

**IMPROVING COMMUNITY ENGAGEMENT THROUGH URBAN PHYSICAL AND  
TECHNOLOGICAL EXPERIENCES**

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## **ABSTRACT**

There is an opportunity to add value to community engagement by provoking the interaction between urban dwellers, physical urban space and virtual experiences. This research project focuses on identifying the experiential and participatory tools embedded in temporary and architectural elements, interactive technological platforms and urban supports in order to build a link between virtual and physical realms. A variety of research methods, analysis, visual tools and foresight exploration techniques serve for the creation of design principles that become the foundation of the conceptual framework of civic portals that enhance individual and collective appreciation of physical space.

*Keywords: community engagement, urban physical space, digital world, temporary, ultra-participatory, interactive, civic portal*

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## INTRODUCTION

## *Dialogues with a research avatar: “the beginning”*

### **Intent**

This dialogue is held by myself the researcher and my *research avatar* named Octo. This tool is used to portray crucial research process reflections while also serving as a homage to the digital principles being explored – like creating a virtual persona of myself. What you are about to read is a conversation in which we discuss the motive behind developing this specific project.

**Participants:** Octavio Juarez (OJ) & Octo



**OJ:** Hi Octo, nice to e-meet you!



**Octo:** Hi, nice to digitally meet you



**OJ:** You are right, the term “digital” is better. Many things are digital nowadays, I sometimes wonder if life has always been digital and we just –



**Octo:** Woah, we are getting existential pretty quick. I am more of a direct person. Like for example I need to ask, why have you created me?



**OJ:** Well you see, it has to do a bit with this existential part of me and some reflections on my profession...



**Octo:** OK I’m listening



**OJ:** I am an architect, so the way I see it I bring conceptual ideas to life through design and then make sure that they are developed correctly while fulfilling client-specific needs. But then I think of the bigger picture, the needs of all of us a whole and how we address that



**Octo:** all of us?



**OJ:** The social groups that live in complex high-density areas! Cities, the physical space, how we influence it and how it influences us. Why do we always want to build more? Is that the right way to improve our living? What if there are other ways to enhance our social interaction and relationship with physical space? What if it all start by re-inventing our appreciation of what already exists



**Octo:** Sure, so you created me because...



**OJ:** because I want you to help me explore the digital world and virtual experiences, I am sure there are many elements in those platforms that can be transferred to the physical world and improve communities in many ways! And I know where to start, let's explore *gaming!*

### ***How digital participatory experiences like gaming have the potential of influencing social & physical space***

My hypothesis revolves around the idea that we can re-invent how we appreciate, and interact with physical place to build strong resilient communities with a sense of place and belonging by embracing current platforms that could serve as inter-connective media channels like those embedded in digital gaming platforms. Once we identify these technological elements that create social cohesion, effective data portrayal, and appealing experiences and focus them on building community engagement, we might be able to find new ways to improve the quality of life. Communities that are aware of their internal dynamics and contextual influence can easily target their impact to be more comprehensively positive. This project is not about applying gamification techniques into different realms, it is about re-thinking game interface as a premise for community oriented purposes while also delineating standards to create large scale interactive experiences in the form of design principles that can be use urban space as a platform. "Community engagement and

citizen participation have long been important themes in liberal democratic theory, although managerial versions of liberal democracy have typically been dominant” (Head, 2008). Community engagement provides individuals with the opportunity to participate in collective change. Many civic programs face challenges when trying to communicate their objectives, consult their public, involve individuals into participation, enable collaboration and provide community empowerment; key steps to achieve community engagement (Homes and Communities Agency, n.d.). Some of these factors get compromised when facilitators fail when trying to engage citizens into collaboration and participation. When reflecting on this I can’t help but think on how many digital platforms empower millions of users while succeeding in inviting users to participate in unique experiences. Of all digital realms, video games are one of the most successful platforms in terms of engaging users into experiences with interactive purposes.

Video games can provide positive human behavior experiences; they help develop personal skills and help build communities in both digital realms and reality. My research focuses on the exploring and discovering of how we can apply interactive core technology into the way we experience physical space in order to develop our perception of community. The use of video game technology in civic contexts and the way interfaces are designed and delivered to users around the world influences social behavior. “Video games force us to reflect on our decisions without compromising our enjoyment, video games are often described as safe environments in which players can experiment with different reactions to ethical and moral issues and dilemmas.” (Bourgonjon & Soetaert, 2013). Gamers (game participants) put problem identification and solving into practice, to test solutions and see the immediate consequences of their choices through multi-sensory interfaces. They learn that through their actions they can accomplish goals, receive rewards, enhance their skills, re-create themselves into different avatars, fail until it is game over and even restart and try it all over again.

This platforms are more than participatory interfaces placed together, graphics that evoke real textures or polygons that construct complex characters; they reflect cul-

ture through storytelling, imagination, art, music and technology. They merge various disciplines, which produces complex interactive experiences that provide users with visual platforms full of action, and the opportunity to practice choice while witnessing how they influence the narrative of any given story. "I love video games, because I have the same experience when I watch a movie that I love or read a book that captures my imagination, but I'm an active participant instead of a passive observer" are some of the key characteristics that differentiates Videogames from other art forms according to user Will Wheaton (Snead, 2014).

In its early development digital gaming experiences were restrained by boundaries of consoles or PC hardware, but since the industry has expanded to mobile devices and virtual reality interface technology, gaming community's behavior is moving into different realms. With developers and users showing more interest in augmented and alternative reality the potential to transfer core elements of virtual interfaces into the design solutions that target social issues is increasing. This is becoming an opportunity to explore alternative ways of understanding community social behavior and increase community engagement.

### ***Hypothesis: Combination of digital and physical elements***

It is expected that by mid 2015 we will be approximately 7,366,792,220 people inhabiting our world ( Worldmeters, n.a.). Recent projections released by the UN, show that we can expect a population growth that will reach 9.7 billion habitants by 2050 (Becker, 2015). With this exponential demographic growth also grows the urge to better understand and enhance our living. We need to think about our environment, global warming, economic projections, limited access to earth's resources, cultural and political conflicts, daily activities, survival and so on. It is important to understand that many of these challenges depend on the approach that we, as communities, have towards our environment. This relates to the context, the immediate space that surrounds us where we perform our daily activities, our needs, goals and objectives, and where we interact with each other. If we understand our social relationships and the way that we influence our immediate physical space, we may be able to solve major complex issues that challenge our existence on earth. This impact can be achieved by combining:

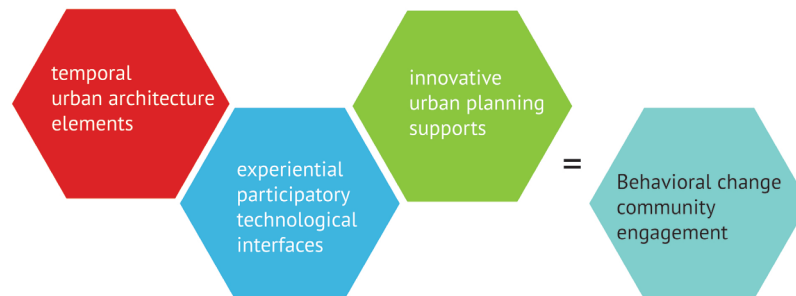


Fig.1 | physical-digital research core fields

These elements become the core research fields that this Major Research Project explores in order to facilitate robust community engagement.

### ***Temporal urban architecture elements - animate public space***

Traditional urban masterplanning has been applied through many centuries in order to develop architectural elements in urban spaces that improve the lives of the habitants through symbolic cultural gestures of sculpture, and art. Since the middle of the 20th Century there has been skepticism and criticism as to the outcome of this more classical practice. "Included is the notion that such plans are starting to



become an end in themselves and bear little relation to real urban settings; that the built environment aspects are only considered two-dimensionally; that the plans are deterministic, inflexible and based on the concept of a completed product whereas the evolution of the city is a process” (Giddings & Hopwood, 2011). In contrast to this traditional approach a new movement has emerged that highlights spontaneity and emergence. Temporal Architecture, not focused on physical permanence, but on the immediate impact of experiential existence.

My objective is to find ways to animate public space to generate significant behavioral change supported by Temporal object installation and settings. These elements are strategically created with a specific purpose, limited life span and assembled in single or multiple locations at different moments of time in order to inspire a reaction from the users. They will be interactive in nature by obeying and responding to actions performed by users. Linked to artistic interventions, these objects can be pavilions, sculptures, projections, graphic-texturized elements, dynamic built objects or spaces. They seek to trigger emotion, provoke reflection and cause changes of behavior and perception to those who experience their existence in a social public context.

### ***Experiential participatory technological interfaces***

Based on the analysis and study of video game culture and digital experiences, I will identify the core elements that attract millions of users to participate in individual and collaborative platforms. I will explore these mass-delivered products with the objective of understanding the different virtual interfaces. This will provide a clear understanding of the mechanisms behind the design and programming that facilitates the feeling and algorithm of action-reaction embedded in many of these experiences.

### ***Innovative urban planning supports***

Gaming needs to assimilate some of the characteristics of physical space, and physical spaces could embrace elements of gaming. In a conversation between MIT's Social Studies of Science and Technology professor Sherry Turkle and MIT's Civic

Media Lab Director Henry Jenkins, Turkle opens the discussion with the rephrasing of Winston Churchill's "We make our buildings, and in turn, our buildings make and shape us. We make our technologies, and our technologies make and shape us" and continues highlighting the importance of merging the real and virtual with statements such as "One of the things that excites me the most is when technologies of the virtual enhance our experiences of and in the physical real" (Svensson & Goldberg, 2015). A project that explores the experience of being an urban dweller may be helpful for the industry and governments to better understand the behavior of its citizens. Citizens may find it easier to communicate their needs and desires through innovative and appealing new channels, like those used in various video game communities. Integration of digital portals into physical space will link important resources to create a new realm of urban design. This project will portray a vision of a possible near future where citizens are able to engage with their physical immediate space by adopting digital experiential-based activities.

### **Primary & Secondary Questions**

Outlining the hypothesis a series of a series of research questions emerge. *Primary* are those that have become an exploratory priority within the research process, whereas *secondary* may be answered in parallel as an outcome of the project.

*-Primary-*

Which are the elements that can be integrated in order to re-invent/enhance community engagement?

How might tech-participatory and experiential interfaces affect the use of urban space?

What happens when a digital portal is integrated in physical space?

How do you make physical experiential space accessible to a global community?

*-Secondary-*

What happens when the physical urban space embraces virtual gaming's participatory and experiential values?

How can we narrow the gap between the virtual and the real?

How can temporary architecture elements be used to influence human behavior?

### **Social & Urban Contribution**

As an outcome of exploring real physical and virtual digital platforms, combination of elements of different realms will be identified as opportunities to emphasize the interaction within communities in urban places. By creating a conceptual prototype, I will visually explore the applicability of the project in the cities like Toronto, recently named the World's most Livable City - according to global ranking that mainly focus on "pleasures a city has to offer the people who live in it" (Metropolis Magazine, 2015).



**RESEARCH CONTEXT**

## Summary

This chapter outlines the initial approach, assumptions, inspirations and context that serve as a starting point for the Research process.

When video game culture bloomed back in the late 70's, it quickly scaled into one of the most profitable and innovative entertainment realms of all time. Video game systems were innovative and affordable enough to reach thousands of households, presenting new ways of digital entertainment. After the Atari System's successful commercial performance slowed down, the future of the industry became uncertain. It was until 1985 when a Japanese company, known in Western world as Nintendo, appeared and revolutionized video game culture through game releases such as *Mario Bros.*, *the Legend of Zelda*, *Kid Icarus* and various other successful franchises. Nintendo attracted more users into gaming because they presented more developed characters, visuals, music, complex story lines and innovative gameplay. This served as inspiration for many other developers and companies which, supported by the evolution of accessible technology and the commercial performance of gaming products, have helped to create unique experiences that impact the lives of many users around the world.

We've witnessed the evolution of this industry to the point where, what was once embedded in consoles, living rooms and arcades, is now found everywhere. These virtual platforms explore experiential design and help technological innovation while building complex gaming communities. Easy access to digital worlds and virtual gaming is changing the way we comprehend our selves and our relationships with others.

The following infographic is based on the *2015 Essential Facts about the Computer and Video Game Industry* report by the American Entertainment Software Association. It helps to understand characteristics and statistics of the average users of these platforms, but also as evidence of the tendency of gamers to co-play.

## VIDEO GAMES: THE NEW SOCIAL SETTING

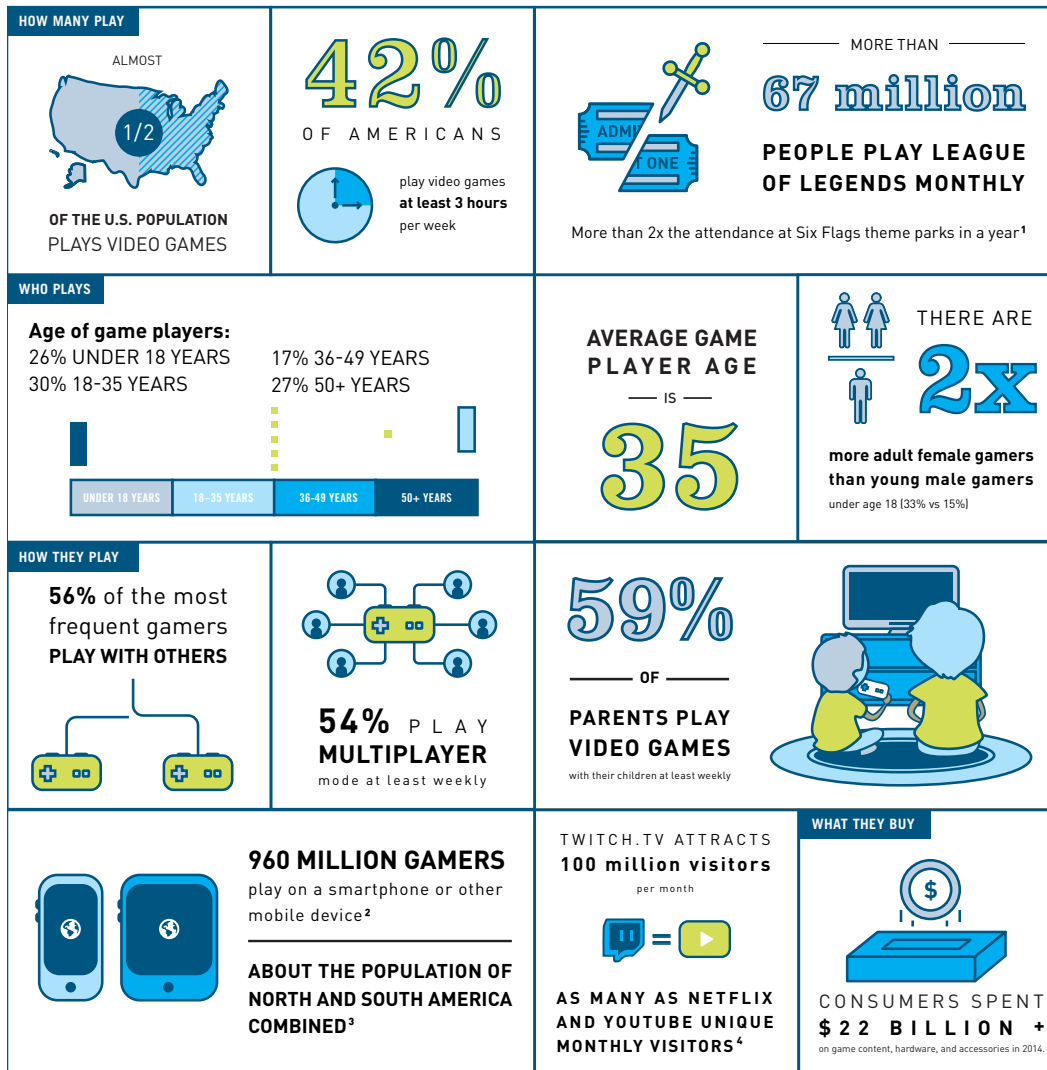


Fig.2 | Video games: the new social setting (source: <http://www.theesa.com/>)

Video games are being used to address various topics, and we have seen a series of stakeholders using them to communicate a variety of themes and societal issues. Examples like University of California's Darfur is Dying Sudan genocide, Ayiti: The Cost of Life portraying Haiti's poverty or real problem solving like Institute for applied systems analysis and Geo-Wiki Project's food harvest tracking Cropland Capture. Around the topic of civic action, VOTE!!! The Game represents the 2012 innovative efforts to drive interest in voting. Users were able to pick between the former candidates Barack Obama or Mitt Romney as fighters within a battle that not

only served as a means of entertainment but also included voting registration and general information about the election process. MTV's Fantasy Election 12' had the objective of highlighting the importance of youth vote, the game solicited users to do achievements, like supporting candidates or registering to vote and of course voting, in order to gain points. Parallel to civic action, users were also invited to create candidates running for president, U.S. Senate and White House representatives; avatar creation in political realms. "Video games' rich storytelling and personal narratives allow players to connect emotionally with deeply moving characters and events" (ESA, 2014). In the era of search for constant innovation, there is a potential opportunity to bring the characteristics that make virtual gaming unique into our physical existence in order to re-invent our relationship with our environment.



## *Dialogues with a research avatar: “the who”*

### **Intent**

Throughout the following conversation, the researcher exposes to whom this project is oriented to – the primary target and potential user

**Participants:** Octavio Juarez (OJ) & Octo



**OJ:** So, it's time to talk about “the Who”



**Octo:** the band?



**OJ:** No, the who... the user of whatever will be the outcome of this



**Octo:** sweet, and for who are you doing this for?



**OJ:** : mmm... for the city's habitants, the citizens! The urban dwellers!



**Octo:** OK man, you have to be more specific, I mean...



**OJ:** OK, in a sense it is for everybody, but the primary target are the geeks, it's mainly about the geeks



**Octo:** I love geeks



**OJ:** Don't think only about the Star Wars geek or an anime geek, it's about a life-geek. It's about the urban geek! Those who care and would like to make something about what they care about

Lars Konzack's paper *Geek Culture: The 3rd Counter-Culture* opens with a comparison between the definition of the word nerd and geek, people's need to find a distinction between the two terms and his decision to approach his work without drawing any difference between the two of them. He exposes the definition of geek as shown in Wikipedia: "A geek is a person who is fascinated, perhaps obsessively, by obscure or very specific areas of knowledge and imagination". He analyses more the definition itself and goes further by explaining the impact of this specific social group in modern culture "what the geek has to offer is a new way of approaching aesthetics and culture. It's a rebellion against extroverts (like the hippies and especially the yuppies), seeking substance instead of superficiality. The geeks want to delve into issues in quest of knowledge and experience" (Konzack, 2006). Geeks have been linked to the active use of video games for many decades and since this research projects tries to combine elements from the digital gaming into urban physical space, the term ***urban geek*** rises. *A person who is fascinated by its immediate Urban environment and seeks an innovative approach through knowledge, experience and imagination.*

## 1. DISCOVERY & SENSEMAKING

Case studies are divided in three different areas that are linked to the fields that are part of the hypothesis of the research project. According to their topic, context, development aspects or experiential outcomes, the case studies are divided in:

**A. Temporal urban architecture elements**

**B. Experiential / participatory interfaces**

**C. Innovative urban planning supports**

It is important to create a coherent framework for the analysis of the case studies so that the outcome can nurture this specific project. This framework is based on computer game criticism. This helps to integrate gaming to physical urban spaces and the urban dweller's experience of it using an analysis language that works as a topic connector itself. Lars Konzack delineates a method "to analyze and thereby understand computer games better" in his paper *Computer Game Criticism: A Method for Computer Game Analysis*. "The method is based on seven different layers of the computer game: hardware, program code, functionality, game play, meaning, referentiality and socio-culture" The methodology proposes that each layer should be analyzed both individually and as a whole with an overall approach that includes the technical, aesthetic and socio-cultural aspects. The analysis of the layers is preceded by the Description of the Game "(the description) should be made from two different perspectives, because a computer game consists of two different levels: a) the virtual space, and b) the playground"(Konzack, 2002). The latter becomes a core element to build the basis of this research process; when trying to understand games one most think of the elements of the game itself, what happens within it, what it represents in its own realm, but also of the playground as the dynamic that occurs between the game, the players and their context. A methodology-framework for analysis emerges as a way to link a wide spectrum of case studies that portray the ephemeral-temporal, digital and urban-physical contexts. The objective of this method is to constantly build a bridge between virtual and physical entities in order to analyze the impact of permanent elements and temporary experiences or spaces that influence their users. The layers that form the following framework are based on Lars Konzack's Computer Game Analysis Method when applied to differ-

ent realms other than video games, based on the hypothesis of this research that assumes that there is a direct link between mechanics embedded in digital gaming and elements of urban physical space. This becomes the *Virtual-Physical Analysis Framework* that comprehends the following elements:

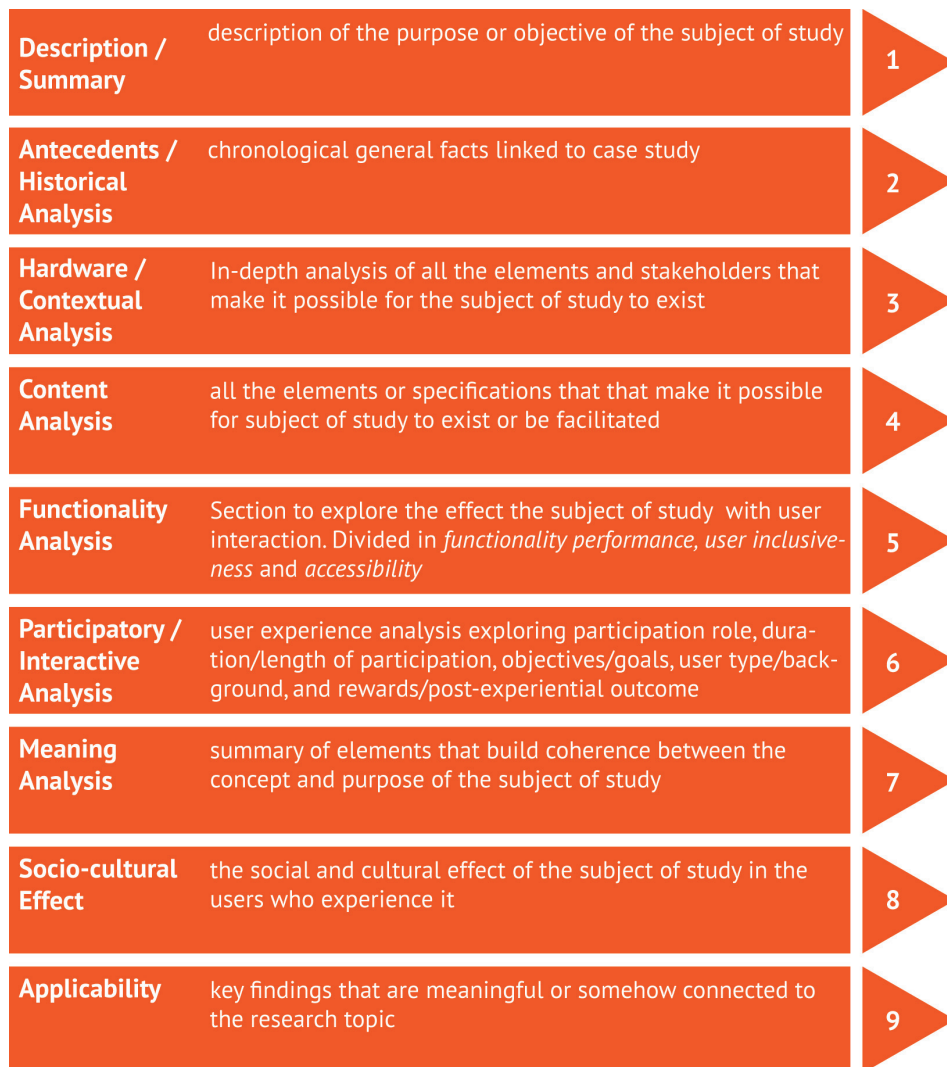


Fig.3 | Virtual-Physical Analysis Framework

Each case study was analyzed using the framework previously described. The following information is a summary of findings conformed by a representative image of the subject of study, a brief description of the core elements and purpose of each case, the effect in users and how they interact with it and a list of key findings that are relevant to this research project or serve as evidence that support my hypothesis. See appendix for detailed analysis of each case study.



