Superfuture:
How global superminds can use immersive experiences to build a positive future

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ABSTRACT

In the face of the ever increasing crisis due to global warming and the ensuing risk and uncertainty, there is an urgent need for organizations to develop resilience and adaptability. In this paper, I propose ways that immersive experiences can provide new pathways for change. Through examination of 16 case examples of resilient organizations utilizing immersive experiences, I present insights and suggestions for how other organizations can use some of the same methods to: 1) use collective intelligence and knowledge share 2) support a culture of creative thinking 3) design future risk response strategies through visioning and foresight strategy 4) build business strategies that include well-being of their employees, stakeholders and the planet. Close examination of these case examples demonstrates that these four areas are a large part of their success. Context for the insights and suggestions in this research, is provided through a brief exploration of challenges to change, components of resilience and the benefits of collective intelligence, creativity, vision, and holistic decision making. These organizations are proving their success and adaptability, using a broad range of immersive experience including: Extended reality (XR, virtual reality (VR), augmented reality (AR), mixed reality (MR), artificial intelligence (AI), games, 360 cameras and location based experiences (LBE) in interesting and unique ways.

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KEYWORDS

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1.0   INTRODUCTION

The purpose of this study is to put forth ideas for how organizations can create positive change using immersive (XR, MR, VR, AR, AI, LBE's, Games) and further, to develop 1) a deeper focus on collective intelligence and shared sense of purpose 2) support creativity and facilitate openness to change 3) develop long term strategies for off-setting risk 4) shift their approach to making business decisions so that they also consider how to have a positive impact on people, communities and the planet. I selected these four areas as key facilitators of positive change (herein called superfuture) based on research into three areas: resilient organizations creating positive change, common change methodologies being used by businesses, research into the cognitive and behavioral drivers of resilience and multiple immersive experiences.

The reason for proposing new methods for positive change, arose out of recognition that in this new era of global warming, risk and uncertainty, survival depends on resilience and adaptability and that both of these require a substantial cognitive shift in the behavior of organizations, including new organizational structure a and more effective methods of creating engagement and buy-in in order to pivot swiftly in more positive ways. A good example of new business approaches that employ holistic decision making is the India Accounting Project which led to the TEEB Project, (Sukhdev et al., 2006) where they are testing new accounting methods which include future financial losses from destroyed biodiversity and displacement.

The current COVID-19 Global Pandemic has demonstrated how, almost overnight, the global economy can be severely impacted (P. Scoblic, 2020). While there is no definitive proof, many see the pandemic as a result of the decision-making in the past that has resulted in global warming. Predictions from organizations such as the United Nations (Susie O'Brien, 2017) and the Intergovernmental Panel on Climate Change (Rogelj et al., 2018) suggest that global warming crisis such as forest fires, drought, displacement, additional pandemics, and governmental instability are only going to increase in intensity and frequency.

While organizations like the UN are adopting collective intelligence, creative thinking, foresight and holistic strategy to create a more positive future, a large number of organizations are finding it difficult to know how to implement these strategies due to their qualitative and

difficult to measure, nature. Still others fail to see the value of these methods or are unable to recognize the urgency to adapt that they face. Of those who do recognize the urgency, many are turning to change methods such as, Nudge Theory, Theory of Change, and McKinsey's 7S model, yet 70% of change methods fail (McKinsey, 2021). An equal number of theories exist as to why change fails. Some say that it is improper implementation, other's that it is pushback, and still others, that it is failure to see the urgency or to properly define why and what they need to change.

In researching change methods, resilience and engagement through case examples, a picture emerged, indicating that immersive experiences could provide important new ways for organizations to facilitate change. Immersive experiences are demonstrating their efficacy across a broad ranging of industries, including: healthcare, education, humanitarian aid, travel and leadership training. Much of the reason that immersive experiences work so well, is that they involve storytelling, quests, scale, time-travel, empathy building, engagement and improved memory retention.

In looking deeper into immersive experiences and how they help to create resilience by developing collective intelligence, creativity, foresight and complex decision making, it became evident that much of their success is anchored in how they develop cognitive and behavioral components of resilience. Games in which players from around the world participate, promote collective intelligence by building trust, empathy, purpose, and meaning. Virtual reality experiences that create awe through novelty and scale promote creativity and this results in people feeling inspired and confident which in turns makes leads to people feeling more open to change (Kaufman, 2011). Foresight, one of the most important components of resilience and the hardest to trigger, is facilitated by *imaginative intelligence* (Mulgan, 2018). Foresight can also be facilitated, when individuals placed into visual environments like AR and VR to see three dimensional representations of future pathways. Holistic decision making, which requires both system 1 intuitive and system 2 analytical thinking (Kahneman, 2011) to make complex decisions, can be supported by the "magic circle" of games that create a safe place where people can iterate the future over and over again without fear of failure (J. P. Scoblic, 2020). This can

lead to better business decisions that consider the needs of, and impact on, large groups of people and the planet.

During the course of this research, through interviews with organization leaders, I discovered that many companies are interested in employing immersive experiences. This is a positive sign for the ideas and suggestions for positive change included in this research. However, immersive experiences face challenges to adoption such as perception or lack of understanding of how to integrate immersive experiences into their organizations (Albani & Kupers, 2014). In an effort to overcome these biases and provide useful suggestions for organizations, I have provided a short synopsis with key insights at the end of each case example.

The 16 case examples included in this paper were chosen out of many, based on the following qualitative assessments: 1) degree of public awareness or popularity of the organization based on numbers of individuals who participate annually or quantity of news about the organization 2) ability to adapt quickly as represented by recent or past change efforts and their success 3) time in business with most organizations falling into the 20+ year category proving their business success over time 4) inter-organizational effectiveness, represented by ability to set goals and achieve them. I chose these parameters because many of the organizations selected are using unique, creative and very different frameworks for conducting business and might, at first glance, appear too remote for more standardized organizations. I focused on organizations that were both large and financially successful to make it clear that their methods could provide value for more traditional organizations.

2.0 BACKGROUND

2.1 Barriers to Positive Change

Before analyzing these case examples, it is valuable to provide context as to why immersive experiences can be effective in creating positive change through a quick overview of the most common barriers. I selected the following: 1) Pushback from leadership or employees, 2) Leadership that is inexperienced in complex decision making or change methods 3) Entrenched organizational cultures of inertia that often value abstract intelligence over imaginative intelligence in ways that serve as barriers to adaptability 4) Failure to present a clear and persuasive vision of what is possible (Kotter, 2011), and 5) Failure to engage employees, due to presentations of change strategies using mediums that are considered "boring," or fail to provide room for creative thinking, meaning or purpose. I also examine how immersive experiences can assist some of the most well-known change methods including: Nudge Theory, Theory of Change, McKinsey 7S Model, Kotter's Leading Change, and U-Theory.

