

THE RISE OF THE CLOUDWORKER

Work, Live, Learn and Play converging in Architecture

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Abstract

Since the nineteenth century, societies, encouraged by the fear of uncertainties and the desire for efficiency, called strong central authorities to move the wheel of time ever faster. In the twenty-first century, a new generation slowly began to realize that the Leviathan is unable to exercise virtue with precision. Instead, he resembles a poor surgeon, who is cutting through organic emergent communities, artificially separating work, live, learn and play with respect to both space and time. However, the recent wave of disruptive technologies, including the Internet and blockchain, enable people to overcome the confinements of space and economic systems. These offer a more decentralized and flexible panorama, which has paved the way for a new generation of computer literate people - the so-called Cloudworker Generation - to come of age, embracing a new lifestyle far less dependent on location or time. The primary aim of this thesis is to understand the architecture of the Cloudworker. It examines the design features of three different models of coworking spaces, including “CRU Cowork” in Porto, “Co-Work & Play” in Frankfurt and “The Cube” in Athens. Indeed, by analyzing these models, this thesis makes an important contribution to current understandings of the value and nature of community in this ever-growing Cloudworker Generation. Also, it assesses the manifold shifts in areas of work, live, learn, and play that emerge when income and location are no longer attached. In this new generation, the blend of these activities is not only logistic but represents a lifestyle whereby the flexibility in both space and time introduces a stark contrast with previous architectures that follows industrial standards. With the ability to blend and redesign work, live, learn, and play fluidly, this thesis maintains, the Cloudworker Generation is able to detach itself from particular locations and choose the community that best suits its needs. This freedom to work remotely therefore enables many of these Cloudworkers to assemble physically based on affinity for one another and for a chosen location, thereby optimizing their quality of life, without sacrificing income. Through various architectural elements - including their use of different materials, colors and sharing arrangements - contemporary coworking spaces assemble specific communities while attracting this new untethered generation through different identities. Cloudworkers are not only able to flourish in their work, but they are now able to thrive socially at the same time.

Keywords: *coworking space, office design, remote work, digital technology, Cloudworker*

Resumo

Desde o século XIX, sociedades, motivadas pelo medo, por incertezas e pelo desejo de eficiência, clamaram por firmes autoridades centralizadas para mover a roda do tempo cada vez mais rápido. No século XXI, uma nova geração lentamente começa a perceber que o Leviatã é incapaz de exercer virtude com precisão. Em vez disso, ele se assemelha a um medíocre cirurgião, que fatia comunidades emergentes e orgânicas, separando artificialmente o trabalhar, o viver, o aprender e o jogar com respeito ao espaço e ao tempo. No entanto, a recente onda de tecnologias disruptivas, a Internet e o *blockchain* permitem que as pessoas superem os confinamentos dos sistemas espaciais e económicos. Oferece um panorama mais descentralizado e flexível, no qual abre caminho para uma nova geração de pessoas com literacia em tecnologias digitais - a chamada geração *Cloudworker* - que amadurece, abraçando um novo estilo de vida muito menos dependente da localização ou do tempo.

O objetivo principal desta dissertação é compreender a arquitetura do *Cloudworker*. Examinam-se as características de design de três diferentes modelos de espaços de *coworking*, incluindo "CRU Cowork" no Porto, "Co-Work & Play" em Frankfurt e "The Cube" em Atenas. Certamente, ao analisar esses modelos, esta dissertação contribui de forma importante para o entendimento do atual valor e natureza desta comunidade e geração em crescimento. Além disso, a dissertação avalia as múltiplas mudanças em áreas do trabalhar, do viver, do aprender e do jogar que emergem quando os rendimentos e a localização já não estão necessariamente conectados. Nesta nova geração, a mistura dessas atividades não é apenas logística, mas representa um estilo de vida em que a flexibilidade do espaço e do tempo apresentam um forte contraste com as arquiteturas anteriores que seguem os padrões industriais.

Com a capacidade de misturar e redesenhar o trabalhar, viver, aprender e jogar de forma fluida, esta dissertação assinala que a geração *Cloudworker* é capaz de separar-se de locais específicos e escolher a comunidade que melhor se adapte às suas necessidades. Esta liberdade de trabalhar remotamente, permite, portanto, que muitos desses trabalhadores se reúnam com base em afinidades e locais comuns, otimizando assim a qualidade de vida, sem sacrificar os rendimentos. Através de vários elementos arquitetónicos - incluindo o uso de diferentes tipologias e estéticas - os contemporâneos espaços de *coworking* agrupam comunidades específicas enquanto atraem essa nova geração através de diferentes identidades. Os *Cloudworkers* não só podem prosperar no seu trabalho, mas também prosperar socialmente com o passar do tempo.

Palavras-chave: espaços de *coworking*, arquitetura de trabalho, trabalho remoto, tecnologia digital, *Cloudworker*

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Chapter 01. Introduction

1.1. Motivation

Technological progress affects the way work, live, learn and play is designed. The Industrial Revolution, for example, was a time of exponential technological growth, and its core values, which include mass production, standardization, and centralization were reflected in architecture and urban planning throughout the twentieth century. The echoes of the core concepts of industrialization allied with strong central authorities had an impact on various levels of analysis and endorsed a centralization process that affects everything from institutional governance, urban development, and ideology.

In moving forward, this thesis identifies and discusses two paradigms. The first is that of centralization, whose impact is observable on three levels of society. On a governance level, it is illustrated either by nation states and the establishment of a supranational union (European Union) or Central Banks and large Governmental University Campus. On an urban level, it is summarized by megalopolises and sprawl, which are the central hubs in the economy. On an ideological level, it is exemplified through the “Organization Man”¹, which was the most relevant identity during the twentieth century.

The second paradigm discussed in this thesis is what one might call the strict paradigm. This thesis further observes the lack of flexibility with regards to space and time throughout the last century. As a result of the industrialization process, design followed clear functions and strict boundaries; for instance, buildings and

¹ “People became convinced that organizations and groups could make better decisions than individuals, and thus serving an organization became logically preferable to advancing one's individual creativity.” (Whyte, 1956)

even regions were segmented into specialized activities in an attempt to increase its efficiency. Life became divided into work, live, learn and play, not only physically, but also conceptually. Weekends were thus dedicated to play, while weekdays from “9h to 5h” were devoted to labor. The lifespan would come to obey the same strict logic. Thus, the first 25 years of life were devoted to study and learning, the next 40 years for work and career, and retirement for play.

While those two paradigms proved to be a potent remedy to urgent problems, the emergence of decentralized networks is moving society toward a new panorama. As a result of the Internet and the blockchain², various levels of society are now seeing a shift from the centralized and strict paradigms tied to industrialization to a more flexible and decentralized network panorama. These changes have led to the emergence of a new generation known as the Cloudworker: location-independent freelancers, young entrepreneurs and self-employed who now comprise a large portion of today’s workforce. In stark contrast to the factory-style architecture of the previous century, the workspace of these Cloudworkers now blends work, live, learn and play activities within a single community space.

In the light of this situation, the motivation for this thesis centers on three main items. First, it seeks to understand and clarify the shifts that have made it possible for the Cloudworker to emerge and flourish. Second, it aims to understand the relevance and features of this generation. Finally, it attempts to visualize the consequences of these items on the nature of the architectural shifts noted above.

1.2. Objective

The main objective of this thesis is to assess the architecture of the Cloudworker Generation. So far, there has been little discussion about how people’s choices of locality change with an increased degree of location independency.

² “A digital ledger in which transactions made in bitcoin or another cryptocurrency are recorded chronologically and publicly”. (Oxford Dictionary)

Specifically, from an architectural point of view, there is a gap in research further to understand the impact and future implications for those untethered workers.

Since remote workers have their income detached from location, they have more sovereignty to choose the community/location that best meets their needs. This enables them to assemble physically based on an affinity for one another, thereby optimizing their quality of life. Given the way that design reinforces and attracts specific communities through a shared identity, this thesis aims to understand precisely which design features (e.g. colors, materials, layouts) are valuable to the Cloudworker.

Furthermore, this thesis aims to comprehend the blend of work, live, learn and play inside coworking spaces, identifying the multifunctional rooms where the mix of activities happens and understanding how design facilitates collaboration and community integration. Moreover, it aims to confirm coworking spaces as an ever-changing arena where those activities blend not only in the space but over time. Finally, it wishes to underline the reasons that make these places resemble a community more than those classical workplaces with industrial features.

1.3. Methodology

1.3.1. The procedure of the work

This work has been divided into five chapters: Introduction (01), Paradigm Shift (02), State of Art (03), Study Cases (04) and Conclusion (05).

Chapter two outlines the consequences of decentralized technologies (see Table 1). The goal in this chapter is to understand further the shifts from a centralization and strict panorama to a decentralized and flexible alternative. This will lead to a broader comprehension of the relevance, features and requirements of the Cloudworker Generation.

Chapter three provides a background of relevant architecture examples that separated work, live, learn and play in the space as a result of industrialization. It

Table 1 Current situation and panorama shift

Current Situation		Shift Panorama	
Centralization		Decentralization	
Governance level	Nation states, central banks, universities, judiciary branch	Governance level	E-Government, transfer power to cities, Government as a service, online university, online banks
Urban level	Megalopolis and urban sprawl	Urban level	Megalopolises not the most profitable alternative for Cloudworkers
Individual level	"The Organization Man"	Individual level	"The Cloudworker" as a social figure.
Strict		Flexibility	
Space is separate by functions	Massive buildings for work, live, learn and huge complexes to accommodate on site workers	Functions are blended in the Space	Work, live, learn and play are blended in a smaller scale (coworking spaces)
Separate of Time	9h to 5h dedicate to labour and weekends dedicated to play. First learn from 25 years, than work for more 40 years and play after retirement	Functions are blended over Time	Work, live, learn and play are blended more naturally across the day. Intergeneration
Individual	Anonymity - labour migration	Individual level	Sovereignty, exit places and situations. (exit <i>versus</i> voice)
Community	Compromise with ideals. Community have less agency in a megalopolis	Community level	Gather by affinity and identity, design to strengthen communities
Technology		Technology	
Television and automobile	Mass communication and transport to reinforce the centralization	Internet and blockchain (Nakamoto Consensus)	Consolidation of the internet generation

explains important factory features such as rationalization, standardization, industrial expansion, efficiency and centralization. It recognizes those characteristics in the utopic Radiant City, where strict zoning provides the perception of the whole city as a factory. It also identifies the same core features in Disneyland and in office spaces, which serve as examples of play and work factories, respectively. Finally, it introduces the Work-Play factory concept represented by the Googleplex.

Chapter four then focuses on three coworking spaces. The aim of this chapter is more fully to understand the design identity of those emergent environments and analyze the reflection and adaptability of different activities, which start to naturally overlap, even on a small scale. The methodology and approach of this research are threefold: research of places, visits and interviews with the community managers or founders.

Chapter five, the Conclusion, is dedicated to restating the aims, summarize the findings and reinforcing the contributions and limitations of the present study. Furthermore, it suggests future research perspectives.

1.3.2. Research Methods

A case-study approach was used to obtain further in-depth information on the requirements of the various spaces and their usage across time. The main criteria behind the choice of the three coworking spaces, including CRU Cowork in Porto, The Cube in Athens and Co-Work & Play in Frankfurt, was as follows: different identity. This thesis selected a small number of samples which reflect the plurality of those emergent spaces through specific and distinct identities. Furthermore, the variety of locations indicates that this phenomenon has taken root across the globe.

It was important to this thesis choose spaces that were in different stages of development. For instance, The Co-Work & Play in Frankfurt only recently opened in 2017, while the CRU Cowork opened in 2012. Despite having opened in 2013, The Cube was a sort of expansion from CoLab (2009), the first Coworking space in Greece, since its founders had previous experience there. A snapshot of these spaces

at different times in their development demonstrates the similarities and peculiarities across time.

After researching different business models, these three spaces were selected. In addition to researching specialized literature, visits were taken to these spaces in order to make direct observations, and semi-structured interviews³ were conducted with all community managers or founders. The purpose of these interviews was to gain a better understanding of the dynamic of the Coworking Space. The interviews centered on three major themes:

- The relationship between the identity of the place and the audience
- Design to strengthen Communities: Blend Work and Learn
- Design to strengthen Communities: Blend Work and Play

Once the data was collected, it was possible to highlight their specificities. Furthermore, as this is a qualitative study, the quantitative data is only collected to further understand the background of workers across time and enhance the direct observations.

³ Questions can be found in the Appendix B

Chapter 02. Paradigms Shifts

2.1. From a centralized view to a more decentralized alternative.

2.1.1 Overview

This section aims to analyze decentralized alternatives in a trifold level: Governance (1), Urban (2) and Ideology (3).

The first level introduces literature that support the increase power of local cities governments over nations to address global challenges. It provides insights about the transnational digital identity observed in Estonia and it highlights different projects that enhance the concept of voice *versus* exit. Furthermore, it explains the potential of Internet and blockchain to reshape governance and to empower the Cloudworker Generation.

The second level explains the labor migration to megalopolises and current issues. It indicates the Cloudworker Generation will not necessarily based itself on these large-scale urban settlements but prefer to exercise its sovereignty to gather by a likeminded community. It highlights projects and trends that value both community and sovereignty. Once more, it enhances the potential of the Internet to decentralize talent and opportunities even outside the megalopolises.

The third level explains in depth the advances in telecommunications technologies that allow the Cloudworker as a social figure. It explains the Cloudworker terminology adopted in this thesis and details who comprises this generation. It reinforces its relevance and features, based on both pillars: community and sovereignty.

2.1.2 Governance level

From a governance perspective, there are currently opinions if nation states are the most flexible answer to an Internet Generation. Nation states traditionally attempt to promote standardization by encouraging a single national identity, national language, government and economic system (White, 2006). However, this definition does not apply to an interconnected world. Terrorism, flow of illegal arms and uncontrolled immigration are just some examples of how this type of state struggles to maintain absolute sovereignty within its borders.

Supranational organizations like the European Union also struggle to maintain their sovereignty in equilibrium. In this case, its expansion has stopped, Greece faces standoff over bailout funds and Brexit happened in 2016. White argues that much of the failure to keep order in modern states is associated with a lack of voice in government, especially where minorities do not feel that the ruling elite represent their interests (White, 2006).

This thesis states that despite the issues that nations face in a globalized world, alternatives to a more decentralized panorama are being proposed. For instance, increasing the authority of the cities is a way to promote better citizen participation. According to Hague, the city size would be more flexible and capable of undertaking global challenges were they work as local hubs of globalization.

“‘The city and governance’ – a vision that dates back to ancient Greek city-states, but was similarly appraised by one of the greatest political thinkers, Jean-Jacques Rousseau. And today, few would disagree that when it comes to governance indeed, cities still are and remain the most direct social and political contract between societies and the notion of authority. It does not come as disbelief that with the complex challenges we are facing today – be it climate change, changing demographics, growing crime rates, disruptive technology and growing pressures on resources, services, infrastructure, housing and energy – the idea of urban governance has entered the political discourse anew. Local authorities are well positioned to address these challenges. They have more room for innovative policy

maneuvering. And this is how local problem-solving can lead to global solutions” (The Hague, 2016).

Following the same logic, megalopolises, which are large and heavily populated urban complexes, tend to weaken the mechanisms of political accountability and citizen participation (Castells, 2002). Castells observes that many of the mega-metropolitan regions had neither an effective management or representation. One proposal solution is to strengthen the power given to local authorities to better account the community needs.

“The constitution of these mega-metropolitan regions without a name, without a culture, and without institutions weakens the mechanism of political accountability, of citizen participation, and of effective management. In other words, there is increasing contradiction between the actual spatial unit and the institutions of political representation and metropolitan management. On the other hand, however, local governments in the age of globalization emerge as flexible institutional factors that are able to react, to adapt more quickly to global trends. In fact, the dynamics of globalization do not eliminate local governments. Rather, globalization enhances their role and the ability of local authorities to get closer to the needs of their community. In other words, if you cannot control the world, you shrink it to the size of your community so you can manage it a little bit better” (Castells, 2002).

Another option toward decentralization is the E-Government currently observed in Estonia. This country offers E-Residency to any person, from any nation. This is not a visa, nor an access to social rights that local Estonians have, nor a way to avoid taxes. Rather, it is classified as a “transnational digital identity” (Schwede, 2016) available to anyone in the world interested in administering a location-independent business online. This means one can have remote access to another country’s digital infrastructure and, for example, set-up a bank account online without ever going to the bank branch. Therefore, despite living elsewhere, a person’s online business could be based in Estonia which by definition, already circumvents the Unitary-Nation concept. Digitization is changing the mechanism

of public administration, and the electronic virtual government can be defined as a step forward toward a Government as a Service.

“The difference if there is one is that Estonia wants to offer E-Residency services to anyone, from any nation. This is, if you will, Government-as-a-Service – and software application developers are needed to make the full integration potential happen” (Bridgwater, 2016).

There are currently diverse libertarian projects that based themselves on the concept “exit *versus* voice” (Hirschman, 1970) to offer a decentralized alternative to the current framework. This concept is not new. Hirschman argues that members of an organization, whether a business or a nation, have two possible responses when they perceive that the organization decreases in quality or benefit to its members: they can either exit, which means to withdraw from the relationship, or they can exercise voice, trying to repair or improve the relationship through complains or proposals.

When voice is not effective anymore, the will to exit is factual and necessary, however, exiting from a nation is very expensive. Currently, most countries/nations have very rigid regulations regarding immigration, which raises the cost of moving and integrating into their system. One can compare nations with gated communities, since both have defined borders and strictly controlled entrances. However, the criteria behind the selection of the first distinct humans based on nationality is self-evidently wrong. For it assumes that a child born in Panama, for example, deserves less labor protection, physical security and access to jobs or education than an American one. This thesis exemplifies some current projects that propose exit, including Free Private City, Silicon Valley’s Ultimate Exit, Sea steading and even Mars Colony vision of Musk.

Free Private City⁴ is a business model that is currently negotiating within

⁴Titus Gebel is an entrepreneur who wants to establish a city which would be managed by a private, for-profit company. This city would function as a contractual “state service provider”, with minimal regulation and maximal freedom. See: <https://freprivatecities.com/>.

existing nation states to find an agreement to include the right to regulate the City's internal affairs. Elaborated by Titus Gebel, this position envisions an alternative model of governance, in which a private company would offer the population the basic services of a State.

The private governance would reduce the Government to a service that maintains the safety and infrastructure of the City. Everything beyond this framework would be a result of competition among private entrepreneurs, insurance and civil society groups. The free market and the possibility of a speed exit guarantees that the operator would remain just a service provider instead of a dictator.

“And this is exactly the idea of a Free Private City: a voluntary, for-profit, private enterprise that offers protection for life, liberty, and property in a given territory — better, cheaper, and freer than existing state models. Residence would depend on a predefined contractual relationship between residents and the operator” (Gebel, 2017).

“Imagine a private company offers you the basic services of a state, i.e. protection of life, liberty and property in a defined territory. You pay a certain amount for those services per year. Your respective rights and duties are laid down in a written agreement between you and the provider. For everything else, you do what you want. Thus, you are a contracting party on an equal footing with a secured legal position, instead of subject to the government's or majority's ever changing will. And you only become a part of it if you like the offer” (Gebel, 2017).

Titus Gebel (Gebel, 2017) claims that, even though Constitutions promote laws that establish the population's rights and responsibilities, most of these laws are constantly being overwritten over the course of time or each time a government's power switches hands, and that this process generates extreme instability. His alternative is to replace the constitution with a contract between the operator and the residents, which would represent a permanent requirement in favor of freedom and self-determination. Therefore, even if the population were to establish a council with 99% of the residents supporting the idea to finance a public



Figure 1 Free Private City utopic perspective

WHY THE WORLD NEEDS FREE PRIVATE CITIES

Political systems all over the world experience economic stagnation, loss of trust and social unrest.

It seems the old ways of governance are reaching their limits, even in western democracies. Free Private Cities can help solve the societal ills that currently plague so many countries.