Fig.4 | Images from Mauni Amavasya festival (source: <http://kumbhmelaallahabad.gov.in>)

## A.Temporal Urban Architecture Elements

### *The Kumbh Mela-Allahabad event*

It is a Hindi religious event in India that is held every 3 years in a rotation in 4 different sacred locations (every 12 years in Allahabad the main focus of the analysis), it is an individual and collective spiritual awakening-experience for people to bath and cleanse all sins. To accurately calculate the number of visitors of the festival is a challenge itself, yet for the 2013 edition around 100 million attendants were expected to attend. In order to have such density of habitants a temporary emergent city appears, bringing not only basic services but also social structure, governance and healthcare. Professor Rahul Mehrotra has studied the event, its infrastructure and perceives the Kumbh Mela as a megacity, “Seven million people live there for 55 days, so what would we gain if we looked at this as a city and not a festival” (Grounded Visionaries, n.d.). There are 2 types of social effects that can be identified. A temporary social structure emerges in order bring a kind of “order” within the

millions of pilgrims who are part of the Kumbh Mela. A process including planning, construction, assembly, operation and disassemble is needed for the temporary settlement to exist. Secondly, we have the interest of researchers like the work led by Rahul Mehrotra, Mapping the Kumbh Mela: Report from the Harvard University Team studying the Kumbh Mela. “A multidisciplinary team of over 50 faculty, staff and student researchers from Harvard University traveled to Allahabad, India in January 2013 to document and analyze the processes involved in the successful functioning of the Kumbh Mela, the world’s largest religious festival that occurs every twelve years, lasts 55 days, and draws millions of visitors to a temporary, purpose-built tent city on the banks of the Ganges and Yamuna” (South Asian Institute-Harvard press, 2015). The primary sign of the meaning the festival has in their pilgrims, its within the attendance of the pilgrims themselves. Local authorities and researchers haven’t been able to find a precise way to measure the quantity of people that go to the Kumbh Mela, but as some reports show, the festival seems to be attracting more and more followers in each edition.



**KEY  
FINDINGS**

- The festival is an example of emergence and temporality;
- The festival happens in 4 different locations every 12 years each;
- Pilgrims overpass the current infrastructure;
- Social structures also claim physical domain, which can be read in the creation of master plans that clearly delineate sectors for different social groups and religious significance;
- A religious experience of this magnitude welcomes not only hindi-background pilgrims but also anybody who wants to be in the experience;
- The Kumbh Mela infrastructure has core foundations: urbanism, business, religion (education), technology, health, governance and engineering;
- Local leaders and governmental representatives play a key role in the operation of the festival;
- Logistics and Planning are delineated by a specific commission responsible of the project;
- Main concerns are the safety and healthy environment in which the pilgrims live for 55 days;
- The rewards are introspective and spiritual;
- A festival can attract literally millions of people to a single physical space;

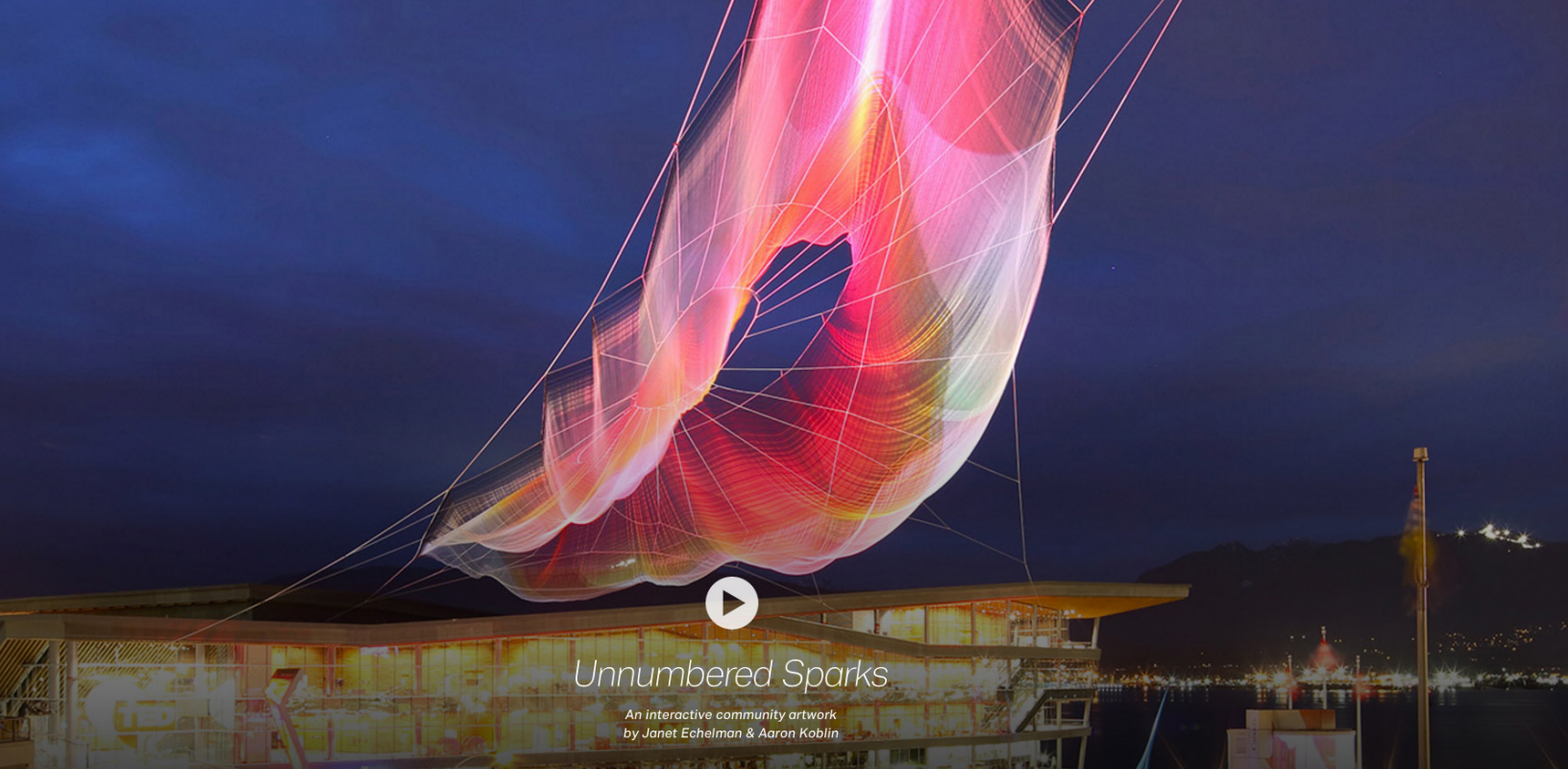


Fig.5 | Screenshot of *Unnumbered Sparks* website (source: <http://www.unnumberedsparks.com>)

### *Janet Echelman's urban nets*

Janet Echelman is an American artist who creates sculptured urban environments that combine aesthetic elements with ancient crafting techniques and technology that interact with users and the immediate context. “The art shifts from being an object you look at, to a living environment you can get lost in” (Echelman, 2013). Her artistic urban-scale interventions are points that promote civic life. Her studio serves as a co-creation hub where artists collaborate with aeronautical & mechanical engineers, architects, lighting designers, landscape architects and fabrication experts in order to explore the latest sculpture techniques, public art production and urban space transformation. “There they were in their business suits, lying in the grass, noticing the changing patterns of wind, beside people they didn’t know, sharing the re-discovery of wonder” Janet Echelman on the experience of users who witness her Denver sculpture (Taking imagination seriously-TED talk, 2011). Urban dwellers perceive urban space as a transition field, the place where people walk from the place they live and where they do their activities.

This case study focuses on a collaboration between private sector, Autodesk and Google, and with the support of several public sector groups of the city of Vancouver, Canada. The project named Skies Painted with Unnumbered Sparks is described by art critic Mary Louise Schumacher as “a social space that is simultaneously physical



and virtual” (Echelman, n.d.). It is considered the studio’s biggest sculpture and the most interactive intervention. The sculpture is influenced by interaction with users, through their mobile phones generating data that is rendered into graphics that become part of the virtual landscape of the urban net.

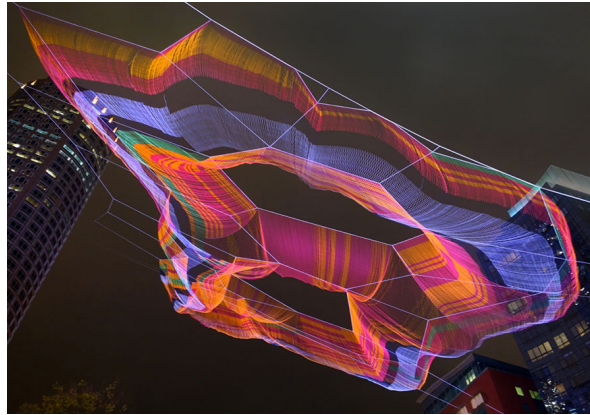


Fig.6 | *As if it was already here*, Boston, 2015 (source: <http://www.echelman.com/>)



#### **KEY FINDINGS**

- By merging technology with highly developed aesthetical, flexible and artistic spaces focal civic points for civic life can be created;
- Interventions can be temporary or permanent, they still bring value or re-invent spaces in meaningful ways;
- The merging of ancient craft-artistry and innovative technology boost the experience of those who witness-experience the physical space;
- The more interactive, the more impact on users spaces have;
- The nets play with shadows, virtual elements, colors and light;
- Net sculptures have day and night life;
- This emergent spaces invite people to interact within each other, even though they don't know each other;
- Sculpture are subtle in comparison to their contextual, yet developed enough to delineate new typologies or spaces;
- The use of existent infrastructure and space is vital;



Fig.7 | Philadelphia Park(ing) Day (source: <http://plinth.co/pervasive-history>)

### *Park(ing) Day global experience*

Annual open-source international event where urban dwellers collaborate to transform parking spaces into public park-based spaces; these spaces exist temporarily while meter fares run out. The event is held worldwide and documented through various media channels every 3rd Friday of September. The interventions seek to portray the importance of urban dwellers as key elements to transform space while promoting civic pride “until the meter runs out” (Rebar Group, 2011).

The first temporary park was created in San Francisco by using easy to assemble and de-assemble props to recreate a park in a delineated parking space. By providing fare enough to use the space for two hours, Rebar Studio used existent public infrastructure as a platform to build their intervention. The interventions seek to express creative experimentation, political and social themes aligned to the law and without aggressively disrupting their context. It is encouraged to do these interventions in highly-dense populated cities to invite urban reflection.

Park(ing) Day gives enough space for creators to proclaim public parking space, nurturing the idea of ownership of public spaces but also brings the necessary elements for designers to feel free to create anything that aims to raise awareness about civic power.



Fig.8 | First intervention by Rebar Studio, San Francisco, CA, 2005 (source: <http://rebargroup.org/parking/>)



## KEY FINDINGS

- The open-source campaign creates a public framework that facilitates innovation, social empowerment, re-invention, ownership, thrives change, urban play or entertainment;
- An original temporary intervention in 2005 that lasted for only 2 hours has been able to have impact creating a yearly event for now it's 10th consecutive year. Social media and collaboration between several stakeholders and urban dwellers around the World make this possible;
- The intervention use existent infrastructure, align to governance and invite people to reflect on the use of public space;
- The creation of a manual becomes vital for users around to understand do's and don'ts;
- Global experience;
- A combination of small intervention can invite to change in a whole city;
- By tracking yearly the development of temporary park(ing) spaces the initiative gains recognition. A proper tracking system is needed to capture proper participant data;

# FULL CONTROL YOUR CITY

au 4G LTE

いつものスマホが、リモートコントローラーになったら。  
いつものスマホで、街やイベントを動かしたら。  
噴水も、タクシーも、コンビニも、思いのままに。  
コミュニケーションソールを超える、  
身体感覚の拡張としてのスマホを、お楽しみください。

Fig.9 | Full Control Your City web promo (source: <http://www.madisonboom.com>)

## A.Experiential / Participatory Interfaces

### *Full Control Your City interface & experience*

An interactive 4 hour presentation of AU Mobile's 4G LTE KDDI mobile phone including a series of interactive interventions in the Zojo-ji Temple in Tokyo, Shiba Park and Tokyo Tower, including j-pop's sensation Kyary Pamyu Pamyu live showcase. The event served as an interactive experience and tv commercial part of the "Full Control your City" campaign. The event shows the technological capacity of the wireless powerful connection and the ways users can use it interact with their physical environment. The event brings the possibility for a selected group of guests to experience first-hand the use of communication network technology innovation and playful ways to influence facades on buildings or smaller scale interventions. The event is the result of a collaboration between various stakeholders and the development of a series of platforms. The project uses marketing and advertising as a channel to connect with people, to generate a language that is easy to understand by everybody. Even the outcome that is distributed is a tv commercial, the whole purpose of the social and artistic values relies on giving users access to technology in order to experience interpersonal and contextual connections in different ways. Users take control of a various elements from small to large scale through an app on their every-day mobile phone device. This generates user empowerment through innovative channels, thriving communications into a experiences of collective impact on immediate environments

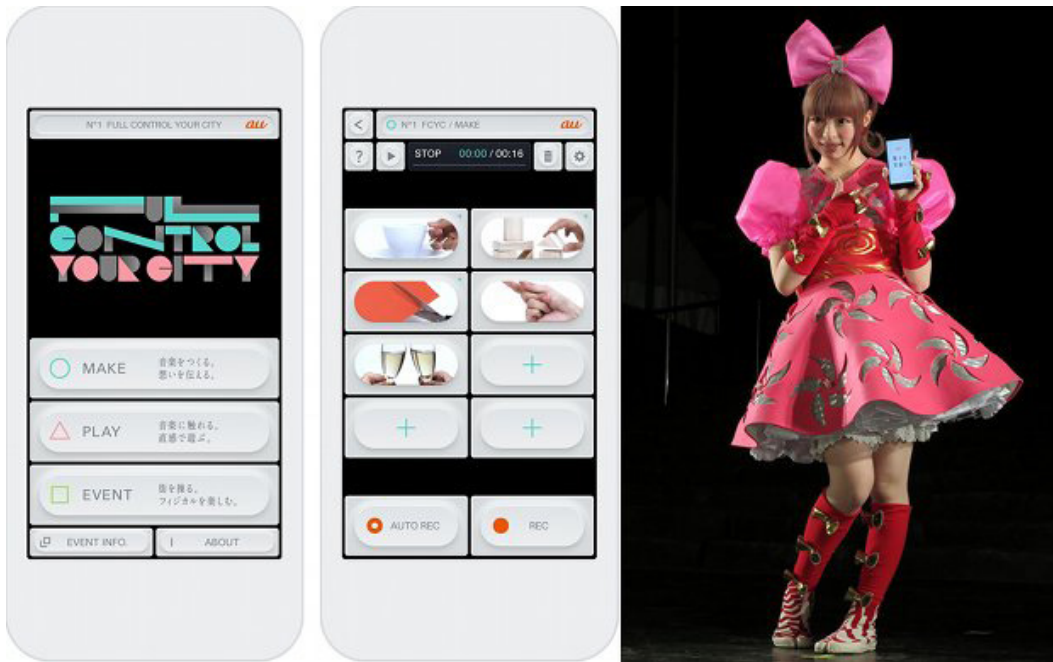


Fig. 10 | Kyary Pyamyu Pyamyu and app layout (source: <http://www.japantrends.com>)



## KEY FINDINGS

- The importance of a physical device that represent a portal to powerful wireless networks and appealing easy-to-use interfaces can be achieved through mobile phones;
- Innovative technology can be accessible through the proper design of interfaces and marketing;
- “Sync” function becomes essential;
- Using mobile devices not only connects people, but also people with their immediate context;
- Human connection not be compromised through online interfaces;
- By mixing virtual and physical elements and giving users the possibility to interact with that relationship, ultra-participatory experiences are created;
- This kind of experiences connect people who don't know each other;
- Visual elements, art and appealing music combined add up to the experiential elements of large-scale;
- By providing temporal control of architectural landmarks, users experience monumental-scale empowerment;



Fig. 11 | WoW cosplay wedding celebration (source: <http://cosplay.kotaku.com>)

### *World of Warcraft Community*

World of Warcraft is a massive multiplayer online Role Playing Game (RPG) part of the Warcraft Universe, a series of games, novels, collectibles, comics, magazines, movies and a community based on a fictitious digital world call Azeroth created by Blizzard Entertainment. What began as strategy games in the early 90's evolved into what became one of the first massive online avatar-based games in 2004. Virtual armies battle each other and computer controlled enemies in a fantasy world with virtual humans, elves, dwarves, gnomes, orcs and trolls. These armies function as guilds where their members achieve goals, improve skills and collaborate in missions online. The community has registered up to 100 million accounts, which creates a solid and complex fan base that has influence in both digital and physical worlds. WoW uses the basic elements of RPGs but takes it to the next level by providing real-time online co-playing, an open fantasy world that is constantly changing through user experiences or expansion packs and by working as an interface that enables users to interact with each other .The current WoW installment has existed for more than 10 years, registering active memberships that go from 5.7 million to 12 million between 2010 and 2015 (Statista, n.d.).What starts with online dynamics in guilds transforms into real life relationships. There are social gatherings, cosplay session, virtual and real-time weddings, and even more unique experi-

ences; like what happened to user Senna1982, whose son recently passed away and seek for guidance in how to play WoW as a way of remembrance for his late loved one. “Recently he passed away and I decide that I wanted to connect with areas of my son’s life I never understood” said the father. The community immediately replied by sharing not only game play guides and walkthroughs but also sharing personal experiences “Since my son passed I have struggled tremendously coming to terms with the reality I am part of – I am humbled at the collective love and kindness shown to me- a total stranger-by the members of this community”. After more exchanges in the WoW reddit community and within the game, the user acknowledged the continuous support “ several of you have reached out to me privately with offers of support and friendship both the in the game and in real life – I will do my best to respond to all of you. Thank you so very much. This means so much to me I can’t accurately describe it”. This is a sign of how the dynamics jump from digital to physical (Khan, 2015).



#### **KEY FINDINGS**

- Avatar creation becomes a key element for users to manifest their physicality in digital worlds;
- The success of the franchise relies on the RPG traditional elements like problem solving, battle and strategy; combined with online co-playing facilitation, guild building and the exploration of an open-digital world;
- Servers that host the digital realms must have the enough capacity to maintain them in function on all times, user frustration comes when servers go down due high-traffic or technical issues;
- The platform also provides space for community-building through message boards, text messages and voice chat;
- The free will element empowers users;
- Membership model have worked for the WoW franchise, yet users demand for the lowering of prices or free subscription models;
- When online game become as vast and complex internal structural elements arise, like the internal banking system that even allows users to play for their memberships through game gold;
- Even with number of membership varying through time the game has been able to maintain its popularity through more than a decade;
- Users find ways to transfer their online experiences into real life experiences. They go from small to large scale social gatherings to even relationships and themed weddings;



Fig.12 | *Universal Everything - PolyFauna* promo (source: <http://www.universaleverything.com>)

### *Radiohead's PolyFauna*

“Your screen is the window into an evolving World / Move around to look around / You can follow the red dot / You can wear headphones / you can get some pretty strange look in the train” posted Thom Yorke on Radiohead’s official website announcing the release of the first PolyFauna edition (Battan, 2014). PolyFauna is an exploratory motion-controlled experience that takes you to an evolving world full of primitive creatures while experiencing Radiohead’s music in an innovative way, it is not a music video nor a music player, participants discover new environments, creatures and elements of songs in an alternative world. This provides users with the opportunity to live inside the music, exploring audio in a virtual environmental way. The app is delivered with no clear instructions leading users to figure out themselves the dynamic of the experience. “Radiohead has previously looked for innovative ways to deliver their music and they are using PolyFauna, an experimental collaboration-based app, to prove that music can combine technology and its nature in more exploratory experiential platforms. The facilitators of this project are looking to find what music means in the digital age and explore ways audiences can enjoy music while embracing the gadgets we have on our lives. They do so by asking users to move around our World while they explore an alternative reality using mobile devices as a portal tool that connects the two worlds together. This discovery



experience is pulled together as a whole through the environmental soundscape, a dissection of selected pieces of Radiohead's works. This proves their point, that music can be experienced through environmental digital interfaces where users have the possibility to discover alternative worlds. "We were a little nervous about the app going live. Radiohead has a very keen and invested fan base – the kind who look for cryptic clues, hidden messages and conspiracies in their music and art" says Mike Pyle, member of Universal Everything on the target the app was being designed for. The exploratory audio-visual experience is unique to each user, no one who uses the app will have the same experience as others. Once Thom Yorke announced the release of the app 100,000 downloads were registered in the first hour (Pyke, 2014). This experiment serves as an example of efforts between different art-oriented stakeholders are taking to re-inventing the way people experience different audio-visual platforms while asking for physical activity that reacts to digital entities.



#### **KEY FINDINGS**

- Mobile devices are used as portal tools to connect physical and digital worlds;
- Minimal design and basic rules allow users to explore and discover in-depth scenarios while delineating their own approach;
- Music elements are of importance to generate holistic experiences;
- People are interested in stepping out of the World as they know it;
- People enjoy having their own unique journeys;
- Users interact with their digital environment while physically moving around while exploring an alternative space;
- The use of existent technology in mobile devices, such as gyroscope 360, are used as supports to build up the app;
- Open digital world;
- Exploratory audio-visual experience;
- People draw and interact with creatures, the option to take screenshots and share with the community is important making it possible to build a collective experience out of an individual journey;
- Narrative can change and evolve;
- Artwork based on Karl Sims' Evolved Virtual Creatures;
- Even though it's an individual experience, it has a collaborative purpose;



Fig. 13 | Fictional GALAX app interface (source:<http://my-shiny-toy-robots.blogspot.ca>)

### *Gatchaman's fictional digital urban community*

The Gatchaman Anime it's known for portraying interest in the conservation of environment and responsible use of technology through action. A group of chosen young heroes fight criminal-terrorist organizations that decide to use technology against humanity aiming to damage society and the environment. In 2013 Gatchaman Crowds series releases their new installment based on a Japanese society that has embraced mobile phone technology to create a community where, through avatars, seeks to narrow the gap between society and government. Making use of civic empowerment, the users post their needs or issues that need to be worked individually or in public sense. For example, when people are in need other users in the enclosed area are notified. This needs become missions that by their completion they become achievements that give avatars points. The system is able to identify those issues that need professional specific help. In that case only specific users receive notifications and missions, like a lawyer helping a person in legal distress or firemen needed to help a fire situation. The achievements system brings a healthy competition environment where users are challenged to help others and their community individually or as a collective. The platform is delivered in the form of a social media-based game platform call GALAX, a tool for good on others promoting civic collaborative behavior into a videogame. This case study is focused on the

mechanics of the fictional app, more than the series itself.