2.1.1 Pushback from leadership and employees

Many leaders have discovered the hard way, that often, when you ask people if they want change, they say yes, but, when you ask people if they want *to* change, affirmative responses decline quickly. As human beings, we are hard-wired towards safety and what we know represents safety (Berger, 2013). So how can organizations overcome these challenges to change? Nudge Theory looks at ways to create change through small, subtle nudges based on behavioral economics, political theory and social science research into how individuals make decisions or form biases (Burt, 2019). While Nudge Theory has proven to be effective some feel it poses a danger to crossing the line and impinging on individual choice. This potential to limit autonomy is in direct conflict with one of the focuses of this paper, which is to facilitate positive change by supporting creativity through autonomy. Immersive experiences in the form of game play are often able to "nudge' individuals towards change in ways that are conscious and intuitive. For example, in the social realism of *We Are Chicago* (Dowling, 2020) viewers step into the world of a young black man living in a gang ridden neighborhood. As they follow him through his day, being at home, going to class, dealing with bullies, viewers gain an understanding and compassion for life experiences other than their own. Immersive

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documentaries can provide a powerful change method for overcoming push back by generating empathy and buy-in.

2.1.2 Inexperienced Leadership

In the midst of uncertainty, complex decision making requires that leaders have the ability to map possible scenarios and put information into categories based on the degree of "known-ness" of the information in order to explore and pre-test possible outcomes (Johnson, 2018). These are skills that the majority of leaders have not been trained in. "You will almost never see a course devoted to the art and science of decision-making, despite the fact that the ability to make informed and creative decisions is a skill that applies to every aspect of our lives" (Johnson, 2018). McKinsey's 7S method of change can be a good first step because it takes a methodical approach to analyzing organizational strategy, structure, systems, shared values, styles of leadership and staff skills (MindTools, n.d.). Immersive experiences can support these efforts in more engaging and creative ways by placing leaders into three dimensional maps of existing challenges, stakeholders and areas of competitive advantage.

2.1.3 Entrenched cultures of inertia and failure to recognize the value of change

In large organizations with thousands of employees, standardization is needed in order to manage the sheer number of activities being conducted every day. These types of organizations often present the biggest challenge when it comes to change. Kotter's Leading Change method can work well here, as it is based on the idea that the number one way to facilitate change, is by clearly demonstrating urgency (Kotter, 2012). He suggest that leaders take drastic measures if necessary, even going so far as to let organizations fail in order to get the point across (Kotter, 2012). I propose that immersive experiences can eliminate the necessity to risk such a high degree of lost profit and time by placing people into experiences of negative future scenarios that enable them to see, hear and feel potential disaster quickly and for a much lower cost.

2.1.4 Failure to clearly present an engaging vision of the future

Many organizations focus on the what rather than the why, of change. This results in lack of engagement due to a missing sense of purpose as to why change is important. The Theory of

Change method asks organizations to imagine the future and work backwards, challenging assumptions along the path ("What Is Theory of Change?," n.d.). While this method has also proven effective, too often the output is some type of report shared across an organization. Here again, immersive experiences can support change by providing more engaging ways to share information. The case example, Escape to the Future, proves that experiential foresight strategies are much more engaging and easier for individuals to understand than reports.

2.1.5 Failure to create engagement or a shared sense of purpose

Despite the fact that the previous couple of centuries have prioritized linear thinking and standard, mass production methods, human beings are driven by emotion. Failure to engage individuals on an emotional level through a shared sense of purpose is a frequent reason that change fails. U-theory, developed by Otto Scharmer at MIT, comes the closest to being a solution for this barrier to change. The method is based on the idea of "presencing" which refers the need for deeper connections between individuals and groups when solving challenges. Through a combination of activities, including mirrored movements, journaling, shared memories, listening, sensing, sitting still and crystalizing information into action, the method attempts to facilitate positive change by supporting individuals to examine their deepest selves, the selves of others, their organizations and the world (Scharmer, 2007). I believe U-Theory is one of the more promising methods. It is also the most experiential. As such, it is likely that it could integrate immersive experiences such as wellness VR easily.

Now that I've outlined some of the more common barriers to change and given brief examples of how immersive experiences can overcome these barriers, it is time to delve deeper into what immersive experiences are, what they provide and why those tools are effective and which organizations are integrating them into their resilience strategies.

2.2. What are immersive experiences?

The term extended reality (XR), was created to dispel confusion about what to call experiences when several technologies or methods overlap. XR includes different types of immersive experiences, virtual reality (VR), augmented reality (AR), 360 film, mixed reality

(MR), UI/UX (user experience and interaction), AI (artificial intelligence), gaming, location-based experiences (interactive exhibits, events, festivals and immersive film or video events,) and emergent media which can combine any number of these.

Virtual reality means "something that exists only as an electronic representation…that recreates our relationship with the physical world in a new plane" (Will, 2007). VR headsets that possess sensors that can see where you look and provide the capacity to see 360 degrees by following viewers heads as they turn or as their gaze changes. These can record interactions in the space and in this way, experiences become something you can store in a computer file. In this way, VR provides a vehicle for creating visual collections of memory that can be accessed at any time in the future.

VR is not an alternative to reality; it is a new form of reality in which anything is possible. In this way, VR can serve as a change method tool by providing ways for individuals and groups to remember and sense ideas and memories from the past or step people into possibility. In terms of technology innovation, VR provides ways to overcome limitations in the physical world. The majority of technology in the physical world is limited by what the human body can do. "You can have tools that change the color of your face, but you can't have tools that change you from one species to another." This is part of the value of VR in creating avatars that enable people to transform into other forms and experience different realities, what that looks and feels like (Will, 2007).

Augmented reality is a technology that enables viewers to bring three dimensional characters and objects into the real world through glasses and apps. For example, in the Walker Museum's Graffiti Nature exhibit, visitors color in a drawing, scan it into a computer and then find themselves standing in a real room, floating amidst floating recreations of their art. This enables people to remain comfortably in the physical world while also interacting with it. In a number of training and support programs that use AR to conduct remote activities, individuals are able to draw on specs to illustrate a point. Infosys created an AR program that makes it possible for people to water their plants remotely (*TeamLab: Graffiti Nature–Still Mountains and Movable Lakes*, n.d.).

Artificial intelligence (AI) in immersive experiences largely plays a supporting role helping to set up interactions or providing characterization. In the experience Chomsky vs. Chomsky (Rodriguez, 2021), for example, AI has been programmed to provide answers to users' questions acting as a computerized version of Chomsky the person. The AI has been programmed to be able to choose one of three ways to answer, either using direct quotes from Chomsky in its data base, or come up with its own answers based on thousands of quotes in its data base using GPT2 (Rodriguez, 2021). In yet another example, IBM's Watson collaborated with the New York Times to create an artistic representation of what it perceived as human, computer collaboration. In these instances of immersive experiences, AI supports collective intelligence and knowledge sharing.

360 cameras take full spherical views of the world that are able to be quickly edited into virtual reality immersive experiences. This feature has made them popular for the interior design, hotel, real-estate, and travel industries because they place viewers into full and complete views of homes and locations. This technical platform, which had faded slightly from popularity as technological capacities of games and virtual reality increased, has seen a recent resurgence during the pandemic. Many travel organizations are now offering "virtual travel," in the face of lockdowns and travel restrictions. National Explorer has already filmed multiple cities around the world such as, Dubai. Through 360 experiences, viewers discover themselves standing side by side with crowds of people watching fountain lights skyrocket into the sky in front of them. (Oculus, 2021). This kind of immersive experience is proving extremely useful to teachers, giving them the power to take students on field trips around the world.

