Implementation Framework of Makerspaces and Creative Business Incubators in Cebu City

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ACKNOWLEDGEMENTS

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This research is dedicated to all Cebuano creatives who long for a space where they can easily make, collaborate, and celebrate their creativity.

About the Researcher

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EXECUTIVE SUMMARY

Cebu City's rich history made it into the creative city it is today. As the major exporter of furniture and fashion accessories in the Philippines, and with other creative disciplines continuing to flourish, it is apparent there is a thriving creative industry. However, if Cebu City wants to continually position itself as a 'City of Design' and develop its creative industries, there should be more spaces where creativity and collaboration are cultivated.

Collaboration are induced in spaces where there is creative convergence. Makerspaces for example are spaces where creatives from various disciples are able to make or create something. Makerspaces are borne out of the maker movement, which have been at the forefront of the third industrial revolution. In the UK, every city already has a makerspace which is part of the ongoing efforts of strengthening UK's creative industries. The UK also has a strong maker community which is evident in the number of maker events all round the country, maker degrees in universities, as well as having creative districts. With the help of creative business incubators such as Cockpit Arts, creatives in the UK are given the chance to get a foothold as a creative entrepreneur. These kinds of spaces can encourage artists and designers to venture into entrepreneurship, contributing more to the creative economy.

In contrast, Cebu City currently has no makerspace, except for Fablabs which are housed inside universities (UP Cebu and CIT). Cebu City also has yet to create a thriving maker community, and has no identifiable design district. Graduates of creative courses, such as product design in UP Cebu, rarely venture out with their own business because of reasons such as (1) lack of business know-how, (2) lack of access to markets, and (3) lack of capital. If Cebu City is to make a similar space to Makerveristy and Cockpit Arts, it needs to look into their best practices, and contextualize it to the current needs of the Cebuano creative.

To conceptualize the most ideal type of makerspace and creative business incubator for Cebu City, best practices from Makerversity and Cockpit Arts are cross-analyzed with Fablab UP Cebu's experiences. However, one cannot expect that the market will accept and adapt to a new concept easily. To mitigate start-up risks, an implementation framework for the new concept can be adapted.

The effective implementation framework from the George W. Bush Foundation was selected as a base framework for the makerspace and creative business incubator for Cebu City. This was selected on the basis of the framework's intended purpose, its multi-level approach, and in-depth engagement with stakeholders. It encompasses the creation of the vision statement, up to the execution, reflection and improvisation of implemented changes.

I.
INTRODUCTION

A new breed of creatives, makers, and crafters in Cebu City must herald the creative industry towards the new industrial revolution.

The ‘Maker Movement’ has been seen as the catalyst of the third industrial revolution (Muro & Hirshberg, 2017). The decentralized approach to manufacturing, equipped with digital fabrication tools, and resources from open source networks through the Internet, has created an unprecedented approach in the way products are produced and consumed.

Although maker communities in countries such as the UK have already been around for more than a decade (NESTA, 2015), it is still relatively new in developing countries such as in the Philippines. Cebu City in particular, although having a long history in crafting and trading (Lorenciana, 2018), is slow to adapt to the third industrial revolution. The first Fablab in Cebu was only established in 2016, 10 years after the beginning of the maker movement. Although the presence of Fablabs in Cebu City since 2016 have already introduced the concept of digital fabrication and makerspaces, there is yet to be a strong and identifiable maker community in Cebu City.

A new breed of creatives, makers, and crafters in Cebu City must herald the creative industry towards the new industrial revolution. To do this, spaces and avenues to make, collaborate, experiment, and ideate must be made available and more accessible. These spaces can foster a community of like minded individuals that can potentially propel Cebu City’s creative industries to the future.

However, introducing new concepts and practices require time and a lot of resources. To mitigate risks, an implementation framework is proposed to serve as a guide for potential makerspace or creative business incubator founders in the implementation of their concept. This research will look into the best practices of UK makerspaces and creative business incubators, and contextualize it for the Cebuano market.

II.
BACKGROUND OF THE STUDY

Cebuano crafts

Creativity is innate in Filipino culture (NEDA 2019). Various communities throughout the Philippines boast of exceptional talent, may it be in visual arts, song & dance, handicrafts, tapestries and clothing, or pottery (Biana, 2017).

Situated in the heart of the Philippines is Cebu, located in the Central Visayas region. Many of Cebu's creative industries are focused on exportation, such as sectors in furniture, fashion accessories, gifts, toys and housewares, shellcraft, and garments (Lorenciana, 2018). Its strategic location has made it an important commercial area even prior to the arrival of Spaniards in the early 16th Century (Orellaneda, 2016). During that time, local and inter-archipelagic traders from Java, Sumatra, Ayutthaya and China exchanged goods with local merchants (Bacus 2004), which turned Cebu into a bustling commercial port with a large population of mixed ethnicities (Nowell 1962).

Increasing population and demand for trade developed Cebu into a commercial administrative centre populated by non-subsistence producers[1] (Orillaneda, 2016). Since Cebu did not grow into an agricultural area due to the exploitation of land by early settlers (Nishimura, 1992), trading of crafted products became a way of life which shaped the sociopolitical structure (Orillaneda, 2016). Examples of these traded goods are iron knives/daggers, and cotton textiles, whose whole production process and trading were controlled by the elites (Bacus, 2004).

Cebu contributes 4.8% of $98.8 bn export revenue in merchandise and services.

Export Developmen Council, 2017

Today, Cebu is still known for making and trading crafted products. Although new technologies and machinery have automated several processes in the creation of products, some remain manual such as weaving and finishing in furniture making (Beerepot, 2006). Other traded Cebuano crafts are fashion accessories, shellcraft, garments, toys and houseware. These industries in Cebu contribute 4.8% for the country's $98.8 billion export revenue from merchandise and services, according to a 2017 report by Export Development Council. Cebu also contributes to 60% of exported furniture in the Philippines (UP Cebu, n.d.). These numbers put Cebu as one Philippine's top exporting provinces. (Lorenciana, 2018).

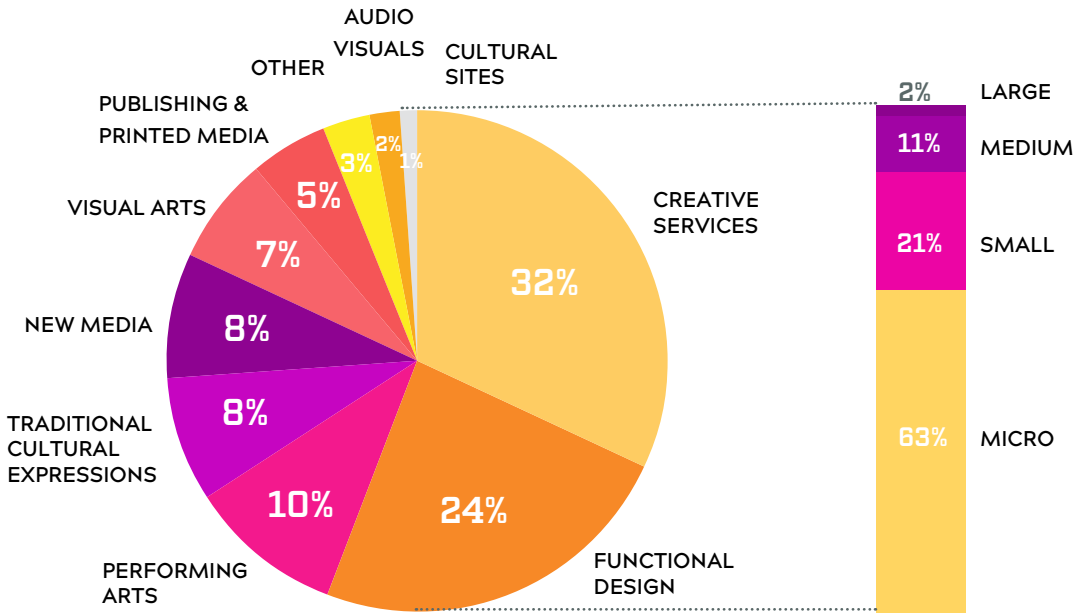
[1] Non-subsistence producers- They make products for trading rather than for sustenance such as food.

Cebu's Creative Industries

Cebu's creative industry is not only limited to handcrafted and traded goods. While creative services[2] and functional design[3] dominate this industry, it also includes publishing and printed media[4], visual arts[5], new media[6], traditional cultural expression[7], performing arts[8], audio visuals[9], and cultural sites[10] (Carungay, 2020). As a whole, Cebu's creative industries contribute an estimated $550 Million, representing 6% of Cebu's GDP (Carungay 2020). Fig 1. Shows the distribution among the creative industries.

It can be noted that MSME's (micro, small, and medium enterprise) comprise the bulk of Cebu's creative industries at 98% (Fig. 1). Assets in these businesses range from P3M - P100M with 1-199 employees. While robust growth was expected in the Philippines prior to the pandemic, COVID-19 has halted more than 2 decades of uninterrupted growth (Carungay, 2020).

FIG. 1 DISTRIBUTION OF CREATIVE INDUSTRIES IN CEBU

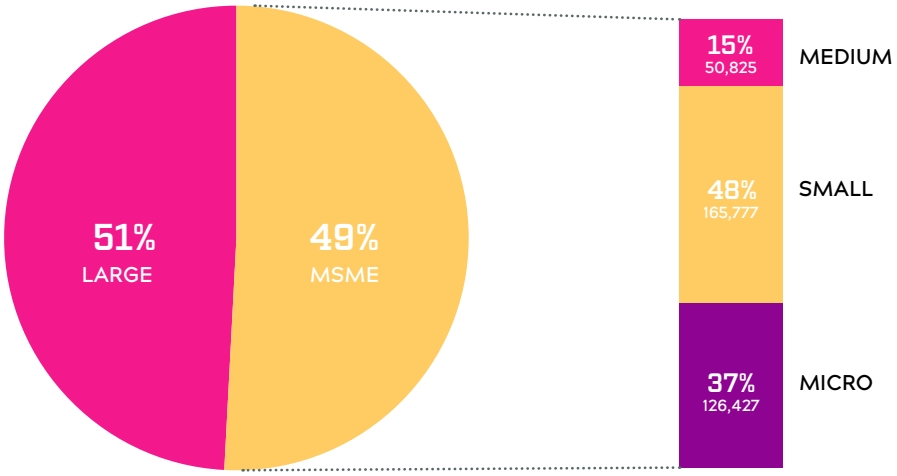


Source: Carungay 2020, THE IMPACTS OF THE COVID19 PANDEMIC ON CEBU'S CREATIVE INDUSTRIES

[2] Creative Services: Architecture, Advertising, Creative R&D, Cultural Services, Digital Services
[3] Functional Design: Interior, Graphic, Fashion, Jewelry, Toys, Objects
[4] Publication & Printed Media: Newspapers, Books, Press, Printers
[5] Visual Arts: Painting, Sculpture, Photography
[6] New Media: Digitized COntent, Software, Games, Animation
[7] Traditional Cultural Expression: Arts & Crafts, Festivals, Celebration
[8] Performing Arts: Theater, Music, Dance, Events
[9] Audio-Visuals: Film, TV, Radio
[10] Cultural Sites: Historical Monuments, Museums, Libraries, Archives

While retrenchment from different companies is still happening, and as small businesses continue to struggle to make ends meet, the inevitable loss of a steady source of income has become the reality for many Filipinos (S. Vanzi 2020).

FIG. 2 MSME SHARE OF EMPLOYMENT IN CEBU



Source: Carungay 2020, THE IMPACTS OF THE COVID19 PANDEMIC ON CEBU'S CREATIVE INDUSTRIES

MSME's in the Pandemic

MSMEs are considered as the backbone of the Philippine economy accounting for 99.5% of enterprises (Shinozaki and Rao, 2021). In Cebu, MSMEs account for 49% of employment (Fig 2). DTI recorded an estimate of 100,000 MSMEs operating in the province in 2019. However, it's June 2020 survey reveals that only 50% of MSMEs were partially operational while 28% had a total shut down (SunStar Cebu, 2020). The various community quarantine restrictions, physical distancing measures, and the eventual business closures have resulted in a 10.3% unemployment rate in Central Visayas in 2020. This is twice as much as the unemployment rate in Central Visayas in 2019 at 5.2% (Palaubsanon, 2021).

While retrenchment from different companies is still happening, and as small businesses continue to struggle to make ends meet, the inevitable loss of a steady source of income has become the reality for many Filipinos today (Vanzi, 2020).

Creative Industries: The Future Beyond the Pandemic

Although the pandemic has resulted in a lot of business closures, it has also given rise to new business opportunities for makers. According to Ramon Lopez (2020) of the Department of Trade and Industries, DTI has recorded more than 916,000 new business registrations by the end of 2020, which is the highest number of new registered businesses since 2010. Although there has been an increase in unemployment rate up to 8.7% in October 2020, the data on newly registered businesses suggests that many shifted to retail to make ends meet during the pandemic (Carnivel, 2021). Since MSMEs are considered as the backbone of the economy, accounting for 99.5% of enterprises and employing 63.2% of the total labor force (Shinozaki & Rao, 2021), support for this sector is crucial to avoid even more drastic economic collapse. Maker entrepreneurs more specifically, have great potential in terms of driving future economic growth because of localized sourcing of materials and labor (Guzman n.d.) (Neuman, 2020).