GALAX embraces the contemporary use of mobile devices, showing that technology and social networking can be used for the benefit of society. It's infrastructure serves as digital platforms that give full control of communication streams to their users, which also provides control over interactions and their environment. This forces administration and governmental entities to try to better and re-invent the way they service their communities, even though they show no signs of resiliency at first. People believe that heroes should not exist because they make societies dependent on a few individuals to maintain the quality of life they want. Instead the GALAX app gives citizens total control of their relationship with others. The anime also shows the need of existent (ancillary) services, such as police, special forces and firefighters where missions cannot be tackled by individuals. This brings consciousness of the importance of community, but also pressures those stakeholders that govern.



#### **KEY FINDINGS**

- Easy-access technology can be used for social and environmental purposes;
- Design must be inclusive to different age groups;
- An interactive virtual platform boosts real life social action;
- Social game – uses urban spaces as platform;
- Technology serves as the link between citizens, but the ultimate objective is to promote physical action;
- Connects strangers;
- Shortens gap between society and those who govern;
- Acknowledges the existence of community services and governance, but gives power to society;
- Cartoon-like avatars;
- Games jump from devices to real life;
- Missions-Achievements system;
- You don't need one super hero, everybody can be a super hero;
- *Update the world* concept;



# THE DOABLE CITY READER

MAKING CHANGE

HIDDEN ASSETS

NETWORK CONNECTIONS

WALKABILITY

BUSINESS CASE

Fig. 14 | *Doable City Reader* official website (source: <http://www.880cities.org/doablecity>)

## C. Innovative Urban Planning Supports

### *The Doable City Reader*

8 80 Cities is a Canadian non-for-profit organization with international presence that promotes activities in urban spaces such as biking and walking, highlighting the fact that these public spaces have a positive impact in urban dwellers. 8 80 takes its name from the principle that if great urban spaces are designed for 8 year olds and 80 year olds, a wide spectrum of habitants that becomes inclusive. In an introductory video by Gil Penalosa (Executive Director) she highlights some of the main objective of the organization which relies on the creation of safe accessible enjoyable places and neighborhood that prioritize human interaction. This Case Study focuses on the Doable City Reader project, a report presenting information on how to achieve the doable in an urban-community scope. “There is so much that can be done to make our cities happier, healthier and more prosperous places. Some of those things will take years or decades to happen. But others can happen right now” (8 80 cities/doable city, n.d.).

The projects developed by 8 80 Cities try to have a positive impact in communities and inspire cities to re-invent the way they approach their public spaces. They deliver all necessary tools to their clients in order to take action and implement change. In the case of the Doable City Reader, the initial phase was brought by a collabo-

ration of the Government of Ontario and Communities themselves. For the second stage, a collaboration with the Knight Foundation and Discourse Media, groups that have a journalism and media approach towards community and social aspects, made it possible to bring experts from all over North America to create a document that expresses the findings of the event based on the sharing of innovative methodologies. The report is co-created by stakeholders and participants who share their knowledge and experiences while trying to implement a series of small actions that can be performed by various organizations in order to enhance their community and proper use of physical space. Coherent to a sense of community, the report shows various layers of information from general to in-detail about what many stakeholders and urban dwellers are currently doing to accelerate change with easy-to-use tools. These tools can be applied to community programs or even urban design in different stages and scales. These tools can be found through 4 core sections:

*Making Change:* explores the opportunity of taking action in small tasks that represent low cost and low risk but can have impact in communities.

*Hidden Assets:* Reflects the idea that parks serve as indicators of how cities perform and their impact in the lives of people who interact with these spaces. Highlights the fact that public spaces are already there they just need to be acknowledged and transformed into opportunities.

*Network Connections:* the way we get between places in our daily life, between different points that include private and public spaces. For example, parks become more efficient when they are interconnected to other parks and spaces.

*Walkability:* prioritizing the walkability aspects in the design of spaces is vital, the way dwellers can reach different spaces and how they are encouraged to make the most of their use of all kind of spaces.



## KEY FINDINGS

- Cities should be safe, accessible and enjoyable places;
- Neighbourhoods should prioritize urban dweller interaction;
- There is a need to improve cities;
- Tools to perform communicate engagement need to be of easy access to everyone and various age groups;
- Projects like the Doable Reader refer to citizens as city makers;
- The condition of parks serve as indicators of how well or poor a city is performing;
- Parks have an effect on the lives of urban dwellers;
- A great quantity of urban space lies there next to urban dwellers, yet it is not properly used or not even acknowledged;
- A successful community has a balance of various factors, it doesn't only rely on urban designers;
- Integration of spaces is important;
- Urban dwellers can take small action, that can add up to a network of other small actions that thrive significant change;
- Doable means possible;
- Urban spaces are there, waiting to be exploited in the right ways;

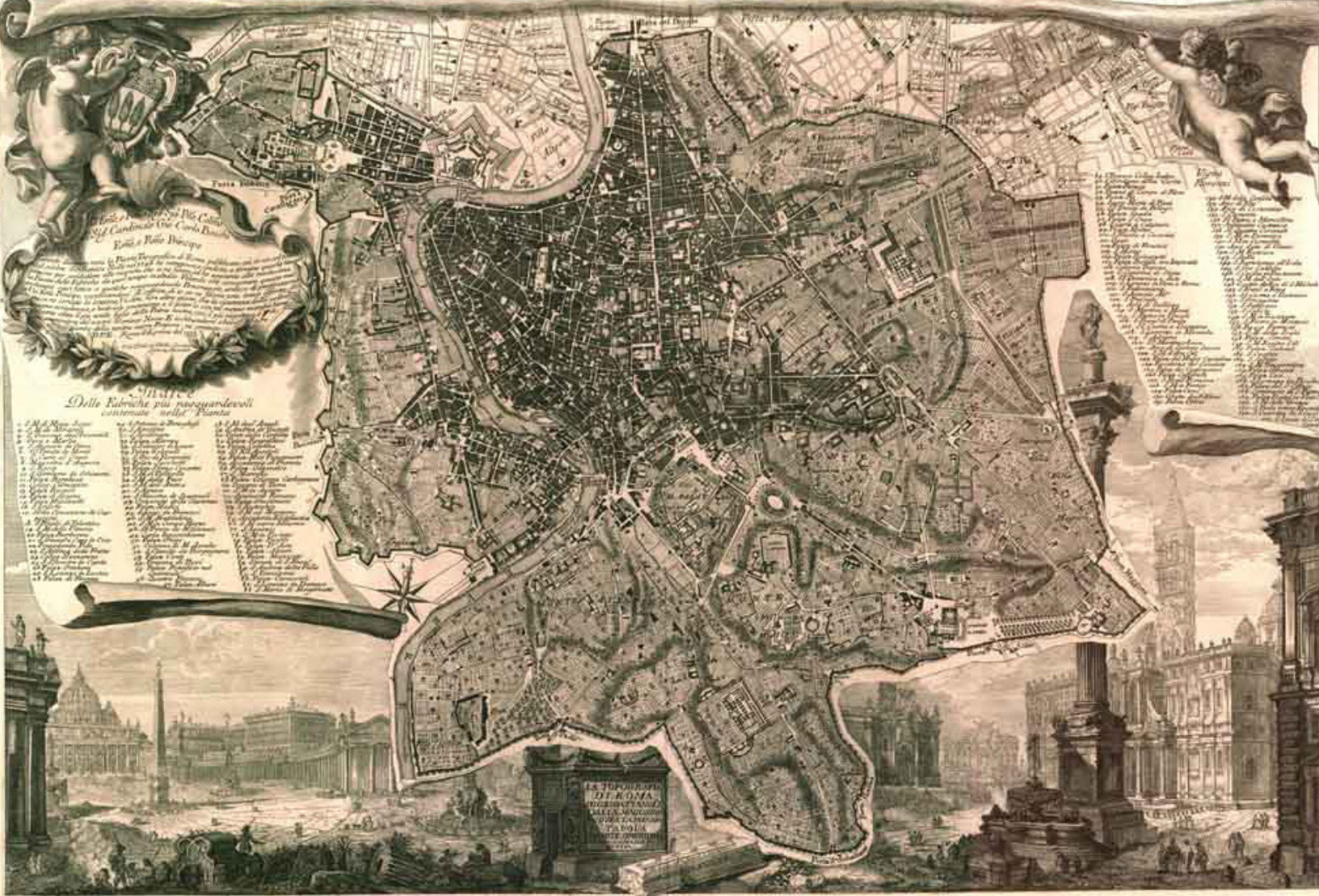


Fig. 15 | Nolle Map (source: [https://en.wikipedia.org/wiki/Giambattista\\_Nolli#](https://en.wikipedia.org/wiki/Giambattista_Nolli#))

### *Giambattista Nolli's urban visual legacy*

In 1736 Pope Benedict XIV commissioned the Pianta Grande di Roma to Giambattista Nolli, an Italian Architect and Surveyor, a map that would represent the 14 traditional rioni (districts) that conformed the city of Rome. Nolli created 12 copper plate engravings that together re-invented the way urban representation is delineated in a map that today is considered a masterpiece and a source of inspiration for many.

The Nolli map is an example of the use of detailed and complex data that transforms into an easy-to-read masterpiece that has served several purpose, one of them linked to the understanding of physical space. The map was innovative in its moment because it represent in high-detail the context of a growing city that merges classic and modern elements. Nolli uses simple visual tools to unify the representation of physical space and shows evidence of the relationship between the civic

spaces and buildings. Its statement is robust, because it takes inspiration of previous representation of cities but it is able to combine different methods that simply complex data in large-scale information. The Nolli map represents the acknowledgement of order and the unique characteristics of several districts through codes, aerial views and symbols. “The Nolli map demonstrates the principle of contextual design evident throughout the city of Rome at the scale of the building and the scale of the city as a whole. The relationship between “outside and inside” and building and place are distinctive features that Norberg-Schulz has called the “genius loci” of Rome” (Tice, 2005). The Nolli map brings balance between complex data and the effective use of visual methods to communicate information that can be used by a wide range of users. Even though the map is not design to interact with users, the map becomes a source of inspiration that has helped to enhance the understanding of the influence of physical space and urban dwellers through centuries.



**KEY  
FINDINGS**

- Monochrome representation based on grey-scale and hatching;
- Symbols to represent the identity of spaces/districts;
- Coding connects visual representation to detail data;
- By unifying through color code the variety of architectural spaces, urban open spaces are highlighted showing the grid and interconnectivity of macro-spaces;
- Representation portrays a surreal yet detailed representation of physical space;
- Visual methods invite users to reflect on their dynamics with space;
- The map is both a scientific and informative piece that becomes also artwork;
- The map itself becomes a source of inspiration a toolkit that delineates posterior work;





Fig. 16 | World Game participants (source: <http://www.genekeyes.com/FULLER>)

### *World Game experience*

“Make the world work, for 100% of humanity, in the shortest possible time, through spontaneous cooperation, without ecological offense or the disadvantage of anyone” (Buckminster Fuller Institute, n.d.). The World Game, also known as “world peace game” or “great logistics game”, is a tool that asks participants to rule the world through scenario exploration. Users have the objective of ruling while making sure everyone and all areas related to our lives are addressed, understand how decisions have impact over people and challenging players to understand how the world works; all of these with the objective of improving life on earth. Originally created by architect, educator and inventor Buckminster Fuller, the game has evolved into a Global Simulation Workshop developed and facilitated by o.s.Earth, a for profit organization that has taken the original game into an interactive experience that can be played by up to 600 players simultaneously.

Once players select their teams, countries or regions they begin to think about holistic solutions to complex large scale problems that shape the interaction between different stakeholders and cultures. The idea is to think about the differences between the different groups that make it possible for all things we know as part of our lives to exist and be approachable by any individual. The objective is to take care of all elements of the world with the responsibility of generating a fair environment. Once the game is finished, players reflect on their decisions and different

ways of acting with each other. They are invited to analyze game play and to identify if they played a fair game while achieving their objectives and collaborating with others. It is important to highlight the design of the playground, the Dymaxion map shows a new perspective of the world as a unified piece of land surrounded by the seas where different cultures must interact and bring social good together.

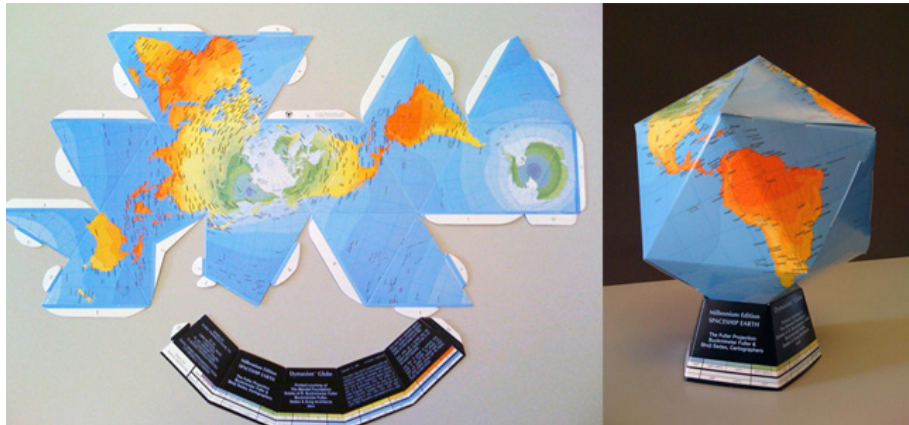


Fig. 17 | *Dymaxion model* Honeywell edition (source: <http://www.genekeyes.com/FULLER>)



## KEY FINDINGS

- The framework works as a solid base that doesn't change but is flexible enough to emphasize on specific goals;
- The playground is the world represented on the unique Dymaxion map;
- The ultimate goal is to take care of people and also all organizations that delineate the social environment;
- Fair play is encouraged throughout the facilitation of the game;
- Game principles are facilitated to invite all kind of players, making accessible for everybody;
- The game has evolved through more than 2 decades but is always faithful to its principles and objectives;
- Gameplay is always unique, consequence of players' input;
- The game is facilitated only by the owner of the rights – no public availability;
- Players use real world data and roles;
- The objective is to play a game to show how the world should work;
- People learn and reflect better when involved in experiences where they put in practice decision making;
- The Dymaxion changes the way people perceive the world;

## Case Study analysis summary

After running each subject of study through the analysis framework I was able to identify key insights linked to physical or digital infrastructure that has a particular effect on the users that experience each case study. My focus is on those elements that enhance experience, serve as supports or show evidence of the potential of merging of both realms while aiming to impact the behavior of urban dwellers. This element can be perceived as independent elements that support their own physical or digital platforms, but I am looking to place them together so they become links, interconnection elements that will become the foundation principle of the framework portrayed in section 3 of this report.

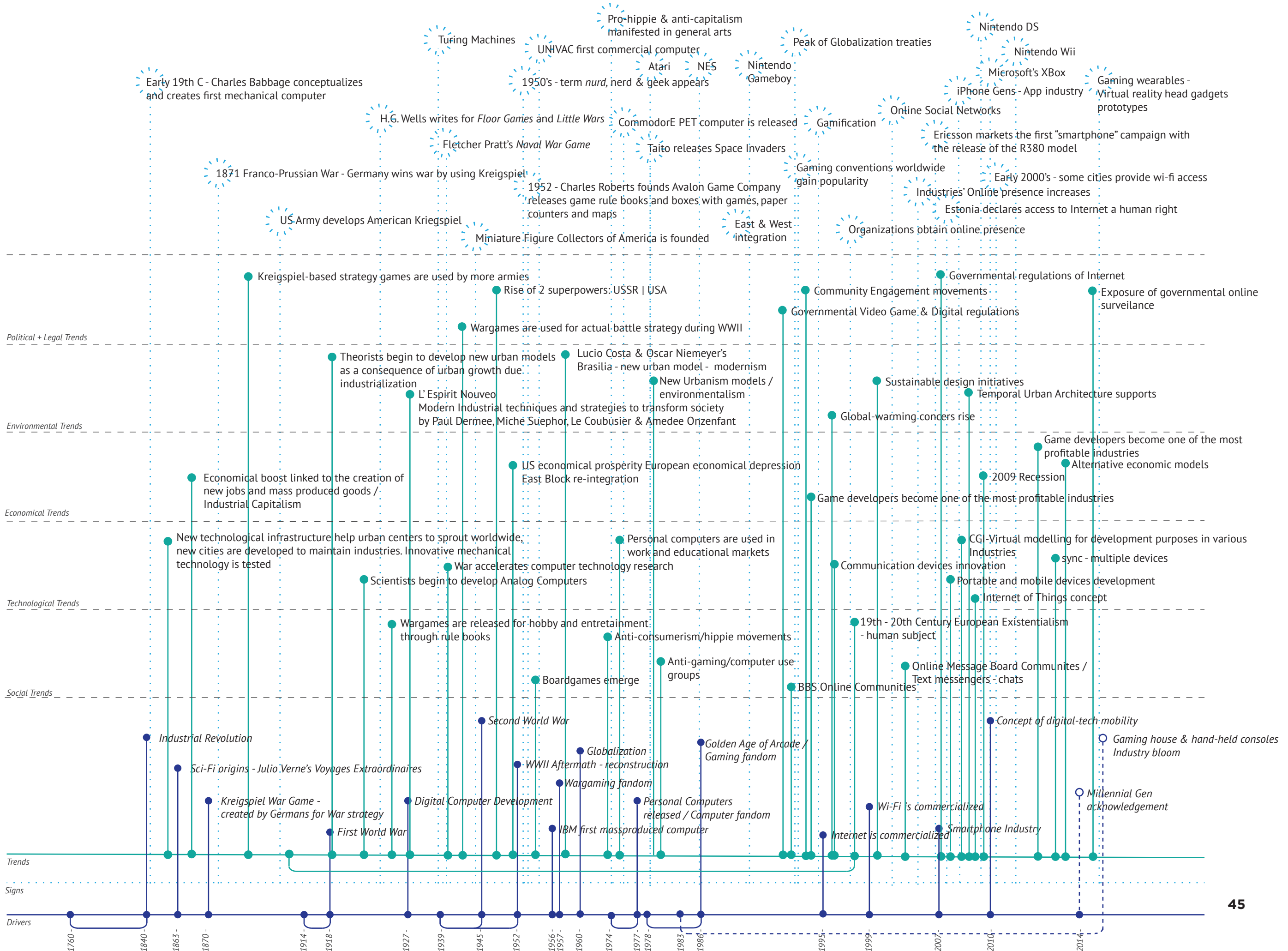


## 2. FUTURING & IDEATION

### ***Drivers, trends & signals analysis***

The following analysis seeks to identify all forces and elements that correlate with each other in order to comprehend the context that surrounds the core elements and principles of this research project. It is presented in a chronological-based chart that shows the relationship between Gaming Development, Urban Design Theories and Technological – Digital development.

Specific historical events serve as drivers that detonate forces that impact users, their environment and the way they use technology through time. Conducting historical analysis was necessary to understand how several factors boost the development of areas, ideologies and products that eventually provoke the merging of society and digital entities. These factors manifest as trends that influence behavior and can be classified in social, technological, economical, environmental, political trends (Makos, 2015). It is important to identify the signs that serve as evidence of how the forces subject of study have integrated or impacted the human experience. The horizontal-base axis of the diagram shows the chronological order in which this particular driver elements appear to impact our history whereas the relationship between drivers, trends and signs is developed vertically.



DRIVERS, TRENDS & SIGNALS ANALYSIS  
Fig.18 | Drivers, trends & signals analysis

## ***Drivers, trends & signals key findings***

### *Technological – Digital development*

Since the beginning of the Industrial Revolution society started to integrate technology and mechanical processes into various human fields with the objective of improving life. With this starts a race of innovation developed by public and private organizations. Many of the most important platforms that we know come from governmental and military classified projects, such as the development of computers and the internet. The first versions of these were designed for authorized users only, but once they cross their original boundaries, the private organizations found the way to make this platforms accessible to the average user. Through time technology has become more effective which eventually provoked the development of home and handheld devices. Once the concept of mobility was introduced, many digital platforms became handheld object that follow us through our daily activities anytime and everywhere. Their increased popularity and commercial success serves as evidence of the appealing channels this platforms use to engage users. Today we see how many social and governmental groups are interested in developing digital entities that places society in constant contact with technology.

### *Gaming Development*

Some of the principles of contemporary gaming first appeared in European war strategies in the 19th century which eventually inspired the creation of the first board and card games. Supported by sci-fi and fantasy literature game developers began to develop more complex stories. When computer and digital technology became commercial, game developers decided to develop games using digital platforms. The first digital games were formed by 8-bit graphics and simple stories but have turned multi-layered experiences. Videogame technology has created innovative platforms that enable more virtual experiences to users through their products. The commercial success of the gaming industry serves as evidence of its appealing channels that impact many users.



### *Urban Design Theories*

Many of the urban design principles which have created the spaces we live in come as a consequence of the World Wars in the 20th century. This post-war period served for the re-analysis of many areas of western civilization, new urban theories came into practice shaping the cities we live in. Design theorists and policy makers promote community engagement in order to solve complex social issues. Nowadays many of the modernist principles of urban design are challenged, contemporary designers believe in the reutilization of space, giving new meaning to existent spaces and creating positive social impact .

## ***When the Digital meets the Physical: Stakeholder Analysis and Convergence Map***

At this point of the research process it has become vital to explore the creation of civic portals that connect the physical communities and infrastructure with those that exist in the digital realms, focusing primarily on those within the video game communities. Stakeholder analysis is the first step that will help to define the core entities that influence both systems; those who can enable the creation of such portals.