Games, another form of immersive experience which involves the "magic circle" (Salen & Zimmerman, n.d.) have been defined in numerous ways over the years. However, most see games as a system. A world that involves play and is separate from the real world, a world that has strict rules where constant failure is safe and acceptable and where people compete to win or are incentivized to win. This broad definition has made it possible for a tremendous amount latitude in defining what is a game. It has also spurred a move towards games for social change. In response to the popularity of these games, Facebook has launched and initiative called VR for

Good. Escape rooms are a popular form of social games for creating positive change. Others, like the popular game Fortnite, offer alternate worlds for socializing as well as play.

Location based experiences (LBE) such as Color Factory, and Sleep No More, offer interactive exhibits aimed at enjoyment and discovery and in some cases like Boda Borg, problem solving. The pandemic is encouraging a number of organizations to take LBE's one step forward, creating emergent media that may combine VR, MR, AR with installations. The case example of Local Projects, demonstrates how LBE's can be used for connecting past and future generations through stories, or provide new ways for individuals to connect with history...

2.2.1 Industries adopting immersive experiences.

"Every major technology company is now investing millions in XR" (Bisbee, Brookline Interactive Group). The pandemic has given XR (VR,AR,AI, UX/UI, MR, LBE's) the boost of support it has needed to succeed. AltspaceVR, which recently joined with Microsoft, has set itself up as a social meeting place and currently has thousands of groups, conferences, master classes, and happy hours active on its platform. While many companies are employing VR for training, more support is going towards the development of AR interactions as it is much easier and cheaper to create. It is also much quicker to onboard as it can be used on apps and web platforms.

Retail in particular is jumping into VR and AR immersive experiences as a way for customers to "try on" clothes in virtual environments. Many see these forms of immersive experiences as the next revolution in fashion (McKone et al., 2016). Education is looking at all aspects of XR to facilitate both in classroom and remote learning. Healthcare is using virtual reality for depression and pain management and may soon use VR to improve telehealth. Other industries are using AR and VR for real-time support, worker training programs and soft-skill development. Walmart, for example, has committed to training all 1.2+ Million of its employees using VR (Alleyn, 2021).

Starbucks partnered with Alibaba to create a coffee amusement park with augmented reality educating consumers on how coffee is roasted. (Purdy & Reznik, 2019) Estee Lauder

launched an AR virtual makeup mirror that makes it possible for users to virtually try different shades of cosmetics.

Entertainment companies are adopting XR in order to compete. "We compete with and lose to Fortnite more than HBO," this from Netflix which has 149 million subscribers to the game Fortnite's 250 million (Purdy & Reznik, 2019).

Professional sports have also jumped into immersive experiences. The start-up Livelike puts soccer fans at the heart of the action and the Olympics have decided to add a new eSports category.

Netflix proved that interactive film content is more appealing with their experience Black Mirror: Bandersnatch.

All of these industries are investing in immersive experiences because they understand that if a picture is "worth a thousand words," how much more engaging are experiences that engage the imagination through storytelling, sight, sound, and touch (Purdy & Reznik, 2019)?

Some might be skeptical to try immersive experiences again, fearing that they are being over-hyped once more (Rodriguez, 2021). This time is different, however, for two reasons. First, the technology has come a long way in the past two decades and even farther in the past two years with 5G speeds. Second, millennials make up 59% of the world's population and of these, 40% are embracing VR (Smithsonian, 2018). This means that just as generations have grown up with smart phones, future generations will have grown up expecting to live and work in immersive worlds.

2.2.2 Why and how are immersive experiences effective for positive change?

"I've seen people cry, hug, dance and meditate in immersive virtual environments…our research shows that they can inspire a sense of awe and that this can be socially connecting" (Quesnel, n.d.). I have already outlined some examples of why immersive experiences, but it is worth spending time on the power of awe to facilitate positive change. "On the transformative

index of emotions, awe is important. It is one of the few experiences that allows people to transcend themselves and to feel part of a greater collective" (Quesnel, n.d.). Awe expands one's frame of reference and drives self-transcendence. It can be evoked by everything from great works of art or music to natural landscapes and human feats of daring and accomplishment." (Berger, 2013)(Keltner & Haidt). Experiences of scale, such as the ability to stand next to the Pyramids, travel the world through Google Explore, or view the Earth from outer space through the virtual reality experience of Mission (Alleyn, 2021). This means that awe can facilitate collective intelligence through a sense of social connection, a key component of resilience.

In his book Enchanted Objects, David Rose explores the idea that people need to be enchanted by the products they use in order to be connected to them in positive ways. "The idea of enchanted objects has deep roots in our childhood, in our adulation of superheroes and fascination with fantasy and science fiction, and in the fables, myths and fairy tales that go back centuries. As a result, it seems as if we have always longed for a world of enchantment (Rose, 2014)." The six human drives he outlines, serve as additional examples of why immersive experiences facilitate positive change. These are Omniscience, the ability know all, Telepathy, the ability to connect more deeply by understanding what others are thinking, Safekeeping, to be safe from harm, Immortality, the ability to live a long and purposeful life, Teleportation, the desire for exploration with ease, and Expression, the desire to create (Rose, 2014). The majority of immersive experiences fulfill most or all of these human needs. (Will, 2007). In co-creating with AI we are able to develop omniscience through data of the future, and AI's ability to store our memories provides us with a kind of immortality and collective memory. VR experiences enable us to have telepathy by creating empathy and giving us the ability to understand others. Through immersive experiences of games, we are able to time travel, teleport, and express ourselves creatively (Rose, 2014). Further, they provide the freedom needed for creativity by allowing participants to make a "choice" of whether to join in play or not (Salen & Zimmerman, n.d.).

In the policy and development field, the potential of VR remains largely untapped. For example, the World Bank is discovering that VR can bring the world's most pressing challenges home to decision makers around the world, and it can simulate environments that are otherwise

too difficult or costly to create in the real world. It can also enable researchers to maintain a high degree of experimental control at a relatively low cost *(Jimena Llopis et al., n.d.).*

2.3 Criticisms of immersive experiences

With all of the advantages that immersive experiences provide in terms of building positive change, it might seem puzzling as to why they have not yet been more widely adopted. One reason relates to the technology itself. Early VR products caused severe nausea, a bodily sensation that is hard to forget for those who have experienced it. In a recent conversation with the North American CEO of Ricoh in which I suggested VR for team building, one of the first things he expressed was the fact that VR caused discomfort and had too many glitches. This demonstrates that in this case, memory is working against change by creating a barrier to recognizing just how much better the technology is today.