The creative industries have been important economic drivers in more developed countries. The UK for example experienced a steep rise of unemployment during the de-industrialization in the 90s, which was caused by the closure of factories to favor overseas manufacturing (Pratt, 2021). Innovative ways to address the damaged economic and social base in key areas were then explored. As a result, the UK pioneered the exploration of the creative economy as a possible way to support communities, focusing more on urban regeneration rather than economic development (Bell & Oakley, 2015).

Today, the United Kingdom is reaping what it sowed. The creative industries sector has grown 5 times faster than the national economy in 2018 (Adams, 2020). It has also contributed more than £111bn to the UK economy or an equivalent of £13M a day (DCMS, 2018). To further support the creative industries, investments are constantly made such as funding for creative scale-ups and apprenticeship schemes (Adams, 2020). Space and business support for the creative industries have been growing as this has been seen as a need for the cultural and creative industries to flourish (Dovey et.al., 2016).

The Philippines can take on a similar route as it establishes an economic recovery plan post-pandemic. While the Creative Industries Bill in the Philippines has not yet been passed into law, its existence and continued pursuit provides an encouraging future for creative industries in the Philippines. The Department of Trade and Industries together with the Design Center of the Philippines have also been putting creative industries at the forefront of economic growth by creating and supporting programs for creative entrepreneurs (DTI, 2020). Pushing for support for creative industries at the policy level, backed up with entrepreneurship support for creative industries, are stepping stones in achieving the 2030 goal of becoming ASEAN's top creative economy (DTI, 2020).

UK's creative industries sector has grown 5 times faster than the national economy in 2018

Adams 2020

Cebu's Potential Contribution to the 2030 Goal

As mentioned previously, Cebu City is home to many world-class creatives, artists, and artisans. Cebuanos have historically been traders and entrepreneurs brought about by its strategic location and proximity in the Philippine's northern and southern parts. This unique combination of entrepreneurship and creativity can help propel Cebu as a prime creative hub that can help boost the local economy.

Therefore, there is a need to look into ways to support and cultivate the culture of craft and entrepreneurship that has long been part of Cebuanos' identity. These may be in the field of fashion design, product design, furniture design, graphic design, film production, animation, painting, weaving and even pottery. While there are individuals who have rediscovered their interest in craft and making, some of the limitations to becoming creative entrepreneurs are (1) steep start-up costs, (2) lack of safety nets, and (3) access to markets.

To address these needs, the establishment of a shared service facility with provisions for business incubation can reduce the risks of starting up, help nurture a business, and create a network to reach a larger audience. This paper investigates how these shared service facilities and creative business incubators are being run in the UK, and how they are sustained. This information will then be cross-analyzed with a Cebu-based makerspace, looking into how practices in the UK can be adapted to the barriers being faced by a local makerspace. An implementation framework will then be adapted, making it useful for anyone who would wish to establish such a facility in Cebu City, Philippines.

Therefore, there is a need to look into ways to support and cultivate the culture of craft, making, and entrepreneurship that has long been part of Cebuanos' identity.

RESEARCH QUESTIONS

1. How are makerspaces for creative entrepreneurs being run in the UK?

2. How are creative business incubators being run in the UK?

3. What implementation framework can be used by founders of makerspaces and creative business incubators in Cebu City?

SCOPE AND LIMITATIONS

While various municipalities all around the Cebu Province have contributed to the whole creative economy in Cebu, the concentration of the industries can be found in Cebu City, the capital city of Cebu.

Therefore, this research will look into current makerspaces already existing in Cebu City, the current set-up and challenges faced, and apply the learnings from a UK-based makerspace and creative business incubator to be contextualized for the Cebuano creative. This research is conducted from January 2021 to December 2021, and is supported by the British Council.

METHODOLOGY

The data is derived from primary and secondary research. The primary research tools used are interviews, and personal observations in the UK, and in the Philippines. It also involves secondary research methods such as gathering information from government agencies, books from libraries, internet resources, and educational institutions.

The data collected is analyzed and synthesized to determine which practices in the UK can be implemented in the Cebuano context. It looks into the differences in terms of the needs of the community, wants of the market and the responsiveness of the target audience towards these kinds of systems. It investigates the potential economic gains to the community based on trends in the UK, as well as its potential in Cebu.

The researcher uses the Effective Implementation Framework in creating the output for this research since this framework is geared towards managing complex changes to practice and policies. Similarly, a makerspace with a creative business incubator is going to be a new concept for the Cebuano community. Accepting and adapting to such a system will require a change in common practices, and possibly a change in some local policies.

III.
Third Industrial Revolution

The maker movement makes it possible for innovators to turn their ideas into reality swiftly without the associated financial obstacles (Anderson 2012).

For many years, mass production has been the means for the production of goods so that these products can be made available to the mass market (Baker and Hart, 2007). People, in turn, have regarded themselves as consumers rather than producers (Bauman, 2007) because production was not really practical for anyone and it was easier to buy rather than to produce their own products.

Today, digital manufacturing tools are putting design and manufacturing in the consumers' hands (Macro Trend, n.d.). Technologies such as 3D printers, 3D scanners, CNC machines, laser cutters, and other similar products have given rise to distributed/ localized manufacturing, and more importantly, the 'maker movement'. However, this does not mean that conventional large-scale manufacturing is disappearing; the maker movement makes it possible for innovators to turn their ideas into reality swiftly without the associated financial obstacles (Anderson, 2012). This new type of manufacturing is what Chris Anderson (2013) calls this the Third Industrial Revolution.

The 'Maker Movement' is a term coined by Dale Dougherty of O'Reilly Media, which broadly describes the community of innovators and designers who use the powerful tools of the software and information industry to revolutionise the way we make tangible things (Anderson, 2013). It views consumers as producers, and it is said to have the ability to draw production back to cities where consumption occurs (National League of Cities, 2016).

Maker communities are brought together online, and physically in different hackerspaces, makerspaces, and fablabs (National League of Cities, 2016). These places provide access to the tools, technologies, ideas and information to digital fabrication while also providing a physical space for makers to meet on their work and projects, and give feedback. (Gobble, 2013).

Cebu City is more than ready to actively participate in the third industrial revolution. To craft the most ideal implementation plan for a makerspace and creative business incubator in Cebu City, it is important to understand how similar spaces operate in

Makerspaces

Makerspaces are broadly defined as open access spaces where people can make something using shared facilities, tools and equipment (Sleigh et.al, 2015). In addition, Andreas Hepp (2018) also defines makerspaces as a space where knowledge sharing and advice are the standard currency. Makerspaces therefore are not only meant to serve the needs of an individual to create something, but to share what they know to others and vice versa, collectively furthering knowledge in certain areas of interest. These 2 main attributes constitute the ethos of makerspaces; serving potential economic capital and social capital.

According to a survey by NESTA in 2015, most cities in the UK already have a makerspace. These makerspaces can occupy a space as little as 12m^2 or as large as 1,022m^2. Although makerspaces around the UK operate differently, they all have a shared belief in the importance of engaging actively with technology, of working with your hands, and the desire to share knowledge with others.

There are several types of makerspaces, each with their own focus but generally having the same ideology of sharing space and knowledge. These are fab labs, hackerspaces, tech/machine shops, and community workshops (Sleigh et.al, 2015).

- **Fab labs** are one of the most popular and consistent types of makerspaces. They are part of a standardized and franchised network that need to adhere to the Fablab Charter.

- **Hackerspaces** are one of the first makerspaces, which was a gathering of computer programmers wanting to ‘hack’ or tinker with technology. Hackerspaces are more oriented towards technology and the digital world but are not limited to the kind of tools they can incorporate (van Holm 2015).

- **Machine shops** are staffed makerspaces that usually have a ‘pay-as-you-go’ scheme for use of machines (NESTA, 2015).

- **Cluster model** combines the resources of a Fablab and/or machine shop with desk space or co-working. This model also generates income through consultancy, designer services, or events hosting, and tends to have the highest financial turnovers (NESTA, 2015).

1 Fablab Nebrija, Spain

2 Electrolab Hackerspace, France

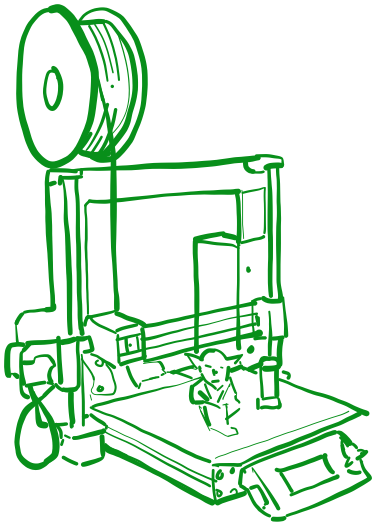
3 Blackhorse Workshop, UK

4 Makerversity, UK

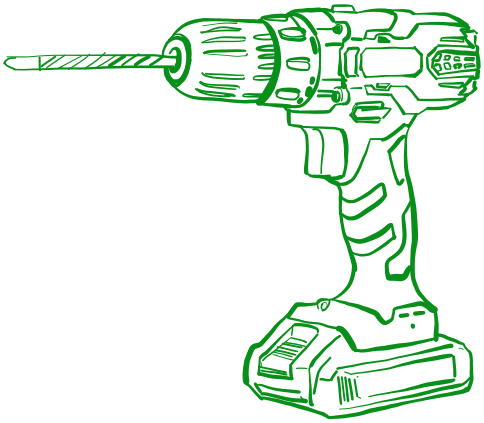
1. NA. Fablab Nebrija. Available at: https://www.fablabs.io/labs/fablabnebrija. (Date accessed: December 4, 2021)
2. Mitch Altman (2013) Electrolab Hackerspace, Nanterre, France. Available at: https://commons.wikimedia.org/wiki/File:Electrolab_Hackerspace_07,_July_2013.jpg (Date accessed: December 4, 2021)
3. NA. Blackhorse Workshop. Available at: https://www.blackhorseworkshop.co.uk (Date accessed: December 4, 2021)
4. NA. Makerversity facilities. Available at: https://makerversity.org/facilities (Date accessed: December 4, 2021)

Equipment, Facilities, Workshops

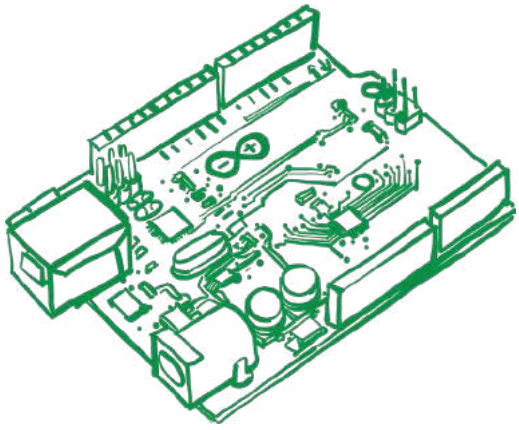
The main feature of a makerspaces is shared access to tools, equipment and spaces. These can range from low tech tools to digital fabrication equipment. There is no fixed list of tools that constitute a makerspace as it is highly dependent on the space available and the needs of its members. Makerspaces have the freedom to customize the line-up of equipment available.



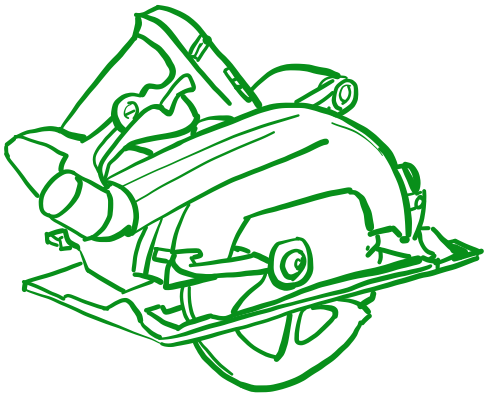
Digital Fabrication- Digital fabrication machines are most common in makerspaces. These are used mostly for rapid prototyping and small scale manufacturing. Examples are 3D printers, 3D scanners, CNC mills, laser cutters and vinyl cutters.



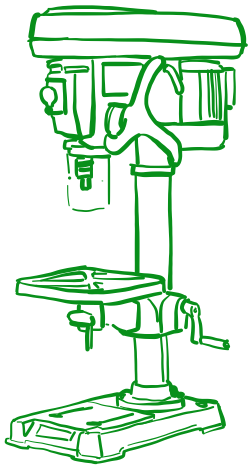
General Hand Tools- These are common tools used for drilling, cutting, grinding and sanding. These tools are quite flexible as they can be used in various workshops such as in woodworking or metalworking.



Electronics- Tools found in the electronics workshop are used for projects requiring electronic work like programming and wiring. Examples of tools found in electronics workshops are arduino, multimeters, soldering irons, cutters, heat guns, to name a few.

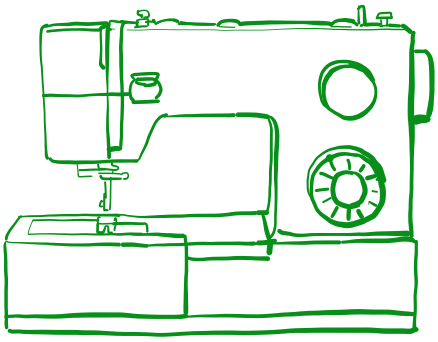


Woodworking- These tools are used when working with wood, may it be cutting, drilling, sanding or joining. Sample tools are circular saws, bandsaws, sanders, pillar drills.