LEGAL CERTAINTY



MORE FREEDOM



GUARANTEED SECURITY



LIMITLESS INNOVATION



SOLVE THE MIGRATION CRISIS



NO MORE SOCIAL STRIFE

Figure 2 Free Private City Features

swimming pool or social security program, this majority still has no right to impose that decision on the remaining 1%. Gebel's position maintains that a permanent guarantee of individual liberty fails regularly in previous and current systems. He subscribes instead to the claim that no single human's rights exist at the expense of others. Neither is Gebel's Free Private Cities project a retreat for the rich. As he explains:

“Free Private Cities are not meant as a retreat for the rich. Run properly, they would develop along the lines of Hong Kong, offering opportunities to rich and poor alike. New residents who are willing to work but without means could negotiate a deferral of their payment obligations, and employers seeking a workforce could take over their contractual payment obligations” (Gebel, 2017).

This model promotes a business-customer relationship between the State and the population in which disputes would be settled by arbitrators, a system currently used for International Law. The city is perceived as a product and its habitants as clients. This model could be replicable with different concepts and rules, which would compete with each other. Those with the most successful parameters would then be able to attract more clients. From this perspective, since the barrier to move in and out would be weaker than that of our current framework, there is a strong incentive for the operator not to break the rules, because the population could more easily vote with their feet⁵ to another product.

Another project is the Silicon Valley's Ultimate Exit. It searches for a decentralized alternative that is run by technology:

“(…) The idea of built in an opt-in Society, ultimately outside the US, run by technology. It's where the Valley is going, that's where mobile is going, it's not about the location-based app, it's about making location completely irrelevant” (Srinivasan, 2013).

⁵ “To indicate a preference or an opinion by leaving or entering a particular locale” (American Heritage dictionary of the English language)

This thesis therefore insists that decentralized movement, guided by likeminded interested seeking to opt out their current system, are already happening. Exit amplifies voice, and for this reason several projects are already moving in this direction. For instance, sea steading communities (Thiel, 2008) or the 80.000 inhabitants Mars Colony Musk's vision (Musk, 2012) are meta-concepts that aim to create peaceful ways to exit and start new countries.

"(...) work to enable sea steading communities – floating cities – which will allow the next generation of pioneers to peacefully test new ideas for government" (Thiel, 2008).

" (...) And you can scale it back too: even on Hacker News, just recently, within the realm of someone on startup number 1 or startup number 2, these guys just went and bought a private island. It's random, it's in the middle of Canada, it's freezing cold, there's sticks over there, it doesn't exactly look like Oahu... but the best part is this: the people who think this is weird, the people who sneer at the frontier, who hate technology—they won't follow you out there. That's the thing about exit is: you can take as much or as little of it as you want. You don't have to actually go and get your own island; you can do the equivalent of dual-booting or telecommuting. You can opt out, exit at whatever level you prefer. Simply going onto Reddit rather than watching television is a way of opting out. There is this entire digital world up here which we can jack our brains into and we can opt out" (Thiel, 2008).

Overall, it seems that the idea that Centralized Governance through nation states or supra nations as the most effective way to organize society is not a consensus. The notion of exit *versus* voice is especially important to a mobile society. Despite the current framework is far too rigid in its current state, there have been efforts to reinforce a possible alternative governance which facilitates a more decentralized panorama. These efforts include literature that supports more sovereignty to be transferred to the cities, E-Citizenship programs and alternative projects as Free Private City/Silicon Valley's Exit and sea steading communities.

A few decades ago, only those of the wealthy class were generally able to afford the cost of moving without sacrificing a life standard. However, technology is changing this situation dramatically, especially for the Cloudworker Generation. Marc Andreessen suggests that as technology evolves, more people will move and attain sovereignty elsewhere:

“The world is going to see an explosion of countries, without bailouts or bombing in the years ahead. I think there is going to be double, triple, quadruple countries in the coming years” (Andreessen, 2013).

Currently, as technology advances toward decentralization, large educational institutions seem to be no longer strictly necessary. Before the Internet and the printing–press, centralized knowledge in a massive building, i.e. University, was extremely efficient. However, the Internet represents a powerful way to distribute information towards decentralization. It allows for efficient organization in a network setup, something for which the centralized model does not allow. Castells (Castells, 2002) suggest that, beyond the revolution in information technology and globalization, a new form of organization that he called “network” was already in operation.

“What is new in this society is the prevalence of networks. It means that we have entered not only a new technological paradigm, but a new form of organizational structure for everything we do. We have shifted from the vertically organized, standardized, rationally structured, hierarchically structured forms of activity to networking forms of activity. This is not just any kind networking, but the specific kind of power networking that works through information technology. This power networking is changing the way we perceive, organize, manage, produce, consume, fight and counter-fight –embracing practically all dimensions of social life” (Carlaw, Oxley, Walker, Thorns, & Nuth, 2006).

Indeed, decentralized technologies have the potential to reshape governance. For instance, blockchain has recently emerged as a “*disruptive innovation with a wide range of applications, potentially able to redesign our interactions in business, politics, and society at large*” (Atzori, 2015). It is one way

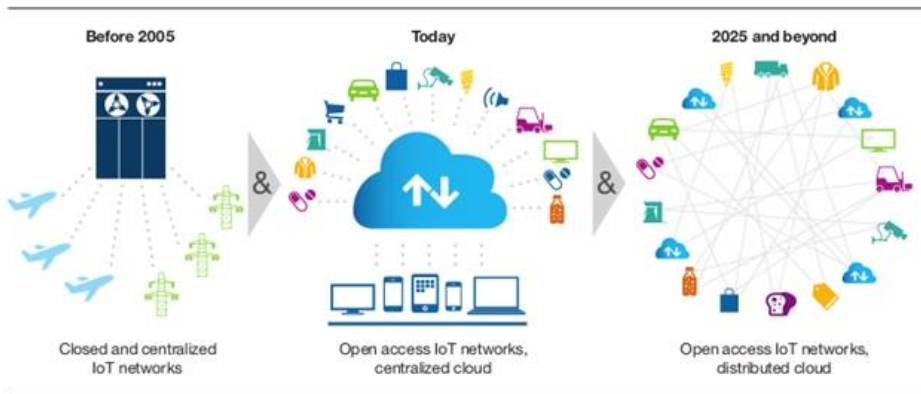
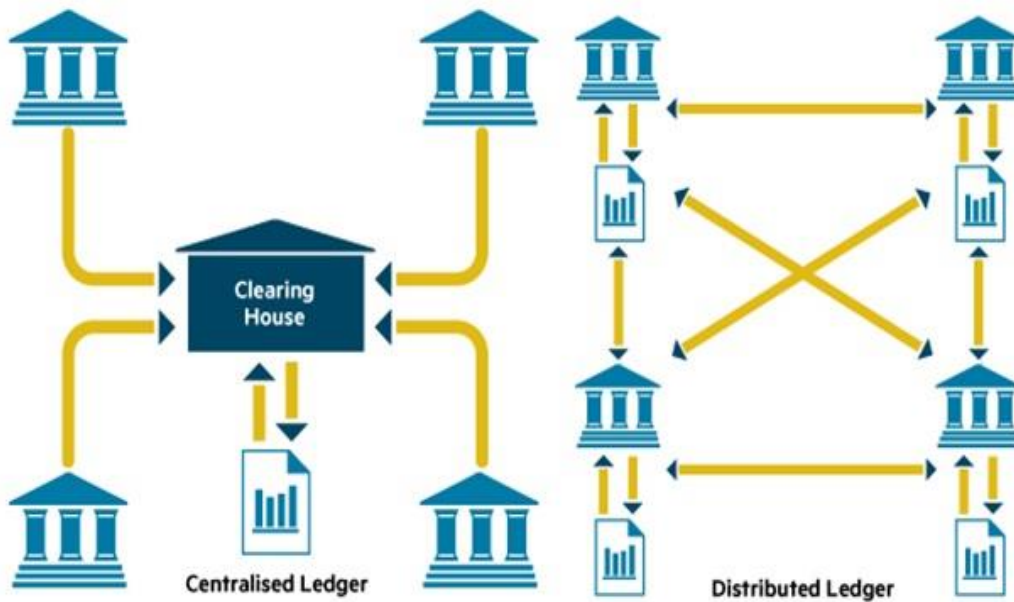


Figure 3 Blockchain: future perspectives

Embedding distributed ledger technology

A distributed ledger is a network that records ownership through a shared registry



In contrast to today's networks, distributed ledgers eliminate the need for central authorities to certify ownership and clear transactions. They can be open, verifying anonymous actors in the network, or they can be closed and require actors in the network to be already identified. The best known existing use for the distributed ledger is the cryptocurrency Bitcoin

FT graphic. Source: Santander InnoVentures, Oliver Wyman & Anthemis Partners

Figure 4 Centralized versus distributed ledger.

of decentralizing data, managing information and reaching consensus without the necessity of a central authority (De Filippi & Wright, 2015).

“Just as decentralization communication systems lead to the creation of the Internet, today a new technology—the blockchain—has the potential to decentralize the way we store data and manage information, potentially leading to a reduced role for one of the most important regulatory actors in our society: the middleman” (De Filippi & Wright, 2015).

Prior to this particular technology, which relies on algorithm-based consensus (Nakamoto Consensus), the legitimization of information relied on institutions. The Blockchain itself is a distributed, shared and encrypted database. It is a transparent, public and incorruptible repository of information, which allows one to create a distributed consensus memory. Since it renders the centralized organization largely reduced, it is able to speed up transactions and cut costs while lowering the chance of fraud (Norton, 2016).

This technology thus has the potential to organize information efficiently in a decentralized network instead of having an extensive, centralized institution, such as the Central Bank or the Judiciary Branch, for example. Furthermore, it enables new development of participatory decision-making systems, since the neutrality of the code, the distributed consensus and the auditability of transactions can reduce or overcome frictions and failures intrinsic in decision-making processes of centralized organizations, which include lack of transparency, corruption and coercion (Atzori, 2015). This empowers the Cloudworker Generation to gather based on affinity and independent from the size of the community. A central authority can be problematic to smaller communities, which of course aspire to self-regulate their own affairs. Yet the blockchain brings institutions (e.g. monetary system, law, etc.) into reach that would otherwise be unattainable on that scale.

“Blockchain technology enables the creation of decentralized currencies, self-executing digital contracts (smart contracts) and intelligent assets that can be controlled over the Internet (smart property). The blockchain also enables the development of new governance systems with more democratic or participatory decision-making, and decentralized (autonomous) organizations that can operate

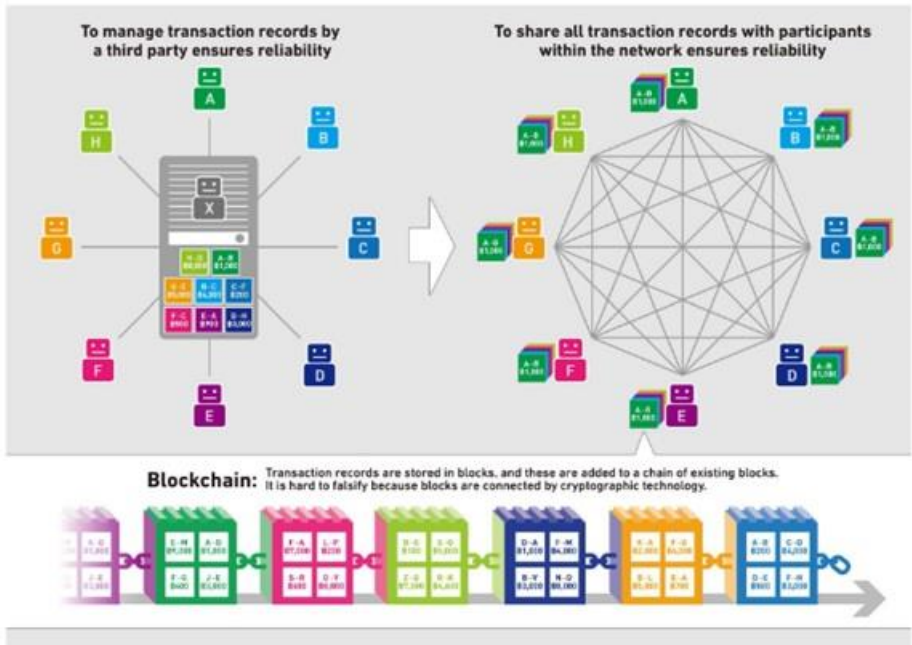


Figure 5 What is blockchain?

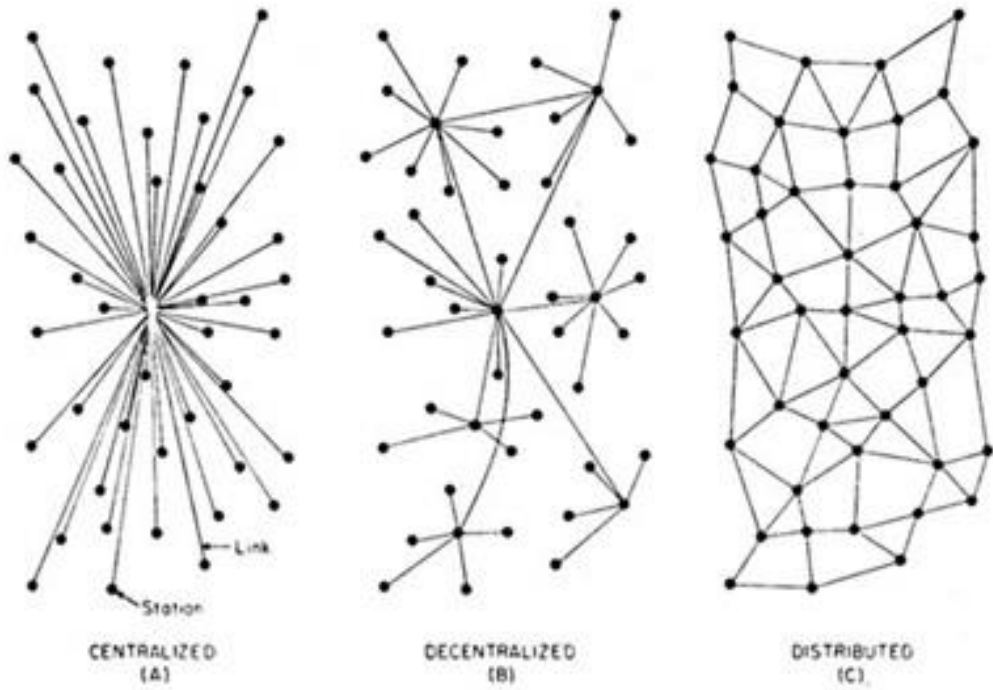


Figure 6 Types of System.

over a network of computers without any human intervention. These applications have led many to compare the blockchain to the Internet” (De Filippi & Wright, 2015).

The first and most popular application of the Blockchain Technology is the decentralized currency called Bitcoin. It is a protocol that serves the needs of the Internet generation and is controlled collectively by the participants of the network (Antonopoulos, 2017). It relies on peer-to-peer networking and cryptography to maintain its integrity and is therefore neutral, transparent, global and outside the control of any government or bank. Western nations might have better access to the global financial system, but for the majority of societies money is confined by strict borders, and most people have limited bank facilities. Sending or receiving money abroad can be very expensive in the conventional system, which also limits one’s power to exit a given place. In addressing this situation, Bitcoin presents itself as an easier and private solution, with no need for personal identification or registration, but only the download of an application.

“World which we have an economy using a form of currency that is neutral, transparent, global and open, belonging to everyone. A currency that requires no qualification to enter or access the system and not under control of any government or bank, that is what bitcoin offers” (Antonopoulos, 2017).

Bitcoin empowers the Cloudworker Generation by increasing their sovereignty. It does so not only because it lowers transaction fees, but because it reduces their exposure to the system they want to exit. Bitcoin is not designed to replace the national currency but to break monopolies and provide alternatives.

2.1.3. Urban Level

On an urban level, this thesis highlights a decentralization associated with the community mindset. In other words, members of the Cloudwork generation will not necessarily rely on megalopolises but will exercise their sovereignty to gather based on affinity. However, before one can appreciate this, it is necessary to understand why megalopolises are the preferred choice of migration for most people, in contrast to other mid-sized urban settlements.

Uneven development is one of the primary reasons for migration. The concentration of capital in megalopolises reinforces the labor migration in search of better employment and income. There are also social and educational motivations behind those movements, even though these are likewise interwoven within and constrained to economic causes. Urban overdevelopments thus provide more opportunities and civic amenities than other types of space. Consequently, people migrate to attain a better financial status and improve the quality of their lives. This seems a logical and irreversible trend and is visible in London, for example. This major world city has a forecast of 13 million people by 2050, which would represent a rise of around 50 per cent of the current population of over 8.65 million (Evening Standard, 2016).

However, the concentration of people in these large-scale urban settlements comes with a price. Health provision, affordable housing, transport issues and school facilities to support the growth are just some of the concerns. As this thesis has shown, a person's choice of locality changes with an increased degree of location independency. This is evident in the case of retirees or semi-retirees in the developed world, who tend to move to locations that offer the best cost-to-benefit ratio. For instance, there is an increase in "Lifestyle migration" to the Algarve among Northern Europeans (Torkington, 2010). This relocation is associated with a slower pace of life, the relative cost of living (including cheap property prices), climate and health benefits and a deep sense of community.

Although it is possible to foster a sense of community in megalopolises, groups are usually more dispersed and less likely to represent a majority. Therefore,

people must choose either to compromise their values in order to tolerate and live peacefully with others or move to a place where there they can exercise more sovereignty and be part of a likeminded community.

An example of the latter option is The Free State Project⁶ in 2016 as an effort to recruit 20,000 liberty-loving people to move to New Hampshire. The project is being promoted by an educational non-profit organization and is not composed by a political action group or a party. It is instead comprised of individuals whose primary goal is to gather enough likeminded people in a single place to make a tangible difference. If they were to choose New York, by contrast, they would not have the same degree of sovereignty.

It should be noted that the desire to gather based on affinity is not new. The Mormon community, for example, initially settled in the Chihuahua desert in the nineteenth century while seeking refuge from U.S. anti-polygamy laws. The desire for community is a natural phenomenon and can be clearly observed in religious groups (Talmon, 1972) or among immigrants (McDonald, 2004). For example, McDonald states Canadian immigrants prefer to assemble with others who share a similar background in culture and language, thereby insuring personal and social support.

The Cloudworker Generation uses the Internet to generate an income detached from their geography. The assumption is that it is easier to adjust one's location in order to optimize the cost-to-benefit ratio or to reinforce a chosen community. In the interest of retaining more income, there is a choice to move out of expensive cities or to places which offer low-tax jurisdictions to increase their business opportunities. But there are additional factors that influence the choices of this untethered generation, including identity, family planning, weather, safety, education, leisure, freedom of association and tolerance. Naturally, a set of those factors resonate with people of a likeminded audience who form the base of such a community.

⁶ See <https://freestateproject.org/about>.



Figure 7 Traffic jam illustration



Figure 8 Highway illustration.

One could argue that Silicon Valley still attracts location-independent freelancers and start-ups, despite being so located in a settlement of four million people. This region boasts of a concentration in capital, status, talent, infrastructure, individual freedom, good weather and some degree of community. However, despite this centralized framework, it is possible to raise money elsewhere than ever before, especially with the development of crypto-currencies. One example is the Golem Project⁷. Despite based in Warsaw, Poland, this project raised approximately 8.6 million USD in just 29 minutes, becoming the sixteenth largest crowdfunding ever (Golem network, 2016) (Aitken, 2016).

Furthermore, talent is being more decentralized with the Internet. It is no longer necessary to be in a specific place to have access to knowledge. As this thesis has shown, megalopolises are not necessarily the most profitable alternative to a Cloudworker Generation. What is best for this generation is its ability to attain sovereignty in order to optimize its income and choose the community/location that best fits its needs.

Perhaps an additional attraction to this generation is the possibility to escape slow-moving traffic. Location independence can have a positive environmental-friendly aspect with less traffic jam and reduced commute distances and times.