The second barrier to immersive experiences lies in perceptions of value for business. "Games, which have been maligned in recent history as trivial and frivolous, are in fact at the very center of what makes us human"(Huiza) (Salen & Zimmerman, n.d.). The positive outcomes coming out of the use of immersive experiences for training (see Walmart case example) is changing this perception, but many organizations are uncertain of how to integrate this largely creative medium into traditional business frameworks such as supply chain analysis or profit and loss statements. Further research over time will be needed to determine whether this encourages organizations to take immersive experiences further once they see the success in training.

2.4. How immersive experiences can foster collective intelligence for positive change

In this section, I explore how immersive experiences can foster collective intelligence, creative thinking, foresight and holistic decision making for positive change. Both Thomas Malone of the Superminds project at the Center for Collective Intelligence at MIT and Geoff Mulgan, author of Big Mind and former CEO of Nesta.org, provide good explanations of collective intelligence for purposes of this research. Each defines how collective intelligence can facilitate change. Malone defines collective intelligence as "the result of groups of individuals acting together in ways that seem intelligent" (Malone, 2018). He uses the definition of

intelligence as *a very general mental capability that, among other things, involves the ability to reason, plan, solve problems, thing abstractly, comprehend complex ideas, learn quickly, and learn from experience (GottFried*

While Malone defines collective intelligence as the result of groups of individuals acting together intelligently, he defines a supermind as the *action* that creates collective intelligence, "a group of individuals acting together in ways that seem intelligent" (Malone, 2018). This distinction is important for the idea of creating positive change using immersive experiences, because much of their transformative power lies in their ability to "activate" individuals. Further, according to Malone's research, collective intelligence is not limited to human to human interaction, but also as human-computer interaction in which machines can play a role as a peer, assistant, tool or manager ((Malone, 2018). This fits well with the idea of using immersive experiences to facilitate change as XR uses human-computer interaction to create engagement and encourage people to work together (Gottfriedson, 1997).

Mulgan emphasizes the choice and ethical aspects of collective intelligence by breaking it down to its Latin roots, i*nter*, meaning "between" and l*egere*, meaning "choose," and *col* which means "together." "The detailed study of how groups work shows that we're bound together not just by interests and habit, but also by meaning and stories," (Mulgan, 2018). This supports the ideas of this paper, that ethics and autonomy are important aspects of creating positive change. Organizations need to consider whether their actions are ethical and will have a positive impact on the world and they need to give their workers autonomy in order to support creative thinking (Mulgan, 2018).

Yet another premise of positive change for superfutures, is the idea that supporting imagination so that people can imagine possibility and step into the future, is essential for facilitating positive change. Mulgan defines the ability of individuals to step into possibility as the result of *imaginative intelligence*, whereas intelligence that is suited to computers, global markets and more aggregate forms of work are supported by "abstract, standardized and universal" types of intelligence. (Mulgan, 2018). Mulgan's perspectives on collective intelligence support the idea that emphasis on standardized and abstract intelligence in the

majority of change methods and their exclusion of *imaginative intelligence*, (Mulgan, 2018) may be part of the reason they often fail.

2.4.1 Using avatars to support collective intelligence building

The word Avatar comes from the Hindi concept of Avatara, the incarnation of spirit into bodily form (Guerra). For centuries, people have gravitated towards masquerade experiences that involve wearing masks because they release people from the constraints of social norms and allow them to express things that they might otherwise be afraid to express (Guerra, 2018). This is particularly important for creating positive change through team building, where avatars can establish a sense of equality between members. Hidden behind avatars CEO's and janitors have equal footing. In researching the immersive virtual platform, Second Life, (Huang & Ballenson, 2019), it was discovered that a high percentage of members felt they could be "more themselves" in the virtual world than the real one and that they felt it actually helped them create better relationships.

Avatars can also serve to effect collective intelligence in a broader sense by involving consumers more fully. Rose sees enchanted objects as avatars of services and uses the example of American Express which serves as an avatar for the freedom to purchase what one desires (Rose, 2014). These findings point towards the idea that avatars support collective intelligence. (Will, 2007).

2.5 How immersive experiences can support creativity to facilitate positive change

"In a culture obsessed with measuring talent and ability, we often overlook the important role of inspiration. Inspiration awakens us to new possibilities by allowing us to transcend our ordinary experiences and limitations" (Kaufman, 2011). Creativity has been defined by many, as the ability to generate or discover new ideas and solutions, find meaning in products and experiences, and connect different ideas that don't appear to belong together (Kaufman, 2011) .Creativity is important for building resilience through collaboration and positive interactions (Cross et al., 2021). Creativity also motivates us. In Thrash and Elliot's "Inspiration Scale," which measures the "frequency with which a person experiences inspiration in their daily lives,"

they discovered that inspired people were less competitive, more driven, more confident and had a greater sense of well-being. In his paper, *Why Inspiration Matters*, Kaufman recommends five ways for leaders to use inspiration: 1) to motivate and inspire 2) empower employees at all levels 3) share knowledge 4) Integrate information into meaning 5) enable creativity. Kaufman's work supports the ideas in this paper that organizations can create a resilient superfuture by supporting creative thinking.

Another way that immersive experiences can promote creative thinking for positive change, is in their ability to "prime" thoughts. A person who enters the immersive experience such as Wolves in the Walls, for example, in which a little girl is convinced that wolves are in the walls, may well be primed to be ready to respond to crisis. This can be useful, in priming workers to be prepared to respond to new challenges. The knowledge of priming comes out of Kahneman's work with groups of students who were given themes about age. When asked to walk down the hall after being asked to explore words associated with aging, they walked more slowly (Kahneman, 2011).

2.6 How immersive experiences can develop powerful visions for positive change

Creating a strong guiding vision is one of the most powerful ways to create successful change (Kotter, 2012). The question then becomes, how can immersive experiences help organizations create vision? Multiple foresight (visioning) methods exist including: backcasting, contingency plans, forecasting, horizon scanning, scenario planning, and trend analysis (P. Scoblic, 2020). An engaging vision can introduce new pathways forward out of a difficulty or into the future, and help maintain alignment and commitment to what people care about, ensuring they "stay the course," even when challenges arise that would otherwise cause individuals to abandon their goals. Using immersive experiences to create visions that support positive change can be accomplished in multiple ways using time-travel and games.

2.6.1 Using time-travel to create vision for positive change

As previously mentioned, time-travel is and effective tool for change utilized in Theory of Change. The Escape to the Future case example included in this research demonstrates how traveling to the past can help design resilient strategies for the future by tapping into collective

memory and self-sufficiency. Time-travel generates imaginative intelligence, to envision futures that are as yet unknown and plan for them (Mulgan, 2018). In the Mission:ISS example of immersive experiences, viewers are transported into the space station, allowing them to imagine what their experiences in space might be like in the future (P. Scoblic, 2020). This is particularly helpful in developing positive futures where people are supported through immersive experiences, to imagine what they want and wish for and then motivate, by experiencing what it feels, sounds and looks like. Without the felt experience of future, it is often difficult for people to imagine (P. Scoblic, 2020).