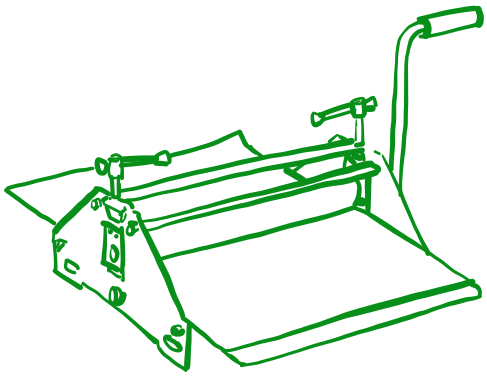


Metalworking- These are the tools for manipulating metal like mills and lathe. There are also presses, metal benders, grinders and cutters.

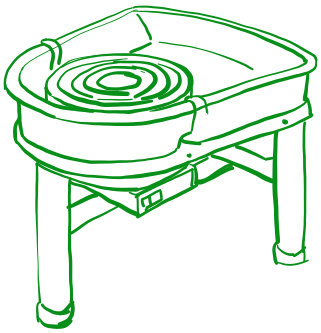
Computing- Computers are common in makerspaces, may it be used with digital fabrication tools, or to use software for animation, graphic design, or even game development.



Textile- These are tools for sewing and textile making. These may include domestic and industrial sewing machines, digital embroidery machines, vinyl cutters, heat press, interlocker, and direct to garment printers.



Printmaking and Photography- Although not as common, printmaking tools such as rollers and letter presses can be available for use. Dark rooms for developing films are also present in some specialized makerspaces.

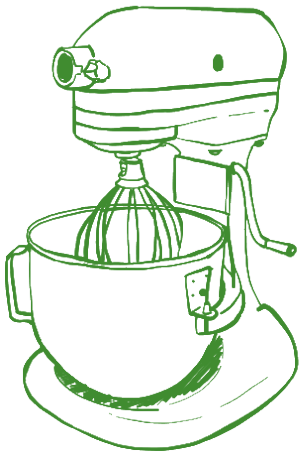


Ceramics and Sculpture- These tools help in molding clay such as pottery wheels, slab rollers, trimming tools, extruder, and kiln.

Science labs- Aside from creating products, some makerspaces cater to users who do research of science, whether it is in the life sciences, chemistry or biology. Examples of machines in the workshop are centrifuge, flow hood, incubator, freezer, PCR machines, and autoclave.

Ceramics makerspace in Sydney, Australia

MakerSpace &company (2020). Ceramics workshop Available at: https://www.facebook.com/MakerSpaceAndCo/photos/not-sure-what-makerspace-co-ceramics-class-is-right-for-you-please-do-have-a-gan/10158464388447888/ (Date accessed: December 5, 2021)



Plastics- Precious Plastics is a project by One Army, and it has open source guides on creating your own plastics machine shop. These workshops usually have shredders, extruders, injectors, and compressors.

Kitchen- Equipment for the culinary arts can be expensive. That's why sharing these facilities in a makerspace makes sense especially for those who like to experiment with food. These kitchens can have ovens, freeze dryers, dehydrators, pressure cookers, among other things.

Precious Plastics at work.

There is no fixed guide to the type of equipment and tools that a makerspace can contain. The breadth of tools also do not dictate the success or failure of one. Management of the facility and implementation of plans are often the more critical part in sustaining makerspaces. Therefore, an implementation framework that will serve as a roadmap and guide will help mitigate the risks involved in running and sustaining a makerspace.

Precious Plastics (2021). PP at work. Available at https://atlasofthefuture.org/project/precious-plastic/ (Date accessed: December 5, 2021)

Creative Business Incubator

Business incubators play an important role in helping start-up businesses thrive in the 21st century (Olkiewicz, 2018). These spaces provide a protected environment for new businesses, reducing the risk and uncertainties related to business activities until they are financially viable and freestanding (Franco et.al ,2015). Business incubators help increase the survival rate of start-up business by providing physical space, management coaching, making of business plans, administrative services, and many more. Successfully incubated businesses move out of the program equipped with the know-how on developing their business, facing problems, and avoiding common pitfalls.

According to a report by ANPROTEC in 2012, business incubators are now considered as instruments to overcome crises and respond to cultural change, especially in countries where 'entrepreneurship' has not yet become a viable alternative to 'employment' (Franco et.al, 2015). Entrepreneurs can turn the economy around by developing new products, boost demand, promote innovation, and create job opportunities. Therefore, entrepreneurs are more

> **...business incubators are now considered as instruments to overcome crises and respond to cultural change, especially in countries where 'entrepreneurship' has not yet become a viable alternative to 'employment'**
>
> **ANPROTEC 2012**

important when the economy is doing badly (Kritikos 2014), which makes the existence of business incubators more valuable than ever.

As innovation in various industries have accelerated the advancement of digital technologies, it has also created a new demand for creative ideas and processes. This desire for more creative ideas has led to the emergence of new industries related to creativity, technology, and innovation. Creative industries are now considered as key drivers for economic growth worldwide, with trade almost doubling in just a decade (UNCTAD ,2008). However, creative entrepreneurs often lack management training in running a business or enterprise (Franco et. al. 2015). Support for this industry through mentorship, training, space, and network, which can be provided by a business incubator, can help bridge this gap.

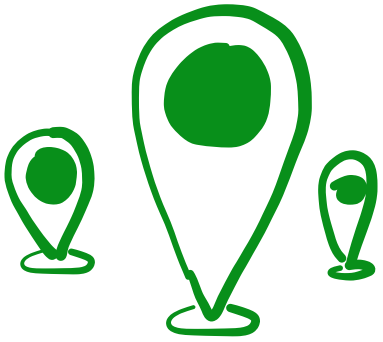
Creative business incubators do not have a unified definition, and are highly variable in their scope of service. But in general, creative business incubators combine the functions of a business incubator and a creative atelier, bridging the gap between a creative idea and commercial viability (V4, n.d.). Although geared towards bridging business and art/culture, the main idea of creative incubators is to foster a community in creation of viable ideas, and promote new encounters to create innovation with commercial potential (V4, n.d.). Creative incubators contribute to the development of cultural and creative industries in an area by developing the material, symbolic, social and economic space.

In a research by Franco et.al (2015), they have determined some of the success factors for creative and cultural business incubators. These success factors can be used as a reference when conceptualizing a creative business incubator in Cebu City.

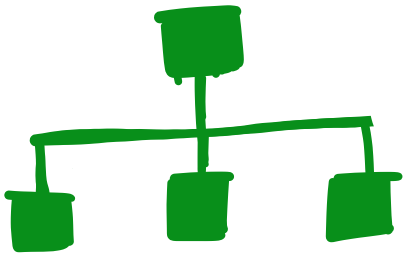
Loffice Co-workinng in Budapest

Loffice (n.d.) Loffice Budapest. Available at: https://loffice.hu/Budapest/en/officerental/index.php (Date accessed: December 5, 2021)

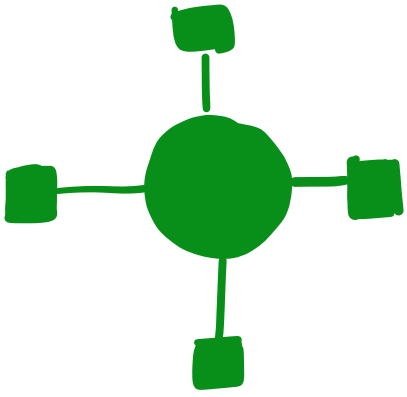
Success Factors in Creative and Cultural Business Incubators



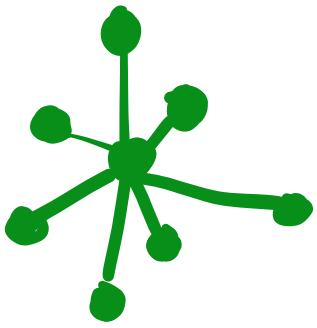
Facilities & Location- Successful incubators are usually located in areas undergoing revitalization, industrial areas, and areas tied to universities.



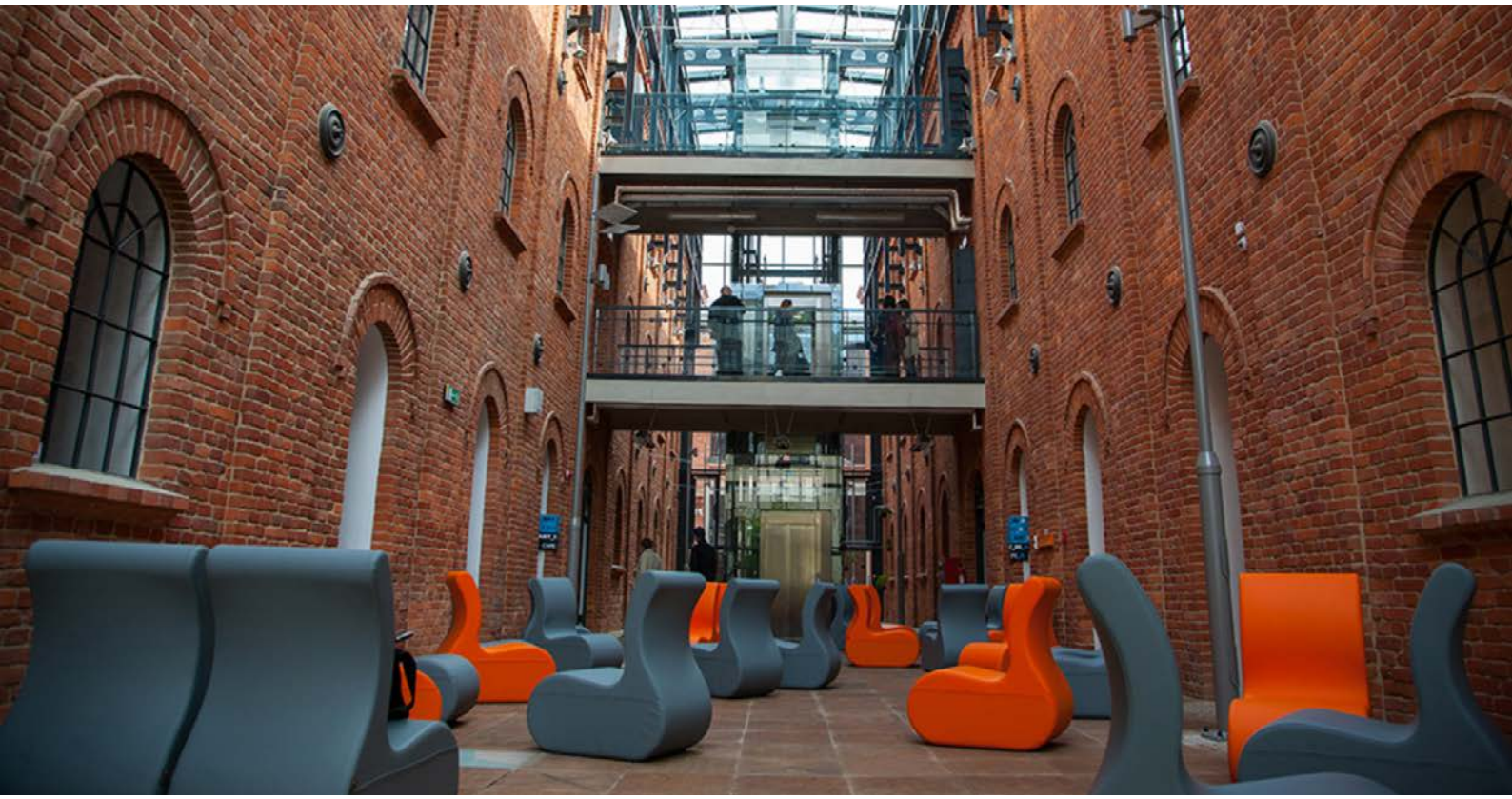
Planning & Incubator Governance- Just like in any venture, an incubator must have administrative and management resources to implement strategies and business plans.



Shared Services- Aside from providing general services such as working space, internet access, shared meeting room, and common spaces, incubators must also provide a mentor network that gives expert advice on overcoming barriers in developing any business. An incubator should also offer support and financial advice.



Networking- Connections are highly valuable for entrepreneurs. Incubators must have a contact network, may it be internal contact, contacts with Universities, or external contacts. Incubators may also act as links to local and regional actors.



Art_Inkubator Building- Creative Business Incubator in Poland

Selection Process for Tenant Firms- As incubator resources are limited, a rigorous selection criteria leads to incubator success. This may include innovation of projections, creative and entrepreneurial capacity, and project sustainability.

Funding & Support- The main sources of finance for incubators are rent paid, community funding, and patronage/ donations.

While there is limited research on topics around creative business incubators (Fredriksson & Cassel, 2021), the emergence of the creative industries as a key driver in economic growth worldwide (UNCTAD, 2018) suggest that programs that better support creative entrepreneurs in developing economies, like the Philippines, should be implemented.

Art_Inkubator (n.d.) Art_Inkubator building. Available at: http://www.artinkubator.com/Main/Artykul/art-inkubatorinkubator-przemysloacutew-kreatywnych (Date accessed: December 5, 2021)

IV.
CASE STUDIES

Successful makerspaces and creative business incubators differ in their organizational structure, funding schemes, space allocation, and services offered.

It is important to understand the needs of the market, and build a plan based on achievable goals. The next chapter looks closer into how a UK-based makerspace, and a creative business incubator are being run. These will be cross analyzed with a case study of a local makerspace in Cebu City.