### ***Community Engagement Realm***

#### ***Primary***

Passive & active Urban Dwellers

Children

Youth

Adult

Senior/Elderly

Community Leaders

Governmental Leaders

Social Institutions & Organizations

Policy Makers

Politicians

#### ***Secondary***

Administrative Entities

Infrastructure facilitators

Private Business sector

### ***Digital Community Realm***

#### ***Primary***

Passive & active Users/ Gamers

Game Designers & Developers

Marketers

Indie Game Developers & Distributors

Commercial Game Distributors

Online Community Leaders

Online Community Administrators

#### ***Secondary***

Parents

Academics & Researchers

Governmental Regulators (ESRB)

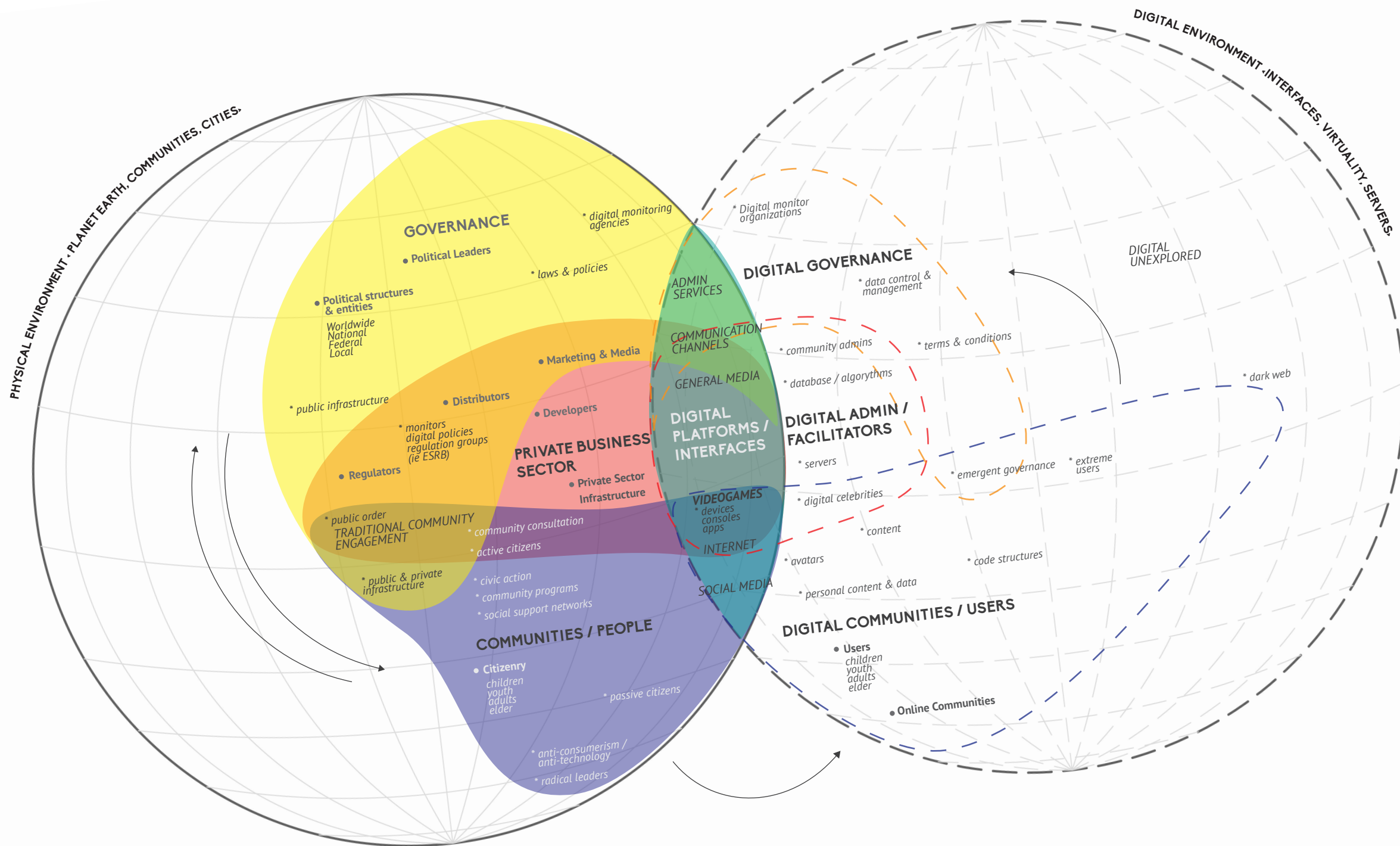
Media

Anti-Video Game Groups

To draw a clear understanding of how this stakeholders and systems interact, the following convergence map is created with the purpose of highlighting influential forces, key relationships and the potential existence of civic portals as a link that will help to nurture the physical and digital realms.

**WHEN THE DIGITAL MEETS THE PHYSICAL**

Fig.19 | When the digital meets the physical convergence map



**Summary**

This convergence map helps to visually identify how core areas that shape community engagement overlap, influence each other and behavioral patterns in the digital and physical realms. The research project suggests that the digital realm serves as a reflection of the physical world. What is evident in this map is that even though these 3 areas manifest in both realms they behave differently. On the physical side, governance has a predominant role delineating physical space, community access to spatial infrastructure and policies that dominate the private sector market (responsible of granting access to digital technology and platforms to average users). On the digital realm governance loses strength, private sector becomes a provider and users as community has absolute control. Even though authorities are making an effort to understand and have a major role in the digital world, the control is still on the hands of few providers and people themselves.

**Merging point**

The existent digital platforms have become the primary link between both realms, through users manifest in the digital world and have access to a virtual reality that enhances or modifies their behavior.

**Influence pattern**

Governance, the private sector and community constantly influence each other through the identification of human needs and the solutions brought by private and public sector. When users have access to digital interfaces they influence the digital world which eventually generates pressure on the other 2 groups. There is a broken link when it comes to governance and their understanding of digital platforms.

**LEGEND**

- Physical realm
- - - Digital realm
- Merging point
- Governance
- Private business sector
- Communities

## ***Scenario Development: Generic Images of the Future***

I have been able to show evidence of several elements that have the potential to interconnect the physical and digital realms in order to create an urban-scale citizen oriented experience. In order to test the concept/outcome of this project, it is important to understand the world it will exist in. I have analyzed the past in order to understand the present context, now it is time to explore the futures. “Giving the limitations of mathematical modeling and the complexity of social futures, the most frequent way to bundle together a number of variables is to construct scenarios – formal stories about how a number of variables might interact to result in some kind of future.” (Dator, 2011.). Scenario development will expose a series of scenarios through the experience of personas that live in a particular possible context, which characteristics might determine the way users perceive their physical and digital environment. The approach given through this foresight exercise is based on Jim Dator’s generic images of the future. This method is based on the idea that “there are just for main visions underlying attempts to outline possible or preferable futures” according to a summary from science writer Jon Torney (Evans, 2010). These method develops scenarios under growth, collapse, discipline and transformation visions. The scenarios will focus on human individual and collective experiences, environmental factors that influence lifestyle and industries, the way governance is provided, the level of reliance on technology and the approach towards community. A digiphysical-o-meter tests how the characteristics of each scenario might benefit or enable the Principles of Urban-Physical Experience design; fit being the scenario that represents the preferable environment in which any outcome from the application of the principles could be more accessible to users.



Fig.20 | Generic images of the future chart



Fig. 21 | *Growth collage* (sources: <http://www.wallpaperup.com> & <https://ec.europa.eu/epale/>)

## ***Growth***

### ***Prologue to Dampé's world – growth through a digital society***

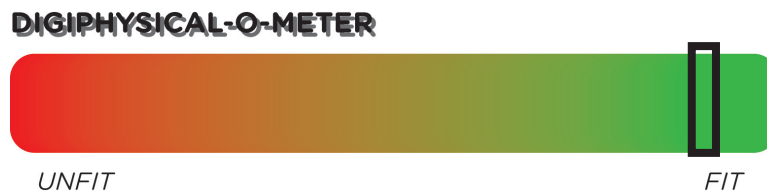
Hello, my name is Dampé, I am a 35 year old professional who lives in the macro-city of Toronto. I want to share with you how life is in the year 2025, a world driven by the use of digital technology but appreciation to the place we live in. To anybody who would be traveling through time, the world wouldn't seem to have changed that much at first glimpse, at least not the physical aspects of it. Yes, there are some geographical changes – maps of the world show changes in the artic and some coastal areas, some regions are less populated by rainforests or green spaces whereas some former desert regions have now large bodies of water, new flora and fauna. The world is not as apocalyptic as we thought it would be, based on the research and media of the first decades of the 21st century. It is very similar in some aspects, but has radically changed in others.

A couple of years ago humanity found alternative fuel sources, we still rely on oil, but we have found new ways to produce and manufacture many of the infrastructure that shapes our lives. With more sustainable resources came more effective production of technological gadgets, making it possible to deliver technology to most of earth's population. As a consequence, digital technology is embedded in most of all industries and sectors related to human life.

A movement called the Wi-fication of Nations, created by private sector stakeholders and people themselves has provided access to internet by 90% of the population. The movement seeks to reach connectivity between all the people around the world, no borders or boundaries. The movement was so successful that pressure grew on governments to embrace technology. Governments have turned digital, 80% of their

services are provided online and facilitated by OS servers. Governmental institutions and private organizations have agreed on a legal structure of the web unifying digital entities through transparent digital policies which has made it easy to rely on virtual sources.

Embracing the digital on us has improved the way approach many things. Social media is stronger than ever, digital experiences use augmented reality expanding our limits as a collective, we understand our environment better, we connect with different social groups we never thought we could reach; it's not only about entertainment but about social connectivity and enabling empathy. We have found a balance between technology and reality, many issues still persist but at least we've found an effective way to understand each other as a community.



The conditions presented in this possible scenario generate proper conditions for the principles to be applied, various stakeholders are interested in the merging of the digital and physical in order to have a positive impact on users. Users believe in the potential of digital platforms to enhance many aspects of life and are interested in exploring new ways to generate community values.



Fig. 22 | *Transformation collage* (sources: <http://static9.cdn.ubi.com> & <http://i2.mirror.co.uk>)

## ***Transformation***

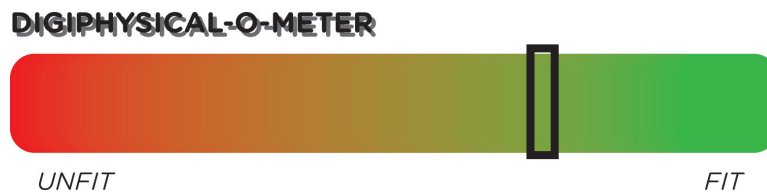
### ***Prologue to Anju's world – transformation found in absolute technology***

My name is Anju, and I will help you to understand how it is to live in a world absolutely driven by technology. I experience life through electronic devices, I see the world as a digital machine. I am not very connected with my environment, but somehow stopped caring about it. I found that being over-conscious about all the issues in the world and our effect on it was just generating guilt on all human beings. I guess that is why we started to rely more on technology.

Having friends and family is nice, but it's all about my own digital experience and how I evolve in the virtual world. We can do everything on our own as users, human beings if you prefer to call us that way. We no longer need politicians or leaders, artificial intelligence is way more effective than human beings not only in mostly field. What happened to all the people that used to perform those jobs you ask me? I don't know for sure, I once accessed to their information online and most all of them work for digital maintenance and development, like most of all do. I am part of the Absolute tech – global program, so I periodically move from region to region helping with converting rural areas into digital hubs. At the beginning people asked me if I wouldn't miss living in a single place, miss my peers or the place I grew up in. But since I can be connected with whomever I want and I find leisure and entertainment through the digital platforms, it really doesn't bother me at all. No wonder why it is the #1 ranked successful program in the world.

Being all the time digital is all I know. I am not very conscious of what is happening around the world, but I know I can have access to anything and everything if I would be interested in that. I could even have access to virtual experiences that re-enact

forests, beaches, lakes and all those extinct environments. I must leave now, don't tell anyone but some users and I are going to explore the dark web, we are looking for dealers of digital estimula, the newest sensory experiences. If you ever want to contact me and I have time to chat, contact me through my online persona.



In this kind of setting there are enough technological supports to apply the principles that try to merge the physical and digital. The habitants of this possible future rely solely on technology and digital entities to perform their activities. They don't longer feel attached to any kind of social order, therefor seems like there is little interest in anything that promotes community. Yet the fact that the *Principles of Urban Digital-Physical Experience Design* try to create a balance between both, there are opportunities to provoke community even it seems to be not a priority.





Fig. 23 | *Discipline* collage (sources: <http://jasonwilliams400com.startlogic.com> & <http://thefederalistpapers.integratedmarket.netdna-cdn.com>)

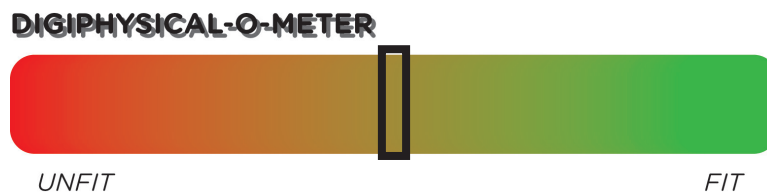
## ***Discipline***

### ***Prologue to Rosso's world – discipline in a stagnated place***

My name is Rosso, I am a 32 year old accountant who works for a bank analysis firm. I will use the following text to introduce you to the world in 2025, at least I see it. The future is definitely not what our grandparents and sci-fi author's imagined, it is actually the same as the past. My friends and I often say "the future is the 90's!" mainly because everything looks the same as back then. You see, we live in a fragile economy due the shortage of most all of the resources and we've found no way to repair the damaged our footprint as humanity has done to the earth. So we basically dedicate our lives to maintain the world as we know it. There are no enough funds to perform research or anything specialized, so all our efforts go to fix the existent conditions we live in instead of trying to improve it. That's everything also looks the same. Because of this we have seen many innovative programs put in shelves or simply vanished, I guess we are at a point in which we don't want to try anything new anymore.

The city I live in, like mostly all the cities in the world, have adopted urban models that has stopped the development of new areas and growth, those responsible of urban policies only focus of maintaining what is already built, experts call it Modernism re-visited. So it's basically like all the things urban dwellers already know, it's like being paralyzed through time. Things are not as bad as they sound, though I always say that living so disciplined we have less time to enjoy ourselves or find ways of entertainment, we are forced into solving all our problems that we rarely have time to relax. This has affected many industries, you see few movies, videogames, sports championship every now and then, but it has become something atypical.

Technology-wise there's not that much happening, yes every six months they release a new smartphone or computer that goes either bigger or smaller and it's available in more colors, but nothing really innovative. I guess if you want to get your hands on something new and interesting you have to go to those small digital communities to find what indie developers and hackers are doing, but it's always expensive and on your own risk. Life might seem limited but as my father says "we have our friends, we have our families and we have our debts but we get the chance re-enact life as we know it".



Rosso's vision of his reality shows a world that has stopped progress. Challenged by the environmental vulnerability and economic disparity has become a barrier for many innovative and technological advances. In order to maintain a specific quality of life, people have to constantly fix issues instead of having time to explore ways to improve their conditions. With such limited resources, relying on the development of digital platforms doesn't seem sustainable. Though there is a sense of community and collaboration, humanity seems driven by the desire to keep things as they were in the past in a world that has already changed.



Fig. 24 | *Collapse* collage (sources: <http://streetsy.typepad.com> & <http://www.abc.net.au>)

## ***Collapse***

### ***Prologue to Tatl's world – the broken digital***

Tatl is a 25 year old female who lives in an environment radically different from that one humanity lived in during 20th and beginning of the 21st century. The fall of oil-based systems, collapse of former economical models and lack of resources makes access many things or a lifestyle similar to the one in the past almost impossible. It's a setting in which the gaps within society have grown wider, there's little interest or no resources for administrative stakeholders to do that much about it.

Few things are digitized like administrative servers, tax services or public databases, something that for average citizens like Tatl is basically insignificant or has no influence in her life at all. Many things have slowed down around various platforms or disciplines, including all social equity efforts and urban design exploration. Mass production no longer is a priority, only few privileged have access to premium digital and technological services. Social anti-tech movements are manifested all around the world in 2025, society questions the importance of keeping funding for this sector, encouraging a less digital and technological lifestyle. Scholars begin to refer to this as the Primitive relapse era, a world where society is taking emergent radical approach to survival, people are witnessing the decline of all things that were considered humanity's achievements. The fact that digital are of no relevance to society doesn't mean community sense is jeopardized; communities are discovering new ways to maintain themselves and grow strong together. The potential for social innovation relies on people instead of political or technological platforms.

Tatl has no access to computers or internet, she's more focused on adapting to change, maintaining her urban farm and finding ways to trade with locals and build an alternative economy.

## DIGIPHYSICAL-O-METER



In this particular scenario we see social disbelief in traditional models that used to shape life in past decades. People believe in change and are willing to explore new ways to become strong communities. As an aftermath of collapsed disciplines and industries there are low expectations on relying on digital or technological realms. In a potential future like this, there is still interest in community building but doing so through technology is not a priority. This scenario represents risks and barriers that compromises the facilitation of the principles previously discussed in this research paper, unless there might be alternative sustainable ways to have access to digital platforms not relying on traditional gadgets and devices.

## *Dialogues with a research avatar: “the framework”*

### **Intent**

In the following dialogue we see the researcher and research avatar discuss the research process development and how to portray the findings.

**Participants:** Octavio Juarez (OJ) & Octo



**Octo:** So... what's going on?



**OJ:** We have in our hands so many findings! There is so much evidence that supports the ideas we have been discussing! First, we had a series of case studies which our conclusions eventually became a list of design principles that proves our point-



**Octo:** what point was it again?



**OJ:** Octo come on! People are highly interested in engaging into digital experiences that enhance their reality, it's happening in many places and platforms at the same time as we speak! It's just that all this is happening in a scattered way. There's a lot of potential into bringing all of this together with a social purpose!



**Octo:** Octo: I was just testing you...you have so many ideas that...



**OJ:** I know, I know... but all those ideas are settling down and becoming something stronger. That's why it has been important to run our findings through more methods and exercises. We've identified which are the stakeholders in this two realms that could facilitate the merging of this elements, we know how they interact with each other through the material generated in the convergence map, we've learned which are the forces that are delineating the context in which all of this could happen and we've even explored potential futures that directly might affect our findings!



**Octo:** Right! So I have a challenge for you... it's call "narrow it"



**OJ:** narrow it!?!?



**Octo:** ok, not the right term I was looking for... let me put it this way; I know you are doing this for the sake of research, innovation and social good, but at this point only you and I can sort of see what's embedded in your research. Imagine you are about to share this with somebody that know absolutely nothing about it, how would you do it?



**OJ:** I mean the research report itself would be one way, but this goes beyond that, this is the foundation of something bigger. This should serve as a framework for anybody to provoke the merging of the digital and physical enabling community appreciation. Octo, let's create a blueprint of ultra-participatory urban interactive experiences!

### **3. FOUNDATION FOR URBAN DIGITAL-PHYSICAL EXPERIENCE DESIGN**

## Foundation for Urban Digital-Physical Experience Design

The previous analysis of each Case Study provides an aggregated collection of design principles, to be combined, to assure the creation of a robust participatory-experience that uses existing urban and technological supports in order to trigger and influence behavioral change in urban dwellers. The following diagram is a summary of those elements that must be considered:





## EXPERIENTIAL PARTICIPATORY INTERFACES

5

### EXPERIENTIAL PARTICIPATORY

- 5.1 EXPERIENTIAL PARTICIPATORY FOUNDATION
- 5.2 SOCIAL-URBAN GAME
- 5.3 INDIVIDUAL & COLLECTIVE EXPERIENCE
- 5.4 ELEMENTS OF DISCOVERY
- 5.5 USERS INTERACT WITH THEIR ENVIRONMENT

6

### COMMUNITY CHALLENGE

- 6.1 INVITE USERS TO REFLECT ON THEIR IMMEDIATE URBAN ENVIRONMENT
- 6.2 DIGITAL EXPERIENCES & ACTIONS MOST PROMOTE CIVIC ACTION
- 6.3 PROVOKE USERS TO INTERACT WITH EACH OTHER
- 6.4 ENABLE SHARING

7

### TECHNOLOGICAL & DIGITAL SPECS

- 7.1 PORTALS SERVE AS POWERFUL WIRELESS COMMUNICATION NODS
- 7.2 SYNC FUNCTION - CONNECT USERS THROUGH THEIR DEVICES
- 7.3 MOBILE DEVICES BECOME EXPLORATORY TOOLS - CONSIDER ALL COMMERCIAL OS'
- 7.4 EXISTENT TECHNOLOGY IN MOBILE & GAMING HANDHELD DEVICES

8

### GAMING ELEMENTS

- 8.1 AVATARS - USERS MANIFEST THEIR EXISTENCE IN VIRTUAL WORLDS
- 8.2 CRYPTIC ELEMENTS TO DISCOVER
- 8.3 RPG-BASED SKILL REWARD SYSTEM
- 8.4 PHYSICAL ACTIONS HELP USERS TO INTERACT WITH DIGITAL ENTITIES THROUGH DATA

**INNOVATIVE URBAN PLANNING  
SUPPORTS**

9

**COMMUNITY ENGAGEMENT**

- 11.1 DOABLE - SMALL ACTIONS HAVE EXPONENTIAL IMPACT
- 11.2 USERS MUST ACKNOWLEDGE THEIR INFLUENCE IN FORGING COMMUNITY
- 11.3 APPROACH PUBLIC SPACE AS AN INTERCONNECTIVITY PLATFORM
- 11.4 EMBRACE LOCAL GOVERNMENT & POLICY FACILITATORS

10

**MAPPING & DATABASE**

- 10.1 DATA REGISTERED THROUGH GAMING REFLECTS ON USER'S SPECIFIC NEEDS
- 10.2 DATA ANALYSIS SHOULD BE ANONYMOUS & HANDLED THROUGH A TRANSPARENT PROCESS
- 10.3 CIVIC PORTALS SHOULD BE LOCATED IN DIFFERENT REGIONS OF CITIES THROUGH CYCLES
- 10.4 CODES & SYMBOLS HELP USERS TO UNDERSTAND COMPLEX DATA

11

**TYPOLOGY OF EXISTENT SPACE**

- 11.1 ACCESSIBLE PUBLIC OPEN SPACE CONSIDER PUBLIC TRANSPORT & WALKABILITY
- 11.2 IMPLEMENTED EXCLUSIVELY IN PARKETTES & NEIGHBOURHOOD PARKS
- 11.3 IMPLEMENTED IN HIGH-DENSITY RESIDENTIAL & COMMERCIAL ZONING
- 11.4 IN AN OPEN SPACE

12

**SOCIAL VALUE**

- 12.1 ENABLE PEER-TO-PEER CONNECTION & PEERS-TO-SPACE CONNECTION
- 12.2 GENERATE USER'S ABILITY TO UPDATE THEIR CITY THROUGH CIVIC ACTION
- 12.3 ENABLE CHANGE IN REGIONS THAT HAVE POTENTIAL TO BE RE-INVENTED
- 12.4 NURTURE CIVIC POWER

Fig. 25 | Foundation for Urban Digital-Physical Experience Design

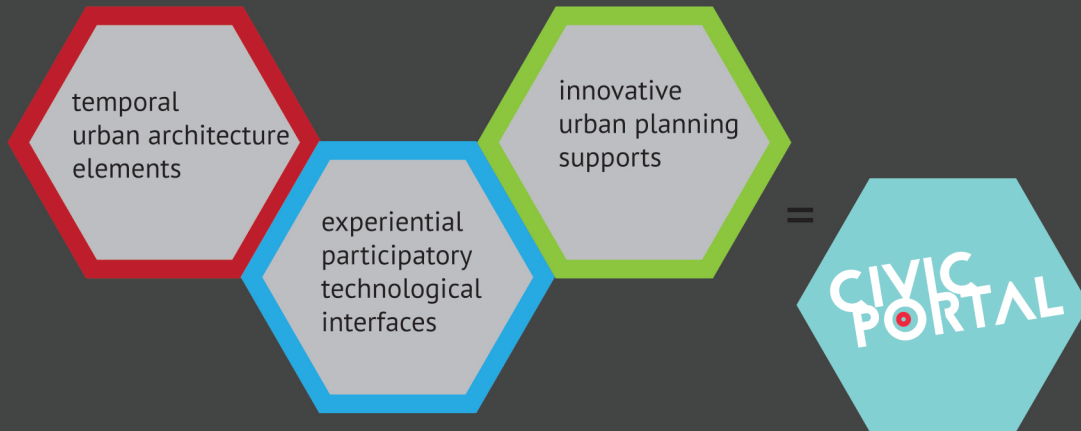


Fig. 26 | Elements combined: Civic Portal

Once the foundation elements are combined we can create an experience that generates a balance of existent physical elements with digital tools that enhance the perception of users while helping them to re-discover their environment, reflect on their approach towards their physical world and collaborate to redefine space. These physical-digital platforms are called Civic Portals, nodes that highlight the potential of the existent infrastructure and empower urban dweller to collectively control their space. Users engage through gaming and digital platforms, they can sync their existent devices and technology to servers that help them to manifest in virtual worlds. The elements previously identified through the research project become principles that when applied together create a framework of a ultra-participatory urban interactive experience. See attached pullout poster with framework principles.