2.6.2 How games can support vision for positive change

Designing a vision of the future is much like the processes of innovation in which people start with an intuitive hunch that something might work and then work towards it through progressive prototype's and iteration (Perez-Breva, 2016). Foresight, is in many respects an "act of faith." The "magic circle" power of games permit limitless, low cost iteration without fear of failure or real world consequences (Salen & Zimmerman, n.d.). Leaders in the real-world face huge implications of their decisions that could cost millions of dollars or cause the company to become bankrupt. In the game world, these same leaders can prototype potential futures and test them over and over again without repercussions. This enables exploration of positive and idealistic futures that often are pushed aside due to financial concerns (Albani & Kupers, 2014).

2.7 How immersive experiences can support holistic decision making for positive change

Several world humanitarian organizations included in this research such as, the World Bank, are turning to virtual reality to facilitate action from organization supporters and the public. The reason for this, is the discovery that immersive experience facilitates empathy, cooperation and better crisis response decision-making, all of which, support holistic decisions by making it easier to see their impact.

2.7.1 How storytelling can support holistic decision for positive change

"Storytelling is a key component of most change and design thinking methodologies. It is known for creating empathy and engaging audiences. Oral storytelling is a valuable form of human expression probably as old as humankind itself. Humans have a universal capacity to create and transmit oral stories, which has most likely served an evolutionary purpose" (*Oral Storytelling Is a Valuable Form of Human Expression Probably as Old as Humankind Itself. Humans Have a Universal Ca*, n.d.). Another researcher, Kaarst-Brown conducted research using allegory with two insurance companies (Kaarst-Brown, 2017). Her results "showed that allegories can guide us through quests and heroism that are analogous to challenges we face in the real world" (Kaarst-Brown, 2017).

In an interesting side note from the case example of Burning Man, members refer to reality as the "default world," thereby insinuating those stories are actually reality. In the case example of Royal de Lux, it is possible to see how immersive experiences of stories create positive change. Their city wide interactive puppet stories have revived city economies around the world (Smart, n.d.). The use of immersive story telling can often support positive change more effectively than standard methods by engaging our imagination, enchanting us and calling on our collective memory (Mulgan, 2018)(Rose, 2014). As Kaarst-Brown demonstrates through her research into allegory "While using metaphor to construct organization fairy tales may seem radical…our reliance on purely rational views…has constrained researchers and managers and linear thinking has negatively shaped our view of organizational potential" (Kaarst-Brown, 2017).

2.7.2 How quests can support holistic decision making for positive change

"We live surrounded by systems of all kinds that sustain life. These provide us with energy, transport, health care, education and food. However, "these systems rarely work as a system: they don't talk to each other, share information or coordinate their help" (Mulgan, 2018).

In an example of developing a game based on the Lord of the Rings (Salen & Zimmerman, n.d.), we can see that quests unite people in a shared sense of purpose towards a single goal. In quests, the challenges are big, the resources are small and as a result, individuals are acutely aware of their need for and impact on one another. As a result, individual skills and

contributions become necessary for the success of the group and that in turn results in individuals gaining value in the eyes of themselves and their peers. Another component of resilience and openness to change is the feeling of being seen and valued. This aspect of immersive experiences is in direct contrast to typical work experiences in large corporations where employees may feel lost in the crowd, and struggle to receive validation for their efforts resulting in feelings of separation from the group. Further, in virtual reality, quests can create a visual "map" of the company (kingdom) and its challenges. In these scenarios, it is apparent that quests contribute to holistic decision making for positive change by incentivizing individuals to create solutions that will have a positive outcome for all (Albani & Kupers, 2014). "You are stronger than you know. You are surrounded by potential allies, you are the hero of your own story." McGonigal believes that the skills we use for gaming such as, collaboration, iteration, heroism, and quests can be applied to the world's problems (McGonigal, 2016). An important distinction to make here is that while many games include questions, not all quests are games. As an example of how games translate to the real world, McGonigal gives the example of a ten-year-old boy who saves his family by taking over the wheel and driving safely off the highway when his father had a heart attack. He was able to do so because of the driving skills he had learned playing video games (McGonigal, 2016).

3.0 APPROACH

Initially, I began this research focused on how to enhance human potential to facilitate resilience within organizations and better understand the behavioral drivers of change. This led to research on several accepted change management methods, studies of the behavioral components of resilience, and into collective intelligence from authors such as Kahneman, *Thinking Fast and Slow*, David Rose, *Enchanted Objects and Supersight*, Jane McGonigal, *Superbetter*, Steven Johnson, *Farsighted*. The word "super" seemed to be everywhere, which is part of why, I named this research *superfuture*. It reflects the work of these authors and my idea that a positive future, perhaps one that is even better than we dreamed, is possible if we shift our thoughts and actions. I extended this research by identifying thought leaders in various creative and innovative organizations and arranging to speak with them. I then conducted secondary research to discover resilient organizations that were creating positive change. This led to the discovery of over 100 organizations working on foresight, civic design, social tech and immersive experiences.

I decided to focus on those organizations using immersive experiences due to observations that they were a) particularly effective in the organizations reviewed, b) appeared to have value for other organizations, c) appeared to provide a solution for the areas where change management was unable to effect change, and d) created the kinds of engagement in individuals that my research into cognitive and behavioral drivers had shown could foster resilience and transformation.

In order to select case examples, it was important that I select organizations whose reputation and size would make them acceptable examples for other companies to follow and would hopefully overcome biases that sometimes occur when examples are based on small organizations because they don't provide enough of a sense of proof and validity. Therefore, I chose case examples that demonstrated scale though 1) a high level of public recognition of their name 2) thousands of employees and/or attendees 3) longevity by having been established for 10 years or more, with most falling into the 20+ years category 4) active engagement in social impact 5) collective intelligence in an easy to identify way. In some cases, quantitative

information was available, in others, I was forced to form qualitative insights from the information provided.

I used a combination of online research, and information interviews together with online research platforms and libraries to develop the case studies. I used Linkedin to track down and connect with organization leaders. Many of the interviews I conducted, were exploratory and as such, open-ended and focused on information gathering. Many of these interviews, while not included in the case examples, provided additional perspectives on what creates positive change and why it is needed. These included interviews with organizational leaders concerned with helping companies design better business practices and supporting human survival through sustainability efforts. These included: Bloomberg Philanthropies, IFTF, Civic Design Lab, Fenton, Millennium Project, Vortex Immersive Media, Liminal, Drawdown, MeetinVR, Nava, Biomimicry 3.8, TED, OmniLifeVR, Ellen McCarthur Foundation

In interviews, where I had previous knowledge about organizations due to online and digital research platforms, I was able to be more specific with questions. In these cases, I asked questions about how the interviewee arrived at their role within the organization in order to establish background and a frame of reference for the information they shared. I asked how the organization made decisions to understand whether they used hierarchy, community or democratic frameworks to ascertain if this contributed to their success. Additionally, I asked what challenges, if any they faced now or in the past and how they had solved them. In other cases where I knew little about the organization, interviews were completely informal and very much "get to know," conversations that eventually led to more information about the organization. In general, the people interviewed expressed the opinions put forth in this paper, that positive change is needed and that it needs to incorporate collective intelligence, creativity, foresight and holistic decision making.