Case Study 1: Makerversity

Makerversity Amsterdam

Makerversity is a co-making space based in London that focuses on helping creative businesses and professional makers in the UK. The idea of a co-making space is an integration of a co-working space and a makerspace. Desks and workspaces are available for use (similar to co-working spaces) along with makerspaces where members can access digital and traditional machinery, tools, and other making workshops.

Makerversity's experience makes a good case study for this research as their business model is geared towards creative entrepreneurs. Aside from having a makerspace, they have a business incubator for fresh graduates who are under 25 years old. An interview with Esther Ellard, manager of Makerversity London, was conducted to know more about how to sustain a makerspace, the important factors to consider when running one, as well as important advice for people who want to start-up a makerspace.

HOW IT STARTED

Makerversity was started by four founders, Andy, Joe, Paul, and Tom, who were looking for a space just like what they wanted. Instead of waiting for someone to make it, they decided to create the space themselves. They were able to secure a 2000sqm lower floor area of Somerset House in London, which is a 300 year old cultural center with a large and vibrant creative community. In return, they had to make a creative hub and improve the whole space.

Instead of waiting for someone to make it, they decided to create the space themselves.

Milad Palles (n.d.). Makerversity Amsterdam. Available at: https://makerversity.org/makerversity-amsterdam-open/ Date Accessed: December 5, 2021)

Overall, the location has played a massive role in the success of Makerversity because of the creative 'buzz' and the ease of access to transport.

Makerversity Entrance

LOCATION

Somerset House was built in the 18th Century as a palace for the Duke of Somerset. Over the years, it has transformed from being a palace into a center for creativity. It is currently home to The Courtauld Institute of Art, King's College, Somerset House Gallery, The London Design Biennale, Somerset House Music Festival, Somerset House Film, Somerset House Ice Skating, and the Embankment Galleries.

According to Esther (2021), there are many benefits in being situated in a place where creativity is celebrated. The major reason would be that creative people naturally gravitate towards the place because of what it represents. Interesting things are always happening because several organizations all operate in the building. Somerset House is also open to new and experimental set-ups, which makes it easier to do things that have not been tried before. The downside of being in a historical building are the leaks and restrictions of renovations. But overall, the location has played a massive role in the success of Makerversity because of the creative 'buzz' and the ease of access to transport.

William Deeble (1828). Somerset House Courtyard. Available at: https://commons.wikimedia.org/wiki/File:Somerset_House,_Deeble,_1828.jpeg (Date accessed: December 5, 2021)

Somerset House Organization (n.d.) Makerversity at Somerset House Available at: https://www.somersethouse.org.uk/files/makerversityjpg (Date accessed: December 5, 2021)

FACILITIES

Tools and equipment at Makerversity are highly dependent on what is popular and what makers ask for. Digital fabrication equipment like 3D printers, laser cutters and CNC machines are the most frequently used, and are therefore regularly updated. The 2nd most frequently used workshop is the woodworking workshop, followed by the engineering workshop, textile workshop, assembly space, and lastly the Podcast studio. Members are surveyed regularly to gauge what machines they would like to have in the space. Spaces are also managed by in-house technicians to ensure that equipment is used and maintained well. List of equipment per workshop are as follows:

WOODWORKING WORKSHOP	DIGITAL WORKSHOP	TEXTILE WORKSHOP	ENGINEERING WORKSHOP	PODCAST STUDIO	ASSEMBLY AREA
Axminster Bandsaw	1300x900mm bed Laser Cutter	Roland Vinyl Cutter	Metal Lathe Clarke CL430	Vocal Recording	Open access wood storage
Festool Chop Saw	Roland gs24 Vinyl Cutter	Cutting Table	Forco Start Pillar Drill	Mixing & Mastering Audio	Individual workbench units
CNC Router	Vacuum Former	Industrial Heat Press	Silverline Grinding Wheel	PR & Marketing Assistance	Spray booth
	Heat Press Kit	Industrial & Domestic Sewing Machines	Baileigh Metal Bender	Audio Clean-up	
	FDM Printers (Ultimaker 2, Ultimaker S5, Witbox 2, Creality CR-10	Industrial Overlocker	10 Ton Pneumatic Press	Music Composition & Sound Design	
	SLA Printers: Form 2 & Form 3		Manual Mill		
	Forms Labs Curing & Cleaning Stations				
	Electronic Workbenches				

Makerspace member at work.

MEMBERS

According to Esther (2021), 90% of their members are start-ups while 10% are students. They do not have hobbyists members, which indicates their focus on creative entrepreneurs. Out of these start-ups, the top 5 fields of specialization are engineering, product design, industrial design, design, and materials.

Retaining members is an issue for sustaining makerspaces, in general. Member recommendation and the 'Makerversity Culture' are seen as the biggest draw for new members. This is why Makerversity makes sure that current members have an enjoyable experience while working in the space so they will recommend them to other people. This involves providing social opportunities for members, as well as providing facilities they need, and creating friendly and welcoming spaces. She describes the culture of Makerversity as a place that's always developing new ideas, having an atmosphere of experimentation, a passion to learn, and being constantly engaged.

Member recommendation and the 'Makerversity Culture' are seen as the biggest draw for new members.

After culture, the breadth of facilities is seen as the next biggest draw for members, followed by the location, membership schemes, network, event, then partnerships. This helps suggest which factors need close attention when considering to put up a makerspace. More than the facilities, the culture among members within the makerspace is crucial in determining how it will be moving forward. Although location is a huge factor, it is only 3rd next to culture and facilities. This may indicate that people are willing to make the trip if the facilities and culture are worth it.

When asked what kind of activities most members are engaged with, Esther cited that members generally want to get on with their work, making, in their workshops and desks. However, when there are social activities, members are very receptive to what Makerversity has to offer. From this insight, we can infer that members come to do serious work, but also value socialization as part of their life as a professional maker.

Makerversity (n.d.). Assembly Space. Available at: https://makerversity.org/facilities Date Accessed: December 5, 2021)

Helping young and visionary entrepreneurs is their way of making sure that the next batch of makers can start off at the right foot with their expertise, network, and support.

UNDER 25 and MAKERS WITH A MISSION

Aside from catering to start-ups, Makerversity also supports young makers with their 'Under 25 Program.' This free 3-month program aims to help young makers get started with their own creative venture. Qualified applicants are provided with desk space, access to workshops, fabrication facilities and events, as well as joining a growing community of makers and businesses.

Another free program they have is called 'Makers with a Mission,' which runs for 6 months. The program is aimed at supporting emerging talent, extraordinary ideas, and young businesses who want to take their first step into the world. These makers are driven to make a change in this world, whether it is a social or environmental agenda, using disruptive technologies or manufacturing processes to transform the way people consume. Qualified applicants are also provided with desk space, access to workshops, fabrication facilities and events, as well as joining a growing community of makers and businesses.

Both of these free programs are somewhat similar to the functions of a business incubator, although more short term. Helping young and visionary entrepreneurs is their way of making sure that the next batch of makers can start off at the right foot with their expertise, network, and support.

Maker from the Under 25 program of Makerversity

Makerverity (n.d.) Under 25 program. Available at: https://makerversity.org/u25/ (Date accessed: December 5, 2021)

SCHEMES

Makerversity has 4 membership options which vary depending on a member's needs, and whether it is physical or purely online. Since they cater mostly to start-ups, they also have a membership scheme for teams. The schemes are as follows:

Fixed Desk Membership- for individuals or small teams who need dedicated desk space

Roaming Membership- for individuals who will be spending more time in workshop and may not require a dedicated space

Vaults Membership- for teams up to 8 people who require a private studio space, whether for work space or build space. These are limited and by invitation only.

Remote Membership (Online Only)- for individuals who want to be part of a community of like-minded people but don't require a space, or aren't located in London.

*All physical memberships have unlimited workshop hours.

All of the programs/schemes have high applications, but it was observed that the biggest group of members are small-medium teams looking for a flexible space to grow into. This means that Makerversity is seen as a space where they can grow as a team, and hopefully become independent once they outgrow space.

1. Makerversity (n.d.). Fixed Desk Space. Available at: https://makerversity.org/advice-from-startup-founders/ (Date Accessed: December 5, 2021)
2. Makerversity (n.d.). Fixed Desk Space. Available at: https://makerversity.org/facilities (Date Accessed: December 5, 2021)
3. Makerversity (n.d.). Valut Studio. Available at: https://makerversity.org/facilities (Date Accessed: December 5, 2021)

SUSTAINING

Partnerships with workshop machine suppliers, universities, and arts organizations help widen the Makerversity audience. After membership, partnerships are ranked 2nd as a means to sustain the business financially, followed by external funding, and lastly ticket sales from events.

This suggests that when one desires to create a makerspace, it is important to establish partnerships with various institutions and organizations as this provides an avenue for the makerspaces to tap into new audiences (and possible membership) and gain relevance within the community. Some partnerships are said to be organic, while some are intentionally established. Although workshops also provide an avenue to attract new audiences, it is not seen as the most lucrative channel to sustain the business financially. This may be due to the fact that staging a workshop and inviting people over require a lot of time and resources, thus not making it a lucrative way of supporting the business financially.

ADVICE FOR MAKERSPACE FOUNDERS

- Research your audience and ask them what THEY want before you start.
- Start small and pivot quickly. Being adaptable is one of the bonuses of being a small start-up.
- Get very invested founding members who love the place and the vibe as they will create the atmosphere for future members.
- Makerversity has been working closely with the British Council and NESTA to share their knowledge globally. But for those who would like a more indepth guidance in setting up a co-making space, they also provide consultancy with a fee.

KEY POINTS

Know your audience well and ask what they want. You don't want to spend a lot of money for space and equipment that people will barely use.

Starting small and pivoting quickly allows you to spend resources wisely.

Location is key. The place should be accessible for people and ideally be in a place where creativity is already celebrated (like art & design districts).

It is mainly the culture that will sustain membership. Make sure that the intended culture within the makerspace is cultivated.

Establishing partnerships with various institutions and organizations is important for sustaining a makerspace as this provides an avenue to gain new audiences and establish relevance within the community.

Case Study 2: Cockpit Arts

Cockpit Arts is London's leading studios for contemporary designers, and the UK's only business incubator for makers and designers. They have 2 branches in London; (1) Holborn & (2) Deptford. Both locations offer spaces and expertise to help craft practitioners build a thriving and successful business both in the UK and internationally (Cockpit Arts, n.d.). As Cockpit Arts is the only creative business incubator in the UK, they have been selected as a case study for this research. Data gathered are based on Cockpit Arts' website, The Cockpit Effect 2021 report, and Cockpit's Application Process.

HOW IT STARTED

Cockpit Arts started in 1986 when Camden Recycling created units for five craft business start-ups. Through the years, it has expanded into more workshops and more studios. In 2005, the creative business incubator model was introduced, and eventually their Consultancy Service, Creative Employment Program, as well as their Apprenticeship Program. In 2019, Cockpit Arts' makers have generated a total of £5.9M in total annual sales, and profit up 12% vs. previous year. Today, it has helped keep 150 studios intact despite the effects of the COVID-19 pandemic.

Cockpit Arts has kept its 150 studios intact despite the effects of the COVID-19 pandemic.

Alun Callender (2016). Eleanor Lakelin work area. Available at: https://www.we-heart.com/2016/05/31/cockpit-arts-open-studios-london/ (Date accessed: December 5, 2021)

SUPPORT & SERVICES

As a creative business incubator, Cockpit Arts have tailored their services, training, and support for craft-based businesses in various levels - from start-ups to established businesses looking to accelerate their growth. Their incubator package include the following:

Business Development

An experienced on-site team offering support services such as coaching, one-to-one business support, peer-to-peer action learning, seminars and workshops, inclusion in various events, and referral to specialist advisers.

PR & Sales

Access to market and promotion of products help make a successful business. Having a studio at Cockpit Arts is a badge of quality craftsmanship and design excellence. Events for promotion such as Open Studios, profile raising events, and studio tours are organized yearly. Members are also part of an online makers directory and are allowed to use Cockpit Art's Maker Mark.

Studio Space

The location of the incubator buildings, both in Holborn and Deptford, are at the center of an exciting community of artists and craftspeople. Cockpit Arts awards successful applicants a managed studio space, office facilities, resource library, internet access, meeting rooms, post and delivery, and a creative environment to work with. Studios are accessible 24/7, 365 days a year, and are usually shared between 2-5 people. Studio pairings are considered when awarding spaces.

Equipment

Some of the awards include access or provision of equipment which otherwise would be too expensive to buy or too large to accommodate in their own spaces.

Cockpit Arts, along with 4 partner organizations, also provide training and support for makers who do not have a studio at Cockpit but want to enhance their ability to advance their craft business through the London Creative Network (LCN) Programme. It is a fully-funded programme of information-led and practical workshops which is complemented by one to one coaching.

Since studio spaces at Cockpit Arts are limited, running programs for makers who do not make the cut show Cockpit's dedication in supporting crafters and artists in London. This kind of dedication to their mission in turn creates a larger network for Cockpit Arts which is beneficial for both the makers and Cockpit Arts.

COMMUNITY

Cockpit's community is a diverse mix of various makers from different disciplines, sex, age, and ethnicities. Although there are 21 different disciplines among the 150 makers at Cockpit Arts, more than 50% are in 2 major disciplines which are jewelry (34%) and textile (20%). This can be attributed to the fact that the Holborn studios are situated in the jewelry quarter at London's Hatton Garden. It is also a reflection of the discipline specific awards and bursaries offered, such as those provided by the Livery Companies.