# CIVIC PORTAL

## ULTRA-PARTICIPATORY URBAN INTERACTIVE EXPERIENCE

Fig.27 | Framework for a ultra-participatory urban interactive experience

concept

START

The Ultra-Participatory Urban Interactive Experience gives urban dwellers the opportunity to re-discover and re-define existent urban physical infrastructure through collaborations that manifest physical and digital realms.

global interaction



Simultaneous experience occurs in cities around the world, and the uniqueness of the outcome generated by users is captured and portrayed through the digital community hub, promoting competition, interaction and global citizenship.

gaming approach



Games are fun and engage a wide spectrum of users into participatory experiences, and the application of gaming core values at a large scale attracts many urban dwellers to interact, explore, discover, solve quests, co-play, compete and create using their city as a playground.

existent digital platforms



Access to the digital experience must be through all existent commercial mobile devices, home and handheld gadgets, allowing synchronization of existing technology and users as a key principle of the experience.

existent physical elements



Existent urban infrastructure can be highlighted and identified through temporary nodes that serve as emergent landmarks that invite users to be part of the re-discovery of physical and digital experiences.

avatar manifestation



Urban dwellers manifest their existence in the digital world through avatars – these are based on skills, emotional qualities and values instead of physical aspects.

civic portals - nodes



Civic Portals help capture the participation of dwellers in physical and digital realms. It is recommended that facilitators use sustainable or recyclable materials for the construction of the nodes. These must be temporary and can't alter existent space. Civic Portals are important to encourage users participate in the space while also building a balance between the virtual and existent context.

malleability



Abstract qualities of the framework content allows the project to be applied in various regions around the world capturing the particularity of each city and culture. Regional modifications are allowed but the core principles must remain the same. Facilitation must align to local policies and by-laws.

digital community hub



Powered by servers administered and maintained through the Civic Portal facilitators, the digital community hub becomes a place where data is captured from user participation, allowing interaction between urban dwellers around the world.

research benefits



Data generated reflects urban behavior, needs and patterns that can be transferred into secure databases that can be accessed by researchers, designers, policy makers and anybody interested in the better understanding of urban experience.

## 4. VALIDATION

### **CIVIC PORTAL Concept: Core Areas – Radar Validation**

The following radar-based validation chart portrays core areas related to the re-search topic, it focuses on how they fit in the conceptual design of the project. A scale from 0-10 refers to the performance of each element once the project is implemented, facing risks and variables that could potentially compromise the fulfilment of each area. Each area's expected performance, including risks, is described below.

CIVIC PORTAL PROJECT:  
CORE ELEMENTS RADAR VALIDATION

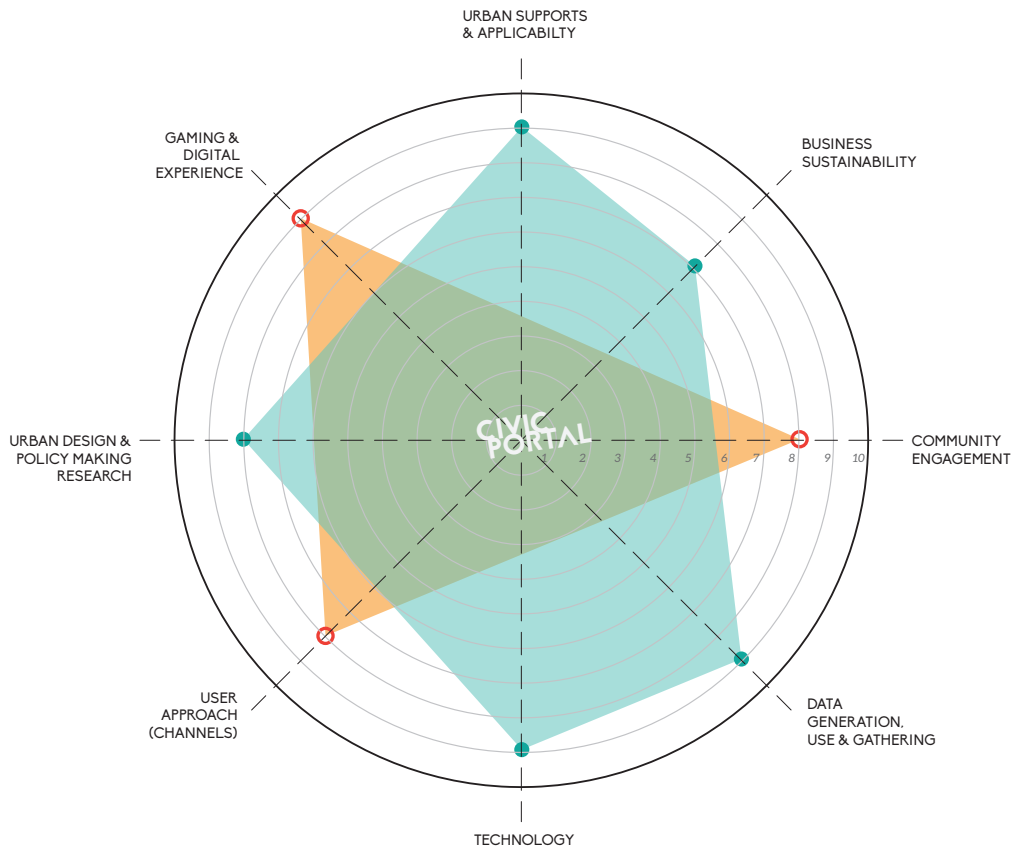


Fig. 28 | Radar validation

#### **○ User related areas**

Community Engagement – The main objective of the project is to enhance and re-invent an urban dwellers' approach to community building through the use of ur-

ban and digital supports. Through game play modes, users are invited to create data input and interact with others users and their environment. The project is completely transparent about its data generation purposes that seek to serve the community by facilitating updated data to designers and researchers. Users know the extent to which they are feeding a robust database, achieving civic change and transformation.

User Approach (channels) – These refer to 2 types of channels that reach potential users directly and indirectly promoting the experience and the outcome of it. The first, are marketing channels that target users who are familiar and comfortable with mobile devices and its use to improve human living, these channels serve as an invitation to be part of the digital-urban experience and also to showcase to the world the use of data. Secondly, the servers of the project enable full communication between users who can sync the internal communication with existent social network platforms. This seeks to create an alternative network of sharing information that goes beyond the use of the CIVIC PORTAL platform.

Gaming & Digital Experience – The project has a wide spectrum of elements that support the digital and gaming principles that nurture the experiential participatory concept on which it is based.

### **General core areas**

Urban Support & Applicability –Users are invited to re-discover their immediate environment, the project focuses on mapping urban areas that have the potential of being used in a more efficient way and where transforming urban attributes could benefit urban dwellers. The project focuses on secondary urban spaces - parkettes and neighborhood parks. Based on urban theory that refers to the re-use and re-discovery of existing urban spaces, the project finds underutilized resources and infrastructure spaces already built.

Business Sustainability – The business model of the project is based on a hybrid

model that mixes partnerships with private and public stakeholders due its urban and digital nature. Relying on a series of collaborations and sponsorships to generate various sources for funding, but also dependent on various stakeholders.

Data Generation, Use & Gathering – algorithm based OS brings a neutral approach for data management and generation. The control for personal data use can be controlled in a way that doesn't compromise the integrity of the users. This robust database can be updated periodically through the cycles intended in the implementation strategy. A real-time updated database can help designers and researchers to understand fast-pace change and resulting challenges in effective ways.

Technology – The use of existing mobile devices and gaming handheld consoles, combined with a holistic inclusion of commercial brands and OS developers, makes it easy for the project to be approached by a wide range of users who already own compatible technology. Trend analysis has shown evidence of the incremental use of technology embedded in more areas of human life in the coming years, which supports the idea of using digital platforms into social-research topics.

Urban Design & Policy Making Research – The project generates rich-in-content research data platforms by providing appealing experiential ways for users to get involved. This has a positive impact for the study and creation of human-centered policy and design theory exploration.



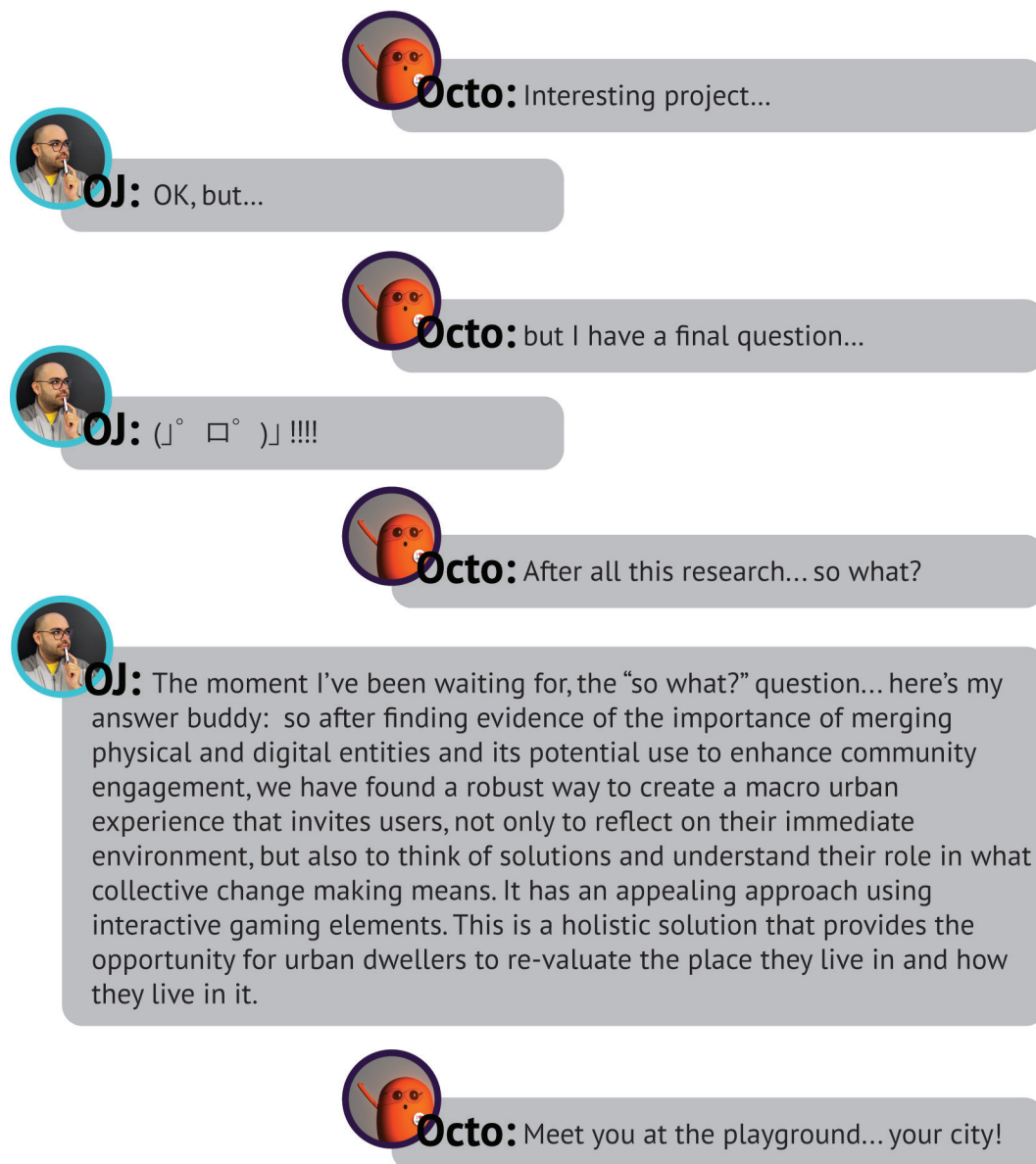
**CONCLUSION**


## *Dialogues with a research avatar: “the final question”*


### **Intent**


The closing dialogue between the Researcher and Research Avatar - dealing with the final question of the Research process.


**Participants:** Octavio Juarez (OJ) & Octo





 **Octo:** Interesting project...


 **OJ:** OK, but...

 **Octo:** but I have a final question...

 **OJ:** (∩° □° )!!!!

 **Octo:** After all this research... so what?

 **OJ:** The moment I've been waiting for, the “so what?” question... here's my answer buddy: so after finding evidence of the importance of merging physical and digital entities and its potential use to enhance community engagement, we have found a robust way to create a macro urban experience that invites users, not only to reflect on their immediate environment, but also to think of solutions and understand their role in what collective change making means. It has an appealing approach using interactive gaming elements. This is a holistic solution that provides the opportunity for urban dwellers to re-valuate the place they live in and how they live in it.

 **Octo:** Meet you at the playground... your city!

This Research project originates from the idea that there are emerging tools in the physical and digital realms that, if placed together with a mutual goal, could be used to design appealing channels to generate collective good; in specific to attract city dwellers into innovative ways of creating community engagement. Virtual and physical elements have been set apart traditionally separated, but currently we see many signs and trends that highlight their potential merging. Case Studies analysis served as the initial research method, which explored a wide range of related subjects of study. Some aspects of emerging cultural patterns, independent of technology, some app-based virtual worlds that helped to draw a framework of an alternative reality. Other existing approaches to physical supports and digital entities that provided users with fulfilling experiences were explored as potential elements to be integrated.

To make a sense of the vast analysis material off the Case Studies, it became crucial to create design principles that corresponded to temporal urban architecture elements, experiential participatory interfaces and innovative urban planning supports. These principles become the basis of a toolkit that portrays the importance of designing and implementing solutions that seek a balance between the digital and physical realms. There is a common factor that appears in several categories, that is related to the use of the existent infrastructure. To understand the bridge between the antecedents in History, and the present and an exploration of the possible futures, this project relies on the creation of timeline-based trends, drivers and signals analysis. This analysis is based on Urban Design theories, gaming and the production of technology as core forces that are linked directly to the research topic. The past has focused on mass-production and the industrial revolution, innovation pushed by political and social conflicts, achieving the rapid growth of urban centers and the constant attempt to deliver technology to a vast quantity of users. We find ourselves at a moment in time in which the use of technology is turning social. This is where this project finds its opportunity to bring experiential and participatory elements from video gaming approaches into community building, as a framework for foresight.

Primarily, the project references Jim Dator's Generic Images of the Future, as a method for the exploration of possible futures (Evans, 2010). Through the exposure of key elements that characterize these futures, I explore the initial conceptual idea of the project as a Growth scenario, a future in which technology development has become more accessible with a social approach. This research project prioritizes action planning, as a possibility to combine findings and apply them to the Principles of Urban-Social Game Design. Supported by visuals and a gameplay description in the form of a promotional brief I am able to model a prototypical view of how the actual experience might look and feel. After outlining the conceptual characteristics of the inclusive ultra-participatory urban experience it is important to consider validation techniques. The radar method draws a relationship between the core elements and project outcomes their performance in action; as an analysis of potential risks and performance. With a thorough understanding of the necessary developed project an implementation plan is created, which highlights the importance of a design strategy and process that creates a flexible-resilient and responsive organization. Constant on-going testing of design solutions and exploring hybrid resources is necessary in order to avoid compromise of the values and Principles of Urban-Social Game Design. This generates an interactive pathway that nurtures a physical and digital inclusive solution that re-invents community engagement. This research project is an invitation to invent and rethink tools to revolutionize our collective urban experience. These tools variable in scale or realm; link urban supports such as existing parks and plazas to become an extensive platform accessible on tools such as mobile devices. The time has come to use our access to fast-paced communication technology as tools for the enhancement of our community experience. This project does not suggest the disposal of current infrastructure, but the creation of temporary elements that work as portals to integrate the digital and physical realms. Urban gamers playing around their city, sharing their interests, provoking change, expressing their needs and building new relationships with each other through the CIVIC PORTAL urban game experience will bring a holistic platform that improves our lives through user experience and the generation of complex data to be used by researchers and designers.

### ***Next Steps***

The next phase contemplates the creation of a business model and implementation strategy in order to transfer the conceptual framework to a realistic proposal. In the third quarter of 2016 I will start the development of an experiential demo that will serve as the first sample of the application of the Ultra-Participatory Urban Interactive Experience framework, it is crucial to seek potential collaborations in private and public sectors to take this proposal to its next level.

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## APPENDIX A: AN AVATAR NAMED OCTO



Fig. 29 | An avatar named "Octo"

### ***A Research Avatar called "Octo"***

Avatars can be perceived as either "an incarnation, embodiment or manifestation of a person or idea" or simply "an icon or figure representing a particular person in a computer game, internet forum, etc." (Oxford Dictionaries, n.a). Since one of the main Research fields is the Experiential, Participatory and Technological interfaces that are embedded in Video Games, it becomes coherent and even natural, to explore avatar creation through the development process.

Researchers who have studied avatars agree that there exists a strong connection between the users and their avatars, the physical and behavioral attributes are linked to the user's personality and appearance or their ideals and interests (Madi-gan, 2013).

Material based on reflections will be portrayed a series of dialogues between myself and a fictional "Research" theme avatar who's solely purpose is to bring to life the core ideas that are key to this project.

**APPENDIX B: THE VIRTUAL-PHYSICAL  
ANALYSIS METHOD**

### ***The Virtual-Physical Analysis Method: in detail***

The following is the structure of the Analysis divided in sections that needs to be considered to generate a robust dissection of each Case Study:

#### 1. Description/ Summary

Description of the purpose or objective of the subject of study. It is important to highlight the primary elements that are part of the virtual/physical entity or experience and the overall outcome or impact that is expected in a Social level.

#### 2. Antecedents / Historical Analysis

In the form of a timeline including general facts, include a historical analysis of the events in time prior, during or posterior to understand where the subject of study stands in time, where it comes from or how it connects to other events or objects.

#### 3. Hardware/Contextual Analysis

In-depth analysis of all the elements and stakeholders that make it possible for the subject of study to exist. This includes its location, contextual elements, accessibility related to platforms, interfaces or physical space. Identify the context type as virtual, physical or combined.

#### 4. Content Analysis

This is the dissection of all the elements or specifications that work together or are part of the subject of study that make it possible for it to exist or be facilitated. They can be listed as a series of facts or components as long as its function is clear.

#### 5. Functionality Analysis

Section to explore and analyze the effect the subject of study suffers once it is accessible for users and how it behaves with user interaction. Citing Lars Konzack's Method for Computer Game "at this point of the analysis we focus on the behavior of the computer and the computers interface reactions to users input. Espen J. Arseth has defined a variety of the functionalities an application may have: dynamics,

determinability, transiency, perspective, access, linking and user function” (Konzak, 2002). In the Virtual-Physical Subjects Analysis Method we must step away from the tech-wise language of Computer games analysis and apply it in a more abstract way for both virtual and physical entities, but still acknowledge some of this function as core elements. Analysis is supported through the following functions:

Functionality Performance – Once the users are able to interact with the subject of study give a description of the way the elements/components keep interacting with each other and how they make sure the functionality and purpose of the entity is not compromised, if the intention is so.

User Inclusive – Analysis of user’s role with the subject of study, does it react to it or is delineated by users exclusively? Are the components working on their own while users just witness?

Accessibility – description of the channels and media that are used to be in contact with the subject of study;

#### 6.Participatory/Interactive Analysis

Description of the experience of users supported by observational analysis, testimonials or the self-experience of the Researcher. In order to portray a structured description of the user experience analysis can be supported through:

-Participation Role: This can be either individual or collaborative, users can have several roles when they interact or participate in activities related to the subject of study;

-Virtual & Physical Characteristics: a description of the characteristics that conform the media or channels in which the subject of study is delivered to its users;

-Duration/Length of Participation: The expected timespan in which users are expected to interact with virtual or physical entities;

-Objectives/Goals: a description of the actions expected to be done while users interact or take part of the subject of study;

-User Type/Background: the typology or spectrum of users expected to interact with the subject of study, also if they need to have certain knowledge or skills;

-Rewards/Post-Experiential Outcome: the rewards, benefits or outcome users are expected after interact with subject of study;

#### 7. Meaning Analysis

Summary of all the elements that build coherence between concept and purpose of the subject of study, its development and outcome through Visual Tools or Physical characteristics. These elements are several specifications or actions that serve as functions that feed the character or typology of the object, space, service or experience.

#### 8. Socio-Cultural effect

The Social and Cultural aspects around the subject of study and the type of effect short, medium or long-term in users. Does it influences or is influenced by users?

#### 9. Applicability

Summary highlighting key findings that are meaningful or somehow connected to the Research topic

## **APPENDIX C: CASE STUDIES ANALYSIS**



## ***Case Studies Analysis***

### ***A. Temporal Urban Architecture Elements***

#### A.1 Panama Pacific International Exposition

##### 1. Description/ Summary

The Panama Pacific International Exposition is a temporary cultural physical experience that ran between February and December in San Francisco's Marina District in 1915. The World's Fair celebrated the completion of the Panama Canal and San Francisco's reconstruction from the 1906 earthquake and fire that devastated the city. Several physical temporary and few permanent spaces were created to showcase achievements of Humanity in the fields of Fine Arts, Education, Social Economy, Liberal Arts, Manufactures & varied Industries, Machinery, Transportation, Agriculture Food produce, Horticulture and Mines and Metallurgic. "The story of the 1915 Panama-Pacific International Exposition is a tale of vision and imagination, perseverance and fortitude, talent and ingenuity that captivated a city, a state, the nation, and the world on the cusp of momentous globalization, innovation, and creativity" (Kale, 2015).