CASE EXAMPLE	Online & Library Research	Interview
Burning Man	x	x
Ars Electronica	x	
Royal de Luxe	x	x
World Bank	x	

Local Projects	x	x
Open Labs	x	x
Red Cross	x	
Walmart	x	
NeuroSociety	x	
Tomorrowlands	x	
Greenpeace	x	
9/11	x	x
Cirque du Soleil	x	
Doctors without Borders	x	
Epic Games	x	

Figure 1.

I further supported this research by engaging in activities that would give me a first-hand perspective on how people interact with immersive platforms such as games and virtual reality. I explored the virtual reality spaces on Oculus with Quest 2 glasses. I explored immersive experiences including 360 experiences, meditation spaces, documentaries, philanthropy experiences and games.

I observed three things:

1. There is an ever-increasing range of media moving into the immersive reality world with various success. Documentaries for example, often do not translate well in immersive experiences. It is a space for action, curiosity and exploration rather than static information reception.

2. Design, interactions and storytelling are very important in terms of creating engagement with viewers and the immersive space has the added dimensions of film to consider, such as timing, scale and pace. In virtual worlds, people want to discover rather than be told. Studies show that women tend to gravitate towards accomplishment, men towards competition. This holds interesting implications for the design of immersive experiences for change management.

3. The virtual world does indeed cause awe and spark creativity.

I conducted experiments in Spatial.io through an XR class where I was able to observe how groups of 20 people interacted with the VR collaborative space. I observed that immersive experience spaces like Spatial, spur people's natural curiosity. The first actions people took were to explore the space using teleporters (these jump people around within the space), and test the tools. The actions they most enjoyed, were the ability to play with scale and many spent a majority of the time, shrinking, growing and moving objects around.

There are still some glitches with virtual reality collaboration such as, sound, onboarding, and accurately putting yourself next to others in the space due to slight distortions. After one hour, I discovered that most of the participants felt exhausted and their eyes hurt. When given the choice later whether to use Zoom or Spatial.io, most chose Zoom, indicating that VR can only be used as a remote collaboration tool for short periods of time and that the decision by the majority organizations adopting immersive experiences to focus on AR may well be a good move in terms of human physical limitations.

I also enrolled in a Games for Social Change class to understand gaming as an immersive experience for change. In the Games for Social Change class, I learned that the main challenge to adopting games for positive change is in creating the right balance between seriousness to promote learning and playfulness to create engagement, direction (telling) and self-discovery (showing) and encouraging engagement through competitive incentives versus collaborative action. Another challenge in using games for change is avoiding the kinds of gamification methods often used by marketing that fail to provide positive results long-term. Yet another challenge lies in determining what, if any, aspects a game mechanic will appeal to users.

In our game, Headline Inspectors about teaching people to distinguish between fake and real news through lateral reading, the dynamics that were most important to people were not the game play, but the discovery that with a very simple Chrome tool, Edit Anything, it was possible to change headlines in seconds. Further, that what people felt was most rewarding, was the chance to trick others in a playful, non-harmful way.

These observations helped me to understand the range and variety of immersive experiences and how they impact users. This further exemplified why the immersive experience methods used in the case examples were effective and helped me to make final decisions about which organizations to select. Lastly, I researched papers and articles on global warming, sustainability and building resilience within companies to provide validity to my argument that positive change is needed.

4.0   RESULTS

Out of this research came the idea of superfuture, that new ways of thinking, acting and making decisions prompted by immersive experiences can effect positive change. To support this idea, this section includes 16 case studies and provides insights through their stories, of how other organizations can use immersive experiences to facilitate positive change. While almost all of these cases present examples of how immersive experiences facilitate collective intelligence, creative thinking, foresight and holistic thinking for positive change, they have been separated into these four categories based on which of these four areas they illustrate most strongly. This was done to support easier connections between the insights in each case and the areas of change they best support.

4.1 Case Examples for Collective Intelligence

4.1.1 Case Example 1: Burning Man

One of the most provocative and comprehensive examples of an organization that makes smart decisions using collective intelligence, is Black Rock City Limited Liability Company (BRCLLC), which produces the yearly event Burning Man. Burning Man is referred to by the BRCLLC as "the project." (Kwatinetz, c. 2021). The BRCLLC is, on a much smaller scale, analogous to the UN in its structure. The head company provides the organizational leadership for dozens of organizations, projects and affiliations. The BRCLLC, uses a unique organizational structure that is a mix of hierarchy, community and democratic decision making. This case example focuses on both the BRCLLC and the Burning Man festival.

Ritual is very important in the BRCLLC. One of these rituals is called the Long Story (Kwatinetz, c. 2021). The Long Story plays a key part in every meeting and decision. While reminiscent of a mission statement, at the BRCLLC, it is used in a very personal way, as a written reminder of how the organization got to where they are and why they do what they do. In other words, it is a form of collective group memory that guides future decisions. Unlike mission statements that tend to remain somewhat abstract for employees, the Long Story is treated as vehicle for daily affirmation of personal identity and core values.

Another ritual is called the Golden Spike which is used in leadership meetings. It is used to facilitate the democratic aspects of the organization's decision-making framework by bestowing permission to speak and ensuring that everyone has an opportunity to share their thoughts and opinions. However, while this structure is democratic, not all members have an equal vote. In this way, the BRCLLC is both democratic and hierarchal in its organizational structure. It is hierarchical in that it makes the majority of key decisions for the Burning Man festival. Once decisions that are vital to the practical and legal functions of the organization are made, the majority of the rest are left up to the community of thousands of volunteers and attendees collaborate with the BRCLLC either by participating in the Burning Man festival or through numerous other projects and affiliations. In this way, the BRCLLC is unique in its ability to balance three different decision-making structures at once: hierarchal, democratic and community.

This decision-making approach results in a high degree of both organization and creative freedom, a combination that has been highly successful for more than 35 years with attendance growing every year since the organization began as a small beach celebration on Ocean Beach in San Francisco in 1986. The Burning Man project now sees 75,000 plus people every year.

In addition to the BRCLLC's interesting leadership and decision-making structure, Black Rock City (Burning Man) makes for an interesting case study for urban planners due to the fact that despite its temporary nature (one month) every year, it operates fully as a city. As such, it offers suggestions for the design and maintenance of other large scale temporary cities such as refugee camps or future smart cities. Situated in the Black Rock Desert east of Las Vegas, Nevada, Burning Man transforms a desolate landscape into a thriving metropolis that averages 3 miles across and 8 miles around and sustains 70,000+ people. During the two weeks in which people attend, every type of city infrastructure is offered from Wi-fi and electricity to 700 volunteer doctors and nurses who perform surgeries as necessary on site. Of the 70,000 + attendees, 20,000 of these are volunteers who serve as law enforcement and ensure sanitation and garbage collection (Kwatinetz, c.2021). The BRCLLC is given permission to host the event in Black Rock every year on the condition that they "leave no trace." Astoundingly, the organization complies year after year. The organization's ability to host 70,000 people engaged

in every possible activity and yet, at the end, leave no trace provides exciting possibilities for cities struggling with garbage and recycling programs.