Open House at Cockpit Arts Holborn

Purva Chawla (n.d.). Open house at Cockpit Arts Holborn. Availlable at: https://www.materialdriven.com/blog/2016/12/14/cockpit-arts30-years-of-supporting-makers-and-fostering-innovation (Date accessed: December 5, 2021)

Deptford - Deco 22 at Cockpit Arts Open Studios

Holborn - Earrings by Ejing Zhang

Of the 150 makers, 35% have been with Cockpit for 0-3 years and another 35% have been with Cockpit for more than 10 years. While most incubators value movement of tenants through the program, Cockpit finds value in having a mix of new and more established makers in its roster. Sharing of knowledge, insights, and experiences across all levels of makers are important ingredients to the culture at Cockpit. Makers joining Cockpit highlight the sense of community as their key motivator in joining, which helps makers develop range and maturity in their practice. Members have also highlighted how having a space at Cockpit has given them the time and space to experiment with their craft.

Jamie Trounce (2018). Deptford - Deco 22 at Cockpit Arts Open Studios https://www.justacard.org/blog/2018/11/16/cockpit-arts (Date accessed: December 5, 2021)
Jamie Trounce (2018). Deptford - Holborn - Earrings by Ejing Zhang, Cockpit Arts Open Studios. https://www.justacard.org/blog/2018/11/16/cockpit-arts (Date accessed: December 5, 2021)

Cockpit Arts open studio

FUNDING

Aside from space rental and payment for support services, much of the subsidies being provided for Cockpit are financed by various private, local and government organizations. Sponsorships from Livery Companies, trusts, foundations, corporate sponsors, and individual donors have enabled Cockpit Arts to provide fully sponsored spaces, opening up their services to exceptional makers or those who are still starting their making business. Other programs such as The London Creative Network (LCN) Programme is part-funded by the European Regional Development Fund, and is offered in partnership with SPACE, Four Corners, and Photofusion.

OTHER PROGRAMS

Make It- Offer full business support, including 2 years of free studio space to young Londoners who are unemployed or underemployed.

Creative Employment Programme- Provide support for craft employers who are ready to grow their business and take employees. At the same time, it acts as a paid internship and apprenticeship for young people to obtain work in any small or medium sized creative enterprise.

The New Craftsmen Award- 3-year program for early career makers to include funded studio space in London, financial and practical support, as well as mentoring and guidance.

Mike Sullivan (2014). Cockpit Arts Open Studio. Available at: http://najimu-japan.com/cockpit-arts-open-studio-london/ (Date accessed: December 6, 2021)

EVENTS

One of the key features of Cockpit Arts is their Makers Market and Open Studios. These events give unparalleled access to an audience of specialist buyers, curators, and commissioners. It is also a good avenue for makers to test out the marketability of their products and gain valuable sales. The Open Studios events are also opportunities for visitors to discover new talent and commission directly from the makers at Cockpit.

Aside from inhouse events, makers at Cockpit also participate in events and exhibitions in the city such as London Craft Week and London Design Festival.

APPLICATION CRITERIA

Based on the 2019/2020 application, only 11% have been offered a place at Cockpit due the the limited availability of vacant studio space. In selecting makers to join Cockpit, the 3 key criteria are (1) outstanding craft skill, (2) an original creative vision, and (3) appetite and determination to develop business practice. A one-to-one feedback process is also given to those who were interviewed but not given a place, so they may incorporate this feedback and reapply the following year.

KEY POINTS

External funding and support is needed- To subsidise cost and provide more opportunities for makers, it is important to gain support and funding from government and non-government organizations, as well as private donors.

Community and space to experiment are valuable to members- More than the space and business support provided by Cockpit Arts as part of their incubation package, it is the culture within the community and opportunities to grow that have kept members with Cockpit Arts.

Provide avenues for sales- To help makers succeed especially at the start of their careers, it is important to stage events that allow them to be recognized by the market and help them reach their audience.

Case Study 3: Fablab UP Cebu

Fablab UP Cebu is the first Fablab in Cebu and second one in the Visayas region. It was established in June 2016 and is hosted by the University of the Philippines- Cebu Campus. This case study will look into how Fablab UP Cebu is run and sustained. It will also look at the challenges they have faced since opening in 2016. As the first makerspace in Cebu, this will provide important insights about the culture of making in Cebu (Cebu City in particular), people's reception with a new concept, and the facilities that are most frequently used. Mona Alcudia, manager of Fablab UP Cebu, shares important insights about running the makerspace since 2016. Some insights are also taken from the research by Brun, Chen, and Alcudia about managing Fablabs in a developing country.

ABOUT

Fablabs are based on a franchised model originating from the Massachusetts Institute of Technology. UP's Fablab was established from a partnership between the Product Design Program of the University of the Philippines (UP) and the Department of Trade and Industries Cebu (DTI). It was created alongside the DTI Negosyo Center which is a business incubator and coworking space. Through their partnership, DTI financed many of the facilities and digital fabrication equipment in Fablab, which amounted to about Php5 million (DTI, 2021). UP on the other hand was able to provide the management, manpower, know-how, and sustaining efforts for the space.

Fablab UP Cebu adopts a 'pay-per-service' scheme which charges by the amount of time spent with a particular machine.

Fablab UP Cebu (2018). Fablab Light of Hope. https://www.facebook.com/fablabupcebu/photos/2240631009505167 (Date accessed: December 7, 2021)

Fablab UP Cebu is located at the 2nd floor of the College of Communication, Art and Design building. Since their inception, they have accumulated different types of equipment from digital fabrication, woodworking, metal engraving, and plastics. Recently, they have also acquired several pottery wheels and a kiln for ceramic work. Instead of paying membership fees, Fablab UP Cebu adopts a 'pay-per-service' scheme which charges by the amount of time spent with a particular machine. This breaks a barrier of exclusivity, allowing anyone from any field to explore and use the equipment available.

Here is a list of workshop and equipment currently housed in Fablab UP Cebu.

POWER TOOLS	ELECTRONICS WORKBENCH	DIGITAL WORKSHOP	TEXTILE AND CERAMICS	PLASTICS
Stanley 10mm Rotary Drill	Soldering Station	CO2 Laser Cutter	Electric Pottery Wheel	Heatpress
Stanley 650W Jigsaw	50MHz Digital Oscilloscope	Print and Cut Machine	Electric Kiln	Extrusion
Stanley Sheet Sander	Benchtop DC Power Supply	Desktop Milling Machine	2-in-1 Sewing and Embroidery Machine	Shredder
Bosch Angle Grinder		Vinyl Cutting Machine	Sewing Machine	Injection
Heat Gun		Large Milling Machine		
1800W Miter Saw		VR Goggles		
Rotary Tool Kit		3D Printer		
Cordless Hand Drill		Sand Casting Kit		
Air Compressor		Vacuum Former		
Drill Press		Fiber Laser Cutter for Metal		
		3D Scanner		

MARKET

Since Fablab UP Cebu is located inside an academic institution, it is only natural that students are the primary users of the space. According to Alcudia (2021), about 60% of their market are students while 40% are a mix of entrepreneurs, hobbyists, and other types of users. Although this has changed during the pandemic, it is projected that students will be coming back to work in the space once face to face classes will be permitted again. In the meantime, Fablab has been doing various work from addressing COVID-19 response needs such as PPEs, accepting bulk work for clients, and assisting entrepreneurs.

DTI PARTNERSHIP

UP's partnership with the DTI is also meant to encourage MSMEs from exploring and innovating their products. Access to digital fabrication tools can aid in prototyping, packaging, and product development. The Negosyo Center established alongside Fablab complements the service by providing assistance to entrepreneurs through workshops, training, and a co-working space.

Anthony Sevilla with his CNCd surfboards

Bag made using Precious Plastics machines

Many of the businesses that utilize Fablab UP Cebu's equipment use them either for product innovation or to speed up a process in production. For example, Anthony Sevilla shapes his surfboards with a CNC router, then finishes it up in his workshop. Another entrepreneur is Earl Glepa of Gasa Chocolates who has used the vacuum former to create custom chocolate moulds. Happy Garaje, a design studio, utilizes the CNC router to create segments of their large scale toys, which are then assembled and finished off in their own studio. For custom wooden gift items, Isha Mancao utilizes the laser engraver. These are just some examples of entrepreneurs who have used Fablab for their businesses. Some go occasionally, while there are already some regular users (those that have incorporated digital fabrication in their production process). Either way, there is already an indication of the growing interest and demand for Fablab's services for entrepreneurs.

Marriel Colaljo (2017). Plastic Bag. https://bit.ly/3y3Degh (Date accessed: December 7, 2021)

Fablab UP Cebu (2018). Anthony Sevilla with CNCd surfboards. hhttps://www.facebook.com/fablabupcebu/photos/2210575239177411 (Date accessed: December 7, 2021)

CHALLENGES

I. Procurement

Maintenance of equipment is essential so service is never disrupted. However, complex procurement processes from government policies contribute to delays in repair, severely limiting the capabilities that Fablab can offer. Since UP is a state-run and state-funded university, it is bound to comply with anti-corruption regulations, and have to deal with organizational culture and internal politics.

The problems faced in procurement have directly translated to significant losses of the Fablab's output because of machine downtime.

To expound, procurement has to be done through a bidding process, and only those accredited through PhilGEPS can bid for a particular request. If a specific part of a machine needs replacement, the Fablab management will have to look for 3 bidders for that specific item, which itself is already a challenge. Another layer of challenge is the approval process for requests that have to go through a chain of managers who may have little knowledge about the significance of the request.

The problems faced in procurement have directly translated to significant loss in Fablab's output because of machine downtime. These problems are difficult to resolve since government processes are backed up by laws, and any breach of these laws may result in legal actions.

Arduino Basics Workshop with EonBotz Technology.

Fablab UP Cebu (2018). Arduino Basics Workshop. https://www.facebook.com/fablabupcebu/photos/2233940990174169 (Date accessed: December 7, 2021)

Starting Out

Prior to Fablab, there really was no established maker community in Cebu, so letting people understand the concept of a makerspace was a challenge. Fablab was often mistaken as a 'make shop' or a printing shop where one would go to have something made including materials and service fees. After running for a few months in this type of set-up, they realized that people were not learning anything about digital fabrication.

To address this issue, they enforced a policy to orient first time users to Fablab rules and how to safely use the machines they wanted to use. Users are also asked to take excess materials with them and clean the workspace used. Staff are not to run the machines for users anymore, but are there to assist or supervise until the users are able to operate it themselves. This new policy quickly paid off as returning users required a lot less help in finishing their jobs.

Another challenge encountered when starting out was people's perception about digital fabrication as something that requires high competence and expertise. This resulted in hesitancy because people automatically assumed that these machines were difficult to operate. Filipinos' risk-averse culture both in management and in potential users are seen as barriers to promoting the value of making and the DIY culture that Fablab seeks to promote.

To address this issue, Fablab UP Cebu started 'Think Make Brake,' a weekly workshop to bring together makers from industry professionals, hobbyists, and students. Diversity is important for a maker community as this promotes practical and

Lasercutting face shields

Fablab was often mistaken as a 'make shop' or a printing shop, where one would go to have something made

Fablab UP Cebu (2020). Lasercutting face shields for PPE. https://www.facebook.com/fablabupcebu/photos/2598103507091247 (Date accessed: December 7, 2021)

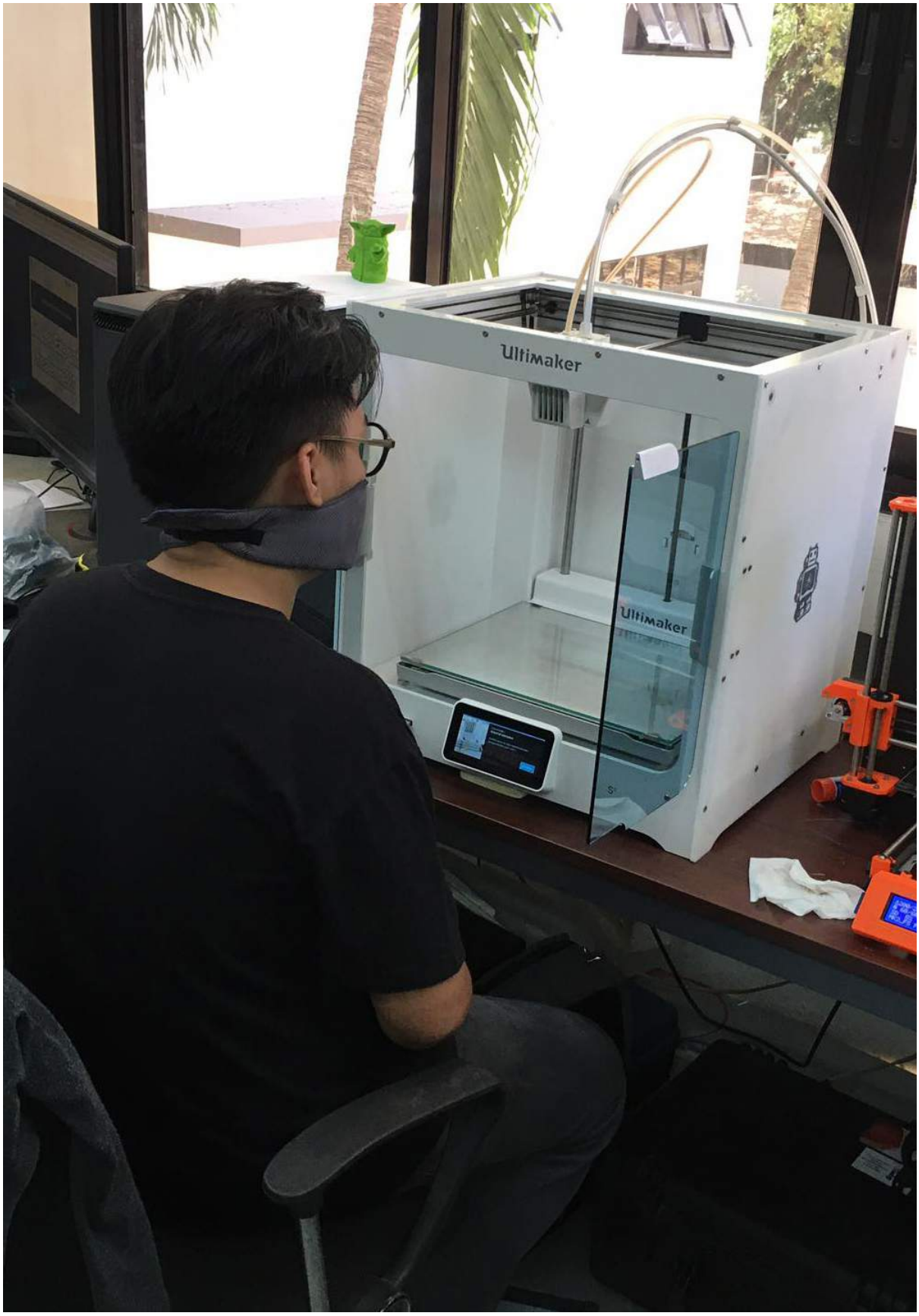
Negosyo Center UP Cebu (2019). Lemoneey and Tea. https://www.facebook.com/NegosyoCenter.UPCebu/photos/2529493503993827 (Date accessed: December 7, 2021)

critical thinking, inspiration, and idea generation. It facilitates an exchange of knowledge which is vital in the larger and international maker community of Fablabs.