“Suburban sprawl and traffic congestion are increasingly common consequences. The economic viability of urban centers has suffered. (...) the question arises: Do we have a transportation problem or do we have a communication problem?”
(Hellman J. , 1996)

⁷ Golem Project to create a global, open-sourced, decentralized supercomputer. See <https://golem.network/index.html>

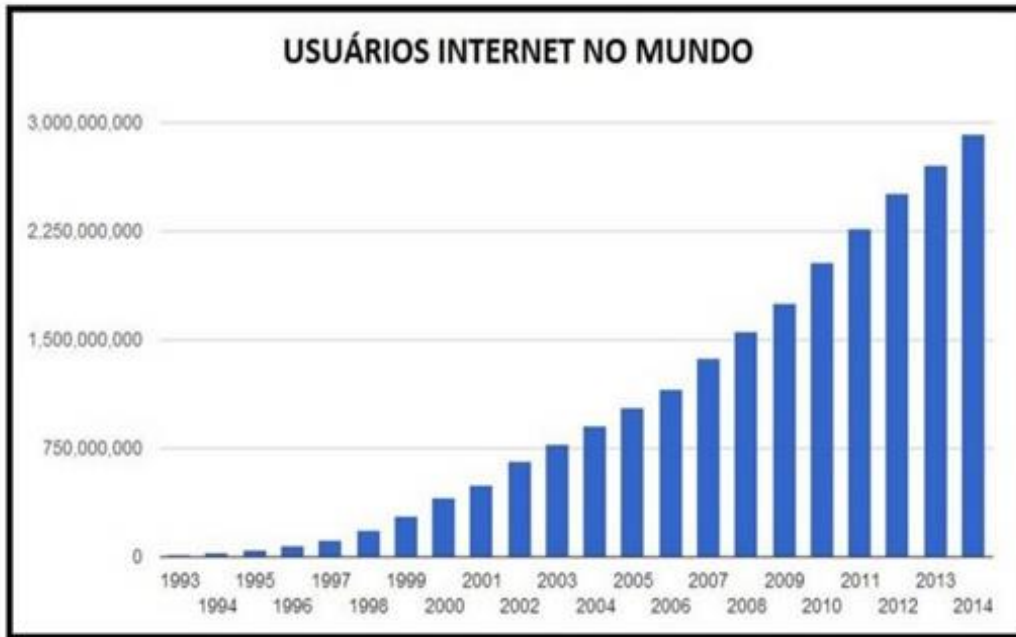


Figure 9 Internet users

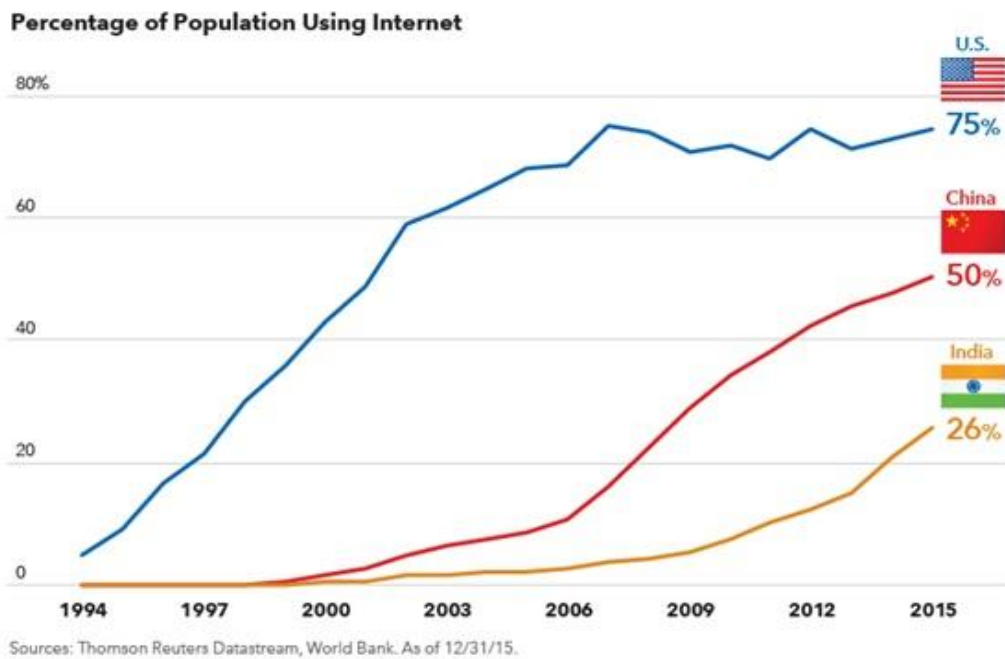


Figure 10 Percentage of Population

2.1.4. Ideological Level

“Telecommunications technology will change our world physically and culturally in the 21st century, at least as much as the tractor and railroads changed it in the 19th century and automobiles, airplanes, telephones and television changed it in the 20th” (Hellman J. ..., 2010).

This shift toward decentralization has also led to a shift from “The Organization Man” ideology (Whyte, 1956) to “The Cloudworker” as a social figure. As Whyte suggests, the reason people join organizations and groups was based on the belief that they could make better decisions than individuals. He observes the concepts of “commitment” and “loyalty” within corporations, which leads to risk-averse executives who face no consequences and can expect jobs for life, as long as they do not make significant mistakes.

Ronald Coase (Coase, 1937) suggests that the reason individuals choose to form partnerships, companies and other business entities rather than trading bilaterally through contracts on a market was a transaction-cost-economic one. However, as the dust of the industrial age settles, the next wave of change is just emerging as we pass by the next inflection point of the Internet age. Since the Internet provides an efficient means of communication, being self-employed or hiring freelancers who work online is currently a viable option, and it has a lower labor cost when compared to that of assembling workers under one umbrella.

The Internet makes “self-employment” relevant again not least by generating new professions, including LinkedIn consultants, Instagram experts and online English teachers. A few years ago, professions that would be considered as unemployed or as filling in a career gap have become the norm more than the exception, especially when average job tenure is in decline. The freelance economy is growing rapidly, and it has never been easier to start an online business. Also, employers prefer variable labor cost over fixed, leading to more on-demand opportunities. This flexibility also affects workers’ time schedules, giving them the option to work part or full time. Currently, 35% of U.S. workers are not engaged in

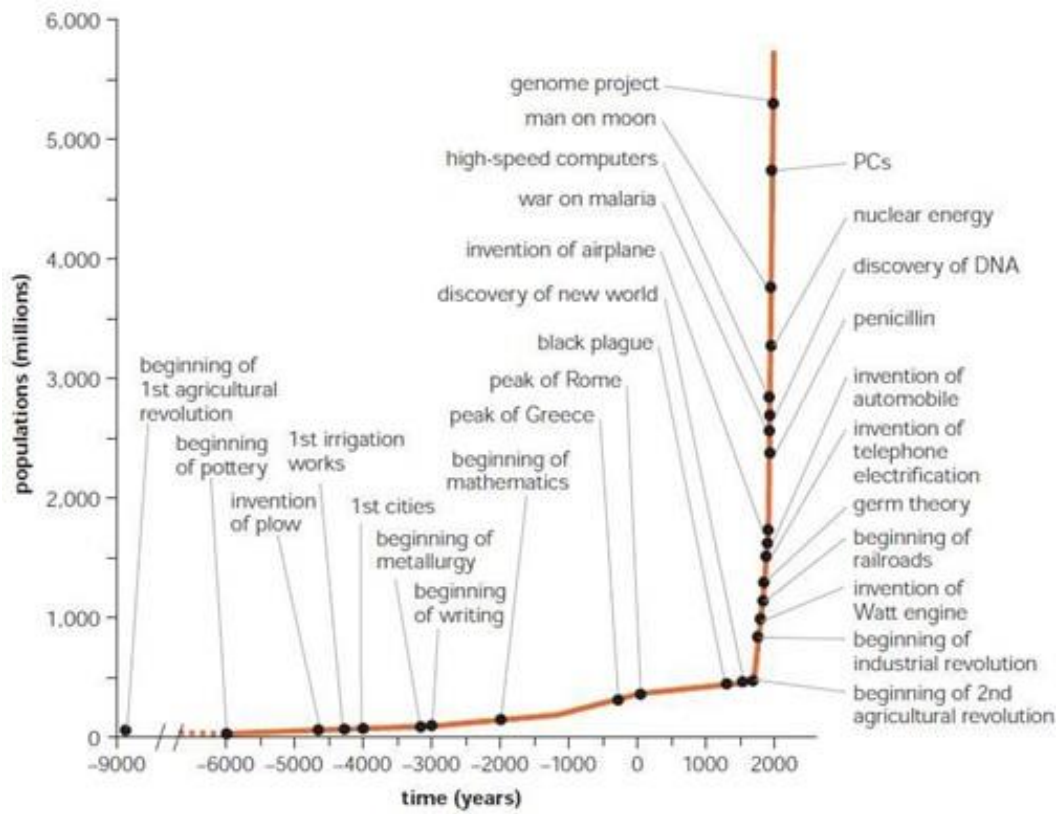
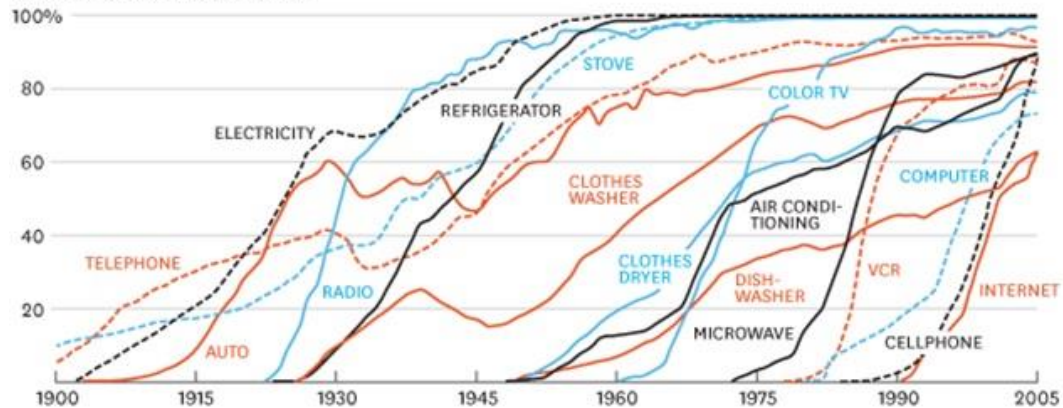


Figure 11 Technology versus population growth

CONSUMPTION SPREADS FASTER TODAY

PERCENT OF U.S. HOUSEHOLDS



SOURCE MICHAEL FELTON, THE NEW YORK TIMES

HBR.ORG

Figure 12 Consumption spread in the U.S

a traditional role (Pofeldt, 2016). Meanwhile, online platforms make it easier to find jobs, redefining the H.R. sector.

“A large-scale survey of the freelance economy shows that the number of freelance workers is growing quickly, with the number of U.S. freelancers hitting 55 million this year, up from 53 million in 2014 and 53.7 million last year. Freelancers now make up 35% of U.S. workers and collectively earned \$1 trillion in the past year, according to the ‘Freelancing in America: 2016’ survey released this morning by the Freelancers Union, based in New York City, and the giant freelancing platform Upwork, headquartered in Silicon Valley. The Freelancers Union represents 300,000 members” (Pofeldt, 2016).

Digital globalization is on demand and shrinks the world, shaping geopolitics, workplace, ethics, education and media. In addition, developed countries generate the most economical output through the tertiary sector. The service sector adapts well to the Internet in areas such as e-commerce and e-business. Presumably, then, in today’s increasingly decentralized world, it is easier to transition from offline to online.

Furthermore, the main consequence of the Internet and the price deflection of technology is connectivity. In 2007, for example, iPhone, Facebook, Twitter, Hadoop, GitHub, Android, Kindle, IBM Watson, Airbnb, genome sequence, fracking, renewable energy, solar and the cloud emerged and began to leave its mark on every aspect of life (Friedman, 2016). Such changes have had an impact on the social imagery of the knowledge economy, in that connectivity has become faster, easier, ubiquitous and free.

In addition to wireless communication technologies, airfares have generally become affordable for a broader range of people (Müller, 2016), which then further empowers computer literate people to pursue the location of their choice in which to work and live.

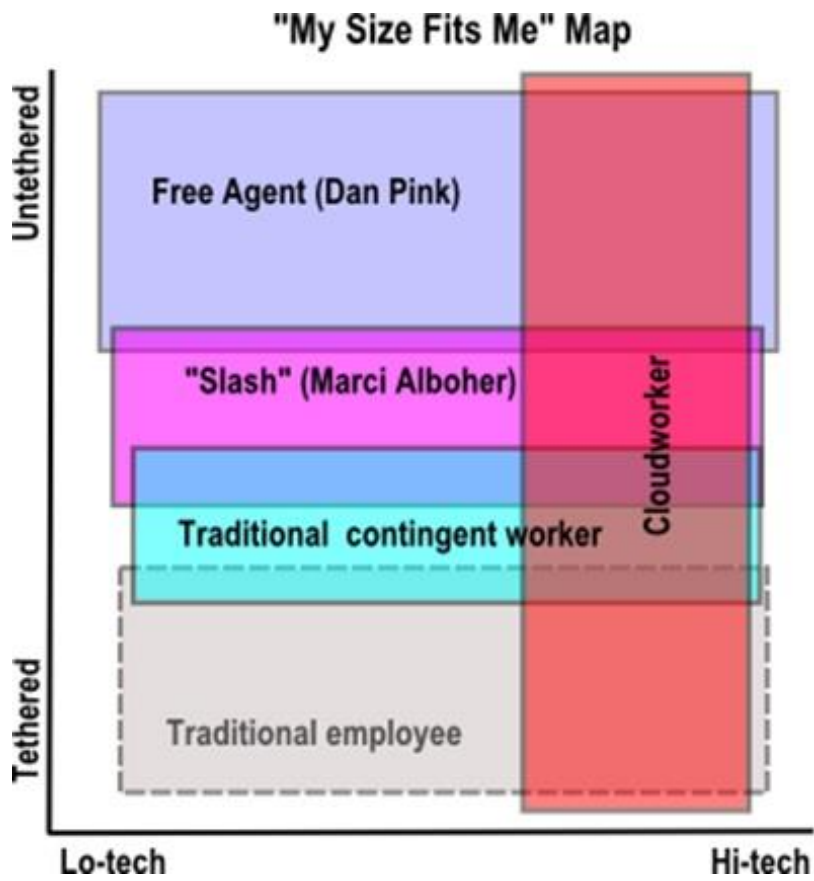


Figure 13 Cloudworker: "my size fits me" map

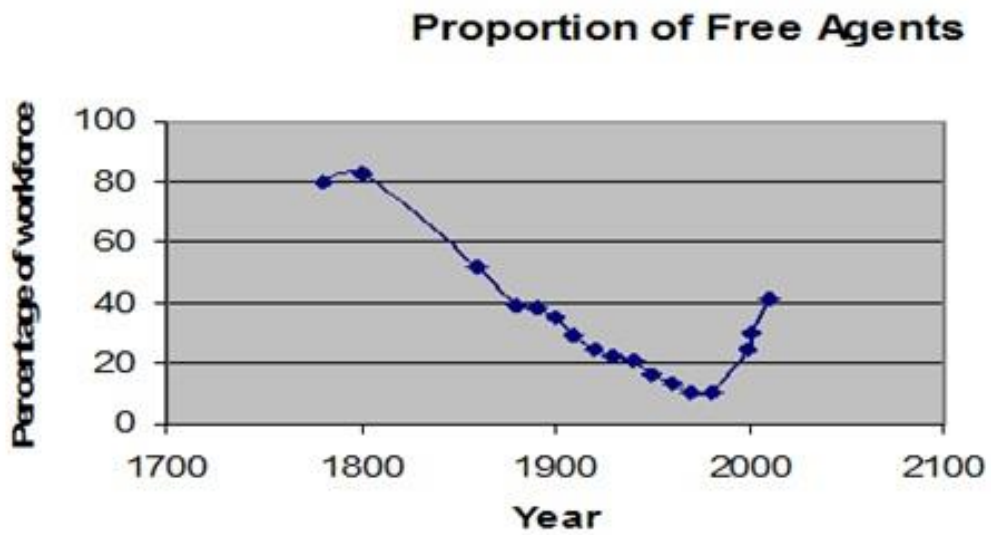


Figure 14 Proportion of free agents

Who comprises this generation of location-independent workers?

The Cloudworker Generation is comprised of location-independent freelancers, young entrepreneurs, online self-employed persons and/or start-up affiliates who work remotely and swap financially secure nine-to-five jobs for a location-independent and self-determined life (Müller, 2016). Research literature refers to these people as “digital nomads”, “neo-nomads”, “global nomads”, “modern nomads” and “new nomads” (D’Andrea, 2006).

“(. . .) a nomadic knowledge worker – that is, a creative, imaginative, and innovative person who can work with almost anybody, anytime, and anywhere. Industrial society is giving way to knowledge and innovation work. Whereas industrialization required people to settle in one place to perform a very specific role or function, the jobs associated with knowledge and information workers have become much less specific in regard to task and place” (Moravec, 2013).

While a variety of definitions of these epithets have been suggested, many of these focus too heavily on the traveling lifestyle aspect. This thesis opts for the Cloudworker terminology, which is more associated this generation’s use of on-demand technology. Venkatesh Rao (Rao, 2008) first defined this term and associated with the choice of a size-fit career path and lifestyle (figure 13).

In Figure 13 Cloudworker: “my size fits me” map , Rao explains the x-axis represents the level of the worker’s dependence on technology for economic production, while the y-axis represents the degree to which the worker is tethered, financially, to a single institution. The Cloudwork-terminology differs from other designations primarily in that it emphasizes the technology-dependent nature of this worker. Therefore, in this thesis, this family of terms refers not only to those who travel (i.e. nomads) but to those who are untethered workers.

“Cloudworker is a term coined by blogger Venkatesh Rao. Rao describes a Cloudworker as: Someone who uses on-demand technology and collaboration tools, such as unified communications, to work anywhere and anytime, and uses the

resulting freedom to enable a my-size-fits-me career path and lifestyle” (Rao, 2008).

Although it is typically associated with IT careers and designers, the term Cloudworker can be linked to anyone who leverages technology to achieve the necessary freedom to pursue a lifestyle that best suits their needs. For example, Uber drivers might be considered a sort of Cloudworker, since in contrast with the fixed municipal license of traditional taxi drivers, those who drive by the app can have the choice to be borderless. Traditional professions such as journalism, teaching, writing, photography, marketing, realty, translation, customer service and commerce are being transformed into untethered positions. Furthermore, new professions that include designers, data analysts, social media managers, video editors and programmers are also being created which could also work with a degree of location independence.

Although the number of those who are untethered is intrinsically difficult to measure, evidence demonstrates that this number is on the rise, which is yet another reason for the Cloudworker Generation’s relevance.

“By one estimate, telecommuting has risen 79 percent between 2005 and 2012 and now makes up 2.6 percent of the American work force, or 3.2 million workers, according to statistics from the American Community Survey” (Tugend, 2014).

The importance of this new actor in the network society further resides in its borderless characteristic. The barrier to “exit” a place is lower when compared to the location dependent workers. So, the most interesting aspect of a society that can have an income geographically independent of its location is that the true social imagery being drawn is in fact a society that vote with their feet. As this portion of society becomes increasingly significant, it will have a greater and greater impact on how people organize themselves, because they will be able to opt out of their current location much more easily than before. Those who do not agree with the next social distress, such as uncontrolled migration or economic or political crises, can simply leave and seek other likeminded communities.

