasibility studies that incorporates the spatial and financial components of acquiring a new space.

Finance

Contacting local business centres or incubators can provide access to business professionals that can help further refine an organization's business model and plan. For more detailed projections for capital and operating budgets, cost consultants can work with an architect in the design and feasibility study stages to determine estimated overall costs.

While some of these services will cost money, organizations will have to decide how much personal time and resources they are willing to invest as opposed to hiring a professional. Including some of these professionals as part of an organization's team or board of directors can relieve some costs if simply looking for minimal guidance. This is where community building and the assembly of the individuals with a diverse skill set is important in the formation of an organization. In addition, there are grants available to aid in the cost of new research or feasibility studies such as Ontario Trillium Foundation seed grant.[14] Grants are also available towards more specialized spaces such as The J.W. McConnell Foundation[15] in support of food sustainability initiatives. Ultimately, the planning of a creative space is an incredibly complex process that often just requires the community to jump in to get started. It is only from continuous testing, engagement with various stakeholders in the community and learning from doing that new creative and cultural spaces can emerge to truly address the city's needs.

End Notes

1   Design thinking is a methodology used by designers to solve complex problems through a solution focused, creatively strategic and action oriented process. Design thinking is an approach that can be used more broadly outside of traditional design practice but also in the business and social sector as well. Design thinking in business was popularized by Tim Brown, CEO of IDEO, an international design and consulting firm, and has written several books on how design can play a strategic role in organizational, management, and product development practices.

Tim Brown and Barry Katz, Change by Design: How Design Thinking Transforms Organizations and Inspires Innovation (New York, NY: Harper Business, 2011).

2   Popularized by entrepreneur Eric Ries in *The Lean Startup*, the lean thinking process reconceives how to tackle a problem by using an experimental method. The process begins with a hypothesis that predicts perceived outcomes which is then tested and measured empirically. The tests are conducted by creating a minimum viable product (MVP) which is described as the most basic product or service that can be made to quickly to test your hypothesis. Lean development is described as an iterative process, Build-Measure-Learn. Lean startup techniques aim to eliminate waste in the business development process by limited the amount of resources used towards proposed solutions before they have been validated by a particular user group. The testing of the MVP is used as a learning process to move closer to a clearly defined problem and solution.

Eric Ries, The Lean Startup: How Today's Entrepreneurs use Continuous Innovation to Create Radically Successful Businesses (New York: Crown Business, 2014).

3   Tactical urbanism uses temporary action for long term change by using short term tactics and practical application to build toward a larger strategy.

Mike Lydon, Anthony Garcia, and Andrés Duany, Tactical Urbanism: Short-Term Action for Long-Term Change (Washington (D.C.): Island Press, 2015).

4   The need for community building is derived from the *participatory planning approach* that incorporates a variety of interest groups in the community as part of the urban planning process. Defining the issues within the planning process has become even more challenging because of the increasing complexity and dynamics of the city as well as the context in which these issues are situated is continuously shifting. In order to understand and anticipate the challenges within the city, an experimental approach must be incorporated as part of the design and urban planning process to reveal new techniques, devices, and design strategies.

5   The Centre for Social Innovation has written more specifically about the key roles and responsibilities that has helped make their organization successful.

Rigour: How to Create World Changing Spaces (2010), http://socialinnovation. ca/sites/default/files/sssi/Rigour_How_to_create_World-Changing_Shared_ Spaces.pdf, 68-75.

6   For more information about Workers cooperatives visit: http:// canadianworker.coop/

7   For more information about Holacratic organizations visit: http://www.holacracy.org/

8   Rigour: How to Create World Changing Spaces (2010), 28-55.

9   "What is Private Debt?," CNL Securities, http://www.cnlsecurities.com/advisor-resources/2022-what-is-private-debta.stml.

10   Amy Fontinelle, "What is a Mortgage," Investopedia, February 16, 2017, http://www.investopedia.com/terms/m/mortgage.asp.