Although this problem is slowly improving through the years, one of the problems of Fablab UP Cebu is accessibility. Since it is hosted inside an academic institution, there are instantly barriers to the perception of accessibility. Kaloy Uypuangco, an interdisciplinary creative and one of the respondents of this research, noted how he'd always known about UP's Fablab but never thought it was open to the public, until recently. There are preconceived notions that the facilities are mainly for UP's academic community, when it is actually open to the general public. Continued online presence have improved this misconception, although physical access to the facilities may still be a barrier since several layers of security have to be gone through before getting to the space.

Negosyo Center + Co-Working Space

In conjunction with Fablab UP Cebu is the Negosyo Center and Coworking space established by the Department of Trade and Industry. DTI's Negosyo Center promotes ease of doing business and facilitates access to services for MSMEs through providing access to Fablab's services, office/working space, and business advisory (DTI n.d.). The synergy between the functions of the makerspace, business incubator, and co-working space are ideal in cultivating new businesses as each facility provides solutions at different stages of a business.



UP Cebu Faculty 3D printing PPE

Vanessa Guerrero and Prof. Mona Alcudia (2020). 3D Printing PPE. https://www.upcebu.edu.ph/up-cebu-fablab-creates-face-shields-for-frontliners/ (Date accessed: December 7, 2021)

SWOT ANALYSIS

Strength

The biggest strength of Fablab UP Cebu is the breadth of their equipment. No other space in Cebu provides access to these kinds of equipment, so that alone positions Fablab UP Cebu as the leading makerspace in the city.

Its strong connections with government institutions allow easier access to grants. Since it is hosted inside a university, there is a captured market of users, especially for research and school work. Fablab's partnership with DTI also positions it as the go-to makerspace for entrepreneurs who are willing to explore digital fabrication as a means to grow their business.

Weakness

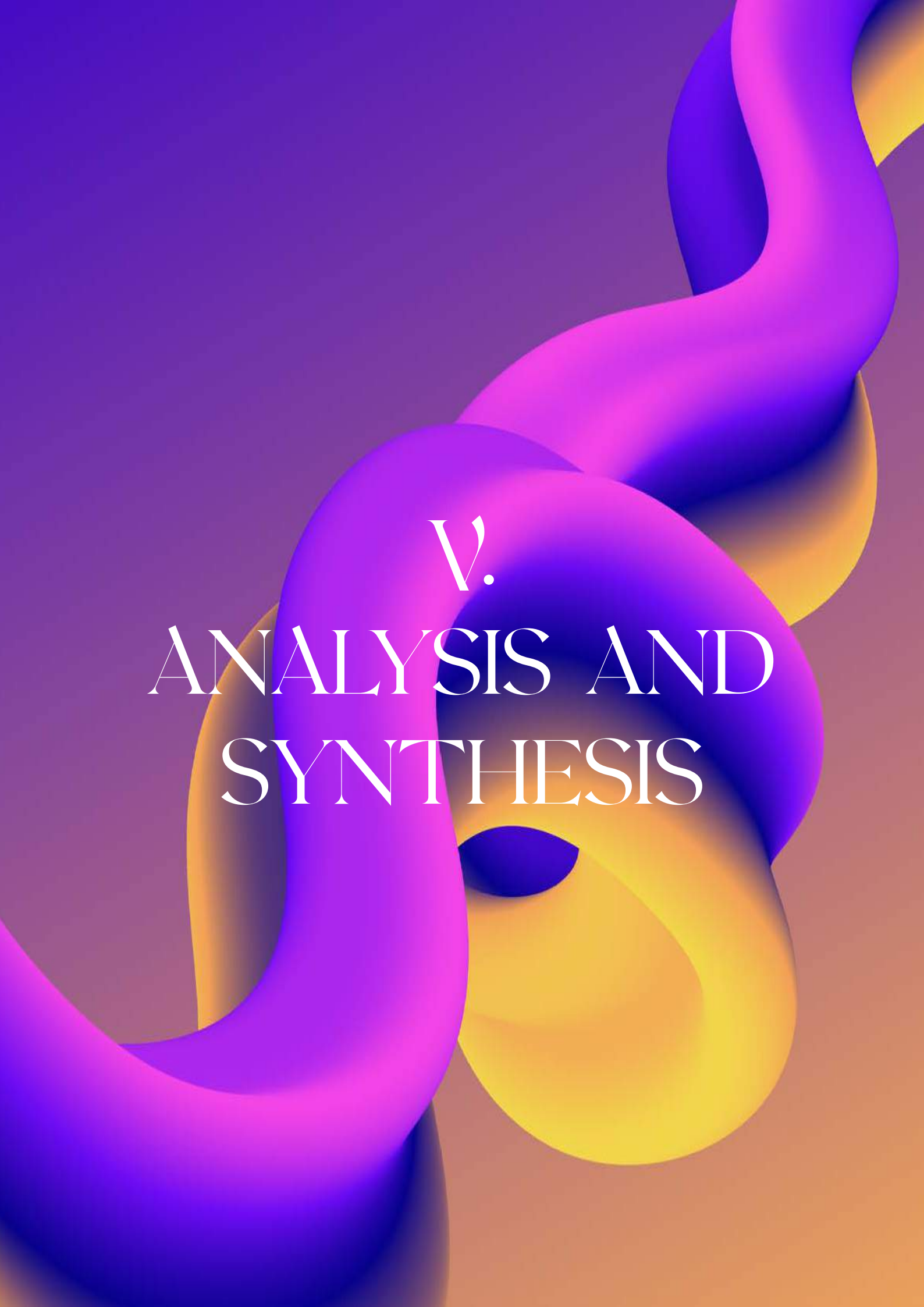
The major weakness of being a makerspace based in a state-run institution, in partnership with another government institution, is red tape and lengthy documentation. The layers of paperwork and approval that need to be accomplished before having anything purchased or approved is detrimental to Fablab UP Cebu as this lengthens downtime of equipment that could have been used by makers. Long downtimes mean loss of opportunity and income, and may also mean dissatisfied customers.

Opportunity

There is a huge opportunity for Fablab to expand its relevance to the community. Actively inviting schools and companies to do a tour helps more people understand the possibilities that can be done in such a space, and it also breaks the barrier of doubt as to whether the space is UP exclusive or not. However, this could also pose a problem because Fablab might not be able to accommodate all users because of limited space. Alcudia mentioned that pre-pandemic, Fablab has always been full of students, entrepreneurs, and hobbyists. This problem however can be turned into an opportunity to expand, or possibly to create another branch.

Threat

Regional directors or officials of the partner agency as well as university officials may be term-based. This poses a risk in terms of the support given especially that stringent rules already exist. DTI has been supportive of FabLab since its inception, and is even looking into duplicating this model in various cities and towns all over the Philippines. However, the political landscape of the Philippines is unstable, and workers in government offices may be moved or replaced. Lack of support from the government or the university can be detrimental to Fablab and could threaten its existence.



V.
ANALYSIS AND SYNTHESIS

Location and culture has been identified as major factors in the success of a makerspace and creative business incubator.

UK's maker culture today is a result of decades of support in the creative economy. Since then, many makerspaces and business incubators have already faced various challenges and learnings that can be benchmarked in making new makerspaces or creative business incubators for Cebu City. On the other hand, Cebu City's maker culture is just starting, and therefore can apply best practices in the implementation of makerspaces, creative business incubators, and the building of maker communities.

SUCCESS FACTORS

Location and culture have been identified as major factors in the success of a makerspace and creative business incubator.

All 3 institutions (Makerversity, Cockpit Arts and Fablab UP Cebu) are located in a creative environment and neighborhood. Makerversity is located in Somerset House along with other creative institutions. Cockpit Arts is located in Holborn which is at the heart of a bustling creative neighborhood well known for crafted jewelry. Fablab UP Cebu is operated by the College of Communication, Art & Design in the University of the Philippines. Although Fablab UP Cebu is accessible (within the City, by the road, and has access to public transport), there are barriers for entrepreneurs to explore Fablab because of its location. Being inside a university creates a perception that it is exclusive for the UP community, and layers of security to get into the place can also put off potential users.

More than access to facilities, it is the culture within the community of these institutions that sustains membership. Having an environment where makers can experiment, share knowledge, and freely 'make' are what creatives need to thrive. Events that encourage these interactions and collaborations are common among the 3 institutions. We can infer that culture is a top priority when it comes to makerspace and business incubator sustainability.

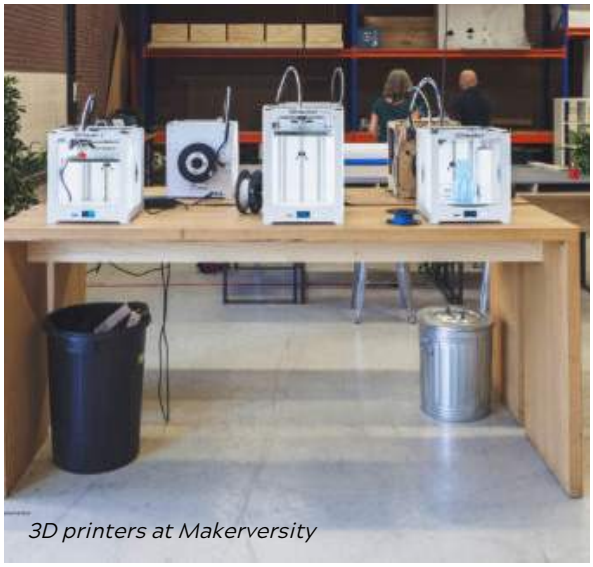
IN-DEMAND EQUIPMENT

The equipment in the digital fabrication workshop are the most frequently used ones in both makerspaces (Makerversity and Fablab). This may help indicate that makers want access to machines and equipment that are difficult or expensive to acquire. One laser cutter/engraver alone can cost at least Php400,000.00 which is very prohibitive to makers or micro-small entrepreneurs. When thinking about putting up a makerspace, the needs of makers and entrepreneurs should be addressed first to complement anything they are already doing. The makerspace being made must ease the process of making and prototyping, or it should help diversify their offering.

FUNDING

Makerversity, Cockpit Arts and Fablab UP Cebu sustain themselves financially through different means. What is common among the 3 case studies is the use of multiple income channels.

For Makerversity, fees from membership is the main financial channel followed by funding/deals from partnerships. This scheme is appropriate for Makerversity since they are a business which needs a steady cash flow to run. For a membership



3D printers at Makerversity

to work, the amenities provided should be worth the price, and flexible enough for them to choose how engaged they want to be. On the other hand, funding and deals from partnerships help them run their programs.

Cockpit Arts have limited studio spaces, so the number of makers that do pay for the services are limited. Rent is still the primary source of income, but these are supplemented through external funding from several private, local and national organizations. External funding and grants make it possible to provide free services to worthy applicants. It is also used to help fund programs such as the London Creative Network. Events such as Open Studios and

Maker culture is widely accepted and practiced in the UK but is relatively new to Cebuanos. There is still a gap between the culture of having someone do it for you or the 'make shop' and a place where you do what you need to which is the 'makerspace.'

Makerveristy (n.d.). 3D printers. https://makerversity.org (Date accessed: (December 7, 2021)

A combination of several financial schemes may help diversify the source of income which is ultimately needed to sustain a space that is run with expensive equipment.

the Maker Market are also opportunities for makers to sell their products, which in turn helps Cockpit Arts sustain their business.