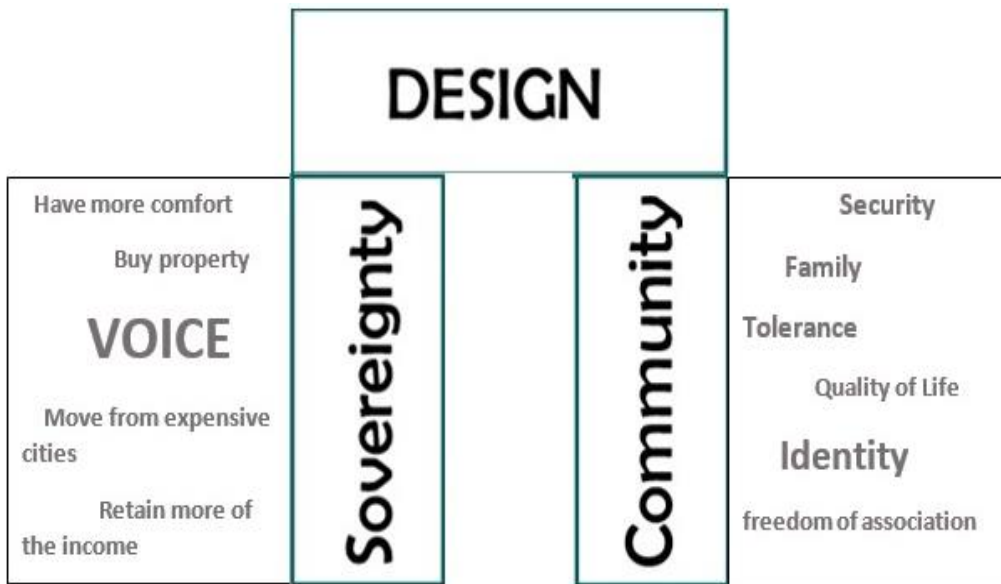


Figure 15 Design foundation.

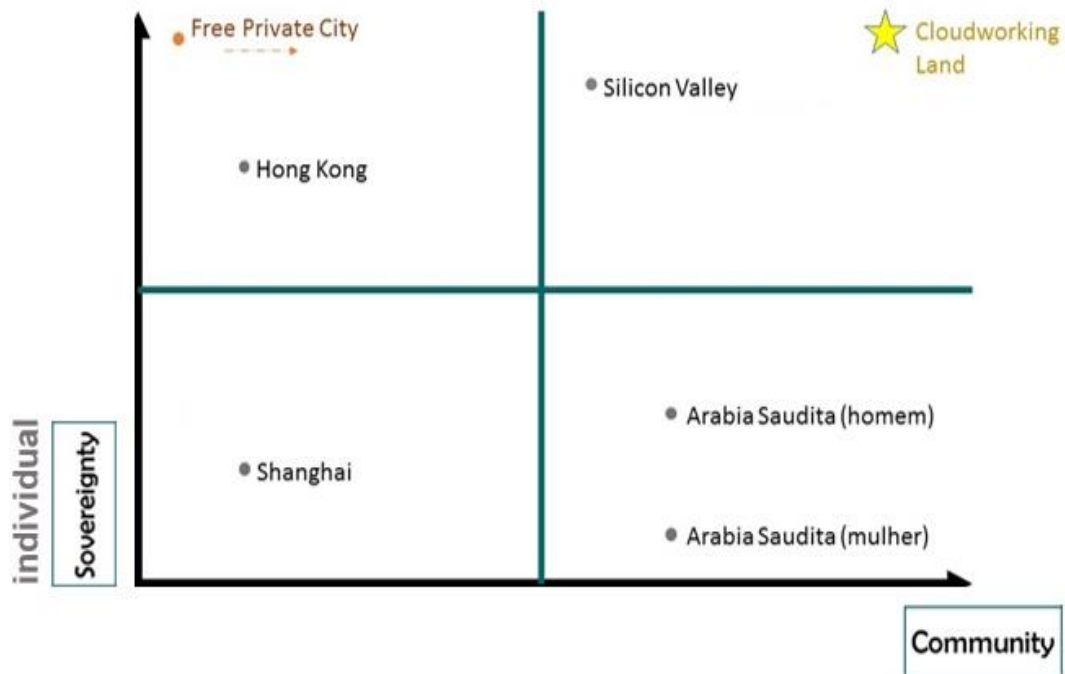


Figure 16 The Cloudwork land.

Individual sovereignty and community are the two pillars that will successfully attract workers of this kind (figure 15). Therefore, the design built on top of those solid foundations is more likely to compose the “Cloudwork Land”, with high degrees of community and high degrees of individual sovereignty⁸ (figure 16). Overall, this thesis highlights the location independent “exit” possibility to attain “voice” and search for a likeminded group gathering.

2.2. From a stricter view to a more flexible alternative.

2.2.1 Overview

Flexibility in work, life, learn and play is the second parameter shift, and this too is observable on two levels: space (1) and over time (2).

The first level explains the differences on organizing work, live learn and play, prior and after industrialization. It understands these activities were more fluidly interconnected on the space before Industrial Revolution. It further recognizes that technology enables a more naturally organization of the activities again in the Cloudwork Generation. Also, it introduces the Foucault’s concept of the two types of spaces: utopias and heterotopias. It identifies a transition from single-use zones tied to both utopia and industrialization, to a Cloudworker city concept, which would be related to heterotopia. It represents this slow shift through schemes in which work, live, learn and play progressively blend into space.

The second level explains the flexibility over time. It understands work, live, learn and play is not static according to a schedule and reinforces that the switch of these activities happens naturally across the week and over the life span. It explains the potential intergenerational concept across time in the Cloudworker Generation,

⁸ “ (...) Schmitt's famous definition of Sovereign is who decides on the state of exception: If there is some person or institution, in a given polity, capable of bringing about a total suspension of the law and then to use extra-legal force to normalize the situation, then that person or institution is the sovereign in that polity” (StanfordUniversity, 2014).

in which exemplifies the family as a basic social unit, highlighting the Mumpreneur phenomenon.

2.2.2 Flexibility in the space

Before industrialization, most people were involved in agrarian activities and were self-employed. At that time, only the Church, the Army and the State were large enough organizations to have their own values of hierarchy, centralism and command. These values served as reference and later extend to large business ventures (Dzidowski, 2014). The family, therefore, was the basic social unit (Cowan, 1976), and the switch of activities would happen more naturally throughout the day and most frequently within the same space, namely, the house and farm.

Following Industrial Revolution, this period in history encouraged the separation of human functions in an effort to increase specialization and efficiency. Specialization has been a powerful concept that brought society to an economy of scale. However, it had visible and physical consequences on the structure of society. Modernist concepts based on rationality and orderliness thus proposed dividing the city in specialized mono-function zones, which would be an allusion to the efficiency of in the factory. With the growth in independence from location, technology now allows people to organize themselves more naturally again in the space.

“The network enterprise has very substantial spatial consequences. The most important is a return to the work-living arrangements of the pre-industrial age or of the period of industrial craft work. Interestingly, these arrangements for working and living in the same place often take over the old industrial spaces, transforming them into informational production sites” (Castells, 2002).

Following industrialization, modernist concepts sought to establish a sort of utopian structure upon society, most notably represented in the Radiant city (Corbusier, 1967). The aspiration of orderliness, standardization and rationalization resulted in large mono- function zones represented by Figure 17, in which work,

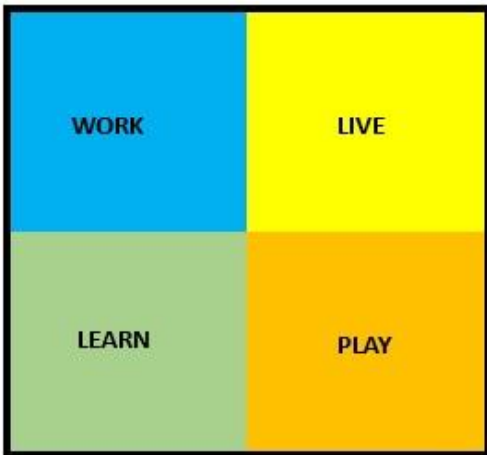


Figure 17 City divided in mono functions zones.

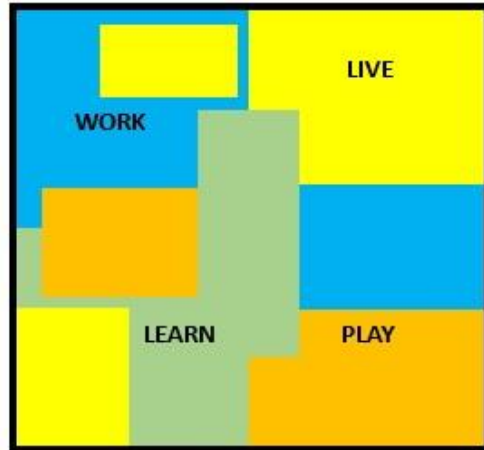


Figure 18 Effort to mix of primary uses.

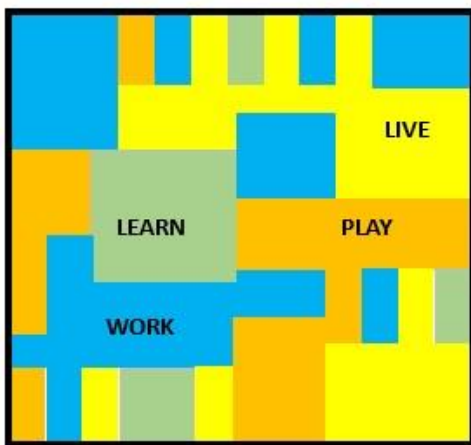


Figure 19 Strengthen of centralized institutions.

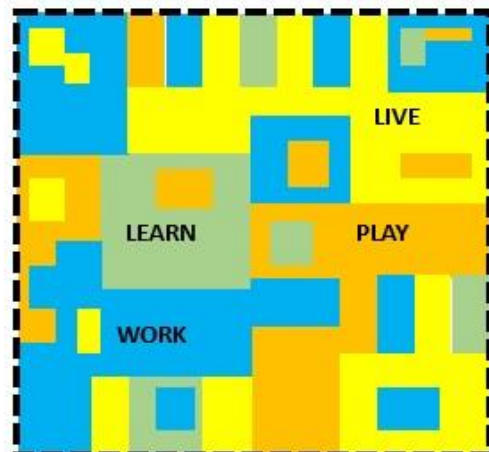


Figure 20 Multiplex use- industrial scale- mix inside the buildings.

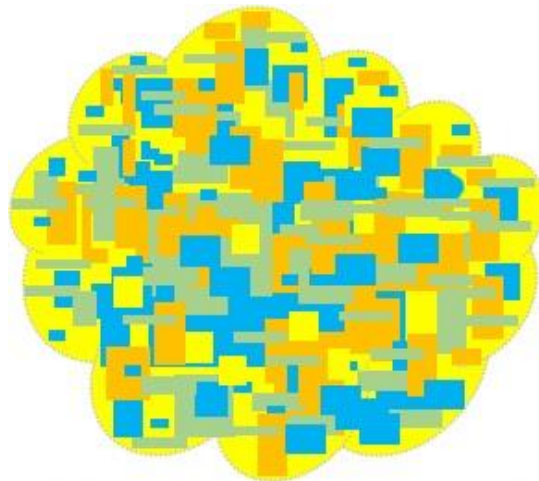


Figure 21 The Cloudwork city.

live, learn and play activities were done in different places throughout the city. One would thus only reside in designated residential areas or work in work areas. Brasilia, the capital of Brazil, is perhaps the example *par excellence* of this theory in action, where the division of the urban fabric between the civic space and the residential areas was highly deliberate. (Macedo & Ficher, 2013)

Since the strict separation of land decays into a blueprint for placelessness,⁹ the next figures represent different degrees of mixed spaces, or as Michel Foucault calls them, *heterotopian* spaces (Foucault, 1998 [1967]). According to Foucault, a heterotopia is a space in which multiple different types of phenomena, experiences, conditions or states merge and exist simultaneously alongside one another. The space is interactive, “*it is a mutable arena in which life happens*” (Putthoff, Forthcoming).

The scheme 18 (figure 18) represents an effort to mix primary spaces with a higher density of populations and different activities on the ground floor. Figure 19 illustrates the centralization, not necessarily between regions, but in institutions or buildings due to the economy of scale and the strengths of corporations in general. In contrast, Figure 20 represents the progressive mix of activities within the same space on a huge scale, including multiplex, shopping centers and massive mixed-use developments. Globalization also helped the mix of activities, since it has begun to make the borders of the cities more permeable as well, represented by the dashed contour on figure 20.

The Cloudworker City (figure 21) is the next step in the process of the multi-level blending of functions. Indeed, in contrast to the philosophy of industrialization, technology will enable Corporations and Institutions to be more efficient through decentralization. What is more, huge structures to accommodate learning, working, living or playing will no longer be absolutely necessary. The city will be even closer to a heterotopia, where various inner bounded sub-spaces may have different activities happening simultaneously. Flexibility in work, live, learn and play is intervened and entangled much more fluidly in the Cloudworker

⁹ Places that lack a "sense of place" are sometimes referred to as "**placeless**" or "inauthentic."

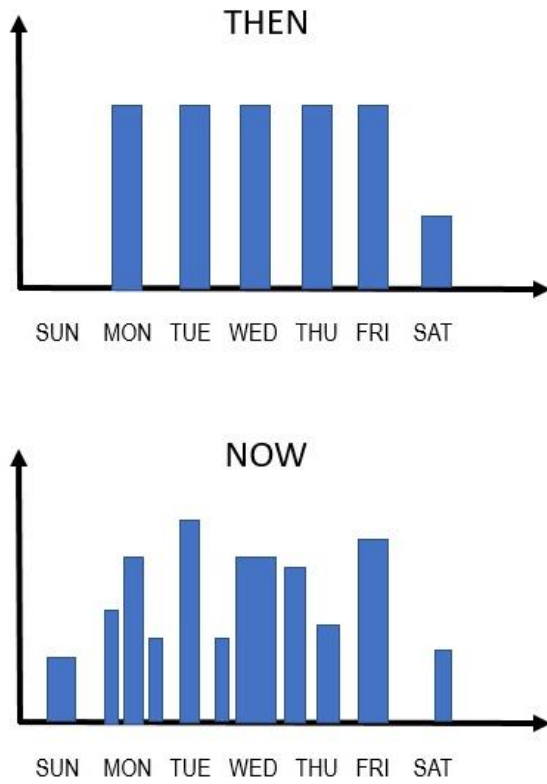


Figure 22 Context switching week

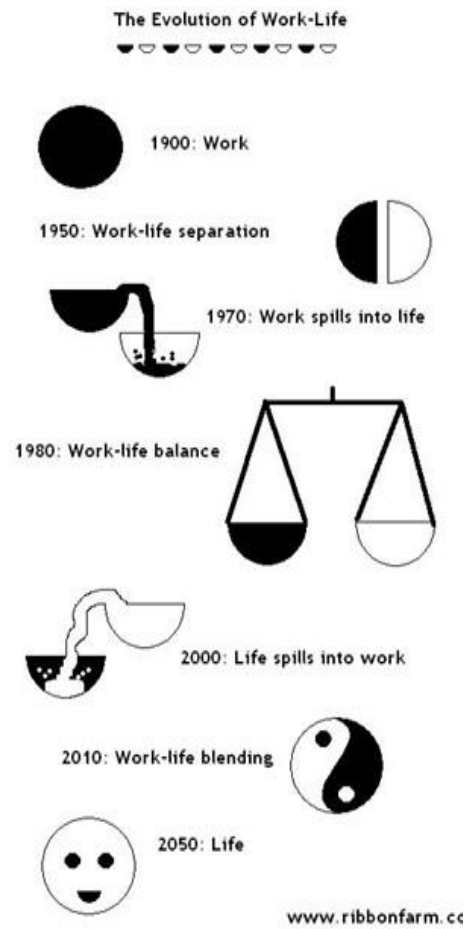


Figure 23 Work-life-blending

Generation, and they contribute, in fact, to the identity of the space on a community level.

2.2.3 Flexibility in time

The second level of analysis is the blending across time. As the Cloudworker Generation do not necessarily rely on a standard 9am-5pm framework, there is room for a more flexible schedule. Therefore, the work-life framing is not as static and well defined as before, allowing for more fluidity in workers' division of their time (figure 22).

During the twentieth century, trends in family composition changed, unnaturally separating social institutions of family and business (Aldricha & Cliff, 2003). Work, live, learn and play became disconnected, provoking changes in society that centered on machine technology and leading to the decline of intergenerational contact. As Aldricha and Cliff state:

“The media frequently contains statements announcing the “death of the family unit”—a claim based not only upon the declining prevalence of traditional family households but also upon data documenting the deterioration of social bonds within even intact nuclear families” (Aldricha & Cliff, 2003).

However, technology allows those who no longer rely on work in a conventional office to switch between work, live, learn and play throughout the day more easily, deciding freely when and where to work. This characteristic empowers families once more to be the basic core unit of society. For example, a couple who works online for different companies could still choose to work from the same coworking space, a luxury unavailable to those whose work must be conducted within a corporation's headquarters.

The impact of parental investments on child cognitive development is crucial, especially in the early years of the life-cycle. According to Ruhm (Ruhm, 2004), maternal employment during the first three years of the child's life has a larger negative impact on reading and mathematics achievement than on that of five- and six-year-olds. However, the ability of parents to be directly involved in

their children's activities is constrained by employment and time. Working online offers alternatives to the high cost of childcare, the inflexibility of typical work schedules and to the often-inhospitable workplace attitudes toward maternity.

These factors encourage the “Mumpreneuer”¹⁰ phenomenon.

“Becoming self-employed was preferable to being perceived as a housewife as it enabled identification with a discourse of intensive mothering, facilitating far greater engagement with children than was possible during previous corporate lives” (Carrigan, 2012).

Hence, technology and entrepreneurship are used as routes to facilitate a lifestyle that allows parents to earn an income through a business carrier and to be more participative parents. That reinforces the possibility of intergenerational contact across life span.

2.3 Summary of the chapter

To summarize the present chapter on Paradigms Shifts, it has been observed, firstly, that decentralized technologies are successfully reshaping society on multiple levels, including Governance, Urban and Ideology. Secondly, the Cloudworker's flexibility is intrinsically associated with their sovereignty to create and reinforce communities comprised of likeminded people. Third, the blend of work, live, learn and play is portrait across spaces and over time, which relates respectively to heterotopia spaces and the switch of these activities in a more intergenerational context.

After understanding the underlying factors that underpin the emerge of the Cloudworker Generation, with their relevance and characteristics, the following chapters are dedicated to visualizing the consequences of those shifts. They further seek to demonstrate how work, live, learn and play are being adapted from a factory model to converge in a community workplace such as a Coworking Space, in which

¹⁰ This term is used here to refer to a woman who combines enterprise and motherhood. (Collins English Dictionary)

different elements in such spaces help to strengthen the likeminded set characteristics.

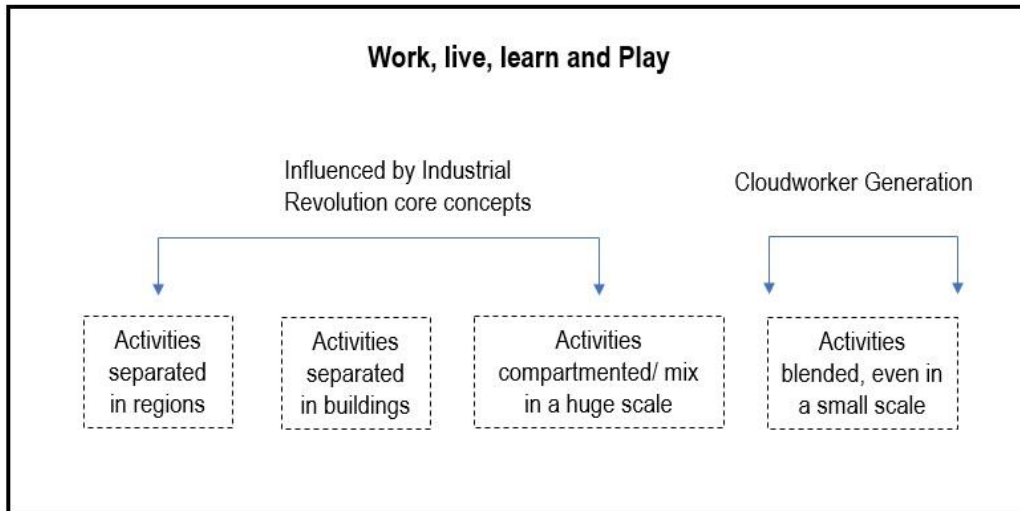


Figure 24 Different ways to organize activities

Chapter 03. State of Art

3.1. Overview

This thesis identifies four concepts to organize work, live, learn and play (figure 24). First, these activities can be separated in regions, as in the case of the Radiant City and Disneyland. Second, these activities can be strictly separated inside buildings, as can be seen in different types of offices. Third, these activities can be intermixed together on a large scale, as in the case of the so-called Googleplex, which fuses work and play into one. Finally, it can be blended in a singular space, as in coworking spaces, though on a much smaller scale. This latter example will be further explored in Chapter 04.