The key to the BRCLLC's success lies in its 10 core guiding principles. These were developed in a communal way through observations and conversations with attendees by leadership over the years. These principles include:" Radical Inclusion, Gifting, Decommodification, Radical Self-Reliance, Radical Self-Expression, Communal Effort, Civic Responsibility, Leaving No Trace, and Participation. These shared principles form the "glue" that enables Burning Man Project to be so successful year after year in their commitment to "leave no trace." (Hoover & Hoover, n.d.) It is also key to the popularity of the organization. Unlike the majority of other organizations which use sets of rules that dictate behavioral expectations to facilitate success, the BRCLLC's principles ensure success by giving people autonomy and inviting them to be part of a community. They also invite people to support the organization through the sense that by doing so, they are also supporting themselves through shared values (Berger, 2013). These shared principles promote group collaboration that results in a robust open platform for knowledge sharing.

A quick overview of these 10 principles is helpful in examining how these apply in the BRCLLC organization and to further illustrate why they have proven to be so successful in facilitating the components of positive change outlined in this paper (Hoover & Hoover, n.d.)

Radical Inclusion means that anyone from anywhere in the world, any age, or race is welcome at the Burning Man festival.

Gifting focuses on the idea of unconditional giving without expectation of return.

Decommodification supports the idea of gifting by creating an environment in which the exchange of money for goods is prohibited.

Radical Self-Reliance encourages individuals to develop and rely on their own inner resources such as intuition, knowledge, skills. It celebrates the autonomy and independence of individuals to make their own decisions.

Radical Self-Expression further supports the idea of autonomy and independence and encourages creative self-expression in whichever way feels right to the individual without judgement from others.

Communal Effort means that anyone who participates is expected to be cooperative and collaborative and support the overall community by adhering to the 10 principles.

Civic Responsibility means that everyone is seen as part of the whole society of Burning Man and is expected to assume responsibility for public welfare and participate in civic activities that support the event.

Leaving No Trace refers to respect for the environment and a commitment to avoid any kind of negative impact by ensuring that absolutely anything brought in is removed at the end of the event.

Participation refers to the idea that in order for transformative change to happen, those involved must participate on a deeply personal level in every aspect whether work or play.

Immediacy refers to one of the main objectives of the event, which is to overcome barriers that stand between us and others.

Going deeper into these principles, Radical Self-Reliance, could easily translate into ways of helping individuals and groups sense the needs of their citizens, remember methods in the past for handling crisis or planning that have worked well and could be revisited. Radical Inclusion offers exciting guidelines for how organizations and cities can address inclusivity and equality agendas. Civic responsibility and Communal effort, tie into the ideas of civic engagement in which governments work closely with local residents, that a large number of

cities worldwide are looking for ways to facilitate. Their success with Leave No Trace serves as a blueprint for recycling and sustainability efforts as well as possible solutions for countries inundated with refugee camps, or leaders of third world nations looking for ways to respond to crisis and natural disasters with few standard resources. The principles of Gifting and Decommodification, are more challenging for most organizations, and countries to consider adopting (fears abound around socialism, barter, and communistic economies). However, they do offer the possibility that barter systems can be successful. Whether only in cities smaller than 70,000 or for short time frames would require additional research to explore and validate (Hoover & Hoover, n.d.).

The BRCLLC also provides an interesting framework for organizations that wish to become more innovative. Due to its creative approach, the Burning Man Project continues to attract engineers and tech leaders from around the world who are drawn to its unique experience. This same mechanism can be seen in why Boulder became a tech hub. It attracted tech leaders who appreciated the experience provided by its proximity to the beautiful Colorado Mountains (*Start Up Communities*, n.d.). The BRCLLC is also currently working with several clean energy companies eager to learn the secret to their sustainable event that works in an environment that is harsh and without the resources of technological access or water (Nickelsburg, 2019). The innovation lab works closely with Silicon Valley to facilitate creative solutions across industries (Velten, 2017).

Yet another interesting aspect of the Burning Man Project, is the way it has managed to evade the typical rise and fall of many other large companies. The pattern we often see with large companies is that they achieve a high degree of success, but after a while, fail to adapt to change and decline or fail. This usually happens through overconfidence and the inability to see oncoming challenges or the inability to engage their members in change (Robertson & Breen, 2013).

In contrast, the Burning Man project has continued an upwards climb for 35 years, only limited by the capacity requirements of the Bureau of Land Management. When asked why the organization is able to remain continually resilient, a member of their leadership group, Mathew Kwatinetz, put it down to the freedom, autonomy and the ten guiding principles and the culture

they've created. Of the 70,000+ attendees, 30,000 are groups that each have their own agenda, offerings, projects. Some create the spectacular art installations the event is known for. Installations that take an entire year to build and plan and which can cost upwards of a hundred thousand dollars to build. Others provide free food or drink camps for the entirety of the festival with budgets that rival popular restaurants. Due to this freedom and brought together by shared principles, the BRCLLC has created an organizational framework that seems to defy the critical mass needed to change its course or to cause its decline. (Kwatinetz 2021).

4.1.1a Burning Man/BRCLLC: Key Insights

The Burning Man Project which has created one of the most famous immersive experiences in the world demonstrates how immersive experiences facilitate resilience and positive change. The mix of decision-making frameworks enable the organization to be nimble and adapt quickly. The emphasis on shared values promotes engagement towards whatever kinds of change are needed, whenever. The organization not only supports but encourages individuals to be as creative as they can be, creating a kind of free-form innovation lab that consistently produces ideas that are adopted by the outside world.

The BRCLLC's use of ritual translates to the importance of storytelling for change explored in this paper. Through story, the organization is able to continuously access shared memory, safe-guard its identity, and at the same time, participate in change by facilitating engagement. The success of the 10 guiding principles in influencing behavior at scale, demonstrates that shared values can be highly effective in engaging desired behaviors and "buy-in" in large organizations and could serve to replace standardized methods with the same if not better, efficacy. Black Rock City's ability to set up and tear down a city of 70,000+ people in two weeks and leave no trace could harnessed for civic engagement in government decision making. It also suggests it may be possible for cities to organize residents into sub-volunteer communities in order to create agile response systems. This could be particularly helpful if established in advance of climate crisis such as Hurricane Katrina or the recent Texas Freeze which shut down power to a large portion of the state (Jenkins, 2021).

4.1.2. Case Example 2: 9/11 Museum of Collective Memory

The Black Lives Matter movement has made organizations and governments take another look at historical monuments. Many agree that a large number of monuments depict racism or gender bias or skewed versions of history (Palmer, 2020). This has created a great deal of controversy about how to handle this problem, whether to keep monuments because of their value in terms of recording history or to remove them for being harmful, or to find a compromise by keeping them and adding information that helps people understand how the monument is harmful or false in its depictions. Nevertheless, monuments serve a valuable purpose in helping us to remember our history and the lessons we've learned (Barton, 2021). Perhaps one of the toughest monument development projects was the 9/11 memorial that faced New York and New Jersey after the attack.