Since FabLab does not have membership fees, they operate through a 'pay-per-use' scheme where each user pays for the amount of time they have used the equipment (exclusive of material). They charge usage at a very conservative rate to make digital fabrication more affordable. However, this does not cover the cost of running the whole space as they have to pay for manpower, electricity, and administrative fees among other things. Their continued existence could be attributed to the constant support and partnership with the Department of Trade and Industries, and the University of the Philippines where they are housed.

When planning to create a makerspace, it is important to identify the goal of the space and use appropriate financial schemes. Across all 3 institutions, connections and networks with government or non government institutions are effective ways to gain funding or access to products and services. A combination of several financial schemes may help diversify the source of income which is ultimately needed to sustain a space that is run with expensive equipment.

MAKERSPACE CONCEPT FOR CEBUANOS

Maker culture is widely accepted and practiced in the UK but is relatively new to Cebuanos. There is still a gap between the culture of having someone do it for you (or the 'make shop') and a place where you do what you need to (which is the 'makerspace'). This gap makes it difficult to establish a socially and financially sustainable makerspace in Cebu. However, it is not impossible. For example, Makerversity does not consider itself as purely a makerspace, but rather a co-making space, which is a combination of the features of a coworking space and a makerspace.

While the concept of a makerspace might be new to Cebuanos, a co-working space isn't. Pre-pandemic, Cebu City alone was home to about 20 co-working spaces (Co-working.com, n.d.), although this number might have changed during and post-pandemic. If we are to use a similar concept for Cebu City, it will be easier for Cebuanos to understand how to use the space and what it is for. The makerspace concept or shared service facilities will then be integrated with the idea of a co-working space. This may bridge the gap between people's understanding about what you can do in a makerspace and the accessibility of the facility.

Lastly, combining this co-making space with studio spaces and creative business incubation similar to Cockpit Arts will create a holistic space where creatives at any point of their careers can grow. A business incubation concept tied to a makerspace can also be observed with several programs of Makerversity for youth and creative visionaries, as well as the Negosyo Center in UP Cebu. Having a business incubator along with a makerspace makes sense especially if the goal of the makerspace is to promote entrepreneurship.

VI.
Conclusion

There is a huge potential for more makerspaces in Cebu...

Based on the cross-analysis between makerspaces from London and Cebu City, we can draw several conclusions when planning to put up or implement a makerspace in Cebu City.

There is a huge potential for more makerspaces in Cebu. This can be inferred from the growing demand of the facilities in Fablab UP Cebu, despite the challenges they have been facing like procuring replacement parts and lack of sustained maker communities. However, several factors have to be considered if one is to establish a community-based or privately-owned makerspace. Opening one will not guarantee success even if there is no competition in the city yet.

Determining the right location is important. If the makerspace is not housed in a university, it should be in a place where creativity is already being cultivated and celebrated, similar to the Somerset House in London. However, although Cebu City is recognized as a UN City of Design, it currently does not have an art or design district as hubs are sporadic. It is hard to determine an area where creativity is 'cultivated' or 'celebrated' especially in a city where several creative spaces have succumbed to more commercial developments.

This problem may pose either a threat or opportunity, depending on how a makerspace will be marketed, and how the culture within its members are cultivated. It becomes a threat because a makerspace will have to make itself known to a community that may not know its value yet. This will require resources and a lot of patience, which a makerspace founder may have little of. However, this may also be an opportunity to be a central hub that can develop a community into a creative district.

Creating a pioneer community is also crucial in starting makerspace. The pioneer community largely dictates the kind of culture that will be adopted, and should attract the market that shares the same kind of values. For creative business incubators, it is important to have credible and experienced mentors since they will serve as role models for the businesses that will avail of the incubator's services. The kind of work ethic and philosophy that these mentors will impart to the makers can affect the kind of culture within the community. Therefore, choosing the right core group to start your makerspaces and business incubator are crucial in setting the tone of the culture that will be adapted by the community.

Opening one will not guarantee success even if there is no competition in the city yet.

Woodworking workshop at Makerversity

Equipment in digital fabrication workshops are the most frequently used equipment. This may be due to the difficulty of acquiring such equipment, and because of its capabilities in doing rapid prototyping and small-scale manufacturing. Other tools such as woodworking tools, sewing machines, and other domestic tools are easier to acquire and may already be available in a maker's home, which explains why these are used less. However, digital fabrication equipment is expensive and may be limiting to a potential makerspace founder in Cebu City, especially when initial external funding is not yet secured. As a reference, Fablab UP Cebu was given Php5.3M worth of digital fabrication equipment by DTI when they started in 2016, a value which translated to only 6 different kinds of equipment.

Makerveristy (n.d.). Makerversity. https://www.somersethouse.org.uk/residents/makerversity (Date accessed: (December 7, 2021)

A makerspace founder may try 3 options to deal with this reality:

1. Secure external funding or sponsorship to shoulder the steep cost of purchasing basic digital fabrication equipment (CNC, laser cutter, 3D printers, vinyl cutters, vacuum former).

2. Combine multiple workshops (non-digital) to enable interdisciplinary work and encourage makers who already have some equipment in their own homes to be engaged with the makerspace. Fablab UP Cebu can then be the digital fabrication center if one needs to access these types of equipment. Tools for woodworking, metal works, textile, electronics may be purchased as 2nd hand or be acquired through donations to minimize initial cost.

3. Provide creative spaces or studios for creative individuals who have the potential to use shared equipment. These are the creatives who are already making a living out of their creativity, either as an artist or as a micro enterprise. As these creative individuals cluster together, it will start building a community of creatives, hopefully attracting more. This area will potentially be the creative district, which will then become a place where a makerspace can be better maximized.

Shared Studio space at Gloucester, England

VII.
Effective Implementation Framework

In proposing a new concept to stakeholders, the 'how' is as important as the 'what.'

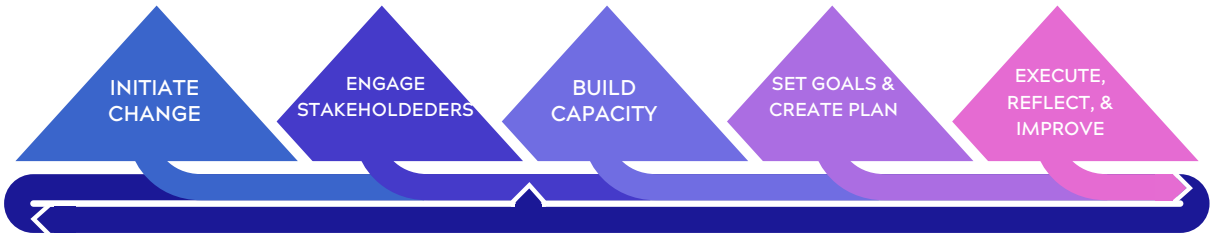
Research-based initiative should drive plans for the future. However, some initiatives that start-strong fade away mid-year because of the lack of a framework for implementation. Focusing solely on the 'what' creates improvements that are superficial and anecdotal (Wicks, Chang, Taylor-Raymond et.al., 2019).

Implementation frameworks provide great value when used optimally. They function as practical tools for planning, executing and evaluating real-world implementation efforts (Moulin et al., 2020). In selecting a suitable implementation framework for an implementation effort, the following must be considered:

- Purpose of the framework.
- The levels included within the framework.
- The degree of inclusion and depth of analysis/ operationalization of implementation concepts.
- The framework's orientation, which includes the setting and type of intervention where the framework was originally designed for.

In proposing a new concept to stakeholders, the 'how' is as important as the 'what.' An implementation framework for the co-making space and creative business incubator for Cebu City is needed to provide a shared language to guide stakeholders in the implementation efforts, especially that it is a 'new' concept for the Cebuano creative. The Effective Implementation Framework (Fig. 3) by Wicks, Chiang and Taylor-Raymond from the George W. Bush Institute is selected as the base implementation framework on the basis of its (1) purpose of initiating change from practice to policy, (2) multi-level approach to effective implementation, (3) in-depth analysis of stakeholders' needs, and (4) orientation towards the education sector. The implementation framework is then contextualized to cater to the pioneers and leaders of the Cebuano creative community in opening up co-making spaces and creative business incubators.

FIG 3. EFFECTIVE IMPLEMENTATION FRAMEWORK



Source: Wicks, A., Chiang, E. M., Taylor-Raymond, J. (2019). Effective Implementation Framework. Dallas, TX: George W. Bush Institute.

I. Initiate Change- Every change starts somewhere

A. ESTABLISH A VISION

1. **Create a Vision Statement**- Create a consistent and compelling vision statement for change.

The vision statement should encapsulate the essence of what the space is working towards. It should be clear and concise. Is it mainly to create a community of creatives? Is it to encourage entrepreneurship in the creative industries? Is it to push for innovation in existing creative industries? Having a clear vision statement can guide actions and decisions by all stakeholders involved towards the success of the project.

2. **Establish a rationale for change**- Establish why a change is needed, articulating a theory of action that demonstrates how changes will lead to both short and long-term outcomes.

Change can be in behavior, perception, practices, and habits. For change to be accepted, a clear rationale or reason for such change must be established. How will this impact the current life of the stakeholders? What good will adapting to this change bring? Why should one be part of this? How long until the effects of the change are felt? Make sure the rationale is understandable and relatable to really move your stakeholders.

B. ESTABLISH FOUNDATION

1. **Identify cost and benefits for change**- Identify known and potential costs and benefits of change as a business and towards the intended community.

Weighing the cost and benefits of change is essential in assuring that the endeavor is worth pursuing. The cost-benefit analysis is informed and confirmed by a variety of sources (e.g. stakeholder feedback, budget constraints, timing constraints, people capacity constraints, impact opportunities, best practice, and relevant research.) Leaders also know that there may be risks and opportunities yet understood.

2. **Establish guiding coalition champions**- Build a coalition of champions and key stakeholders who assume the responsibility of launching, rallying, and sustaining change efforts.

The pioneer community[12] of a makerspace will greatly influence the kind of community that it will attract. Select champions that embody the values and share the vision of the endeavor. What role can this champion play in order to build the creative community? What skills and talent can be utilized? How can his/her network contribute to the community? Champions may include pioneer communities, hub managers, network, and partners.

(1) Pioneer community- Represent the 'movement' and herald of the 'new industrial revolution.'

(2) Hub Managers (Socials)- In-charge of cultivating the culture in the co-making space, connecting people within the network of makers and partner organizations.

(3) Hub Managers (Leasing)- In charge of space rentals which are essential for consistent cash flow.

(4) Network- An established network can provide members access to certain resources and vice versa. This may include academic institutions, organizations, and trusted suppliers.

(5) Administrators- Responsible for daily operations of the space

(6) Mentors (business incubator)- Credible mentors can help entrepreneurs navigate through the business landscape

3. **Create a sense of urgency and excitement**- Create a sense of urgency such that stakeholders are genuinely excited by the vision of change, understand why immediate action is needed, and are eager to contribute to change efforts.

Based on your cost and benefit of change, emphasize the urgency of the project and how delays can ultimately minimize efficacy. Momentum will keep the excitement, so pace progress well. Stakeholders must have something to look forward to, may it be big or small. What is the cost if progress is delayed? What are the actionable steps that need immediate attention? What will keep stakeholders excited with the whole endeavor?

[12] Pioneer communities are the forefront of media-related transformation in society. They are open to new forms of entrepreneurship and policy making that contribute to societal transformation towards mediatization (Hepp, 2016).

C. QUESTIONS TO ASK ABOUT INITIATING CHANGE

1. Is there a clear, ambitious, yet achievable vision statement guiding the effort to create a new concept of a makerspace in Cebu City?
2. Does the vision statement drive all plans, decisions and actions?
3. Can leaders and stakeholders describe why change is needed?
4. Is there a commonly understood theory of action aligned to the vision?
5. Do leaders use data and other evidence to understand costs and benefits of the change before diving in?
6. Is there a coalition of champions?
7. What would help build a sense of excitement and urgency about your change?

II. Engage Stakeholders

Successful change depends on its stakeholder

A. UNDERSTAND STAKEHOLDERS

1. **Identify stakeholder groups and their interests**- They can anticipate champions, undecided, and resistors and identify competing or aligned priorities between groups.

Before diving into establishing a makerspace, it is important to understand the needs of the stakeholders. Starting small and scaling up using stakeholder feedback will help create a space that stakeholders want and need. You can engage in individual creatives, collectives, academic institutions, local government, and organizations. What are their barriers to achieving their goals? What are their current practices? How can a makerspace and a creative business incubator be of value to them currently and in the near future?

1. **Creatives and makers**- How can such space help me grow as a creative and maker? What kind of assistance can this place provide?
2. **Local Government Unit (LGU)**- How is this going to affect my city? Will it increase employment, opportunities, and interest in my city?
3. **Department of Trade and Industries (DTI)**- How can this space help MSMEs? What programs can DTI incorporate in such a space to help MSMEs?

4. **Academic Institutions**- How can this space help graduates of academic institutions? Can this space be an avenue for research, experimentation, and innovation?

5. **Industry workers**- How can other industries be a part of this movement? What kinds of expertise are needed to create a well rounded community and organization that is sustainable?

2. Invite and strategically use feedback- Seek honest feedback from all stakeholders. Effectively communicate how feedback is being used and set expectations that all feedback will be heard but not all feedback may be incorporated.

Feedback is valuable because it gives an unbiased view of the project or endeavor. However, the vision statement should still be the guide in deciding whether to adapt feedback or not. Stakeholders need to be part of the growth, so their views have to be respected and evaluated based on goals. Will adapting to this feedback change the vision? How can the feedback make the product or service better? Which stakeholder feedback is more valuable?