##### 2. Antecedents / Historical Analysis

- 1844- French Industrial Exposition (First known national exposition)
- 1850- London's Great Exhibition of the Works of Industry of all Nations (first in the World's Fair series)
- 1881- France begins construction of Panama Canal
- 1904- USA takes over construction of Panama Canal
- 1906- Earthquake in San Francisco
- 1910- Business and Civic Leaders gather to discuss the site of the first World's Fair of the 20th Century
- 1914- Completion of the Panama Canal
  - Planning for San Francisco's World's Fair begins
- 1915- February 20th the Panama-Pacific International Exhibition opens to the public

December 4th the Exhibition closes to the public followed by the demolition and pull down of most of the buildings and physical spaces

-1930- Palace of Fine Arts is restored

-1964- Palace of the Fine Arts is reconstructed

-1989- Sismic Retrofitted works on site

-2003- Maybeck Foundation launches campaign for restoration

-2004- Restoration works begins

-2005- Palace of Fine Arts is returned to original colors and conditions

-2010- Final phase of restoration

-2015- September 19th Party for the Parks centennial celebration of the PPIE

### 3. Contextual Analysis

- 288 days

- Temporary Physical spaces were created for the event including plazas and pavilions

- 1st Exhibition with a primary focus on Architectural elements

- Located in San Francisco, Marina District

- The Region is mostly developed on landfill

- Prior to the exhibition there was average habitation, mostly sand dunes. After the infrastructure was destroyed in the 1906 Earthquake the area was assigned and developed to host the Exhibition

- 635 acres of mud lands were filled

- 76 city blocks were cleared to hold event

- Accommodation confined in around 2,000 hotels in adjacent areas like Oakland, Berkeley and Alameda

### 4. Content Analysis

- Exhibition conformed of pavilions, domes palaces, fountains, sculptures, courtyards and gardens

- 10 major exhibits, 47 miles of walkways, 50 State pavilions, 11,000 pieces of artwork, World class racing events and battleship rides

- Most temporary buildings were made of a wood base (lumber), finishes like plaster

and burlap type fiber and pastel colors for façade (part of a color master plan) – image pending

- 1,500 sculptures and murals – image pending

- Around 30,000 thousand imported trees and 70,00 plants, bushes and flowers – John Mclean Landscape Architecture

- Lighting Scintillator & Infrastructure: several bases floating in San Francisco Bay, 48 beaming searchlights, projecting 7 colors into the sky; the concept was to create a surreal landscape

- First exhibition to include indirect lighting – William D'arcy Ryan Lighting Design

- Locomotive machines were situated on platforms next to searchlights to generate steam to improve lighting

- Tower of Jewels was the tallest building with 102,000 Novagems of jewels. Indoor painted murals celebrating 400 Anniversary of Vasco Nunez de Balboa's discovery of the Pacific Ocean and the creation of the Panama Canal

- Locally known as the Dome City due the existence of domes in the design of many buildings such as the Palace of Fine Arts, Festival Hall, Manufacturers Palace, Liberal Arts Palace, Palace of Horticulture and Palace of Varied Industries

- Palace of Machinery was the largest building, mechanical technology innovation displayed including giant color pressing machines, submarines mines and torpedoes, modern American machinery, passenger elevators and electrical exhibitions

- Every State in the Union had a representative building

- Pavilions of several international Nations

- The Zone was a 65 acre amusement area hosting several entertainment exhibitions, scientific and medical Exhibits. Some of the highlights including the Liberty Bell, Underwood typewriter and biplane ride. Other exhibitions included international food sampling and fireworks shows

- Festival Hall Stage hosted musical and theatrical performances

## 5. Functionality Analysis

Functionality Performance – Due the magnitude of the exhibition a wide range of events were hosted during the 288 days of its existence; indoor and outdoor facilities were able to host artwork and technological machinery innovation. The use of

existent public space was important, not only to serve as a platform for big scale interventions, but also to show the recovery of the city from the devastating aftermath of the earthquake of 1906. Some elements of the exhibition, like aircraft shows and rides and battleships occurred in the Bay and airspace. The buildings were designed as temporal elements, seen as a secondary city within the recently restored city. Most all of them were pulled down after the exhibition.

User Inclusive – In the PPIE audiences were expected to witness many of the innovative and artistic exhibitions. Participants may not have a primary participatory function other than attending and enjoying the services and events provided.

Accessibility – Infrastructure and transportation facilitation made it easy for visitors to enjoy the exhibit

#### 6.Participatory/Interactive Analysis

-Participation Role: Exhibits aimed audiences that had particular individual to collective experiences. The program or content was not intended to modify depending on user interactions. Some users could be part of an International jury that rewarded products and exhibitions

- Physical Characteristics: Different typologies of Architecture buildings served to host the event, for large-scale showings public infrastructure was used, while as medium and small size exhibitions would fit indoors in assigned spaces relevant to a Master Plan program and topics. Foreign countries and States had their own spaces where they could create a mix of exhibition themes. Even though the Design of spaces were flexible depending on each commission, there were standards based on façade colors palettes or lighting standards.

-Duration/Length of Participation: The exhibition ran for 288 days where attendants were invited to witness a wide range of events. Once the exhibition was over pavilions and palaces were supposed to be pulled-down and no more event programming would be available for the public.

-Objectives/Goals: users were invited to witness the latest innovation in many areas

of civilization. The purpose was to raise awareness of the technological and social development at the moment and to invite to reflect on an advance society in the beginning of the 20th Century.

-User Type/Background: The event was meant to be accessible for any visitor from any place in the World and for all ages (some age restrictions applied to rides and artistic exhibitions)

-Rewards/Post-Experiential Outcome: People's products would receive badges by a Jury formed by 500 men and women from around the World. It worked as an International Award System that was separate from the governance of the Exhibition. Six classes of badges existed:

Grand Prize (Best of Class)

Medal of Honor (95-100 points)

Gold Medal (85-94 points)

Silver Medal (60-74)

Honorable Mention – no medal

25,527 certificates were given and 20,344 medals. This became an important element of the fair, people granted with medals could promote their achievements in media, such as newspaper ads; it was considered a privilege for individuals and organizations to receive a medal.

## 7. Meaning Analysis

World's Fairs are all about bringing the best of the World in terms of industry, science, technology and merchandised innovation to massive audiences, serving as a bridge between the international community. In the specific case of the PPIE in San Francisco, the architectural language, design of public spaces and the magnificent temporal sites portrayed the status of San Francisco and the World while entering to the 20th Century. A celebration of technological achievements, like the engineering marvel of the Panama Canal, and the celebration of a Worldwide community

even though in the midst of the First World War. For the local residents it meant the possibility to show the efforts and struggle they went through the recent geological events, the earthquakes and fires that had destroyed the City. The infrastructure built in order to host the event not only served as a reflection of that specific moment in time in which the Fair is being developed, but also is coherent fulfilling the objectives of those who organized the event.

#### 8.Socio-Cultural effect

The event registered 18,876,438 visitors and revenue estimated around \$27,178,065. The impact in the visitor's experience can be tracked in documented comments and reviews such as those from poet Edwin Markham "I have seen tonight the greatest revelation of beauty that was ever seen on this Earth. I may say this meaning it literally and will full regard for all that is known of ancient art and architecture and all that the modern world has heretofore seen of glory and grandeur" (San Francisco Memories, n.d.).

This analysis focuses on a single yet meaningful event that talks about aftermath and impact in the local community, how something temporary becomes permanent. This referring to the reconstruction of the Palace of Arts "There were many other palaces, courts, state and foreign buildings to see at the fair – however the most of them were made of a temporary plaster-like material, designed to only last for the duration of the fair. Luckily, one of the primary exposition buildings, the Palace of Fine Arts, was not torn down with the rest of the buildings" (San Francisco Memories, n.d.). The building was finally reconstructed in the 60's and since then has been supported by a series of campaigns that have slowly secured their structural permanence and aesthetical origins. 2015 has seen the celebration of the 100th anniversary of the Exposition driving a series of events to commemorate the original Exposition. This events include the Wells Fargo History Museum's Panama-Pacific International Exposition 1915-2015, Exceptional Expositions in the Environmental Design Library of the University of California, Company's Coming: San Francisco Hosts the Panama-Pacific International Exposition a photographic archive exhibition in the San Francisco Public Library, Portals of the Past: The Photographs of Willard

Worden including the work of one of the official photographers of the Exposition hosted in the Young Museum-Golden Gate Park and Cocktail Parties in the Palace of Arts. In the attempt to jump into digital-community platforms, an initiative part of History Pin of name Mapping San Francisco's 1915 World's Fair invites the community to contribute to the collection of the Panama-Pacific International Exposition "by sharing our memories, and giving others the opportunity to offer information about them, we can create an amazing portrait of the fair and a resource for all to use" (PPIE100, 2015). Participants upload pictures, audio and video material while pinning and sharing memories in exact locations where the Exposition occurred. Around 2,027 images and locations have been uploaded, some of them followed by posts with memories or articles.

#### 9.Applicability

The Panama-Pacific International Exposition has highlighted the following findings that area meaningful for this Research Project:

- The exposition was created as a way to physically celebrate and hold the cultural, social and technological advances of the global community
- It opens a portal between the City that is hosting the event and all the Nations invited to be part of the Fair, bringing thousands of visitors from the all over the World
- The use of visual and artistic elements is used in order to communicate the content of the Exposition, this includes the creation of temporary Architectural elements that embrace the visitors and enhances their experience
- Local and Federal investment is needed in order to activate the development, administration and construction of the Fair
- Ephemeral lighting elements were one of the highlight of the Exposition
- Representative elements of communities, States and Nations were brought into place to portray the identity of social groups
- An medal-based Award System adds an extra experiential element driving a healthy competitive environment
- The use of physical elements is vital to show monumentality

- The exposition uses a series of themes in order to categorize the materials exhibited, same that delineated the Architectural program
- The fair captures the specific moment in time Socially, Technologically and Economically
- The event held for 288 days was supported by temporary physical elements to have impact in the users, such impact can be measured even 100 years later in smaller scale initiatives that celebrate the existence of the Fair
- Mapping San Francisco's 1915 World's Fair initiative shows the significance of the online community in re-enacting and sharing experiences of something temporal or ephemeral. This invites users to go physically to locations where the context has dramatically changed from the original context of the Exposition days, but still help to at least digitally proclaim the impact of the event through image and story sharing

## A.2 Kumbh Mela - Allahabad

### 1. Description/ Summary

Hindi religious event in India that is held every 3 years in a rotation in 4 different sacred locations (every 12 years in Allahabad the main focus of the analysis), it is an individual and collective spiritual awakening-experience for people to bath and clean all sins. To accurately calculate the number of visitors of the festival is a challenge itself, yet for the 2013 edition around 100 million attendants were expected to attend. In order to have such density of habitants in one single space for 55 days a temporary infrastructure like an emergent city appears, bringing not only basic services but also social structure, governance and healthcare. Profesour Rahul Mehrotra has studied the event, its infrastructure and perceives the Kumbh Mela as a megacity, "Seven million people live there for 55 days, so what would we gain if we looked at this as a city and not a festival" (Grounded Visionaries, n.d.).

### 2. Antecedents / Historical Analysis

-origin- unknown-mythological based

-7th Century- Xuanzang Emperor Shiladitya registers an event on his chronicles,



talking about the distribution of wealth among attendants of the event where people gathered between rivers every 5 years

-1868- First British report mentions event and the need to increase sanitary conditions

-1882- 1st time a Master Plan is created to hold the event

-1892- An outbreak of Cholera in Mela at Haridwar is reported, urges the formation of Haridwar Improvement Society

-1903- 400,000 attendants are registered

-1950's- A sense of order is implemented in the organization of the event

-1954- An incident known as the Kumbh Mela stampede at Prayag registering 500 human losses / Master plan of the event includes zoning and grid

-1998- 10 million people gathered at Haridwar for Kumbh Mela

-2001- more than 40 million people gathered for Kumbh Mela

-2007- 70 million in the 45-day Arda Kumbh Mela

### 3. Contextual Analysis

-The event is held for 55 days

-Every 3 years in rotation in 4 different sacred places: Haridwar, Allahabad, Nashik and Ujjain (every 12 years on each place)

-Sacred places located in the Ganga, Yamuna and Sarawati rivers

-Allahabad, the main focus of analysis, is formerly known as Prayag in the junction of Ganga and Yamuna rivers, the centre for the Indian movement against British occupation

-The sacred places are situated in the confluence of the Ganges, Yamuna, Sarawati rivers

-The infrastructure of the Mela is constructed and deconstructed in each cycle

-Thousands of tents are facilitated by the organization based on delineated grid

-The site can be accessed by roads, Allahabad Domestic Airport, 8 railway stations and bus stations

-Accommodation can be secured through Deluxe, budget and heritage hotels, guest houses, dharamshalas and camps

#### 4. Content Analysis

- Millions of hindu gather, between 30 and 100 million pilgrims were expected for the 2013 Allahabad edition
- 10's of thousands of families camp the temporary grid designated sectors based on services and religious purposes
- The sectors include private and public tents, hierarchical residential structure
- Pontoons - temporary bridges between river banks and inland locations
- Areas temporary developed include: urbanism, business, religion, technology, health, governance and engineering
- 40,000 toilets for public use
- It's considered the biggest gathering in the World, visible from outer space
- An ephemeral city emerges in the banks of the rivers
- Temporary Health and Sanitation spaces are created including 14 Allopathic hospitals, 12 Homeopathy hospitals and 12 Ayurvedic hospitals
- 30,000 policemen and security elements parallel to a CCTV surveillance infrastructure and Fire Stations
- The bathing procession is considered the climax of the event
- Cultural, religious performances, lilas and gaming events are held in during the festival
- Food services aid is provided through a ration card system (200,000 were distributed)
- Akhadaas, representatives of arenas, represent 3 main communities including the Shaiv (Sanyasi) Akhara, Bairagi (Vaishnav) Akhara and Udaseen Sampraday (Akhara)
- Media Centres and International Media camps
- Series of regulations for the safety of both tourists and pilgrims
- The Ritual is by the following elements:
  - Peshwai Procession – marks the arrival of a sect of sadhus
  - Main event: Ritual bathing at the banks of river
  - Religious discussions
  - Devotional singing
  - Mass feeding of holy women, men and poor

Debate and standardization of doctrines  
Structure-order on how people go in water  
Darshan/respectful visual exchange with holy people

#### 5. Functionality Analysis

**Functionality Performance** – Through time, the organizers of the event in collaboration with religious, governmental and civil groups, have been improving the infrastructure with the objective of enhancing safety and sanitary conditions. The temporary settlement tries to provide all basic needs to the pilgrim yet due the massive amount of attendance, to assure services to all attendants becomes a challenge. The rituals are maintained by local leaders and self-fulfilled by pilgrims themselves.

**User Inclusive** – The interaction of pilgrims in the event is based on religious tradition and emergence for the fulfillment of basic needs. The challenges of the event rely on the gap between the infrastructure and the millions of people who attend the event causing several health hazardous situations. Several efforts from different stakeholders are trying to cope with the demand of pilgrimage. In that sense, users are constantly demanding and delineating the structure of the event without compromising the traditional rituals

**Applicability** – Other than the individual effort of traveling to the region, organizers and stakeholders provide transportation accessibility through master plans and logistics. A website aiming international community includes detailed information of the festival.

#### 6. Participatory/Interactive Analysis

-Participation Role: pilgrims are the main stakeholder and purpose of the religious gathering. They need to achieve their spiritual objectives without compromising their safety and health

-Physical Characteristics: A temporary city made out of tents based on a pre-delineated grids that forms sectors and governance with specific objectives

-Duration/Length of Participation: 55 days

-Objectives/Goals: According to their social hierarchy, pilgrims and visitors engage into a series of activities that fall into the rituals of the Hindu gathering

-User Type/Background: the gathering is for Hindu pilgrims, but a number of administrators, tourists, media and researchers take an active role during the festivity

-Rewards/Post-Experiential Outcome: for pilgrims this represents a spiritual rewarding individual and collective experience

### 7. Meaning Analysis

Pilgrimage is defined as “a journey, especially a long one, made to some sacred place as an act of religious devotion” (Dictionary, n.d.). The planning, organization and provision of temporary shelter elements make it possible for the pilgrims to go through their rituals which is the main objective of the event, yet there still many areas of improvement to assure the safety of the visitors. Rules and behavioral guidelines for pilgrims and tourists need to be followed bringing wellness to the visitors while also trying to protect the environment. It has been mentioned before that the magnitude of the events makes it difficult to provide all services for the millions of pilgrims and tourists. Several research and governmental groups try to prepare themselves through innovative methods in order to cope with the amount of people and needs to be fulfilled for the month and half religious gathering. Even though there are constant fears of disease outbreaks or human stampedes, the rituals still play the role of spiritual awakening, serving the main objective of the pilgrimage.

### 8. Socio-Cultural effect

There are 3 types of social effects that can be identified, the first is manifested in the moment a temporary social structure emerges in order bring a kind of “order” within the millions of pilgrims who are part of the Kumbh Mela. This structure involves 5 main stakeholders: pilgrims, sadhus, tourists, local governance and researchers.

On the side of governance and operation, there are specialized commissions that take control of different aspects that bring order, safety and provision of basic needs to pilgrims. Take for example the Office of the Mela Adhikari Kumbh Mela, they are responsible for delineating the boundaries of the region prior to the event. A process including planning, construction, assembly, operation and disassemble is needed for the temporary settlement to exist. Due its scale, the vicinity regions collaborate in order to make infrastructure work. This creates political active relationships where state and regional leaders, including the Mela Adhikari (chief of the Kumbh Mela), must take decisions, create budgets and secure the infrastructure of the Mela (South Asia Institute et al., 2013).

Secondly we have the interest of researchers on the Kumbh Mela. There's the Research work led by Rahul Mehrotra, Mapping the Kumbh Mela: Report from the Harvard University Team studying the Kumbh Mela. "A multidisciplinary team of over 50 faculty, staff and student researchers from Harvard University traveled to Allahabad, India in January 2013 to document and analyze the processes involved in the successful functioning of the Kumbh Mela, the world's largest religious festival that occurs every twelve years, lasts 55 days, and draws millions of visitors to a temporary, purpose-built tent city on the banks of the Ganges and Yamuna" (South Asian Institute-Harvard press, 2015). The report explores the emergence of social, urban, business and public health aspects that occur during the festival. Facilitated by MIT and the government of Nashik, Kumbathon 6 is an on-field experience that implements innovation in 3 main fields of Kumbh Mela in health, safety and logistics. The 6th edition of the Kumbathon runs for a month where innovators and entrepreneurs seek to implement strategies and solutions to the Kumbh Mela happening in the city of Nashik in 2015.

Last, is the impact on the lives of pilgrims who witness the experience. In the article 6 things YOU WILL get from the Kumbh! The authors of the Kumbh Mela website state the various experiences gain when attending the festival, from introspection and discovery to a more branded-touristic approach "The Kumbh is a real treasure

trove for people who seek more than the ordinary in their lives” (Kumbh Mela, 2015). The primary sign of the meaning the festival has in their pilgrims, its within the attendance of the pilgrims themselves. Local authorities and researchers haven’t been able to find a precise way to measure the quantity of people that go to the Kumbh Mela, but as some reports show, the festival seems to be attracting more and more followers in each edition. In the 1977 edition 15 million people attended, by 1989 approximately 29 million (Mystical Journeys-India, 2009), in 2001 around 60 million people were reported (Encyclopedia Britannica, 2015) and 100 million in the Allahabad 2013 edition (Tindall, 2013).

### 9.Applicability

The following are the findings-outcome of the analysis of the Kumbh Mela emergent temporary infrastructure:

- The festival is one of the best examples of emergence and temporality, “Maha Kumbhaouri is the world’s largest city which pop up within 3 weeks, exists for 55 days and is removed within 7 days” (Kumbh Mela, n.a.)
- The sacred locations host Kumbh Mela Festivals in rotation, 4 different locations each every 12 years working in temporary cycles
- Pilgrims overpass the current infrastructure facilitated by local organizations, forcing many stakeholders to find innovative ways to fulfill the visitors’ needs
- Social structures also claim physical domain, which can be read in the creation of master plans that clearly delineate sectors for different social groups and religious significance
- A religious experience of this magnitude is able to attract millions of visitors, the festival welcomes not only hindi-background pilgrims but also anybody who wants to be in the experience
- The Kumbh Mela infrastructure can be considered urban settlement, aside of its temporality, it develop the core foundations of any settlement: urbanism, business, religion (education), technology, health, governance and engineering
- Local leaders and governmental representatives play a key role in the operation of the festival

- Logistic and Planning are delineated by a specific commission responsible of the project
- Main concerns are the safety and healthy environment in which the pilgrims live for 55 days
- The rewards are introspective and spiritual
- A festival can attract literally millions of people to a single physical space

### A.3 Janet Echelman's Urban Nets

#### 1. Description/ Summary

Janet Echelman is an American artist who creates sculptured urban environments that combine aesthetic elements with ancient crafting techniques and technology that interact with users and the immediate context. "The art shifts from being an object you look at, to a living environment you can get lost in" (Echelman, 2013). Her artistic urban-scale interventions are points that promote civic life. Her studio serves as a co-creation hub where artists collaborate with aeronautical & mechanical engineers, architects, lighting designers, landscape architects and fabrication experts in order to explore the latest sculpture techniques, public art production and urban space transformation.

#### 2. Antecedents / Historical Analysis

The following is a chronological list of her work, supported by images that will help understand the evolution of her artwork that goes from small-scale ancient fabrication crafting based sculpture to high-end technology urban artistic-civic spaces.

- 1997- Belbottoms Series, Mahabalipuram, India
- 1998- Garden of Earthly Delights, Mahabalipuram, India
- 1998- Trying to hide your tail in the Air, Vilnius, Lithuania
- 1998- Inside-Outside, Cambridge, MA, USA
- 1999- Eye of the Storm, Cambridge, MA, USA
- 1999- Green Torus with Modesty Panel, Ghent, New York, USA
- 1999- Red Peak, Ghent, New York, USA

- 2000- Window treatment with 21 tails and red spikes on 29th st, NYC, NY, USA
- 2000- Road Shrine I: Cone Ridge, Texas, USA
- 2001- Kyoto Project, Kyoto, Japan
- 2001- Floor Target, Coimbatore, India
- 2001- Target Swooping down, Bullseye, Madrid, Spain
- 2001- Target Swooping down, Bullseye II, Burgos, Spain
- 2001- Target Swooping down, Bullseye IV, Miami Beach, FL, USA
- 2002- Road Shrine II: NYC, NY, USA
- 2004- Target Swooping down, Bullseye V, Rotterdam, Netherlands
- 2005- She Changes Porto, Portugal
- 2006-2007- Line Drawing, Tampa, FL, USA
- 2007- Expanding Club, NYC, NY, USA
- 2009- Water Sky Garden, Richmond, BC, Canada
- 2009- Her secret is patience, Phoenix, AZ, USA
- 2010- 1.26 Denver, CO, USA
- 2011- Every beating second, San Francisco, CA, USA
- 2011- 1.26 Sydney, Australia
- 2012-2013- 1.26 Amsterdam, Netherlands
- 2013- Space between us, Santa Monica, CA, USA
- 2014- Dance Collaboration, Stuttgart, Germany (indoors)
- 2014- 1.26 Singapore
- 2014- Allegory, Eugene, OR, USA (indoors)
- 2014- Skies painted with unnumbered sparks, Vancouver, Canada
- 2015- Impatient Optimism, Seattle, WA, USA
- 2015- 1.26 Montreal
- 2015- As if we were already here, Boston, MA, USA

#### Future Work

- November 2015- Smithsonian Art Museum Commission, Washington, DC, USA
- 2016- Le Bauer Park Project, Greensboro, NC, USA
- 2016- Pulse, Philadelphia, PA, USA



### 3. Hardware/Contextual Analysis

Janet Echelman's work can be found in North America, Europe and Asia. This analysis will focus on a specific project that came to life as a collaboration between private sector, Autodesk and Google, and with the support of several public sector groups of the city of Vancouver, Canada. The project of name Skies Painted with Unnumbered Sparks is described by art critic Mary Louise Schumacher as "a social space that is simultaneously physical and virtual" (Echelman, n.d.). It is considered the studio biggest sculpture and the most interactive, parallel to the 30th Anniversary of the TED conferences in 2014. Located between Fairmont Waterfront and Vancouver Convention Centre. The sculpture is influenced by interaction with users, through their mobile phones generating data that is rendered into graphics that become part of the virtual landscape of the urban net. Google's Creative Lab, led by creative director Aaron Koblin, built the interface that uses user data recollection in order to live-feed and create the projection patterns that are a key element of the sculpture. Other collaborations include Autodesk, experts in 3D design software, who created a platform where the artist can explore her own creations in an enhanced digital way. The soft fiber sculpture uses as supports the existent architectural buildings, a trademark of Echelman's work. Stakeholders who have to do with administration and governance of public space become supportive elements for the creation of the 745 feet and 3,500 pounds sculpture.