The present chapter focuses on the first three concepts and seeks to demonstrate how all those examples imitate, on certain levels, the factory features of industrialization.

3.2. Activities Separated in Specialized Regions

Technology is a major driver of architecture and urban transformation. The Industrial Revolution was a period of exponential unpredictable growth in technology that profoundly changed every aspect in the life of humanity. After industrialization, work, live, learn and play tend to be divided into specialized regions. The most representative example of this zoning is the utopic Radiant City put forth by Le Corbusier (Corbusier, 1967).

Anchored in the core technological concepts of his time, Le Corbusier's model treats the city as a factory. The Radiant City was based on a geometric plan, with a massive city center above the arteries (figure 26). It sought to propose a clean, rational and efficient alternative to existing cities and to promote activities rationally planned and organized in mono-function areas. As a result, he proposes a strict division of the city into commercial, business, entertainment and residential zones linked together by a vast underground system of trains (Merin, 2013).

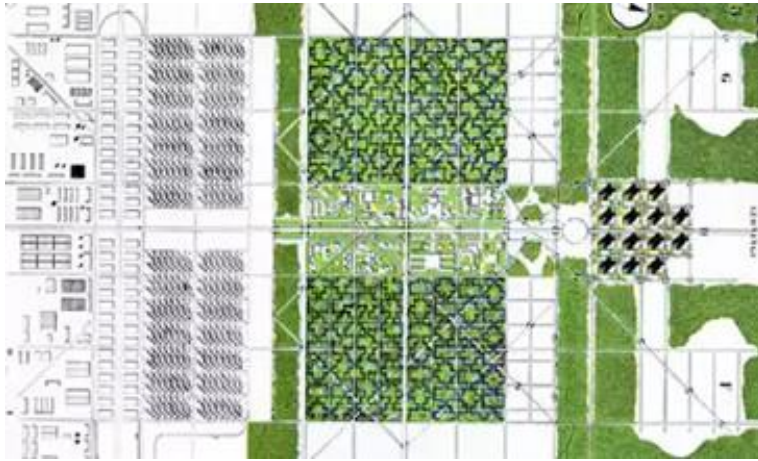


Figure 25 The Radiant City plan- 1930

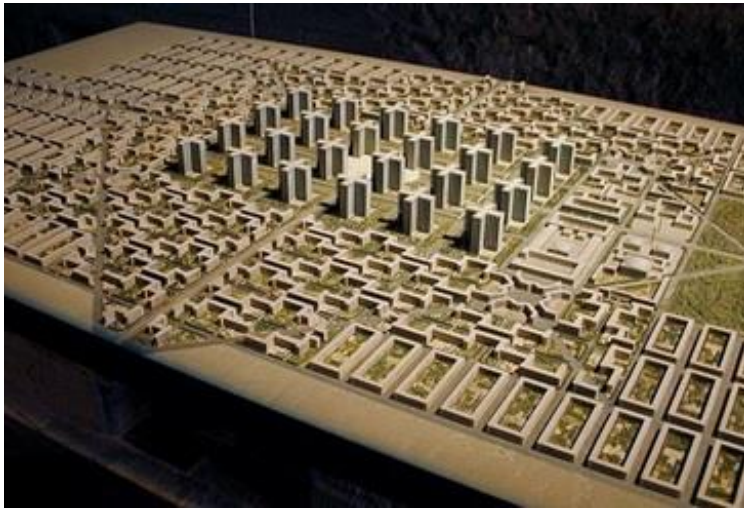


Figure 26 La Ville Contemporaine - 1922



Figure 27 La Ville Contemporaine -1922

“(…) The contemporary city was based upon a geometrically harmonious plan, with a rectangle containing two cross-axial streets meeting in the center, which was the civic and commercial heart of the city” (Gold, *A world of organized ease: The role of leisure in Le Corbusier's La Ville Radieuse*, 1985).

Le Corbusier’s design centers on the factory logic, because at its core are the concepts of standardization, rationalization and functionalism. To illustrate this point, his ideal city encourages prefabricated materials and mass production. It proposes steel and glass skyscrapers built to serve a city of three million residents (Angelidou, 2015), which would then require the use of standardized materials to attend a dense population concisely and efficiently. Despite the various proposals for such ideal cities that have emerged after industrialization, the Radiant City is still perhaps most widely noticeable (Gold, *The Death of Urban Vision*, 1984).

Overall, Le Corbusier’s urban vision was popular for three main reasons. First, his new ideas symbolized a break with the past, which was appealing after the social distress caused by war. Second, the physical imagery was accompanied by a powerful social imagery in the 1930s which aspired to fit in the modern man with universal function ideal (Gold, *The Death of Urban Vision*, 1984). Third, the proposal of high-rise buildings aligned perfectly with the centralization process pervasive in the twentieth century.

Despite the popularity, Le Corbusier’s ideas began to suffer increasing criticism with the advance of urban sprawl. According to Jacobs, the crude physical solutions, authoritarianism and lack of density on the ground floor could not reinforce community and diversity (Jacobs, 1961). Urban motorways, airports located in the city center and single-purpose land-use zoning have also drawn harsh criticism. Nevertheless, Le Corbusier’s model had a direct influence on the emergence of megalopolises in the twentieth century, and *“few architects have embodied the hopes and disillusionments of the Industrial age”* as he did. (Cohen, 2004)

The legacy of the Machine age can likewise be found in similar divisions of regions or large megastructures, many of which are still used for a singular activity.



Figure 28 An aerial view of Disneyland in 2000



Figure 29 Disneyland proportions



Figure 30 Disneyland California- Main Street

Built in California in 1955, Disneyland is an example of a region dedicated primarily to Play. It comprises an assortment of entertainment options, leisure activities and mass media, all of which were produced according to industrial standards. This thesis characterizes Disneyland as an example of Play Factory.

Interestingly, however, Disneyland reinforces play, not because it has rollercoasters, but because it treats architecture as a plot. It uses colors, theatrical stereotypes and architecture symbols to engage all the participants in an experience flow. King (King, 1981) notes the similarity of the park with a museum or archive, where it is possible to experience the popular taste embedded on the diverse themes inside the park.

“They are a very special kind of museum, of course-of past and future not as they were or will be but as popular taste has shaped and nurtured them in the collective imagination. The Disney “archive” of Americana is thus highly valuable as a display of popular thought on every featured theme” (King, 1981).

Disneyland is an example of a factory not only because of its monumental scale (expanding to about 100 acres) but for its production values. It accounts for faith in progress, industrial expansion, technological inventiveness, pragmatism and efficiency.

“While Disneyland is in one sense a temple of consumption made possible by leisure, surplus value, technology and consumerism, it is even more solidly based on the (American/Protestant) values of production: the work ethic, exploration, faith in progress, industrial expansion, technological inventiveness, pragmatism, efficiency” (King, 1981).

Disneyland has drawn criticism due to its focus on consumption. Klingmann, for example, reduces the park to an “Architecture as a product”¹¹ (Klingmann, 1998) while Julian Halevy considers “ ‘all Romance, Adventure, Fantasy, and Science’ to a ‘sickening blend of cheap formulas packaged to sell’ ”

¹¹ “Architecture as a product” receives its shape at the cross roads of opportunity created by the global collision of markets, media, culture and technology.

(Havely, 1955). Despite the critics of the commercial aspects of the park, the play activity is well represented in Disneyland. The park is designed to encourage imagination, exaggeration, nostalgia and popular concepts of history. The archetypal experience uses symbols, colors and distorted proportions to create a playful atmosphere that represents a collective memory for Americans and foreigners alike.

3.3. Activities separated in buildings: industrial scale

Like regions, activities can be separated inside individual buildings as well. For instance, offices are primarily dedicated to the work activity. Such buildings use symbols and materials to convey a businesslike message, with values such as transparency, steady progress, financial robustness and credibility. Even though they come in different designs and scales, some having more steel and glass than others, the primary function remains the same: they serve as workplaces, or homes for large offices with hundreds employees.

This thesis suggests that labor control is the main feature transforming such buildings into work factories. From a sociological point of view, the office configuration is not only a physical framework that symbolizes modes of organization, but it also works as a control device (Hofbauer, 2000). This attempt to reproduce social order in the workplace remounts to an early factory, where the foreman could effectively control time and supervise workers' tasks.

Indeed, there are different ways to impose a power structure in architecture. Hofbauer argues that “*one tends to find 'heads of department' located on the upper floors of office buildings, whereas manual labor is associated with the basement - the term 'shop-floor' hints at this*” (Hofbauer, 2000). This means upper levels were analogous to the brain of an organization, while the execution, the body, would occupy lower levels. Another popular way to represent status and hierarchy is to grant additional space to the leaders. It should be helpful at this point to analyze three different types of plans used to exercise managerial control. These include the open-plan office, the corridor office and the office landscape.



Figure 31 Toronto Offices



Figure 32 São Paulo Offices.



Figure 33 Brussel Offices.



Figure 34 Paris -La Defense Offices



Figure 35 London Offices

3.3.1. The open-plan office

This model holds the most visible factory features: standardized tasks, division of labor and little privacy for workers. The assembly line style of desks is considered less productive and unfriendly by staff below supervisor level, due especially to the constant noise, lack of visual and sound privacy, limited space and no indication of staff status.

However, from the point of view of supervisors, the advantages are generally related to the flexible layout, space saved and easy communication, supervision and organization that are inherent in such workspaces.

“In fact, it is regarded as appropriate for work to be organized according to Taylors principles of management, with standardized tasks, division of labor, and little or no discretion for workers. The design principle at work is apparently to take full advantage of the space available by lining up individuals in ordered rows of desks” (Hofbauer, 2000).

The open plan became standard especially in the 1950s. In general, workers were forbidden to adorn, decorate, modify or rearrange their environment. This lack of colors and personalization contributed to a unified look, no doubt a further reference to industrial standardization.

3.3.2. The corridor office

The corridor office concept is characterized by its *“bleak corridors with walls whose only purpose seemed to be to provide a framework for dozens of numbered, nameplated doors”* (Duffy, 1992). Although criticized for its waste of space, the corridor office provides the employee with more privacy, individualization and control of the environment than the open plan office. For instance, in the cells formed by single rooms, employees have more sovereignty to personalize their own space and control their own light switches and windows. On the other hand, when small offices are shared, they offer poor conditions for mental concentration (Hofbauer, 2000). Furthermore, partitions are expensive to move,

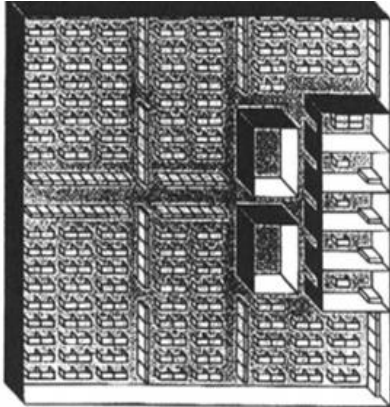


Figure 36 Open plan office



Figure 37 Open plan office perspective

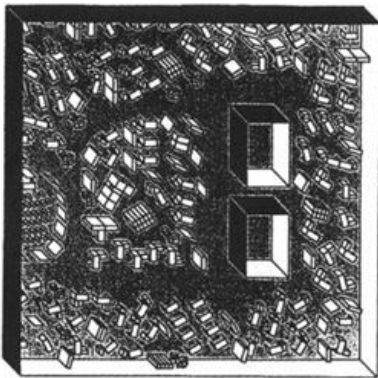


Figure 38 Burolandschaft office (office landscape).



Figure 39 Burolandschaft office perspective

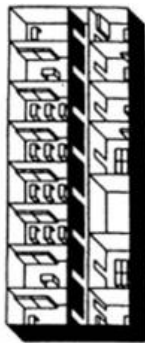


Figure 40 Corridor office



Figure 41 Corridor office perspective

which further limits the flexibility of the layout and inhibits informal contact, neither of which is socially desirable.

3.3. The landscape office (Burolandschaft)

This concept emerged in Germany in the late 1950s, when management discourse was changing to a more Human Relations approach (Dzidowski, 2014). Although still rooted in the works of Taylor and Ford, the focus was not so much on the clerk tracking the routine tasks, but on a team approach organized through an informally dispersed layout (Dzidowski, 2014). The group was considered the foundation of the organization, therefore, work stations and the grouping of desks began to emphasize proximity and to be more organic, following a more complex structure in order to impose order. However, as Hofbauer states: *“they are no less artificially constructed, that is, shaped by organization culture and design concepts”* (Hofbauer, 2000).

In contrast with the open plan design, where labor control relies on direct control, the landscape office concept empowers peer-review and self-monitoring. Peers are responsible both for organizing tasks and enforcing standards and norms of behavior at the same time. Although probably appealing and more human-egalitarian oriented, such offices still serve a hierarchical structure, usually fictional or divisional (Dzidowski, 2014).

Therefore, all three examples embed managerial control within the architectural design, giving employees little agency with regards to time, location and personalization. Once again, the creation of such spaces was related to the uniformization tendency, efficiency, and control, intrinsic to the factory concept in the Industrial Revolution.

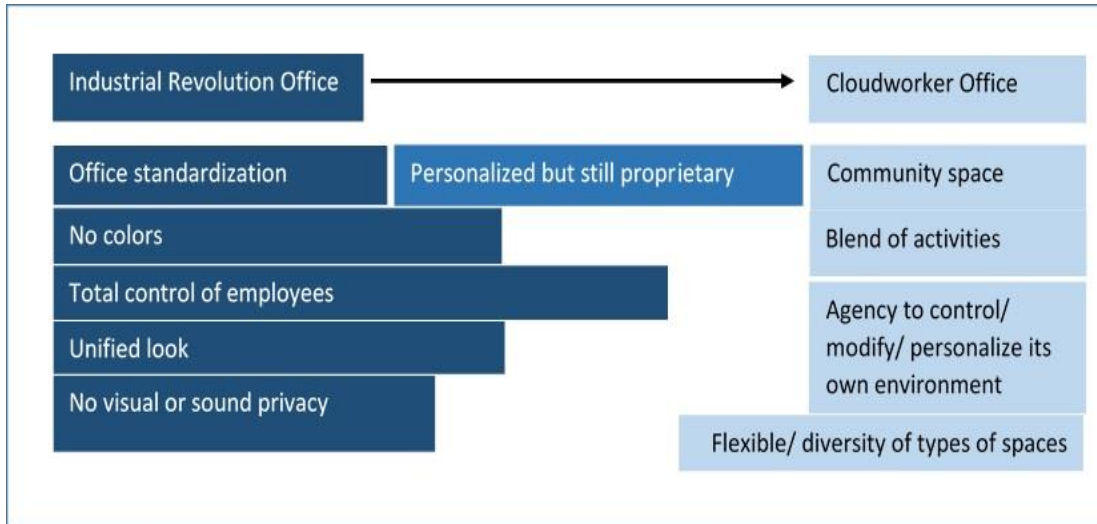


Figure 42 From industry to Cloudworker -Features

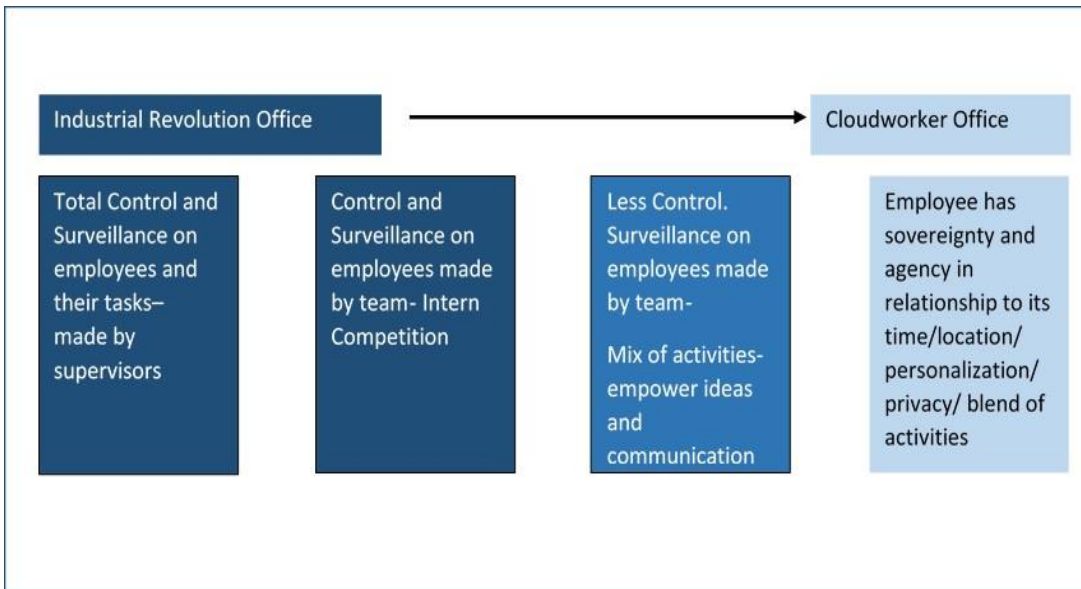


Figure 43 From industry to Cloudworker- Power structure

3.4. Activities mixed within Buildings: Googleplex- Play and Work

This section turns now to an examination of an instance in which the various activities are mixed within the same building. Built in California 2005, the Googleplex incorporates play and fun into work and represents what one might call a WorkPlay Factory.

From the assembly line style of desks to a sort of hospitality-work atmosphere, the office as a playground embraces a work environment designed to induce creativity and collaboration (Dzidowski, 2014). The design of this workplace includes innovations such as slides between floors instead of stairs, relaxation zones and onsite arcade games in the attempt to promote work-life balance within a singular space.

This “Disneyfication” of the office brings symbols, colors, new material, personalization and distortion of proportions into the workplace. The interior design is conceived as an urban setting, where inner neighborhoods make the headquarters feel more like a town (Young, 2012). The architects identified different zones from hot to cold, depending on the level of social interaction they encourage. For example, a hot area is an activity zone, which is composed of a kitchen, lounge and library. Usually the neighborhoods share common hot areas, which are also called landmarks and represent the vivacity of Googleplex (Chang, 2006). As Chang writes:

“the architects came up with a list of 13 different zones and arranged them from hot (‘clubhouse’: pool table and lounge area) to cold (closed workrooms), depending on the level of interaction they encourage. Each floor of the building was divided into five or six flexible neighborhoods separated by ‘landmarks’, the shared public spaces that are the center of Google life” (Chang, 2006).

The design also attempts to democratize the hierarchy with cubes, yurts, huddle rooms and laptops everywhere-standard, creating both concentration zones and activity zones. In addition, the company is open to establishing dialogue with staff by allowing them to personalize spaces, offering them a variety of writable surfaces. By allowing employees to bring photos and freely rearrange the furniture,



Figure 44 Googleplex.



Figure 45 GooglePlex.



Figure 46 GooglePlex



Figure 47 GooglePlex.



Figure 48 Googleplex.



Figure 49 Googleplex

the company reinforces visual and experimental identities, corporate values and social interaction.