11   For more information about Community Bonds visit: https://communitybonds.ca/

12   Alexander Osterwalder, "Business Model Canvas," Strategyzer, https://strategyzer.com/canvas/business-model-canvas

13   Ash Maurya, "Lean Canvas," LeanStack, https://leanstack.com/leancanvas.

Resources

Creative Hub Kitchener- Planning and Strategic Initiatives
https://www.kitchener.ca/en/Calendar/CouncilCommittee/Details.
aspx?Id=3de76cc8-7853-4cf5-bad8-5d44906457dd

Centre for Social Innovation: How to Create
World-Changing Spaces
http://socialinnovation.ca/sites/default/files/sssi/Rigour_How_to_
create_World-Changing_Shared_Spaces.pdf

Artscape D.I.Y Creative Placemaking Toolbox
http://artscapediy.org/Creative-Placemaking-Toolbox.aspx

10 Carden Community Bond Offering Overview
http://10carden.ca/wp-content/uploads/Community-Bond-
OverviewOctober2016.pdf

The Creative Content Industry Waterloo Region Report 2015
http://www.omdc.on.ca/Assets/Research/Research+Reports/
The+Creative+Content+Industry+in+Waterloo+Region+Report/
Creative_Content.pdf

Centres for Community Innovation and Design in Waterloo
Region 2010
http://civics.ca/docs/ccidfeasibility.pdf

ArtsBuild Ontario
http://www.artsbuildontario.ca/

Appendix

Program Sheet

Program	# of Rooms	Per unit (ft²)	Total (ft²)	Description/ Notes
Total Net Square Footage (NSF)				
Total Net Occupiable Square Footage (NOSF)				+30% Circulation
Total Gross Square Footage (GSF)				+10% Mechanical + 2% Exterior Walls

Site Selection Map
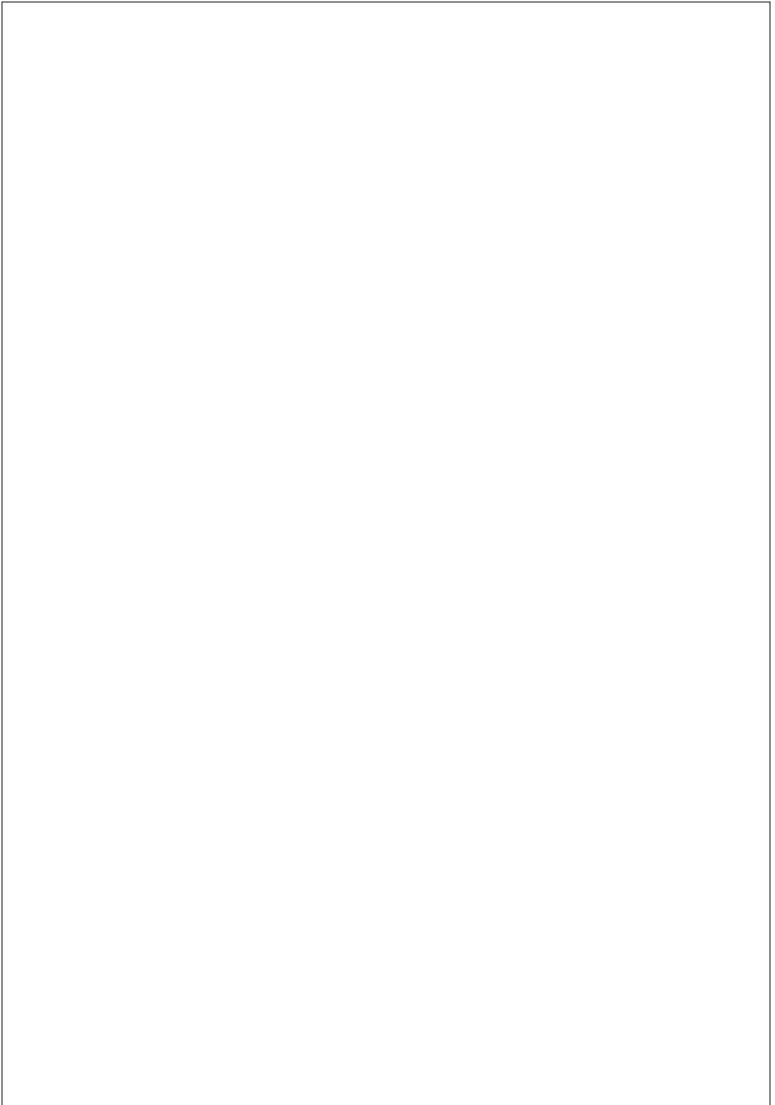
Site Selection Matrix

Location											
Building											

Business Model Canvas

Key Partners

Who are our Key Partners?
Who are our key suppliers?
Which Key Resources are we acquairing from partners?
Which Key Activities do partners perform?

MOTIVATIONS FOR PARTNERSHIPS
Optimization and economy
Reduction of risk and uncertainty
Acquisition of particular resources and activities

Key Activities

What Key Activities do our Value Propositions require?
Our Distribution Channels?
Customer Relationships?
Revenue streams?