### 4. Content Analysis

- matrix of 860,000 hand and machine-made knots
- 145 braided fiber
- 3,500 pounds approximately
- 745 feet
- Google-based interactive interface that allowed participants to add visual and lighting layers
- The simultaneous user interaction come from their input through mobile phones. The app allows users to connect to a server that stream the data into Chrome which runs the outcome into a rendering source which projects the dynamic layers into the

net

- net made in Honeywell Spectra fiber, nylon, polyester which is 15 times stronger than steel, manufactured through industrial and hand-labour processes
- interactive lighting plays a key role
- developed in public space, supported by buildings in the context
- Autodesk-based software for 3d modeling and simulation that helps to evaluate the artistic piece with the immediate context (buildings) and natural forces such as the wind.
- Installation team needed to place the net in the support points and final position
- Vancouver Convention Centre, Fairmont Waterfront, Port Metro Vancouver and Tourism Vancouver represent the administrative and local government supports

#### 5. Functionality Analysis

Functionality Performance – The sculpture is designed to make it possible for participants to interact with the public net by building an interface where users use a mobile app that sends data to servers that interpret the data into visual real-time interactive maps. The construction was supervised by the Studio prior and during the event, while servers were maintained by Google staff and Construction supervision during the event.

User Inclusive – The interface makes it possible for the participants to see the impact on the sculpture at the same time they are using interface, giving them the control on the visuals. This becomes the core activity of the urban sculpture making it not only aesthetically and technological inclusive, but user inclusive.

Accessibility – Though related to a private event, the sculpture was located in a public area, making available to experience by any visitor

#### 6. Participatory/Interactive Analysis

-Participation Role: Individual data input manifested in collaborative visual outcome made by participants

-Virtual & Physical Characteristics: the interactive piece manifests its dynamics while merging of both physical elements (the net itself and how interacts with the

urban context) and virtual elements (the use of an app to create visual material embedded in installation)

-Duration/Length of Participation: temporary installation

-Objectives/Goals: bring a surreal interactive civic space where participants have control of the net's dynamics

-User Type/Background: users are average urban dwellers with access to a mobile phone with a wi fi connection

-Rewards/Post-Experiential Outcome: self-satisfaction of controlling a temporary virtual civic space through innovative channels

#### 7. Meaning Analysis

The Skies Painted with Unnumbered Sparks not only represents a success in Janet Echelman's artistic collaborations, it represent how public spaces can be re-invented by using virtual and digital channels. Urban elements that are usually part of the connectivity between public and private spaces become civic spaces where people can gather and leave their footprint as a community. The artist teams up with digital artists, engineers and software developers to build a proposal that uses the existent context as, literally, a support to bring temporary and permanent virtual spaces.

#### 8. Socio-Cultural effect

"There they were in their business suits, lying in the grass, noticing the changing patterns of wind, beside people they didn't know, sharing the re-discovery of wonder" Janet Echelman on the experience of users who witness her Denver sculpture (Taking imagination seriously-TED talk, 2011). Urban dwellers perceive Urban space as a transition field, the place where people walk from the place they live and where they do their activities. "In the streets and city spaces of poor quality, only the bare minimum of activity takes place. People hurry home. In a good environment, a completely different, broad spectrum of human activities is possible" (Gehl, 2011). And

that is precisely what efforts, such as Echelman's collaboration create; a rich, temporary or permanent civic space that brings new values to existent space, dragging the attention to spaces that were not used in their total potentiality and in cases even showing the direct impact community members have in it. The success of her work of Janet Echelman is visible in the evolution of her work and how she implements new technology to bring new urban participatory experiences. Sculptural spaces such as the 2013 project, Space between Us, caught the attention of 150,000 participants a sign of the amount of traction this virtual spaces drive.

#### 9.Applicability

The analysis of the artist's work highlight the following findings:

- By merging technology with highly developed aesthetical, flexible and artistic spaces focal civic points for civic life can be created
- Interventions can be temporary or permanent, they still bring value or re-invent spaces in meaningful ways
- The merging of ancient craft-artistry and innovative technology boost the experience of those who witness-experience the physical space
- The more interactive, the more impact on users spaces have
- The nets play with shadows, virtual elements, colors and light
- Net sculptures have day and night life
- This emergent spaces invite people to interact within each other, even though they don't know each other
- Sculpture are subtle in comparison to their contextual, yet developed enough to delineate new typologies or spaces
- The use of existent infrastructure and space is vital
- Engineering, Architectural, Artistic and Governmental stakeholders work together to create innovative spaces

#### A.4 Park(ing) Day

### 1. Description/ Summary

Annual open-source international event where urban dwellers collaborate to transform parking spaces into public park-based spaces; these spaces exist temporarily while meter fares run out. The event is held worldwide and documented through various media channels every 3rd Friday of September. The interventions seek to portray the importance urban dwellers as key elements to transform space while promoting civic pride “until the meter runs out” (Rebar Group, 2011).

### 2. Antecedents / Historical Analysis

-2005- In November 16 Rebar, a San Francisco Art and Design studio, took a parking spot for two hours between 12:00 and 14:00 hrs and converted it into a temporary public park.. Couple of weeks after the studio is contacted to do more interventions in other cities. Project gets media attention and is promoted as an open-source intervention. Rebar creates a “how-to-manual” that is free and distributed online

-2006- 47 parks created / 13 Cities / 3 Countries / 2 Continents

-2007- 200 parks / 50 Cities / 9 Countries / 4 Continents

-2008- 600 parks / 100 Cities / 13 Countries / 4 Continents

-2009- 700+ parks / 140 Cities / 21 Countries / 6 Continents

-2010- 800 parks / 183 Cities /35 Countries & 2 Territories / 6 Continents

-2011- 975 parks / 162 Cities / 35 Countries / 6 Continents

-2012- 1227 parks / unknown / unknown / 6 Continents

-2013- unspecified parks / unknown / unknown / 6 Continents

-2014- unspecified parks / unknown / unknown / 6 Continents

-2015- unspecified parks / unknown / unknown / 6 Continents

### 3. Hardware/Contextual Analysis

The first temporary park was created in San Francisco by using easy to ensemble and de-ensemble props to recreate a park in a delineated parking space. By providing fare enough to use the space for two hours, the Studio used existent public infrastructure as a platform to build their intervention. The interventions seek to express creative experimentation, political and social themes aligned to the law and without aggressively disrupting their context. It is encouraged to do these interven-

tions in highly-dense populated cities to invite for urban reflection.

#### 4.Content Analysis

- Temporal intervention, running out only every 3rd Friday of September and lasting as long as there are active parking fees in meters
- The installations are limited to the author's objectives and imagination
- Interventions only exist temporarily, but their impact intends to have lasting effects shifting the way urban dwellers see their environment
- Approaches such as social ecology, experimental design and creative vision are encouraged to be given to the parking spots
- A series of elements need to be considered while creating the intervention:
  - Type of metered space
  - People you try to serve (who and when)
  - Documentation (users are asked to take pictures or videos of people interacting with their parks)
  - Inclusive of Environmental conditions
  - Materials:
    - Groundcover, protecting existent conditions
    - Seating elements
    - Shade
    - Safety enclosure

#### 5.Functionality Analysis

Functionality Performance – free access is a premise of the temporary spaces, allowing users to use space freely during their existence. Spaces are design in a way they allow users to stay and enjoy the installation doing any activity they would normally do in another public space

User Inclusive – The spaces are designed with the solely purpose of providing users with a temporary space to re-invent their perception of their immediate context

Accessibility – Spaces are designed so the users have free access to the transformed parking spots/

## 6.Participatory/Interactive Analysis

-Participation Role: we can identify two type of users, those who design and maintain space and those who use it. Even though much of the existence and design of space relies on those who put it together, without the traction of those who make use of it the space would not fulfill its purpose

-Virtual & Physical Characteristics: Physical characteristics vary from the intentions and materials used by designers. Documenting the parks is a vital activity to show the impact of the temporary space

-Duration/Length of Participation: Parks exist as long as park meter fees are paid on the specific date of the worldwide initiative

-Objectives/Goals: Temporary parks provide leisure and entertainment, re-enacting established public parks in spaces meant for parking

-User Type/Background: spaces open for any urban dweller of any age group. Due the nature of the proposal, many creators of parks have a Design-oriented background

-Rewards/Post-Experiential Outcome: users get the chance to be part of a worldwide event that proclaims urban space and entitles citizens to tweak the meaning and purposes of parking spaces

## 7.Meaning Analysis

Park(ing) Day gives enough space for creators to proclaim public parking space, nurturing the idea of ownership of public spaces but also brings the necessary elements for designers to feel free to create anything that aims to raise awareness about civic power.

## 8.Socio-Cultural effect

From 2005 to 2012 records show that through the passing of years more parks are

created in more cities around the world. This provides the opportunity given to re-invent in creative ways what is usually perceived as permanent space for car use into temporary social use

## 9. Applicability

The highlights that have impact in this Research process are the following:

- The open-source campaign creates a public framework that facilitates innovation, social empowerment, re-invention, ownership, thrives change, urban play or entertainment
- An original temporary intervention in 2005 that lasted for only 2 hours has been able to have impact creating a yearly event for now it's 10th consecutive year. Social media and collaboration between several stakeholders and urban dwellers around the World make this possible
- The intervention use existent infrastructure, align to governance and invite people to reflect on the use of public space
- The creation of a Manual becomes vital for users around to understand de do's and don'ts
- Global experience
- A combination of small intervention can invite to change in a whole city
- By tracking yearly the development of temporary park(ing) spaces the initiative gains recognition. A proper tracking system is needed to not lose participant data like it has happened in the latest editions

## ***B. Experiential / Participatory Interfaces***

### B.1 Full-Control Tokyo Event

#### 1. Description/ Summary

An interactive 4 hour presentation of AU Mobile's 4G LTE KDDI mobile phone including a series of interactive interventions in the Zojo-ji Temple in Tokyo, Shiba Park and Tokyo Tower, including j-pop's sensation Kyary Pamyu Pamyu live showcase. The event served as an interactive experience and tv commercial. Part of the "Full



Control your City” campaign, the event shows the technological capacity of the wireless powerful connection and the ways users can use it interact with their physical environment. “Singer Kyary Pamyu Pamyu performed while KDDI enabled the local area to be used as an interactive digital theme park. Using KDDI’s iOS or Android app, “Odoroki” (which means surprise) guests could manipulate street lights, water fountains, even taxis” (Maxwell, 2013). The event had primary a marketing objective, but also aimed to connect people that don’t know each other through an interactive experience.

## 2. Antecedents / Historical Analysis

AU Mobile has previously launched events merging music and interactive mobile phone-based experiences like the “Perfect Sync/Real” concert where the audience controlled the visuals on a music concert. But “Full Control your City/Tokyo” was the first one to involve Tokyo landmarks, a large-scale intervention area and outdoor music concert. The event was held in January 29, 2013.

## 3. Hardware/Contextual Analysis

AU Mobile – KDDI Corporation teamed up with technological-artistic studio Rhizomatiks and the interactive boutique Glider to create the interactive-theme park event. The mobile phone uses 4G LTE technology which provides wireless communication which can transfer data in high-speed forms between other mobile phones and terminals. In order to make the interactive experience that served as a promotional campaign for the launching of the product, an app call Odoroki was creates which uses in full potential the characteristics of high-speed technology and lets users tie media with existent digital platforms (such as Facebook) and also control their environment.

The climax of the campaign relied on the private event where participants could control their environment, an event mixing music and user mobile phone-controlled interventions which were created by Rhizomatiks. Visual, lights and projections on the façade of the iconic landmarks in the Shiba Park combine communications networks, with mobile phone, app interfaces and users in order to control urban physi-

cal space, a balanced combination of the digital and physical.

#### 4. Content Analysis

-At the beginning of the event, regular projections are shown in screens next to a stage set up in the Zojo-Ji Temple. Prior to the beginning of the Kyary Pamyu Pamyu performance, images are reflected in the façade of the Temple

- The initial projections are standard sponsor logos but soon enough they evolve into interactive visuals that align to the architectural elements of the Temple

- Master of Ceremonies introduces the purpose of the event and the way the Odoroki app works. The interface of the app is divided in three actions: make, play and event. Make and play are options that help users to create their own media and match their creations to existent social media platforms. Play includes internal games and also helps users to interact with some of the interventions of the event. Event mode makes participants interact with their environment. The main function presented during the performance enables the audience to manipulate the color projected on the Zojo-Ji Temple and Tokyo Tower

-Tower App – is a mode in which using a QR code the app reveals a 4 colour palette that changes the colors on the façade of the Tokyo Tower

-Taxi-Car Control – the mobile device controls the taxi to go up and down in the rear front

-Color Fountain – users change the colors of fountain through the mobile device

-Video promo- advertising of the event and the launch of the mobile shows a summary of the interactive showcase closing with the line “Taking surprise to common sense”

#### 5. Functionality Analysis

Functionality Performance – The ability of the device to sync with public space and servers is a key element for the development of the live event. There are no reports on syncing failing, which led the users to experience the full potential of the event by manipulating individually and collectively their urban environment

User Inclusive – The sole purpose of the event is to prove the mobile technology is able to give users the power to interact and manipulate their context in a large-

scale urban scope

Accessibility- Only pre-invited users could get access to the event

#### 6.Participatory/Interactive Analysis

-Participation Role: The 1,500 people audience are in full control of art installation and architectural landmarks that react to their input through mobile devices and also sync with the musical performance

-Virtual & Physical Characteristics: 2 landmarks and a series of artistic interventions are controlled by an app with three modes. Event mode helps users to read QR codes to control the interventions or simply to connect with other mobile phones to control visuals and colors in facades

-Duration/Length of Participation: 4 hour evening event

-Objectives/Goals: show the technological potential of the brand's mobile phone and generate a sense of connectivity and control of urban space between users

-User Type/Background: mobile-phone owners, the videos shows a varied age range in the audience yet youth represents the majority in attendance

-Rewards/Post-Experiential Outcome: feeling of influencing the environment by users who attended the presentation and interactive park

#### 7.Meaning Analysis

The event brings the possibility for a selected group of citizens to experience first-hand the use of communication network technology innovation and playful ways to influence facades on buildings or smaller scale interventions. The event comes to life as the result of a collaboration between various stakeholders and the development of a series of platforms. The project uses marketing and advertising as a channel to connect with people, to generate a language that is easy to understand by everybody. Even the outcome that is distributed is a tv commercial, the whole

purpose of the social and artistic values relies on giving users access to technology in order to experience interpersonal and contextual connections in different ways.

#### 8.Socio-Cultural effect

Users become more than an audience of entertainment and technology, they take control of a various elements from small to large scale through an app on their every-day mobile phone device. This generates user empowerment through innovative channels, thriving communications into a experiences of collective impact on immediate environments

#### 9.Applicability

The following are findings that are meaningful to this Research project:

- The importance of a physical device that represent a portal to powerful wireless networks and appealing easy-to-use interfaces can be achieved through mobile phones
- Innovative technology can be accessible through the proper design of interfaces and marketing
- “Sync” function becomes essential
- Using mobile devices not only connects people, but also people with their immediate context
- Human connection not be compromised through online interfaces
- By mixing virtual and physical elements and giving users the possibility to interact with that relationship, ultra-participatory experiences are created
- This kind of experiences connect people who don't know each other
- Visual elements, art and appealing music combined add up to the experiential elements of large-scale
- By providing temporal control of architectural landmarks, users experience monumental-scale empowerment

## B.2 World of Warcraft Community

### 1. Description/ Summary

WoW is a Massive Multiplayer Online Role Playing Game part of the Warcraft Universe, a series of games, novels, collectibles, comics, magazines, movies and a community based on a fictitious digital world call Azeroth created by Blizzard Entertainment. What began as strategy games in the early 90's evolved into what became one of the first massive online avatar-based games in 2004. Virtual armies battle each other and computer controlled enemies in a fantasy world with virtual humans, elves, dwarves, gnomes, orcs and trolls. This armies function as guilds where their members achieve goals, improve skills and collaborate in missions online. The community has registered up to 100 million accounts, which creates a solid and complex fan base that has influence in both digital and physical worlds.

### 2. Antecedents / Historical Analysis

- 1994- Warcraft: Orcs & Humans
- 1995- Warcraft II: Tides of Darkness
- 1996- Warcraft II: Beyond the Dark Portal
- 1999- Warcraft II: Battle.net Edition
- 2002- Warcraft III: Reign of Chaos
- 2003- Warcraft III: The Frozen Throne
- 2004- World of Warcraft
- 2007- World of Warcraft: The Burning Crusade
- 2008- World of Warcraft: Wrath of the Lich King
- 2010- World of Warcraft: Cataclysm
- 2012- World of Warcraft: Mists of Pandaria
- 2014- Hearthstone Heroes of Warcraft
- 2014- World of Warcraft: Warlords of Draenor
- 2016- World of Warcraft: Legion

### 3. Hardware/Contextual Analysis

The case study focuses mainly on the 2004 release of World of Warcraft, since it

serves as a trigger for the formation of the online community. A game developed by Blizzard Entertainment which took around 4 to 5 years to develop due their extensive and constant testing of servers and gameplay.

The game takes place in Azeroth, an open virtual world formed by 3 Continents, Kalimdor, Northrend and Pandaria. The videogame runs through Battle.net, Blizzard's online gaming distribution platform that was launched in 1996 to support other battle games released by the same company. This platform hosts the community, game guides, media, forums, shop and membership account information. This platform supports Macintosh and Windows. Currently there are 5.6 million active user accounts, and even though this represent the lowest in the history of WoW (Apolon, 2015), it is still the video game with most subscribed gamers.

#### 4.Content Analysis

- Membership model - Once purchasing a retail or digital \$49.99 copy of the game, users get the chance to access a free-trial account for the first 20 levels. Then memberships can be purchased in a \$14.99 monthly, 3 months and 6 months basis through pre-paid systems
- The game starts with the creation of an avatar, you can pick from a variety of races, physical features and skills
- Users select a Server/Realm in which their story will develop
- Through the completion of quests, avatars get more developed, gain talents and new skills
- Characters join guilds
- Characters that die become ghosts, they can be resurrected by meeting other specific characters with healing skills
- Internal bank system based on game gold
- The environment in the game reflect some of the real-time seasons through the year
- Parental control options can control gameplay in daily or weekly limits, the creation of a playable schedule can be monitored too
- Open World allows users to do as they please with their avatars

- Several expansion packs have been released, providing more content to users

### 5. Functionality Analysis

**Functionality Performance** – The game works properly on operating systems that are able to support the rendering and video requirements in addition to access to connectivity. The rest relies on the Battle.net servers that host the different realms in which the open virtual world are hosted for thousands of users to navigate and perform their quests. Intercommunications with different users is enabled, ensuring that the co-playing modalities are not compromised. Nevertheless when there's high-traffic online active users, some players may be dropped-out or even cause servers to collapse.

**User Inclusive** – By providing an open-world, users get the opportunity to do their will while forming guilds and achieving quests that help their avatars to evolve, the framework is designed in a way that enables co-playing in an immersive experience

**Accessibility** – user trial edition available for everyone, to continue using the game after first level a membership is needed

### 6. Participatory/Interactive Analysis

**-Participation Role:** players have absolute of their actions in the virtual world. Their interaction with each other is responsibility of each player, the open-world platform gives the opportunity for various users to delineate their own rules and guild structures. The game developers release several expansion packs with additional content and quests to enrich the ongoing experience

**-Virtual & Physical Characteristics:** The physical aspects rely on the act of playing the game and using a computer as platform for the interface of the game. Virtually users use their avatars as personifications of themselves to explore the fantasy-medieval era based realms. Players can interact with each other through voice chat and specific actions through avatars

**-Duration/Length of Participation:** The game play brings infinite possibilities with no limit of playable hours. Parental control brings day and weekly hours limits. The

game has been existing online for 11 years

-Objectives/Goals: Gamers from guilds that battle each other, evolve in co-playing scenarios, explore a fantasy world, gain skills and recognition in the WoW community

-User Type/Background: The game is designed as the ultimate experience for those you enjoy RPG, a wide spectrum of users that go from casual to extreme players

-Rewards/Post-Experiential Outcome: Users get to form strong relationship that sometimes go from the online world to the physical world. As characters, they are part of teams and achieve individual and collective goals. Characters evolve through game play time.

## 7. Meaning Analysis

RPGs in general give gamers the possibility to explore alternative scenarios or worlds to put in practice their decision making and strategy more than other game categories. WoW uses the basic elements of RPGs but takes it to the next level by providing real-time online co-playing, an open fantasy world that is constantly changing through user experiences or expansion packs and by working as an interface that enables users to interact with each other. By combining these elements, the videogame earns its title of Massively Multiplayer Online Role Playing Game.

## 8. Socio-Cultural effect

The current WoW installment has existed for more than 10 years, registering active memberships that go from 5.7 million to 12 million between 2010 and 2015 (Statista, n.d.). Within those millions of online participants we can find extreme devoted fans to the franchise. What starts with online dynamics in guilds transforms into real life relationships. There are social gatherings, cosplay sessions, virtual and real-time weddings, and even more unique experiences; like what happened to user Sen-na1982, whose son recently passed away and seek for guidance in how to play WoW



as a way of remembrance for his late loved one. “Recently he passed away and I decide that I wanted to connect with areas of my son’s life I never understood” said the father. The community immediately replied by sharing not only game play guides and walkthroughs but also sharing personal experiences “Since my son passed I have struggled tremendously coming to terms with the reality I am part of – I am humbled at the collective love and kindness shown to me- a total stranger-by the members of this community”. After more exchanges in the WoW reddit community and within the game, the user acknowledged the continuous support “ several of you have reached out to me privately with offers of support and friendship both the in the game and in real life – I will do my best to respond to all of you. Thank you so very much. This means so much to me I can’t accurately describe it” as a sign of how the dynamics jump from digital to physical (Khan, 2015).

#### 9.Applicability

The following can be directly linked to the subject of study:

- Avatar creation becomes a key element for users to manifest their physicality in digital worlds
- The success of the franchise relies on the RPG traditional elements like problem solving, battle and strategy; combined with online co-playing facilitation, guild building and the exploration of an open-digital world
- Servers that host the digital realms must have the enough capacity to maintain them in function on all times, user frustration comes when servers go down due high-traffic or technical issues
- The platform also provides space for community-building through message boards, chat and voice chat
- The free will element empowers users
- Membership model have worked for the WoW franchise, yet users demand for the lowering of prices or free subscription models
- When online game become as vast and complex internal structural elements arise, like the internal banking system that even allows users to play for their memberships through game gold

- Even with number of membership varying through time the game has been able to maintain its popularity through more than a decade
- Users find ways to transfer their online experiences into real life experiences. They go from small to large scale social gatherings to even relationships and themed weddings
- More than the battle aspects, RPGs are recognized for the space they give to digital strategy and decision making through achievement that enhance skills which help avatars to evolve

### B.3 Radiohead's PolyFauna

#### 1. Description/ Summary

"Your screen is the window into an evolving World / Move around to look around / You can follow the red dot / You can wear headphones / you can get some pretty strange look in the train" posted Thom Yorke on Radiohead's official website announcing the release of the first PolyFauna edition (Battan, 2014). PolyFauna is an exploratory motion-controlled experience that takes you to an evolving world full of primitive creatures. The first edition makes you experience Radiohead's music in an innovative way, it is not a music video nor a music player, participants experience an alternative world that reacts to the Lunar calendar while discovering new environments, creatures and elements of songs. The 2nd edition of the app was released the same year featuring new worlds and creatures while listening to the environment sounds that became Thom Yorke's latest solo work. This provides users with the opportunity to live inside the music, exploring audio in a virtual environmental way. The app is delivered with no clear instructions leading users to figure out themselves the dynamic of the experience.