This playful atmosphere makes Googleplex seem like a stage set, a full-scale mock-up filled with foosball, pool tables, volleyball and gyms integrated into the office space. There are events as meditation group section, film, wine tasting or salsa dancing to complete the promise of work-life balance. These well-designed spaces integrate educational, communal, recreational and food facilities, which allows teams to improve information flow while enjoying a relaxation area. The focus on the office design as a tool to mirror informal relationships or emphasize social bonds among team members seeks to create an attachment within the employee to the workplace as “second home” (Hofbauer, 2000). From complimentary sweet snacks to heated toilet seats, everything is provided so that the employee never needs to leave the massive 500,000 sf (46.451,52 m²) Google island.

As described by Fuchs and Trottier, both the early factory and Googleplex require the workforce to create economic value and both expect intensive engagement from the employee. The difference between the two is that the latter focuses on ideas to generate value rather than physical labor (Fuchs & Trottier, 2013). Even still, when employees must attend office (face time), they do not have agency over their own time or workplace situation and are still locked into a factory framework. Labor control is still present, even if it is done by peers, reframed and disguised by a focus on recreation and nourishment and the promise of a healthy work-life balance. Fuchs and Trottier explain:

“The work conditions in companies like Google are different than the ones described by Engels in the 19th century factory: the workplace seems at the same time to be a playground and an area for relaxation. But both Google and the 19th century Scotch manufacturer Engels described have one thing in common: they are profit-making companies that require a workforce to create economic value, and in turn need these value-creating activities to be secured” (Fuchs & Trottier, 2013).



Figure 50 GooglePlex.



Figure 51 GooglePlex.



Figure 52 Floorplan, building 43 GooglePlex



Figure 53 Section, building 43 GooglePlex

“Participatory management promotes the use of incentives and the integration of play into labor. It argues that work should be fun, workers should permanently develop new ideas, realize their creativity, enjoy free time within the factory, etc. The boundaries between work time and spare time, labor, and play, become fuzzy. (...)” (Fuchs & Trottier, 2013).

The transition to a knowledge-based society has enabled Googleplex to maximize innovation through the input of ideas and knowledge in order to meet the ever-faster deadlines. By way of contrast, the early factory wished to maximize physical labor and worker engagement with machinery. As Trottier argues: *“while foosball tables seem preferable to physical beating or direct supervision, both are efforts to totalize the worker’s engagement with the company”* (Fuchs & Trottier, 2013). Therefore, despite the playful space, surveillance happens on a more physiological level. The ultimate existence of corporate architecture is part of a business strategy to ensure that workers accomplish duties under the same proprietary umbrella. In other words, Googleplex resembles a theme-park factory. *“Taylorism has not been replaced, we do not live in an age of post Taylorism, rather we are experiencing an extension and intensification of Taylorism that is complemented by new ideological forms of workforce control. The emergence of workplayplaces is a tendency in contemporary capitalism that interacts with established forms of work and play”* (Fuchs & Trottier, 2013).

3.5 Summary of the Chapter

The present chapter has sought to demonstrate different ways in which work, live, learn and play, inspired by the core industrialization values, were divided through the design and utilization of space. It has highlighted the similarities between contemporary spaces and the early factory in the attempt to ensure progress, industrial expansion, technological inventiveness, pragmatism, efficiency and work control. It draws some observations about differences and similarities in the workplace from an industrial to a knowledge-based society.



Figure 54 Googleplex



Figure 55 Googleplex



Figure 56 Googleplex

Chapter 04. Case Study

4.1. Overview

The present chapter explores coworking spaces. Remote workers who thrive in those places have sovereignty to choose their own community and location, restricting labor control only to goals and online platforms. They have authority to decide from where to work, which can truly contribute to the design and the participatory decision making on those spaces, in contrast within the office environment in traditional corporations.

Home of the Cloudworker Generation, these spaces offer a more collaborative environment rather than a competitive one. In such spaces, remote workers are not under the control of peers sitting in the next desk, for example. On the contrary, those spaces assemble multiple people from different backgrounds working on diverse projects from a wide variety of companies.

Usually design typically has minimal influence on workers' reasons for choosing to accept a job in a traditional company. In fact, many workers only see their workplace after succeeding the initial interview. However, the physical design of coworking spaces works as a visit card and offers the potential members an identity and the promise of a supportive community. In addition, when remote workers contribute to this design, it is not motivated by any corporate policy, but because they feel comfortable and part of a community.

Three reasons therefore make coworking spaces more like community spaces than workplaces: First, because they offer an identity from where a likeminded community can meet and exchange work experience. Second, because those spaces generally allow members the freedom to personalize and control their environment. Third, because they offer a speed exit, since many spaces have months, weekly and even daily tickets, coworkers can rent a place according with their needs.



Figure 57 Scheme plan Cru



Figure 58 Shiny colors CRU art shop



Figure 59 Serene atmosphere CRU Cowork

Every member of a coworking space has sovereignty to decide which space best fits its working needs. This authority is a fundamental characteristic for communities to emerge. This chapter further explains the design features of these types of space by investigating three pertinent case studies.

4.2. The CRU Cowork, coworking space in Porto, Portugal.

The year 2012 saw an increase in makers, artists and designers, simmering with wonderful thoughts and new ideas, in the heart of Porto. However, many of them had the same complaint: lack of a workplace. Tania Santos, founder and manager of the CRU Cowork, along with Miguel Ferreira, viewed this gap as an opportunity for a business. Santos thus had the idea to create a better workplace condition for this vibrant community, where they could connect, exchange experience and outflow their products. As she states:

“I was part of this movement and met a lot of people with those characteristic and I realized that as I, those people did not have a place to work, they worked from home with poor conditions for the creative activities that they developed. They did not have much space, their houses were small, so usually they had to take away everything from the dining table to put a sewer machine, their watercolor pencils, and there was this constantly put in and out. Furthermore, I realized that they did not have places to test and have feedback of their products, except for those fairs” (Santos, 2017).

The CRU Cowork, located at 211, Rosario Street, in the artsy neighborhood of Porto, Portugal was built to accommodate the needs of this emerging community. It offers approximately 400 square meters for 30 independent workers and is home to creative minds, generally composed by photographers, designers, artists, illustrators, architects and marketers. The art shop is a complement to the community and helps the coworking space to be visible, profitable and affordable. It works as a transition space between the street and the workplace. It empowers those who create products inside the coworking, allying both production and sales. Furthermore, the shop allows clients the opportunity to contact the artists directly and obtain exclusive and personalized products. Thus, Santos explains, *“From the*



Figure 60 CRU Cowork Panorama



Figure 61 Atelier work cell

client's perspective, it [the art shop] adds value to know the products are produced, conceived, and imagined in the coworking space” (Santos, 2017).

How the identity is reflected in the architecture

To find the right property, Santos identified elements that would best attend the needs of this particular audience. One important factor was the location, since it should be built in the art neighborhood of Porto. The other essential attribute was a courtyard, which would allow people to connect to the environment. As she explains:

“I was sure that this idea was related with the space. I knew what type of space I needed and what characteristics it should have and one of them, which was irrevocable was a courtyard. I also thought that a coworking with these characteristics should be open in this area of the city, because as the art spot, where it assembles the art galleries and the most creative and alternatives projects of Porto” (Santos, 2017).

Regarding the interior design, the founders planned both the coworking space and the shop with the help of an architect called Pedro Biscaia. The brand identity of the shop reflects a more noble and contemporaneous design, while in the coworking space, they sought to create a more comfortable atmosphere, where members could feel at home. As an example of this, the shop has sparkling colors reflected in the red carpet, in the wall curtain decoration and in the custom-made iron structure, which has removable shelves. This shiny furniture allows different flexible arrangements, according to the available products. In contrast with the bright colors of the shop, the coworking space has a serene atmosphere with neutral colors, a beige carpet and light green and light blue panels in the wooden furniture. *“We would like the shop to reflect a noble and contemporaneous look, where the products shine, and it should be closer to design than craft made, therefore we tried to have an architectonic aspect. However, at the coworking space, we would like to have a more comfortable atmosphere, we would like a place where people could feel at home” (Santos, 2017).*



Figure 62 Multifunctional courtyard



Figure 63 Multifunctional courtyard

Furthermore, privacy was carefully designed in the CRU Cowork. Despite members sharing an open space, Santos understood that some privacy was necessary to foster creativity. Therefore, the founders elaborated an atelier cell structure to avoid immediate eye-contact between members. The wood casting work cells were especially helpful, because they allow workers to store their materials and personalize their space (figure 61). As Santos reinforces, this coworking space could not be a clean and white space. After all, it is also a place for manual art production, and the variety of brushes, snips and sketches coworkers bring along would otherwise make it quite chaotic.

“We thought it would make sense for this community to work in an open space, but in the other hand, have its own island, like a work cell. A cell in which people could store their materials. We knew those people bring a lot of materials with them and are not only books and organized things, but also kneaded papers, brushes in water glasses, snips, tissues etc. Therefore, we could not have a white clean space, because it would be very chaotic” (Santos, 2017).

Design across time: the community contribute to the design of the place

In 2012, the coworking space concept was very recent and unusual, so the CRU Cowork began with just four working cells. As the cells became occupied, two more were built, until arriving at its current configuration.

“As we started with 4 ateliers, we had a huge lounge with games and puffs. The space to eat and rest was bigger than the space to work. Beyond the obvious grow, we have always been very attentive to the needs and suggestions that our community make, for example, in our basement, we had always rooms and those were taking shape from the people inside” (Santos, 2017).

As the space emerged, it became flexible enough to incorporate the necessities and suggestions of the community. So, for example, the two rooms in the basement, currently a photography studio and a silk screen print lab, were adapted based on the background of the workers using them. The founders and members realized an opportunity to run workshops in the rooms, and as the



Figure 64 Kitchen with glass division



Figure 65 Glass door courtyard



Figure 66 Design courtyard.

coworkers engaged and helped purchase necessary materials or make their own equipment available, such changes came into being.

“We were changing the function of the places, so for example, the meeting room became a photography studio and the silk screen print lab was a place where coworkers could saw wood before. Things change according with the people’s need inside. Right now, one of the rooms will be used as storage, because two people need it for the online shop. If we had plan the spaces with very clear functions since the beginning, we wouldn’t have the flexibility to discover new things and adapt” (Santos, 2017).

Another change was the exhibition space, which no longer exists. Santos explains that for four years there was an art gallery/Christmas bazaar inside the coworking space, allowing the shop clients to enter inside the coworking space only to see the exhibition and leave. In addition, the types of work cells have also changed over time. In the beginning, the same number of cells to accommodate either two people (6 sqm) or one person (4sqm) were planned. However, there was a higher demand for a one-person atelier, so more of the second type was actually built. Until recently, there were still three two-person ateliers left, but Santos explains that this modality will be completely replaced in the near future to make way for teamwork desks that accommodate up to four people.

The founders have also responded to requests from the community in order to improve thermal and acoustic elements, building a glass division (figure 64), between the kitchen and the Coworking Space. Artists themselves feel comfortable to contribute directly with the design of the coworking space; for example, both the door between the kitchen and the courtyard (figure 65) and the walls of the courtyard (figure 66) were illustrated by them.

How the blend of work and play is reflected in the architecture.

The kitchen area and the courtyard are the primary communal spaces in the CRU. On the other side of the glass division (figure 64) in the common area, workers are more comfortable socializing and less worried about interrupting those who are trying to concentrate on their work. Santos explains that play activities



Figure 67 Ping-Pong Kitchen



Figure 68 Event,



Figure 69 Courtyard event.



Figure 70 Event



Figure 71 Kitchen event.



Figure 72 Event

should be revised occasionally. For example, the ping pong table, which was a success in the beginning, has largely fallen out of use. Therefore, the founders must be very attentive to identify such changes and offer new alternatives, since those events are especially necessary to facilitate the integration for newcomers.

Currently, they have an event called “CRU sobre a mesa”, which takes place each Wednesday after lunch and consists of one coworker’s informal presentation (15 min). It has to approach three questions “From where do you come?”, “Where are you now?” and “Where do you want to go/future plans?”. The coworkers can choose to give either a more professional or more personal touch to their answers. After the discourse, people are free to ask questions, and the entire exchange is audio recorded and shared privately among the members. It is an opportunity to integrate and discover more about the background of other freelancers and challenges they may have faced. It also offers a personal growth experience, because it can be used as a reference to revise and track goals for the future. The CRU also holds a monthly party and occasional happy hours inside or outside the space. Santos thus insists:

“We do not want to be a factory where the people work and come home. We all need more than that. People look for a place to work, but also to feel at home, where they can learn, have fun and live in society” (Santos, 2017).

How the blend of work and learn is reflected in the architecture.

Workshops spread throughout the coworking space and can even be held in rooms in the basement floor or in the courtyard when it is sunny. The themes of these workshops must be relevant to the community’s needs; if they are not, the founders tend to reject them. For example, themes can be related to marketing, photography or legal support (e.g. how to open a company/ accounting). The CRU usually run two or three events by month, though their current goal is to restructure this schedule to be even more germane to the expectations of the community.



Figure 73 Event CRU Cowork

In addition, speakers can be outsourced, but members often take the initiative to run their own workshops. As Santos states:

“Sometimes, there are workers that really suggest sharing their own knowledge, because they realize others have an interest for this skill, therefore that is how many workshops start here” (Santos, 2017).

Learning is also reflected in their two marketing interns, who experience the reality of a small Portuguese business and bring new input and stimulate team work. Furthermore, learn extends to other hubs as well. For instance, Santos recently shared her knowledge and learned best practices of Betahaus-Berlin through the European Creative Hubs Network (ECHN). She explains that, since their entry is made from a coffee place, Betahaus allows networking from insiders and outsiders. There are two parallels between the CRU and Betahaus. First, their entry can be compared with the art shop in the CRU, since both work as a transition space that creates connections and empower coworkers. Second, as Santos illustrates, Betahaus also adapts over the course of time. According to Santos:

“Their Cowork grew around a coffee place. As they were successful, they were gradually occupying the floors in the same building. Currently they have 4 floors. It is interesting how they were growing, because it almost feels the age of each floor, the ideas change across time and it is reflected in how they organize the space, choose the furniture and choose the relationship between empty or occupied spaces” (Santos, 2017).

Future Perspectives

The CRU would eventually like to open an artistic makerspace to empower their coworkers with both traditional and technological tools. The founders would also like to invest in the human and professional value of their community members, so as to generate better opportunities of work for them.

“We have an increasing community and we would like to serve their needs. We would like to focus on the human value and the professional value of them, so they have more and better opportunities of work, because they are a part of this community” (Santos, 2017).



Figure 74 Co-Work & Play lounge

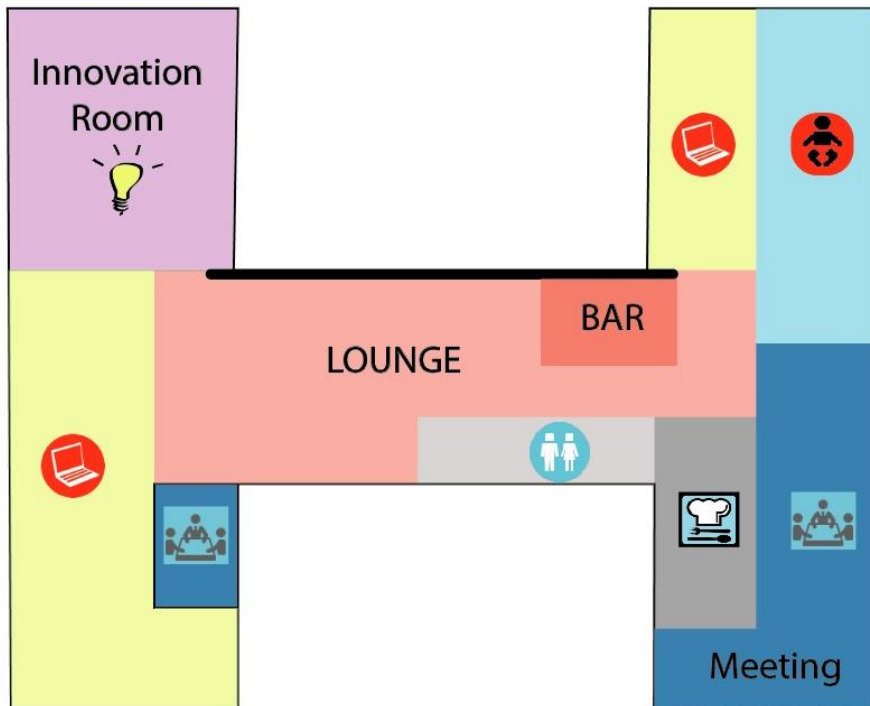


Figure 75 Scheme Co-Work & Play

4.3. Co-Work & Play, coworking space in Frankfurt, Germany

The possibility to generate income online empowers parents to pursue a career while making family a priority. Just opened in Frankfurt Eastside in 2017, with 1.200 square meters, The Co-Work & Play is currently one of the largest coworking space in town. It allows remote workers to be part of a vibrant community with the option for on-site child care. Reframing the work-family concept in this manner encourages parents to embrace entrepreneurship as a means of managing their work-life balance. According to an interview with Jana Ehret, one of the Founders/Managers of Co-Work & Play, along with Yvonne Schrodt, the motivation to integrate childcare facilities into their business model was twofold. As Ehret explains:

“We have two goals: First, give parents the opportunity to be parents and witness their children’s milestone, particularly in their early years. So, we provide childcare until 3 years old. Second, we want to give parents the opportunity to not only be parents. Empower them to discuss and focus on business themes and not necessarily be full time worried on child issues, while pursuing their fulfilling career” (Ehret, 2017).

Despite the childcare brand, the intention of the founders is to have a diverse identity in the coworking, one that is comprised of both parents and non-parents. In fact, Co-Work & Play has start-up members and freelancers who do not have children. However, because the coworking-daycare is still not a frequent arrangement, it is somewhat of a challenge to let potential members know that they are not required to have children in order to use the space.

How the identity is reflected in the architecture

First, the focus of all coworking spaces is the community. Ehret (Ehret, 2017) explains that it took a long time to find the right property. It was important that the Co-Work & Play was based on one floor in order to facilitate the community



Figure 76 Inside Graffiti.



Figure 77 Colorful layout



Figure 78 Innovation Room.



Figure 79 Parent's office



Figure 80 Alternative seats

integration. After all, she states, *“When there are several floors, it has a risk to split the community, which is the core of a coworking space”* (Ehret, 2017).

The Co-Work & Play also offers different atmospheres and corners, which allow for both group activities and individual concentration. In the east wing are the parent’s offices, childcare and meeting rooms, while in the west wing one finds fixed desks, offices, meeting rooms and the so-called innovation room (Figure 78)Figure 78 Innovation Room.. Connecting the two wings is a large lounge that serves as a liminal open space. It is equipped with an in-house bar and an assortment of games. This space is especially important for fostering a sense of community among the members, hence its central location in the architecture (Figure 75).

The diverse identity of the community is represented in different arrangements and colorful atmospheres (Figure 77). The space has a total of seventy flexible work desks, twenty fixed work desks and five team offices, each with spacious enough for up to four people. Furthermore, it has five conference rooms with space for up to thirty people along with a hundred square meter area that offers children plenty of space for playing. On the lounge wall, the colorful graffiti panel (Figure 76) captures the diversity of Frankfurt, a multicultural city, and of the Co-Work & Play, whose members come from France, Morocco, Russia and many other nations.

Because the coworking space was previously a commercial office, there was no need to adapt the glass of the childcare space for acoustic purposes. However, the wall that divides the parents’ office from the childcare space (Figure 82) has been customized. It allows parents to focus on their work while still permitting them to see their children playing. Another concern when integrating children into a coworking space is the service area. The Co-Work & Play, for example, even contains a fully equipped kitchen and washing machine.