B. UNDERSTAND THE CHALLENGE AND SET EXPECTATIONS

1. Assess current state and use results- Use data to assess the current state and use results to guide their ongoing planning. They continuously assess over time and adjust accordingly.

Research not only about your stakeholder needs, but of the current state of the industry, institution, and/or organization you want to involve. What is their current state (numbers, social equity, perception, etc.)? What are the factors that contribute to this state? How can the information gathered in the research be used in planning for the project/endeavor?

2. Understand root causes of current performance- Investigate and clearly explain why performance trends are occurring. They use a variety of information sources (e.g. surveys, data analysis observations, etc.) to determine root causes.

After assessing the current state, research deeper to the root causes. Ask the 'whys' of the problems. Why are these the current practices? Why have these been unchanged? Why have these problems/challenges persisted?

3. Set expectations and encourage persistence through distractions- Ensure that stakeholders clearly understand that the cycle of implementation will include both success and setbacks. Stay on course and demonstrably support, encourage, and incentivize others to do the same.

Although the vision of the project is clear and attractive, with feedback being incorporated in the growth of the community, unfulfilled promises and expectations could lead to doubt from the stakeholders. It is important to set expectations and show all possible outcomes. Anticipate problems and plan alternative solutions ahead.

C. EFFECTIVELY COMMUNICATE

1. **Strategically plan communication**- Consider when and how to best deliver specific content. Set due dates, adopt methods and assign owners into a communication plan or project work plan.

> Identify all communication channels available and select which ones provide more value for your project/organization. Create a plan for these major communication channels and identify a working group to assure that these are handled well. Who is the audience and what do they need to know? When is the best time to communicate specific messages?

2. **Tailor message to the audience**- Craft messaging that is compelling, often by incorporating hope and a sense of possibility.

> Different products/services will have a different market. It is important to know how to communicate with them to effectively convey the message without being pretentious. Acknowledge concerns and risks when discussing sensitive topics. If a leader is not familiar with a particular audience, they seek help to improve their understanding. Effective communication is consistent in its messaging, but can adapt to a range of audiences to support broad understanding.

3. **Incorporate effective communication techniques**- Use a variety of communication techniques to achieve desired impact.

> Different communication channels require different techniques to be effective. Examples of communication techniques include telling stories, leveraging quantitative data, removing jargon, evoking emotion, utilizing visuals, and preferencing face-to-face communication when possible. When addressing possible partners or investors, what kind of information would they want to see and how should these be communicated? When talking to local makers, what communication techniques should be used to attract their attention? How can you keep stakeholders engaged?

4. **Build momentum by celebrating success**- Celebrate wins quickly and consistently. In doing so, they reinforce how successes are moving the organization towards the vision, and they are modeling a strong cultural practice.

> Small wins could be as small as finishing a prototype, or as big as sealing a big partnership. Whatever it is, celebrating wins and communicating it can encourage a positive outlook towards the project or endeavor. They can come from individual community members, its broader network, or of the organization itself. Pace announcements of success so there is constantly something to celebrate. Aside from announcing success, it is also good to celebrate large wins with a social gathering.

4. Over-communicate and check for understanding- Intentionally over communicate by sharing the same message in multiple ways (e.g. email, face-to-face, newsletter, etc.).

To ensure that the intended message is received and understood, use multiple channels. Purposefully check for understanding and action to determine whether the messaging is successful. Then, identify ways to improve communication. This in turn will ensure that the right kind of communication channel, techniques, and tools are used.

D. QUESTIONS TO ASK ABOUT ENGAGING STAKEHOLDERS.

1. Have stakeholder groups been identified?
2. Within stakeholder groups, who are the champions, neutral or resistors?
3. Is there a method of seeking and incorporating feedback from stakeholders when planning?
4. Is there a method of assessment to drive planning?
5. Are the root causes of current performance, both good and bad, understood?
6. Do leaders demonstrate persistence and encourage others to do the same throughout both success and setbacks?
7. Are communication efforts effective? How do you know?

III. Build Capacity

Moving from vision to reality requires investment. Invite potential investors and partners that will make it happen.

A. INVEST IN CHANGE

1. **Ensure leadership support**- Critical high-level leaders visibly support the vision and strategy, enabling a "sponsorship spine" to drive change.

    These may include government agencies, academic institutions, organizations, and influential individuals that people in the industry look up to. Their support may be in the form of financial support, endorsement, policies, or sharing of knowledge and resources. Ensure that leaders from various stakeholders support your endeavor to influence a positive perception.

2. **Create implementation team(s)**- Build an implementation team(s) of the most essential stakeholders necessary to bring about change.

    These individuals will collectively bring the vision and plan to life. Team members clearly understand their roles, responsibilities, and who is accountable for each step. Recognition of effort and success must be shared.

3. **Invest Resources**- Invest extensive resources of time, people, and money in making change occur (e.g. they create teams focused on the change process; they allocate sustainable, protected funding, etc.).

    Properly invest valuable and limited resources such as time, people and money. Look for ways in which these limited resources can be invested to create a larger impact in the future. Which aspects should you focus on with your time and people? How should available funding be used to ensure sustainable flow of income? What investments can create a larger impact?

B. OPTIMIZE INDIVIDUAL EFFECTIVENESS

1. **Build content expertise**- Build the team's (and other stakeholders as needed) content expertise related to the change efforts through coaching and by using relevant research, best practice, and experts.

    Based on your current state assessment, determine the opportunities of improvement to build content expertise. Let team members and/or stakeholders join specific training or hire consultants who are experts in a particular field. Coaching, apprenticeship, and residencies are also ways to build expertise among members.

2. **Build understanding**- Create frequent, meaningful opportunities, to build stakeholders' understanding of new policies and practices.

Create regular opportunities to guide stakeholders on their implementation of new policies and practices (e.g. there are frequent opportunities to receive feedback on and observe implementation of a new policy; there are frequent opportunities to plan with stakeholders and/or design pilots). These may be done through evaluation based on agreed upon criteria both for the policy/practice and for the implementation.

C. OPTIMIZE TEAM FUNCTIONING

1. **Run efficient team meetings**- Team meetings utilize practices that promote quality, and efficient functioning.

Agenda for every meeting must be clear and concise. Utilize protocols when meetings are not aligned to the agenda. Have clear objectives, involve facilitators, timekeepers, and other roles.

2. **Create next steps to ensure accountability**- Team meetings result in a list of clear, actionable next steps that include specific tasks, owners, and deadlines.

A clear plan of action with corresponding champions after every meeting provide clear direction. There should be visible norms and processes that ensure follow up on next steps such as providing status updates.

3. **Create systems for collaboration**- Teams have structures in places that promote frequent collaboration.

Organize social events for the team, as well as projects that require collaboration among members. This promotes teamwork and a better understanding about how each one contributes to the overall project at hand.

Shared Studio space at Gloucester, England

D. QUESTIONS TO ASK ABOUT BUILDING CAPACITY

1. Do high-level leaders visibly support this change?
2. Is there an implementation team that understands their roles and feels accountable to each other?
3. Is the organization's investment of people, money and time sufficient?
4. Have leaders created meaningful opportunities to build stakeholder understanding of the change?
5. Does the implementation team have systems and procedures that promote accountability and project management?

IV. Set Goals and Create a Plan

Now that the vision has been established, as well as the factors that are needed to make the change happen, it is now time to create a step by step plan on how this change will be accomplished.

A. ESTABLISH GOALS AND PRIORITIES

1. **Establish and prioritize goals that promote urgency**- Identify milestones and set timelines for each one. Establish desired outcomes, then prioritize and de-prioritize goals by considering impact and timing.

    Understand that the order of priority of goals is not fixed and is subject to change, especially when timing and potential impact is changed. Which goals need to be achieved first to create an immediate or larger impact? How do specific goals affect the attainment of other goals?

2. **Identify connections to other local initiatives and goals**- See where local initiatives may overlap or compete. Various initiatives should promote the growth of the industry as a whole, and should not bring another initiative down.

    Using broader goals as guidance, seek to resolve overlaps between initiatives and instead leverage complementary efforts. Let them be part of your growing network instead.

B. PLAN FOR IMPLEMENTATION

1. **Create an implementation plan**- Craft an implementation plan that outlines the what, who, when, and how of change.

    Use the information gathered from (I) Initiating Change, (II) Engaging Stakeholders, (III) Communicating Effectively, (IV) Building Capacity. Team

uses and updates this plan consistently to account for new opportunities or setbacks.

2. **Ensure timeline is sufficient**- When planning for implementation, leaders must balance feasibility with urgency using techniques like backwards mapping, using pilots or tests, and considering seasonality.

Although timelines can be adjusted, corresponding consequences must be identified when they are not followed. When plotting timelines, it is best to consult with different people who are more familiar with the process. Provide time allowance for unforeseen hurdles.

3. **Anticipate challenges, identify risks, and plan accordingly**- Anticipate common pitfalls, such as competing priorities, budget constraints, and stakeholder resistance, and adjust accordingly.

Examples would be considering the timing of the launch initiative to other initiatives, determining how much additional work will be required of stakeholders, understanding what resources or other stakeholders will need to implement, or understanding requisite behavior shifts.

4. **Plan quick wins**- Consistently identify and plan for quick wins (efforts that are both high impact and achievable)

Although larger projects need more time and effort to accomplish, planning quick wins assure that there is always something to celebrate to keep stakeholders interested. Quick wins also promote a positive image towards the project which in turn can encourage more support.

QUESTIONS TO ASK ABOUT CREATING GOALS AND PLANNING FOR CHANGE

1. Do the goals promote urgency? Do they align clearly to the vision?
2. Are the goals prioritized based on impact and timing?
3. Has the implementation team identified where this work overlaps with other initiatives?
4. Does the team use a strong implementation plan to guide their work both short-term and long-term?
5. Does the team use backwards mapping to ensure timelines are feasible?
6. Do leaders anticipate challenges and risks and plan accordingly?
7. Are quick wins identified in the implementation plan?

V. Execute, Reflect, and Improve

Every change requires continuous improvement through feedback and reflection.

A. ACHIEVE GOALS

1. **Take action**- Avoid planning paralysis and execute on high-quality implementation plans with urgency and a sense of possibility.

    Take action but pause when reflection, revision, or correction is/are necessary. Immediately remove obstacles or pivot when dead ends are met.

2. **Stay on Track**- Teams meet their deadline for tasks and milestones.

    Setbacks and obstacles are to be expected, but should be minimized. Adjust timelines when obstacles or delays arise, or adjust to incorporate new information. Set a clear path and stay on track.

3. **Generate quick wins**- Achieve quick wins.

    Big wins are the result of many smaller wins. Leverage on quick wins to create momentum for additional, often more challenging efforts down the road.

4. **Achieve goals**- Achieve goals on time or adjust goals with evidence.

    Leaders and members have a sense of accountability and expect consequences if goals are not met, or changes are unexplained.

B. EXAMINE DATA

1. **Monitor progress**- Have meaningful systems in place to measure the progress of the change.

    Leaders must establish tools for collecting data about the initiative process and have regular check-ins with stakeholders to ask about implementation.

2. **Reflect and Learn**- Use progress monitoring data to reflect on implementation and to identify, define, and analyze problems and bright spots.

    When initiatives have already been implemented, a post-mortem must be discussed among leaders. Leaders identify and share learnings (e.g. with stakeholders, members, etc.) of what is now working that can be replicated, and where outcomes are still to be determined.

C. CONTINUOUSLY IMPROVE

1. **Improve strategies**- Use a reflection process to identify high return improvements that can be feasibly implemented and monitored.

    High return improvements can be in terms of financial or social impact. Build upon effective strategies and stop doing what is not working.

2. **Adjust implementation plan**- Incorporate new or revised strategies into the implementation plan, as needed.

    Ensure that a revised plan aligns with identified opportunities for improvement the possible entry of new stakeholders, and new anticipated challenges or opportunities.

3. **Institutionalize Improvement**- Ongoing cycles of continuous improvement become deeply ingrained in the community.

    As methodologies are refined, effective strategies must be institutionalized to serve as a guide for future leaders and members.

D. QUESTIONS TO ASK ABOUT EXECUTING, REFLECTING AND IMPROVING

1. Do leaders value both urgent action and thoughtful reflection?
2. Do leaders stay the course?
3. Do implementation teams stay on track?
4. Do leaders have systems in place to measure progress?
5. Do leaders regularly and transparently reflect on this progress?
6. Do leaders make changes based on what they learn?

VII.
Reecommendations

Laser cutter at Fablab UP Ceub

The researcher recommends looking more into the kinds of business models that will work best considering the habits of the Cebuano market. Conceptualizing a makerspace and creative business incubator will require insights from young Cebuano creatives who are ready to be part of the third, and even fourth industrial revolution. The implementation framework proposed in this research can then be used when the business concept will be realized. The researcher also recommends partnering or coordinating with more experienced institutions such as Makerversity and Cockpit Arts in realizing a successful makerspace and creative business incubator.

Despite the recognition as a UN Creative City of Design, it can be noted that Cebu City does not really have what can be called a 'creative district' as creative hubs are sporadic. The researcher recommends looking into the root causes of why 'clustering' of creative industries has not yet happened despite the presence of various creative industries.

Finally, the researcher recommends building close partnerships with Fablab UP Cebu and the British Council. Support and guidance from experienced organizations will be valuable in starting up, and in contributing to the larger creative community locally and worldwide.

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