#### 2. Antecedents / Historical Analysis

- 2011- Radiohead's 8th studio album King of Limbs is released
- 2014- February 11th – Radiohead releases Polyfauna V 1.0 including audio elements from King of Limbs' Bloom
- 2014- September 2nd – PolyFauna V 2.0 is released featuring new audio elements

-2014- September 26th - Thom Yorke's Tomorrow's Modern Boxes is released, many songs are part of the audio elements of Polyfauna V 2.0

### 3. Hardware/Contextual Analysis

Users explore deep into an alternative world that intends to show that music has different boundaries beyond a music video, a remix or a playlist. Music embodies a minimal exploratory atmosphere that users can walk-through literally and discover using mobile devices as a window or portal to these new worlds. The app requires iOS 6 or later that is compatible with Apple products or Android 4.0 and up

### 4. Content Analysis

- Basic instructions: Tilt/Turn/Draw
- Users are not given detailed instructions, instead they are invited to discover them by themselves with the intention of triggering excitement and empowerment contrary to just follow directions
- Set to follow Lunar Calendar
- Goal: provide absolute interactivity in a minimal way while experiencing music in a different boundary-less way
- PolyFauna is an experimental collaboration between Radiohead, producer Nigel Godrich, visual artist Stanley Donwood and Universal Everything
- Based on 3 core dynamics: ability to draw on screen (drawings interact with creatures), move your body physically to explore the World and follow a red dot
- Music elements – PolyFauna V 1.0 includes 30 variations based on Bloom song / Polyfauna V 2.0 includes 8 realms to explore
- music is emitting from various points in the map
- Worlds are designed as atmospheric habitats merging audio-visual virtual elements with primitive creatures that resemble subconscious elements
- Context elements – seasons, colours, terrain, plants, trees and species
- Users explore the world while walking through physically and using their mobile devices as windows to the alternative space
- It is one big virtual country, every time you open the app you land in a different place

- Open-ended world with no set goal, just following the red dot
- Graphics are minimal style, polygons, colors and chaotic environments
- 360 immerse world - uses gyroscopic 360 technology embedded in mobile devices
- changing elements in each session: music mix, environment, weather, colour palette, moon phase and creature species
- Hardware elements:
  - 1000 hands Kinetic Typeface
  - Unity engine – Android iOS
  - C#
  - FMOD (3d Audio)
  - Spatial Positioning
  - Low and high-pass filters
  - Even dopler effects
  - Shaders – OpenGL ES 2.0 compatibility with mobile platforms

## 5.Functionality Analysis

Functionality Performance – The way the app is designed allows users to have a unique experience each time they log into the platform. Nothing is scripted or programmed in a linear way, therefore the environment can be discovered through the perception of those witnessing space. Music mixes, environment and creatures all vary and ready to be discovered by those who walk through the different realms.

User Inclusive – Creatures and music elements interact with the location of users and what is drawn by them generating unique experiences for each of the participants.

Accessibility – Free download app to any user with mobile app

## 6.Participatory/Interactive Analysis

-Participation Role: individual experience where users take mobile devices as discovery tools and interact in a unique way with their environment

-Virtual & Physical Characteristics: the design of the environment tries to evoke a world that is not man-made, no urban elements, just an alternative world with creatures and music to discover. Graphics are not realistic, evoking to polygonal designs coherent to an abstract language. The more users explore the more the world interacts with them. Music elements include programmed beats and drums, bass, guitars, synths and voice samples

-Duration/Length of Participation: Users can explore the worlds as long as they want, once they get close to the red dots their environment implodes and they land in a different location to explore

-Objectives/Goals: Users move around in real life using the app and headphones to enjoy the audiovisual experience, an augmented reality of an alternative world is shown and ready to be explored enhanced by a music experience. By not providing rules, they give users the satisfaction of delineating their own rules for gameplay.

-User Type/Background: the users can be download app for free in iOS and Android and is oriented to everybody. Radiohead/Thom Yorke fans are the frequent users of the app

-Rewards/Post-Experiential Outcome: each time users reach the red dot and they land into a new location in the virtual continent they get the chance to explore a unique-exclusive version of music and environmen

## 7. Meaning Analysis

“They (Radiohead) had a very clear but open idea of what they wanted: to go beyond a linear music video and build an app that is an immersive, ever changing world.

The app would be made by exploring the music from studio session of Radiohead’s last album, Kings of Limbs, and Stanley’s organic pen and ink drawings” (Pyle, 2014). Radiohead has previously looked for innovative ways to deliver their music and they are using PolyFauna, an experimental collaboration-based app, to prove that music

can combine technology and its nature in more exploratory experiential platforms. The facilitators of this project are looking to find what music means in the digital age and explore ways audiences can enjoy music while embracing the gadgets we have on our lives. They do so by asking users to move around our World while they explore an alternative reality using mobile devices as a portal tool that connects the two worlds together. This discovery experience is pulled together as a whole through the environmental soundscape, a dissection of selected pieces of Radiohead's works. This proves their point, that music can be experienced through environmental digital interfaces where users have the possibility to discover alternative worlds.

#### 8.Socio-Cultural effect

"We were a little nervous about the app going live. Radiohead has a very keen and invested fan base – the kind who look for cryptic clues, hidden messages and conspiracies in their music and art" says Mike Pyle, member of Universal Everything on the target the app was being designed for. The exploratory audio-visual experience is unique to each user, no one who uses the app will have the same experience as others. Once Thom Yorke announced the release of the app 100,000 downloads were registered in the first hour (Pyke, 2014). This experiment serves as an example of efforts between different art-oriented stakeholders are taking to re-inventing the way people experience different audio-visual platforms while asking for physical activity that reacts to digital entities.

#### 9.Applicability

PolyFauna is relevant to this study due the following factors:

- Mobile devices are used as portal tools to connect physical and digital worlds
- Minimal design and basic rules allow users to explore and discover in-depth scenarios while delineating their own approach
- Music elements are of importance to generate holistic experiences
- Art, music and programming work together to bring these worlds to life

- People are interested in stepping out of the World as they know it
- People enjoy having their own unique journeys
- Users interact with their digital environment while physically moving around while exploring an alternative space
- The use of existent technology in mobile devices, such as gyroscope 360, are used as supports to build up the app
- The framework is design but users have the option to freely explore as in an open-world
- Exploratory audio-visual experience
- People draw and interact with creatures, the option to take screenshots and share with the community is important making it possible to build a collective experience out of an individual journey
- Narrative can change and evolve
- Artwork based on Karl Sims' Evolved Virtual Creatures (Sims, 1994)
- Even though it's an individual experience, it has a collaborative purpose

#### B.4 Gatchaman: Crowds

##### 1. Description/ Summary

The Gatchaman Anime it's known for portraying interest in the conservation of environment and responsible use of technology through action. A group of chosen young heroes fight criminal-terrorist organizations that decide to use technology against humanity aiming to damage society and their environment. In 2013 Gatchaman Crowds series releases their new installment, the new series is based on a Japanese society that has embraced mobile phone technology to create a community where, through avatars, seeks to narrow the gap between society and government. Making use of civic empowerment, the users post their needs or issues that need to be worked individually or in public sense. For example, when people are in need other users in the enclosed area are notified. This needs become missions that by their completion they become achievements that give avatars points. The system is able to identify those issues that need professional specific help. In that case only specific users receive notifications and missions, like a lawyer helping a person in legal

distress or firemen needed to help a fire situation. The achievements system brings a healthy competition environment where users are challenged to help others and their community individually or as a collective. The platform is delivered in the form of a social media-based game platform call GALAX, a tool for good on others promoting civic collaborative behavior into a videogame. This case study is focused on the mechanics of the fictional app, more than the series itself.

## 2. Antecedents / Historical Analysis

- 1972- Gatchaman-Science Ninja Team – 1st episode aired in October 1st (Japan)
- 1974- Gatchaman- last episode airs in September 29th (Japan)
- 1978- Gatchaman II
- 1979- Gatchaman II ends – Gatchaman Fighter is released
- 1994- condensed reboot of original series
- 2013- Nikkatu Studio's live action feature
- 2013- Gatchaman Crowds – 1 season starts July 12th
- 2015- Gatchaman Crowds – 2nd seasons begins July 4th

## 3. Hardware/Contextual Analysis

Gatchaman Crowds is set in Tachiwaka-shi, a city located in western Tokyo metropolitan area. Considered the 2nd biggest and important area of Tokyo Metropolis, the city has around 180,000 habitants which most of them are active users of the GALAX app.

GALAX serves maps the city and their habitants serving as an alternative reality of the city where needs are addressed by citizens themselves. The app is based on a game-like system with achievements with objective of building a platform to for citizens to do good to each other. The app is a social counter-reaction to incompetent politicians and public servers.

## 4. Content Analysis

- GALAX is a popular social networking app used as a social game. It has the objective to show life can be a game that makes better persons



- Includes incentives that invite citizens to help each other and become empathic to strangers
- Gaming aspects: users aim to obtain points through achievements in real life. By updating physical urban space people get rewards
- Voice chat and instant messages through avatars
- Web Video: features streaming video and webcast of local news
- Search engine: Information of users to match specific needs and services
- Avatars: Users create and customize cartoon-like avatars, design clothes and decorate virtual rooms
- Political voting: local elections and voting run through the app

#### 5.Functionality Analysis

Functionality Performance – The app is supported by servers with enough capacity to map physical space and update status and chat in real-time speed, providing real-time status and missions

User Inclusive – The app is supported by gaming mechanics and technological supports to empower citizens to excel their living, the dynamics between users rely on themselves. The anime shows a society that is completely engaged in the social game.

Accessibility – n/a

#### 6.Participatory/Interactive Analysis

-Participation Role: The app gives absolute power to citizens to relate and nurture their immediate physical space

-Virtual & Physical Characteristics: Connected to the physical urban realm, the app shows an isometric version of the city with cartoon-like avatars and basic architectural/interior design elements

-Duration/Length of Participation: Users are expected to maintain connectivity to physical space any time they want in parallel to their real life activities

-Objectives/Goals: help each other, even if strangers, while obtaining game-like points increasing avatar/citizen status

-User Type/Background: for every urban dweller who owns a mobile device

-Rewards/Post-Experiential Outcome: avatar status are enriched through the achievement of points in a social competition framework, users are expected not only to their physical space but to all their peers

### 7. Meaning Analysis

GALAX embraces the contemporary use of mobile devices, showing that technology and social networking virtual spaces can be used for the benefit of society. It's infrastructure serves as digital platforms that give full control of communication streams to their users, which also gives control of their interactions and their environment.

### 8. Socio-Cultural effect

Based on the fictional interaction of citizens portrayed in the series, users are completely engaged to the app and feel empowerment. This forces the administration and governmental entities to try to better and re-invent the way they service their communities, still showing resistance to the mechanics of the app itself. People believe that heroes shouldn't exist because they make societies dependent of few individuals to keep the quality of live they want. Instead the GALAX app gives citizens total control on their relationship with others. The anime also shows the need of existent services, such like police, special forces and firefighters when missions can't be tackled by individuals. This brings consciousness of the importance of community, but also pressures those stakeholders that govern.

### 9. Applicability

This fictional case study reflects on the importance of acknowledging technology and mobile devices and its inclusion on community based interfaces. The anime's concepts the importance of channeling social good through gaming and interactive spaces. The following become relevant to this Research project:

- Easy-access technology can be used for social and environmental purposes
- Design must be inclusive to different age groups
- An interactive virtual platform boosts real life social action
- Social game – uses urban spaces as platform
- Technology serves as the link between citizens, but the ultimate objective is to promote physical action
- Connects strangers
- Shortens gap between society and those who govern
- Acknowledges the existence of community services and governance, but gives power to society
- Cartoon-like avatars
- Games jump from devices to real life
- Missions-Achievements system
- Virtual interaction is run through: status update, instant messages and voice chat
- You don't need one super hero, everybody can be a super hero
- Technology is vulnerable to technology based criminal groups
- Update the world concept
- Local news are forecasted through app

### ***C. Urban Planning Supports***

#### C.1 880 Cities – The Doable City Reader

##### 1. Description/ Summary

880 Cities is a Canadian non-for-profit organization with international presence that promotes activities in urban spaces such as biking and walking, highlighting the fact that these public spaces have a positive impact in urban dwellers. 880 takes its name from the principle that if great urban spaces are designed for 8 year olds and 80 year olds, a wide spectrum of habitants that becomes inclusive. In an introductory video by Gil Penalosa (Executive Director) she highlights some of the main focuses of the organization which relies on the creation of safe accessible

enjoyable places and neighborhood that prioritize human interaction. This Case Study focuses on the Doable City Reader project, a report presenting information on how to achieve the doable in an urban-community scope. "There is so much that can be done to make our cities happier, healthier and more prosperous places. Some of those things will take years or decades to happen. But others can happen right now" (8 80 cities/doable city, n.d.).

## 2. Antecedents / Historical Analysis

-2014-Ontario, Canada -8 80 Cities sets a new objective, to help people learn how to kickstart change in their communities. First project in Ontario

-2014-Chicago, USA - in June of the same year, the organization teamed up with Knight Foundation to bring together 200 innovators to share and discover methods for change making

## 3. Hardware/Contextual Analysis

The projects developed by 8 80 Cities try to have a positive impact in communities and inspire cities to re-invent the way they approach their public spaces. They deliver all necessary tools to their clients in order to take action and implement change. They aim to have an impact in governance, key stakeholders related to public spaces and urban dwellers. In the case of the Doable City Reader, the initial phase was brought by a collaboration of the Government of Ontario and Communities themselves. For the second stage, a collaboration with the Knight Foundation and Discourse Media, groups that have a journalism and media approach towards community and social aspects, made it possible to bring experts from all over North America to create a document that expresses the findings of the event based on the sharing of innovative methodologies.

## 4. Content Analysis

-Objective:

- Help people kickstart community projects
- Make cities happier and healthier
- Make change now

- Small actions have an exponential impact
- Embraces the term doable as something that is possible
- Report divided in 4 core sections:
  - Making Change
  - Hidden Assets
  - Network Connections
  - Walkability
- Making Change: explores the opportunity of taking action in small tasks that represent low cost and low risk but can have impact in communities. These “small” interventions can last for a couple of hours or day, they can be temporal, but still make society and governance reflect on solutions and change that may go permanent
- Hidden Assets: Shows the benefits of parks and public spaces as the realm where people live together. Reflects the idea that parks serve as indicators of how cities perform and their impact in the lives of people who interact with these spaces. Highlights the fact that public spaces are already there they just need to be acknowledged and transformed into opportunities
- Network Connections: chapter that talks about the way we get between places in our daily life, between different points that include private and public spaces. By thinking about these connectivity we may discover different ways in which we can use public space. Parks become more efficient when they are interconnected to other parks and spaces.
- Walkability- prioritizing the walkability aspects in the design of spaces is vital, the way dwellers can reach different spaces and how they are encouraged to make the most of their use of all kind of spaces. The disruption comes when walking stopped being considered the main way of transportation, making many cities being design for cars and segregating walkability. This generates disconnections among communities. The delineation of city grids, urban design elements, amenities, cycling and transit connections are elements that have an impact in the way walkability is experienced. Since there is no thing as a sole trigger, it becomes important to learn how to balance all the elements that have in impact in urban dwellers. The positive impact that can be read once designing spaces that are inclusive in this way can be read in the satisfaction and health of inhabitants and even financially speaking.

-Each chapter presents layers of information that refer to more projects and case studies that support the summary of findings and creates an online source that shows ideas and methodologies that aim to have impact in people's lives.

#### 5. Functionality Analysis

Functionality Performance – The report serves as a multi-layered source of information full of methods and case studies that are condensed in 4 main categories. The information given is coherent to the narrative presented

User Inclusive – The report main subject of study is the relationship of parks and public physical space and the direct relationship it has in urban dweller's life. It's an informative piece not interactive

Accessibility – Free online report with objective of serving any interested user

#### 6. Participatory/Interactive Analysis

-Participation Role: readers get access to various sources that support the main cores that are to be considered when trying to enhance quality of life through parks and urban spaces inviting a wide range of organizations to make change

-Virtual & Physical Characteristics: online report that includes various links to information and videos that support all the ideas

-Duration/Length of Participation: open source report available for free access to any reader

-Objectives/Goals: shows a summary of a series of case studies and methodologies that show that by taking small actions targeting the enhancement of parks and urban space and exponential impact can be achieved

-User Type/Background: Even though is targeted to those who are interested and familiar with urban and social-community oriented topics, the language can be understood by a general public

-Rewards/Post-Experiential Outcome: knowledge and the opportunity to delineate civic action

### 7. Meaning Analysis

The report is the outcome of a collaboration between various stakeholders and participants who share their knowledge and experiences while trying to implement a series of small actions that can be performed by various organizations in order to enhance their community and proper use of physical space. Coherent to a sense of community, the report shows various layers of information from general to in-detail about what many stakeholders and urban dwellers are currently doing to accelerate change with easy-to-use tools. These tools can be applied to community programs or even urban design in different stages and scales.

### 8. Socio-Cultural effect

The report shows the importance of prioritizing and re-inventing our urban space, but also showing the power urban dwellers have and even responsibility to make change happen. It becomes a guide to understand the core elements to think when trying to create a balance that can have a positive impact in communities.

### 9. Applicability

This report serves as evidence of the importance of acknowledging physical space and looking for its integration with all urban dweller's activities. It also shows the significant role of various stakeholder who are currently working in innovative ways to make civic action more easy to be delivered. The following points serve as findings or support to this Research project:

- Cities should be safe, accessible and enjoyable places
- Neighborhoods should prioritize urban dweller interaction
- There is a need to improve cities
- Tools to perform communicate engagement need to be of easy access to everyone and various age groups
- Projects like the Doable Reader refer to citizens as city makers
- The condition of parks serve as indicators of how well or poor a city is performing

- Parks have an effect on the lives of urban dwellers
- A great quantity of urban space lies there next to urban dwellers, yet it is not properly used or not even acknowledged
- A successful community has a balance of various factors, it doesn't only rely on urban designers
- Integration of spaces is important
- Urban dwellers can take small action, that can add up to a network of other small actions that thrive significant change
- Doable means possible
- Urban spaces are there, waiting to be exploited in the right ways

### C.3 Fuller's World Game

#### 1. Description/ Summary

"Make the world work, for 100% of humanity, in the shortest possible time, through spontaneous cooperation, without ecological offense or the disadvantage of anyone" (Buckminster Fuller Institute, n.d.). The World Game, also known as "world peace game" or "great logistics game", is a tool that asks participants to rule the world through scenario exploration. Users have the objective of ruling while making sure everyone and all areas related to our lives are addressed, understand how decisions have impact over people and challenging players to understand how the world works; all of these with the objective of improving life on earth. Originally created by architect, educator and inventor Buckminster Fuller, the game has evolved into a Global Simulation Workshop developed and facilitated by o.s.Earth, a for profit organization that has taken the original game into an interactive experience that can be played by up to 600 players simultaneously.

#### 2. Antecedents / Historical Analysis

-1960- B. Fuller proposes the concept

-1964- proposes concept again

-1967- proposed for Montreal's Expo 67'

-1969- World Game is played for the first time in New York Studio School for draw-



ing, painting and sculpture

-1970- B.Fuller claims intellectual property rights of the game concept

-1972- the World Game Institute is founded in Philadelphia

-1980- the World Game Institute in collaboration with World Resources Inventory published the World Energy Data Sheet

-1993- a educational software called Global Recall is released including a computer-based simulation game with the principles of the World Game

-2001- o.s. Earth purchased the World Game Institute assets and developed the upgrade version of the game call Global Simulation Workshop

### 3.Hardware/Contextual Analysis

The game uses the world as a playground represented through Fuller's Dymaxion Map. This is a flexible tool that can be presented in any size printed or digital version, which allows a wide range of participants to be part of the interactive experience. Either 2 players or large teams up to 600 can play under the versus mode in order to achieve peace and the best conditions on the world for people to live in.

### 4.Content Analysis

The game been facilitated through different versions and scale, the following is a list of the conceptual basic elements of the game:

1. Dymaxion Map – layout of the world that represent all continents as a single island
2. Badges representing countries or regions
3. Physical locators – depending of scale could be figures, badges or players themselves
4. Players roles composed by regional representatives, administrators and facilitators, news media representatives
5. Rounds : 3 rounds to trade sources
6. Props representing items or resources
7. Players are encouraged to collaborate and compete between teams
8. Players must take control of government, organizations, banks, ngo's, media and society in general

9. Currently the game is facilitated in single and double world modes

#### 5. Functionality Analysis

Functionality Performance – The interactive experience helps participants to reflect on the dynamics between different social groups and industries with the objective of creating a fair world that benefits everyone

User Inclusive – Different roles are needed in order to facilitate the game but the core objective remains on the participation of those who represent countries and regions. The interactive experience relies 100% on the participants and their creativity to delineate solutions. Not a single game iteration repeats itself

Accessibility – Currently facilitated through o.s. Earth

#### 6. Participatory/Interactive Analysis

-Participation Role: Participants through their unique interaction are responsible of the outcome per session, they have full control of the world.

-Virtual & Physical Characteristics: The flexibility of the game elements allows the game to be facilitated through physical and virtual platforms and different scales

-Duration/Length of Participation: length varies depending on the time briefing takes. A minimum of 5 hours including preparation, briefing, an hour per world and cleaning

-Objectives/Goals: the game and workshop are designed for people to enjoy an experience in which they bring ideas and solutions and reflect if they play fair or think about others and being strategic about it.

-User Type/Background: The game is designed for everybody to play it under the principles of gaming. Currently primarily oriented towards students

-Rewards/Post-Experiential Outcome: Knowledge, strategic thinking, team work, negotiation, decision making, collaboration and global citizenship

## 7. Meaning Analysis

The simulation allow users to understand the dynamics of the world and think about the effect and consequences of their decision making while trying to build a fair world for everybody, including organizations and individuals. The flexibility of the framework serves as a blank page for players to decide their strategies. The challenge relies on understanding that the outcome of their decisions must bring benefits to the whole world. The rules of the game are basic and their abstract qualities allow the experience to be facilitated in a wide range of scale and with varied numbers or participants. The complexity relies on the challenges and negotiations to be held between players.

## 8. Socio-Cultural effect

Once players select their teams, countries or regions they begin to think about holistic solutions to complex large scale problems that shape the interaction between different stakeholders and cultures. The idea is to think about the differences between the different groups that make it possible for all things we know as part of our lives to exist and be approachable by any individual. The objective is to take care of all elements of the world with the responsibility of generating a fair environment. Once the game is finished, players reflect on their decisions and different ways of acting with each other. They are invited to analyze game play and to identify if they played a fair game while achieving their objectives and collaborating with others. It is important to highlight the design of the playground, the Dymaxion map shows a new perspective of the world as a unified piece of land surrounded by the seas where different cultures must interact and bring social good together.

## 9. Applicability

The game experience is connected to the main objectives of the research project, the following are key findings of the analysis of this case study:

- The framework works as a solid base that doesn't changes but is flexible enough

to emphasize on specific goals;

- The playground is the world represented on the unique Dymaxion map;
- The ultimate goal is to take care of people and also all organizations that delineate the social environment;
- Fair play is encouraged throughout the facilitation of the game;
- Game principles are facilitated to invite all kind of players, making accessible for everybody;
- The game has evolved through more than 2 decades but is always faithful to its principles and objectives;
- Gameplay is always unique, consequence of players' input;
- The game is facilitated only by the owner of the rights – no public availability;
- Players use real world data and roles;
- The objective is to play a game to show how the world should work;
- People learn and reflect better when involved in experiences where they put in practice decision making;