Figure 81 Lounge

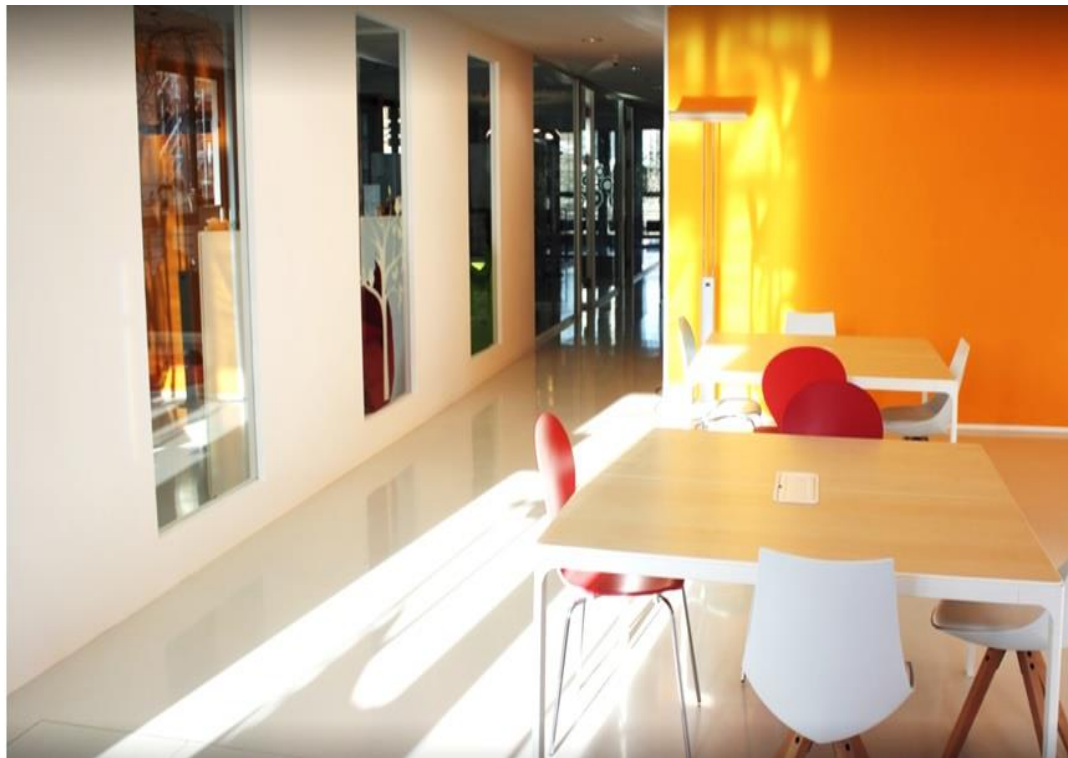


Figure 82 Customize wall- parent's office

How the blend of work and play is reflected in the architecture

The Co-Work & Play fosters a sense of community by holding after-work socials, weekly yoga and breakfast each Friday. The multipurpose lounge, which contains a variety of board games, a foosball table and an in-house bar, hosts a number of events and is a place for both parties and networking. Furthermore, the playful colors in the chairs and bright floor surfaces reflect a friendly, albeit professional, identity.

The founders are the driving force behind the organization of events and development of new ideas to bond the community together. However, they always encourage members to participate and give feedback, so that as time passes, the coworkers themselves will take more of the initiative. Furthermore, the events are not restricted to the borders of the coworking space. Rather, the intention is always to interact with the city as well, through outdoor activities such as barbecues.

“Here at Co-Work & Play, the “play” is not only for children but for grownups too: we have board games and a foosball table. We have yoga once a week, as together breakfast every Friday and we are planning for the Summer to do some outside activities like barbecue” (Ehret, 2017).

How the blend of work and learn is reflected in the architecture

Co-Work & Play encourages learning through workshops. This begins at their “innovation room”, an open space with a variety of flexible alternative seats. But the events generally spread throughout the lounge, often coming to occupy the entire floor. Speakers are usually outsourced but can also be from within the community, and the themes are very diverse. Events occur at least three times per week, but Ehret explains that lately such events run almost every day and sometimes even twice a day.

“We have business, finance, legal topics but also parent education workshops with practical skills and guidance. It is very diverse, we try not to push a specific



Figure 83 Co-Work & Play

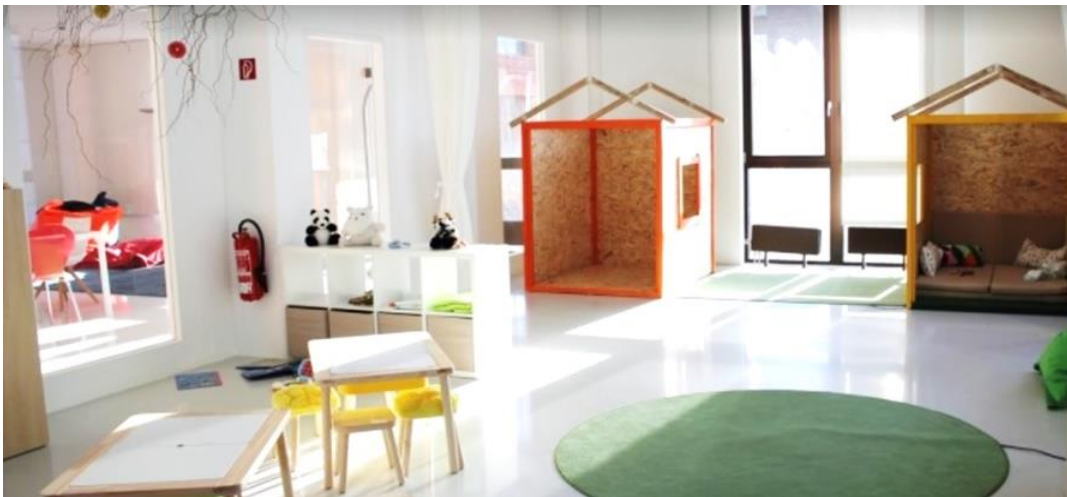


Figure 84 Co-Work & Play - Children's space



Figure 85 Intergenerational



Figure 86 Meeting Room-



Figure 87 Board Games

direction, because we would like different themes to emerge, like a flour. So, we adapt our events to the necessity of people inside as they come” (Ehret, 2017).

Furthermore, Co-Work & Play seeks to branch out beyond Frankfurt in order to fill the gap many parents have when trying to find a community where they can be productive without failing to pay proper attention to their families. They intend in the future to open a reduced version of Cowork & Play throughout smaller cities, for as the founders observe, coworkers often commute from those to Frankfurt. Thus Ehret states:

“We would like to branch out everywhere! The problem with parents not being able to bring their children to work is not restricted to Frankfurt. We would like to make it smaller though, plenty of workers come to Frankfurt, but live outside as i.e. Darmstadt. It would be interesting to open in smaller cities and give them an opportunity to not have to drive until Frankfurt to enjoy a community where they can work and it is child-friendly. We also would like to branch out even beyond Germany, maybe in Switzerland for example!” (Ehret, 2017)

4.3. The Cube, coworking space in Athens, Greece

The Cube, Athens's largest startup cluster, event space, coworking space and makerspace, was founded in 2013 by Stavros Messinis and Maria Calafatis in the Exarcheia neighborhood. Prior to this, both had previous experience at Athens' first coworking space known as CoLab (2009), situated in the heart of the city and home to technology-oriented teams and start-ups.

The Cube began with a tech and startup identity. This identity aligned with the experience and interests of its management team and stemmed from partnerships with various institutes for technology training. However, over the course of time, the space has become more variegated and attracts digital nomads, freelancers, NGOs and Organizations. It stands out as a hub of innovation which fosters collaborative work and network opportunities with contacts in talent and funding. It offers full-time members access to the building 24/7 in attempt to facilitate those who need the flexibility to work across time zones.

The Cube's tech and startup identity is also reflected in the architecture. The nine-floor building (approximately 1800 square meters) hosts companies, meetups, hands-on workshops, hackathons, discussions and other events. The makerspace laboratory on the second basement provides makers and hobbyists high-quality tools enabling them to turn ideas into reality. It contains 3D printing facilities and hosts regular workshops on electronics, arduino, jewelry making and others. As Calafatis explains:

"We started a couple of years ago at CoLab, mainly technology-oriented teams and start-ups. Eight years down the line, we have a nice bigger variety. So, we have a lot of digital nomads, freelancers both international and not. Through the winter, we have about twenty teams, and then things get quieter in the summer, about fifteen teams. But we also host currently, about five, both local and international, NGOs and Organizations that work closely with the refugee crises" (Calafatis, 2017).

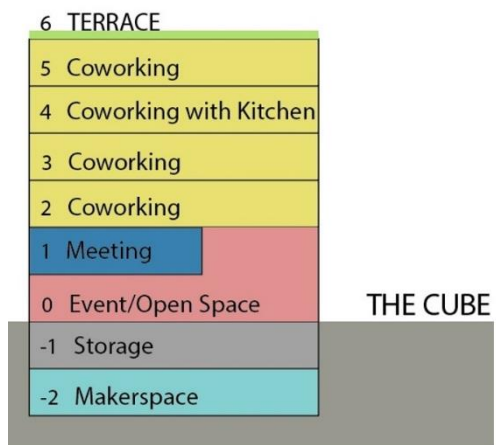


Figure 88 Section Scheme- The Cube.

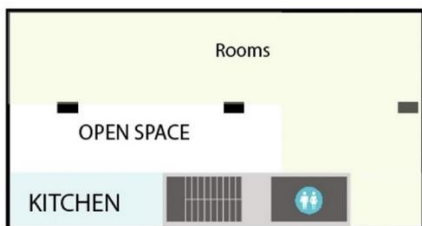


Figure 90 4th level scheme- The Cube.

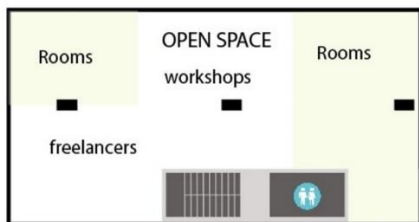


Figure 91 2th level scheme- The Cube.

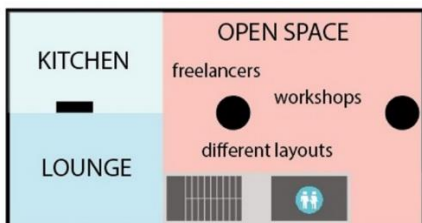


Figure 93 Ground floor scheme- The Cube.



Figure 89 Ground floor tech identity- The Cube.



Figure 92 Meeting Room- playful atmosphere.

How the identity is reflected in the architecture

After CoLab, the founders of the Cube were searching for a bigger space, which they could not find in their downtown location. They were also searching for a space with a semi-industrial, technological look, which tends to appeal to the language of their audience. The Cube was thus established in what was previously a stock exchange building, which had shiny steel panels in the walls and high monochromatic color contrasts in the floors. As times passed, they upgraded these features with wood panels in the ground floor to create a warmer space for their members.

Maria Calafatis, the founder and community curator, explains that the furniture is reorganized daily, especially on the ground floor, where most of the events take place, sometimes up to three different workshops each day. So, the founders are very flexible and allow the organizers of these events to decide the layout that best suits their needs, which often changes the atmosphere of the Cube. As most of the activities take place on the ground floor, this setting functions as a positive and welcoming environment, which draws the attention of the coworkers on their way in and out and fosters connections between inside and outside talents. Calafatis thus explains:

“The ground floor is where we run most of our activities, so it means when people walk in and out they usually tend to participate or ask what is going on or jump in the middle of it or they were in their way to go out or in and they are likely to stop by and listening to what is going on” (Calafatis, 2017).

And she continues:

“A space, like any space, even like our house/ home you need to upgrade, you need to decorate ever so often if not it becomes boring and monotonous. The fact that we also host too many events, we are also very flexible towards the organizers of the event. So, we allow them to come in and run the event the way they want to, decorate the space the way they would like to see it, so it also gives a different atmosphere to the space” (Calafatis, 2017).



Figure 94 Ground Floor- example layout 01.



Figure 95 Ground Floor- example layout 02.



Figure 96 Ground Floor- example layout 03

Calafatis further notes that floors are not fully equipped, which enables the community to move and connect throughout the floors. The printer, for example, is only available on the ground floor. As she states:

“The printer for instance, we only have one and it is on propose on the ground floor, because we want people to move, to come down, we want people to meet, we want people to connect. If we had all 9 floors fully equipped, the community itself would never get to know each other because they would have everything they need on their floor” (Calafatis, 2017).

Also, because both the ground floor and the fourth floor have a common kitchen area, they are quite hectic. The kitchen serves as a meeting point for coffee and lunch breaks and creates opportunities for valuable creative collaborations and new business ventures. The space on the mezzanine floor was once used as storage by the previous stock exchange company, but at The Cube these have been transformed into four playful meeting rooms. The colors of these rooms stand apart from those of the other floors. Calafatis explains that these different designs help to create different corners and atmospheres throughout the floors. Some are thus dedicated to activities, while others are better used for tasks requiring concentration. This design gives the coworkers the opportunity to escape, work and visit different spaces based on their needs at a particular time. According to Calafatis:

“So, ideal we also want to have different areas to the space that will give people the opportunity to escape and to work and visit a different space every time, specially the digital nomads and the freelancers, which means all the floors have its own characteristics” (Calafatis, 2017).

Legislation also influences The Cube’s architecture, because it requires companies and startups based in Greece to have enclosed office areas. Coworkers are thus not allowed by law to work from an open space once they are registered in Greece and given a Greek tax number. This flexibility is possible if a person is a freelancer, but businesses are not afforded this luxury.

More important than a luxurious design, Calafatis emphasizes, the main objective of a coworking space is the community and their personality.

“Being an entrepreneur in a coworking space in general, we do not want to spend too much money because first, there is no money to be spent and at the same time



Figure 97 Furniture across time example.



Figure 98 Furniture across time example



Figure 99 Wood Panels



Figure 100 Steel panels



Figure 101 Graffiti Terrace



Figure 102 Graffiti entry.

because we are hosting startups, startups in general, especially when they start out, they are not very comfortable financially wise and they do not come to the space because the space is beautiful or there is a lot of money spent in, they come because of the community, because of the personality, because of the host of the space. The fact is when we run the Cube, a coworking space, you need to be there, you need to understand the needs of the community” (Calafatis, 2017).

How the blend of work and play is reflected in the architecture.

Especially noticeable on the ground floor, the layout is constantly changing. This allows coworkers to host a variety of events, from meet-ups to social events to weekend-long hackathons, talks and workshops. For instance, the Yoga festival, which happens three to four times each year and serves nearly 500 participants, occupies the entire building on the weekend. Registration and exhibition generally occurs on the ground floor, while smaller workshops are held throughout the building. When the weather permits, participants even use the terrace outside.

The Cube also hosts a graffiti festival. Maria explains that the neighborhood is well-known for its street work, though one of the challenges is the dirty graffiti that appears there. So, this festival assembles graffiti artists to join and do proper artwork in the area. Not only does this promote the community-centered aims of The Cube, but it extends its impact beyond the walls of the coworking space. Similarly, Belgian University partnered with The Cube to host a one-week workshop in which students could express themselves about the Refugee Crises in artistic ways. Among the results of this workshop is a graffiti artwork on The Cube’s terrace (figure 99).

How the blend of work and learn is reflected in the architecture.

As indicated by the diversity and frequency of workshops, learning pervades the entire building. The opportunity to have an in-house makerspace takes learning through hands-on experimenting to a whole new level. The Cube also runs the Athens Mini Maker Faire, a two-day intergenerational event that showcases



Figure 103 Yoga festival



Figure 104 Yoga festival ground floor



Figure 105 Event.



Figure 106 Intergeneration context - Social role



Figure 107 Event



Figure 108 Private Room. Social role

invention and creativity. This type of event binds the community together and gives the coworkers who participate the opportunity to learn and share their knowledge with one another.

“And a very cool project that we are running now is the Athens Mini Makers fair. So, there will be a lot of workshops, throughout the weekend. So again, we have a lot of people showing interesting both from the Cube itself but also from the community that want to participate and either exhibit their own project or run their own workshop throughout the two-day festival” (Calafatis, 2017).

In addition, learning is reflected between hubs. As Calafatis explains, each hub has its own specificities. For instance, while The Cube is mainly startup oriented, others are more artistic oriented. So, one to two times each year, the different hubs co-host common events to bring a diversity of people together to create innovative ideas/projects.

The social role

Apart from continuing their plans to facilitate community growth and foster more entrepreneurial activation, The Cube founders also play a social role, running a program called SOLE Greece (Self-Organized Learning Environment), a school for young refugee children (6-12 years old) that occurs twice a week. The program hosts about 30 children, most of whom are Arabic speakers. Often coworkers show interest in volunteering and facilitating these sessions, mostly because they believe in the program and enjoy working around children.

Chapter 05. Conclusion

5.1. Restatement of motivation and aims

Advances in technology reinforce a slow process towards decentralization, shifting from a centralized factory model to a decentralized network model. The emergence of the Cloudworker is one of the most important consequences of this shift.

The primary aim of this thesis is to assess the architecture of the Cloudworker Generation. As labor control can now be detached from the physical workplace, coworking spaces can resemble more of a community spaces than a traditional workplace. To test whether coworking spaces resemble community spaces more than conventional workplaces, this thesis formulated three hypotheses.

The first proposition aims to comprehend the way work, live, learn and play have become blended in architecture. This thesis has sought to understand if this blending of activities is reflected in the spaces, in particular, through multipurpose and flexible rooms.

The second proposition aims to understand the brand identity of the spaces. This thesis has sought to know how the design of the spaces promotes specific identities (e.g. through colors, materials, layout) in attempt to attract untethered workers and in what ways these identities relate to affinities, skills and a community mindset over a corporation logo.

Since the coworking space is not a readymade place, but it has to adapt constantly based on the needs of its coworkers, the third proposition analyses the way design emerges across time. It assessed in what ways the community members contribute to the design of the space and how this personalization promotes engagement and ownership among the coworkers. Therefore, overall the aim of the present research was to examine the design features of such community workplaces and analyze the blending of work-learn and work-play within these multifunctional spaces over time.

5.2. Summarizing research findings

5.2.1. Why Community Workplace

The foregoing research has observed that in all the three study cases, the core of a coworking space is community. The founders of the CRU Cowork, for example, were already inside the artistic community in Porto before launching their coworking space. They understood the necessities and challenges of this type of community and sought to translate this into their space. The founders of Co-Work & Play in Frankfurt understood the particular challenges of balancing entrepreneurship and parenthood, so they chose to offer on-site childcare services to their coworkers. The Cube in Greece began primarily as a tech-startup environment, but as they expanded they sought to expand their reach to beyond the startup community and began to address social questions, such as the Refugee Crises in Greece.

5.2.2. How the identity is reflected in the architecture

One major finding is that each coworking space has its own specificities that best attract and respond to the particular need of their audience. These specificities are reflected in the materials, colors, furniture and layout of the various spaces.

For instance, because The CRU Cowork in Porto has a more artistic oriented approach, its founders developed customized atelier cells to give privacy to their members. The materials of these spaces consist of wood, beige carpet and light colors, which create a comfortable, home-like atmosphere, in contrast with the vibrant and shiny colors in the art shop. The location in the city was also relevant to this space, since it is in the artistic neighborhood of Porto. Another architectural feature which was essential to create a bond within the art community, in the perspective of the founders, is a courtyard.

The Co-Work & Play in Frankfurt, promotes a very business-like but also playful atmosphere. It provides in-house childcare, which allows parents to bring their children to work. The intergenerational context is represented in the diversity

of bright colorful furniture, shiny surfaces and different games for both children and adults. According to the founders, the variety of colors in the main graffiti is also a reflection of the diversity found throughout Frankfurt.

The Cube in Athens, promotes a tech startup-oriented identity. The semi-industrial look with steel panels and the diversity of rooms for small teams reflects this personality, and the makerspace focus on technology provides members the tools they need to create and innovate.

5.2.3. How work-play is reflected in the architecture

All three examples realize events as an opportunity to connect coworkers with one another and facilitate integration for newcomers. Each of the three examples has a main multipurpose space designed to bind the community together.