CATERGORIES
Production
Problem Solving
Platform/Network

Value Proposit

What value do we deliver to the cu
Which one of our customer's probl
helping to solve?
What bundles of products and serv
offering to each Customer Segmer
Which customer needs are we sati

CHARACTERISTICS
Newness
Performance
Customization
"Getting the Job Done"
Design
Brand/Status
Price
Cost Reduction
Risk Reduction
Accessibility
Convenience/Usability

Key Resources

What Key Resources do our Value Propositions require?
Our Distribution Channels? Customer Relationships?
Revenue Streams?

TYPES OF RESOURCES
Physical
Intellectual (brand patents, copyrights, data)
Human
Financial

Cost Structure

What are the most important costs inherent in our business model?
Which Key Resources are most expensive?
Which Key Activities are most expensive?

IS YOUR BUSINESS MORE
Cost Driven (leanest cost structure, low price value proposition, maximum automation, extensive outsourcing)
Value Driven (focused on value creation, premium value proposition)

SAMPLE CHARACTERISTICS
Fixed Costs (salaries, rents, utilities)
Variable costs
Economies of scale
Economies of scope

...ions 🎁

...stomer?
...ems are we

...ices are we
...t?
...sfying?

Customer Relationships ♥

What type of relationship does each of our
Customer Segments expect us to establish
and maintain with them?
Which ones have we established?
How are they integrated with the rest of our
business model?
How costly are they?

EXAMPLES
Personal assistance
Dedicated Personal Assistance
Self-Service
Automated Services
Communities
Co-creation

Customer Segments 👥

For whom are we creating value?
Who are our most important customers?

Mass Market
Niche Market
Segmented
Diversified
Multi-sided Platform

Channels 🚚

Through which Channels do our Customer Segments
want to be reached?
How are we reaching them now?
How are our Channels integrated?
Which ones work best?
Which ones are most cost-efficient?
How are we integrating them with customer routines?

CHANNEL PHASES
1. Awareness
   How do we raise awareness about our company's products and services?
2. Evaluation
   How do we help customers evaluate our organization's Value Proposition?
3. Purchase
   How do we allow customers to purchase specific products and services?
4. Delivery
   How do we deliver a Value Proposition to customers?
5. After sales
   How do we provide post-purchase customer support?

Revenue Streams 💰

For what value are our customers really willing to pay?
For what do they currently pay?
How are they currently paying?
How would they prefer to pay?
How much does each Revenue Stream contribute to overall revenues?

TYPES	FIXED PRICING	DYNAMIC PRICING
Asset sale	*List Price*	*Negotiation (bargaining)*
Usage fee	*Product feature dependent*	*Yield Management*
Subscription Fees	*Customer segment*	*Real-time-Market*
Lending/Renting/Leasing	*dependent*	
Licensing	*Volume dependent*	
Brokerage fees		
Advertising		

Capital Budget

Revenue		
Funding Mechanism/ Granting Entity		
Total Project Revenues and Financing		
Expenses		
Building		
Construction		
Design allowances and contingency @ 15%		
Consultants		
Project Management @ 5%		
Community Development		
Fundraising Expenses		
Total Project Expenses		
Surplus/(Deficit)		

	Notes

Annual Operating Budget

Revenue		
Revenue generators (space, memberships, taxes, fees)		
Total Annual Revenue		
Expenses		
Interest and principal on mortgage		
Property taxes		
Heating and cooling		
Hydro		
Water		
General Maintenance		
Cleaning		
Security		
Maintenance salary		
Management overhead		
General Staff		
Administrative expense		
Legal		
Insurance		
Capital reserve allowance		
Contingency		
Total Annual Expenses		
Surplus/Deficit		

	Notes

Urban Prototyping Canvas

Problem

What are crucial problems faced by your audience?

Audience

Who is your target audience? Identify several audience groups your solution is geared toward.

Solution

What is your solution to your audience's problem?

Unique Value Proposition

What makes your solution different than existing ones?

Partners

Who are your key partners?
What activities and/or resources do they help you acquire or assist with?

Activities/ Resources

What key activities or resources does your solution require?

Funding

For what value are your customers willing to pay?

How much does each revenue stream contribute to overall funding?

Cost

What are the most expensive costs inherent in your solution?

What are the costs associated with the key resources/activities?

Metrics

How will you track your solution's performance or success? (attendees, engagement, revenue generated)