The courtyard and the kitchen area in the CRU Cowork represent the main place to foster the community. These multipurpose spaces host work, learn and play activities and seek to enhance the community spirit through events, rituals, barbecue, podcasts and games. The shop in the CRU also reinforces the art community, because it connects the inside artists with clients on the outside. It allows clients to speak directly with the artists about customization and strengthens the visibility of the coworkers.

The lounge in Co-Work & Play is the most notable area to foster the community. It is central in the architecture and enables both parents and non-parents to share breakfast together every Friday. It has an in-house bar and hosts various learning workshops and after-hours socials. It also has board games through which coworkers can connect.

At The Cube, the ground floor best enhances community. It contains a resting lounge with a kitchen area, which is a natural meeting point for the coworkers. The majority of events are hosted in this floor, which calls for constant adaptation in the layout to accommodate different types of events and constantly adjusts the atmosphere of the space. As those events happen in the entry, it attracts and welcomes coworkers to join in whether on their way in or out of the building, and it further allows them to integrate with outside professionals who only attend

the events.

5.2.4 How work-learn is reflected in the architecture

In all three coworking spaces, regular workshops tend to spread throughout the entire buildings. Those workshops take place daily, monthly, on weekends or with more intensity during certain times of the year. One of the more significant findings of this study concerns the flexible nature of the spaces. This seems to indicate that large-scale or compartmented spaces are not essential in order to integrate different types of learning activities in the coworking space.

In the CRU Cowork, for example, such activities can happen in the courtyard when the weather permits. In addition, the founders only accept workshop themes directly related with the community needs. They ask for feedback and provide surveys to allow them to be even more assertive to the needs of the community. Many of the workshops are run by the members or former members of the coworking space.

The Co-Work & Play has an open space called “The Innovation room”, which is equipped to support presentations. However, these workshops often spread throughout the lounge or even the entire building. Some workshops are held in the lounge itself. The founders prefer to not intervene on the themes of the workshops and let them emerge naturally, so as to promote the diversity identity.

On its ground floor, The Cube has a double-height ceiling which highlights the main workshop area. Events held here then often spread naturally across the ground floor. Frequently, The Cube runs festivals, which occupy the entire building, including the yoga festival, as well as smaller workshops in the open space of the upper levels.

5.2.5. Design across time

Overall, the above case studies indicate that such coworking spaces are not a readymade place and is mutable across time. When they expand, the interior design responds to the average time people are inside, and as the community grows, some feel comfortable to contribute to and customize the community space.

The CRU is the most evident example in this respect. Although it began with only four modulus of atelier working cell, as it grew, more ateliers were added to give it its current configuration. Therefore, as the space emerged over time, it was flexible enough to incorporate the necessities and suggestions of the community. For instance, it was originally planned the same amount of both types of cells measuring four or six square meters, corresponding to one or two people. But to respond to the coworkers' demands, the founders added more cells measuring four square meters. In addition, rooms are able to change functionality over time, according to the members' background. For instance, because members engaged and made available their own equipment or purchased the necessary materials, rooms in the basement were transformed into a photography lab and silk screen print lab. Direct contributions to the design made by inside artists can also be observed in the courtyard paint and door illustration. Further still, spaces once reserved for an art gallery and to host Christmas fairs no longer exist. Lastly, the installment of glass divisions has made acoustical and thermal improvements throughout the coworking space.

The Cube has also made several changes over time. For example, wood panels on the ground floor were added to provide warmth to the space. The space on the mezzanine floor, once used as storage by the previous stock exchange company, has been transformed into colorful meeting rooms. On the ground floor, there was upgrade of the furniture in the lounge across time as well. The motivation behind such changes is to provide both quiet and energetic zones with different personalities, thereby creating opportunities for members to visit diverse atmospheres based on their particular needs. The founders intentionally have also chosen not to equip each floor fully, so as to oblige coworkers to move about, meet and interact with one another. Meeting rooms are thus not found throughout the

floors, and the printer is only located on the ground floor. Customized designs emerge across time; for example the graffiti on the terrace and ground floor represents direct contributions from the community.

Having only opened in 2017, the Co-Work & Play has not made any visible changes yet. However, the concern to create different corners and atmospheres has been embedded in the founders' minds since the conception of the project. The founders frequently encourage members to participate and give feedback, so as time passes, the coworkers will begin to take more initiative in the design and utilization of the space.

5.2.6 Intergenerational Aspect

The ability of parents to be directly involved in their children's activities is often constrained by employment and time. However, location independent income empowers parents to pursue a career while making family a priority. Some coworking spaces address this audience, such as the Co-Work & Play, which has on-site childcare. In addition to this 100 square-meter childcare in which children are able to play and develop, the fully equipped kitchen and washing machine address the challenges inherent in places occupied by small children. The wall that divides the coworking space from the childcare has been customized with windows so that parents are able to see their children playing while they work.

Another example of intergenerational can be seen in The Cube's participation in the SOLE Greece program. The founders not only run this startup twice a week, but they have their own children who frequent the space as well.

5.2.7 Transition space

Oftentimes, the lobbies of traditional companies are quiet spaces and do not reveal much about the workplaces themselves. They are often composed of noble architecture finishing in order to impress possible clients with the solitude, scale and financial status of the company. By way of contrast, coworking spaces have replaced these quiet waiting zones with highly active spaces. Each coworking space

discussed above makes use of its entry area either to host community events or to promote its unique identity in attempt to attract new coworkers.

For example, the CRU Cowork has an art shop between the street and the workplace, which directly signals the identity of its community. It also empowers those who create products inside the coworking space by allying both production and sales. The Co-Work & Play entry takes the form of a lounge and serves as the primary space for communal bonding. From the perspective of a new visitor, it reveals much about the personality of the coworking space and its events at first sight. Like the Co-Work & Play, The Cube has also events in the front entry, but it has the advantage of being on the ground floor. The exposure of workshop activities to the street also showcases the community to outsiders and generates curiosity from passersby.

5.2.8 Impact beyond the Coworking space - urban relationship

Oftentimes, the impact of the activities and events exceeds the boundaries of the coworking space itself. The Cube, for example, seeks to have an impact both within the immediate community, by incentivizing its artists to replace the dirty graffiti throughout the neighborhood, and on the refugee crises facing Greece today, by running a school for refugee children and volunteering in refugee camps. Indeed, all the three case studies seek to establish a relationship with the city through outside activities. This takes place through happy hours outside of the coworking space itself and by co-hosting events with other hubs to promote and learn best practices and to empower the coworkers involved.

5.3. General Hypothesis and Contribution of the Study

These findings enhance our understanding of the blending of work, live, learn and play in the Cloudworker Generation's architecture. It is possible to identify the multipurpose and flexible character of such spaces, especially in the main areas dedicated to foster a community.

Moreover, the identity of coworking spaces is reflected in the design, and the activities hosted by these spaces relate more often to affinities, skills and a likeminded community than to a corporate brand. Therefore, materials, colors, layouts and events, especially those found in the entry areas, are used to attract new members and foster community among coworkers.

Furthermore, this study strengthens the idea that the architecture on the coworking spaces emerges over time based on requirements of members who utilize those spaces. Also, members often feel comfortable enough to contribute to the design and personalize the spaces themselves. Finally, it confirms that coworking spaces resembles a community space more than a traditional workplace.

5.4. Limitations of the Current Study

This is a qualitative study, and the interviews were undertaken with the community managers. In addition to direct observations made during visits to those spaces and investigation of specialized literature, interviews seem to have been the most effective way to understand the dynamic of the coworking spaces. Only the founders were interviewed, not members, therefore this thesis is also limited to their perception.

Furthermore, quantitative data can be found in the Appendix C, but it was utilized only to understand further the background of workers across time. It should be noted that, as the sample was only limited to three Coworking Spaces, it is not possible to extend significant relationships of the gender, age or frequency of the coworkers with the identity of the spaces. The main objective of the quantitative data collection

was thus to reinforce direct observations and empower the qualitative semi-structured interviews with the community managers.

5.5. Suggestions for future work

It would certainly be insightful to assess the positive and negative effects on traditional schools and universities as coworking spaces continue to emerge and become recognized as centers for working and learning. For example, learning through an atelier, which has commonly been embedded in traditional craft-making professions and architecture, were once restricted to large centralized, governmental institutions. In this light, future research might investigate whether or not it is possible to integrate education and university credentials through coworking spaces.

Further research might also explore the intergenerational context in the coworking space. It would be necessary to explore the limitation on regulations and the necessary licenses, which such spaces are expected to acquire, as well as interviews with parents to understand challenges and opportunities they face in pursuing a career while maintaining family as a priority.

There is abundant room for further progress in abstracting the ownership of a coworking space to its members. As stated, the core of these places rests on the unique experience created by the connection and collaboration of their coworkers. Despite the fact that members create the unique atmosphere of their space, drive its value and even contribute to its design, they do not receive any equity for their efforts. Further research might explore the cryptographic value transmission mechanisms that the Nakamoto-Consensus has brought to the Internet, as in the example of Ethereum. It is possible to abstract the ownership of a coworking space into a smart contract that governs the development and maintenance of the building by turning its community into shareholders, which would seemingly make these spaces more significant.

This thesis indicates that megalopolises, urban sprawl and the necessity to accommodate large concentrations of on-site workers is a less probable future for the present independent and entrepreneurial generation. However, further quantitative studies might well assess why some coworkers still seek to establish themselves in megalopolises and why others prefer mid-size cities.

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Figure 106- See: <https://www.theschoolinthecloud.org/partners/sole-greece>

Appendix A Outline the work

Observation/Motivation:

- Identify the current situation (named Centralization and Strict paradigms).
- Identify technological advances which reinforce a shift from a centralized/factory model to a decentralized network panorama.
- Cloudworker emerges
- Consequences of the shift: work-live-learn-play change from a factory model to a community workplace.

Research question:

- What are the design features in the community workplace (coworking spaces identity)?
- How the blend of work/learn and work/play is reflected in architecture?

Hypothesis:

- Coworking Spaces are more community spaces than workplaces
- Work, live, learn and play blend/ converge in architecture within the community workplace.
- Design of the places have specific identities to attract untethered workers.
- Design emerges across time.

Panorama Shift Chapter (Outline Consequences of Decentralized technologies):

- Explain the emerge of the Cloudworker- requirements and features

State of Art (Explain types of architecture with factory features):

- Activities divided in specialized regions – The Radiant City/ Disneyland (The city as a factory and the Play factory)
- Activities divided in buildings - Offices plan (Work factory – labor control)
- Activities mix in a huge scale – Googleplex (Work play factory)

Methodology:

Analyze 3 Coworking Spaces through 3 Major Themes:

- Understand the relationship between the identity of the place and audience
- Design to strengthen Communities: Blend Work + Learn
- Design to strengthen Communities: Blend Work + Play

Interview with the community managers to understand the dynamic of the Coworking space, direct observation through visiting those spaces and specialized literature

Study Case:

- Cru Coworking Space- Porto, Portugal
- Cowork & Play- Frankfurt, Germany
- The Cube- Athens, Greece

Conclusion:

Coworking spaces as community workplaces, Identity is reflected in architecture, Work, live, learn and play changes are reflected in architecture, multipurpose spaces, design across time, intergenerational context, transition space, impact beyond the Coworking Space (urban relationship)

Appendix B Qualitative data – Semi structure questionnaires

Main idea to explore: *Identity – Space – Audience*

- What idea motivated you to open this space? Why did you choose this Audience?
- Did you decorate the space yourself?
- Is the space rented? Who owns the building?
- The Brand Identity of the Materials: Was it a matter of Design or only an Economic choice? What is the criteria of the choice?
- Does the Community also contribute to the design of the Space? How? (Design that emerges)
- Are the spaces flexible? How often has the Coworking space been remodel?
- What was the last time that happened?
- Do you have multi-purpose spaces? Do you plan on rearranging specific spaces (rooms, areas, floors)?
- Have you rearranged the furniture? What is your criteria? For whom do you rearrange? Are you demanding driven?
- What is the average time people staying in the space and does the interior design respond to that? More team/ more individual workers?
- How much do you refer to in-house talent and substitute tasks that you would otherwise outsource/ contract?
- Was it an intentional partnership or an “Art” shop was a coincidence? (CRU)
- Does the mix between the Coworking and the Shop business help to maintain the Coworking profitable/visible and still affordable? (CRU)
- Does the Shop also empowers the products of artists inside? (CRU)
- About the Maker Spaces. How do you manage the times of those spaces? By hour? Day? Are those spaces opened to the public or only for the Coworkers?
- How much do you refer to in-house talent and substitute tasks that you would otherwise outsource/ contract?

Main idea to explore: *Blending of function – PLAY- ideas to strengthen communities*

- What are the events that strengthen the community? What is the frequency and the expect outcome?
- Which spaces help to build a community?
- Do you encourage activities and spaces outside of the CRU? In the city or in other hubs?
- What design consideration did you make to integrate the children? (Co-Work & Play)
-

Main idea to explore: *Blending of function – LEARN*

-
- What spaces do you use for the workshops?
- Who makes the workshops? Inside talents or hired?
- Do you reject proposals of workshops?
- What is the frequency of workshops?
- Learning is also reflected in interns: What does the intern learn and what do you get out of that? What is approximately the age and the background of the interns? How often do you hire them? How many do you hire? (CRU)
- Learning is reflected between coworking spaces?
- Challenges to run? Future perspectives?

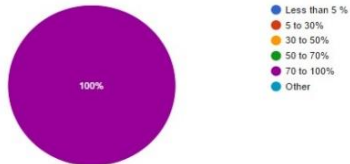
Appendix C- Quantitative data

The CRU



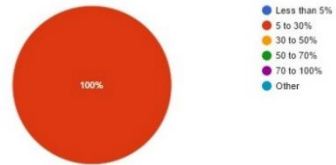
How many coworkers identify themselves as Artists ? [Architects, Authors, Dancers, Designers, Musicians and Composers, Painters, Sculptors, and Craft Artists, Photographers, Illustrators, Media Occupation, Entertainment, etc]:

1 response



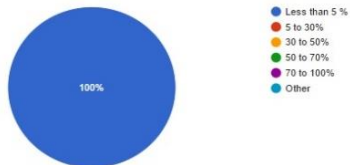
How many coworkers identify themselves as Business/ Sales Entrepreneurs ? [Management, Financial Services, Legal Occupation, Sales and Costumer Services, Offices and Administrative Occupations, Community and Social Services, Translators and Educators/Trainee]:

1 response



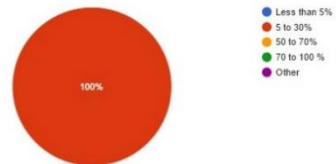
How many coworkers identify themselves as Tech workers ? [Developers, Engineers, Mathematicians, Database Analysts, Software Programmers, IT support, etc]:

1 response



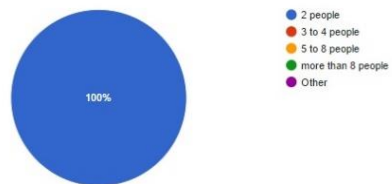
How many work in teams inside of the Coworking Space?

1 response

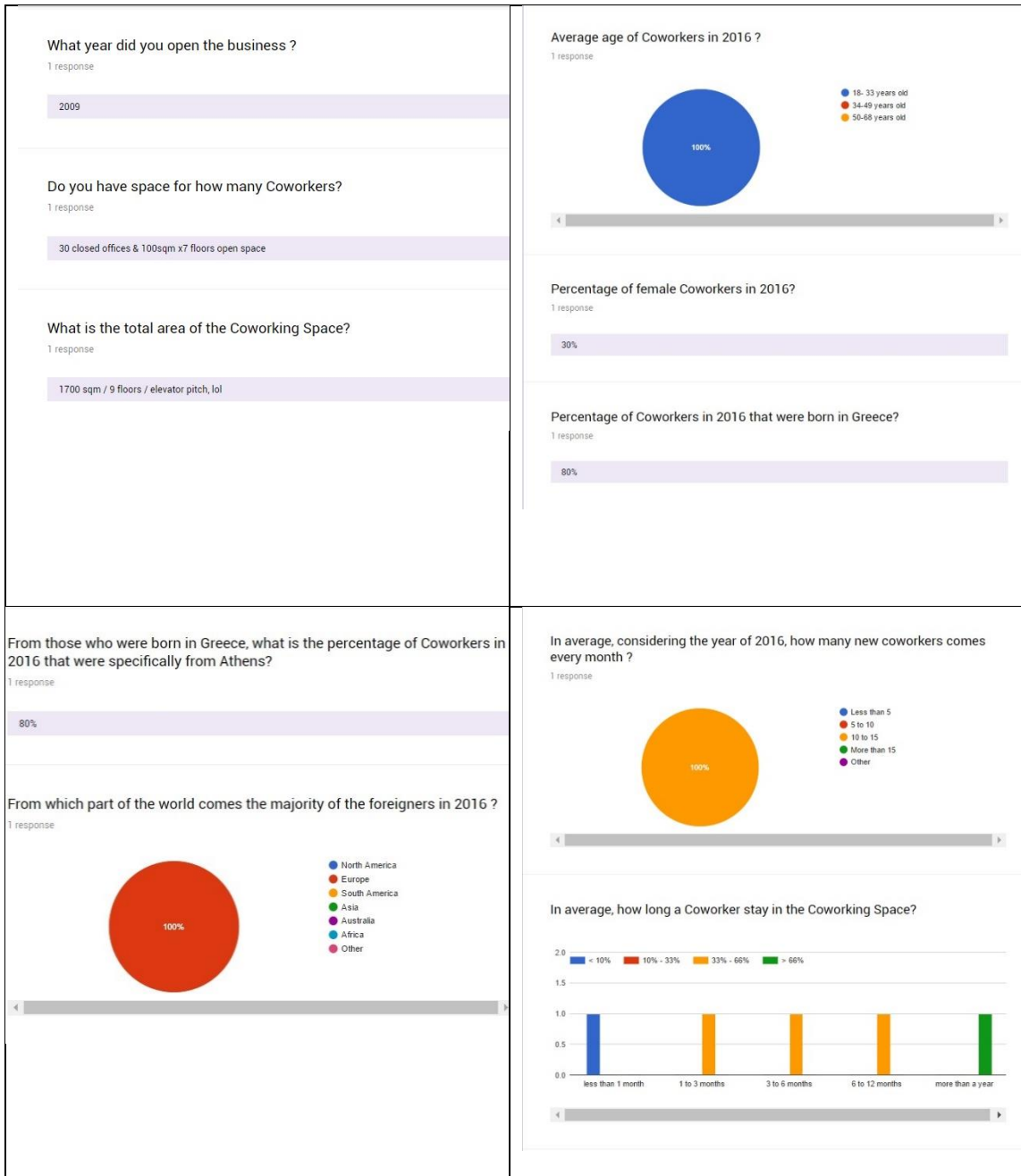


In general, the teams are composed by how many people inside of the Coworking Space?

1 response



The Cube



In your estimation, how many members have been to other coworking spaces prior?

1 response



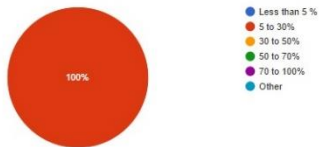
How many coworkers identify themselves as Tech workers ? [Developers, Engineers, Mathematicians, Database Analysts, Software Programmers, IT support etc]:

1 response



How many coworkers identify themselves as Artists ? [Architects, Authors, Dancers, Designers, Musicians and Composers, Painters, Sculptors, and Craft Artists, Photographers, Illustrators, Media Occupation, Entertainment etc]:

1 response



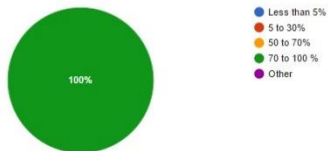
How many coworkers identify themselves as Business/ Sales Entrepreneur ? [Management, Financial Services, Legal Occupation, Sales and Customer Services, Offices and Administrative Occupations, Community and Social Services, Translators and Educators/Trainee]:

1 response



How many work in teams inside of the Coworking Space?

1 response



In general, the teams are composed by how many people inside of the Coworking Space?

1 response