The 9/11 memorial may well have been the toughest challenge any city has had to face in this or the last century, and therefore, provides a great example of how to use immersive experiences to build collective intelligence into urban planning. The decision was the responsibility of multiple city organizations and commissions, each with their own agendas including Port Authority which held the lease on the land where the Twin Towers had stood and had a vested interest in transportation (Dunlap, 2002). There were city infrastructure decisions to make about office space and whether to keep the Wall Street business focus. How to rebuild and direct traffic through the tunnels connecting New York and New Jersey (Dunlap, 2002). There was also the consideration of how to give equal representation to the two cities without offending one or the other.

Most challenging was the question of how to create an inclusive memorial that would not only capture the spirit of our nation for the world, but also properly commemorate and capture the stories of those lost (Bagli, 2002). To add a further complexity, most of the public had desires that differed from those of city officials. They wanted a memorial that was inspiring as well as commemorative. Initial efforts by the two cities involved opening up a design competition to multiple design and architectural firms. In the first rounds, New York and New Jersey made decisions internally about the submissions and then shared them with the public (Brustein, n.d.).

The search for the right design was conducted in two separate competitions. One for the building that would replace the Twin Towers and one for the memorial itself (Bagli, 2002). All in all, there were 5,201 entries from 63 nations and 49 states for the memorial. After the first round with six finalists, the public said that the designs were all "too polished," "too gimmicky" and too "architectural." The public felt that all of the designs felt like cemeteries, while they wanted a memorial that spoke to the heroism and survivalist spirit of New York. They didn't just want to talk about the pain and loss, but also about the ways that many positive events and business came out of the tragedy as individuals and organizations came together to help one another. They wanted the towers remembered by preserving what pieces were left. They wanted water, light and a sense of connection designed into the infrastructure to espouse these things. They wanted a memorial that was human (Bagli, 2002).

How then, in the face of so much rejection month after month from the public, did the 9/11 memorial achieve a successful outcome? The answer, through a great deal of trial and error; through multiple calls for submissions from design firms; through an endless number of "town halls" and finally, through digital sites that made it possible for citizens to vote and choose the design they liked (Bagli, 2002).

Local Projects was chosen to complete the Museum of Collective Memory (Barton, 2020). Local Projects, an immersive experience exhibits firm founded by Jake Barton, was a natural choice. Around the world, they have been creating exhibits that range from "fun" such as Planet Word which recently opened in Washington D.C dedicated to celebrating language and making it interactive, to tougher topics, such as the Legacy Museum in Alabama, that explores modern slavery and America's prison system.

Today, the Museum to Collective Memory encompasses nearly all of the "asks" of the public. Those who wanted office space got it within the new Freedom tower. Those who wanted better connectivity and transportation got it through the rebuilt subway station that stands below the beautiful ribbed building designed by Calatrava. It memorializes all 2,982 people who died. It commemorates the brave fire fighters and rescue workers and it maintains key elements from the towers. The holding wall against the Hudson is preserved as are a few crushed vehicles and the radio tower. Artifacts from those who passed are preserved, giving a human perspective on

the lives of those lost. It walks people through that horrific day in a timeline room that features video and radio calls that occurred during 9/11. It also memorializes the collective loss that was felt by the world through voice recordings that immerse visitors as they walk in. It engages visitors by letting them record their own thoughts and feelings. The memorial square sides flow with water falling deep into the center with the names of those lost in the Twin Towers around the sides (Barton 2020, Bonime 2021).

4.1.2a 9/11 Memorial: Key Insights

Despite a rocky journey, the 9/11 Memorial is an example of resilience and renewal that is possible. The Twin Towers, so long an iconic part of the New York Skyline, has been built back in a way that offers more beauty and significance. The design of the memorial which incorporates so many aspects of immersive experiences, including storytelling, creativity, and global thinking, serves as a unique roadmap for change. The method by which the final designs were developed provides a blue print for what to do and what not to do in civic engagement and why leaders should use collective intelligence by including citizens in decision making from the start. It demonstrates new ways to preserve our collective memory for future generations.

4.1.3 Case Example 3: IFRC (Red Cross + Open Labs) 2030 WhatFuture Project

The Red Cross is the world's largest humanitarian foundation. Also known as the International Federation of the Red Cross (IFRC), it founded the Solfrino Academy which oversees their innovative projects. In 2019, they began worked with Open Labs at Newcastle, UK to develop a global real-time collective intelligence project using Whatsapp. The IFRC's role throughout the past century has been to react to crisis, however, the organization has been looking increasingly at ways to shift from reactive to proactive. Given its size with 192 offices around the world, thousands of staff and millions of volunteers, (Lambton-Howard et al., 2019) the IFRC faces the same challenges as other large organizations when it comes to finding ways to adapt and change.

The WhatFuture project was aimed at creating this shift from reactive to proactive, through several objectives. One, they wanted to move from a hierarchal decision-making

structure to a more community based one so that the creative ideas and observations from their volunteers could be heard. Without projects such as WhatFuture, the hierarchal framework made it difficult for volunteers or anyone without direct access to leadership to be heard. Second, they wanted to gain the perspectives of the younger generation in the hopes these suggestions would provide ways for the organization to be more agile. As such, the project targeted the 9 million volunteers under the age of 30.   Third, the IFRC wanted help with foresight strategy in coming up with its 2030 roadmap.

For the WhatFuture Project, the IFRC gathered 487 players from Kenya, Hong Kong, Bugaria, Australia and Finland to play over the course of 10 days, using the popular messaging platform, Whatsapp. The platform was ideal due to the fact that it has fast become a low-cost way for organizations to engage with customers around the world from use for monitoring election fairness in South Africa to issuing court summons in India or for education in the classroom (Lambton-Howard et al., 2019).

The Red Cross broke their objectives down into four categories to be addressed: morphology, role, externalization and process. Morphology addressed questions such as how the size of a participant pool would impact participation, mutual understanding and decision making. Roles looked at how individual roles influenced participation and behavior. Whatsapp only allows for two roles (group members and administrators). Externalization looked at how and when information gathered from participants would be shared publicly. Process examined the series of actions and steps that participants would need to take in order to achieve the outcome goal of the engagement.

The Red Cross also identified an additional challenges which was "how exactly would participants generate usable insights?" To that end, they identified three key questions that would provide the data they were looking for. These were 1) What challenges do young IFRC volunteers think their local communities will face in 2030? 2) What opportunities will arise from these challenges? 3) How should the Red Cross adapt to meet these challenges and opportunities in 2030? In order to create incentives, they designed the experience with Leaderboards where each days winning story submissions would be posted.

Building on knowledge from previous crowdsourcing games, they set up three challenges for participants. Challenge 1: Work with your team to produce a news story from 2030 about the biggest challenge facing your society. Challenge 2: Create an advertisement for an innovation in 2030. It could be a new product, service or initiative. Challenge 3: Record a message to the Global Secretary General of the IFRC updating her from the front line of an innovative disaster response in 2030 (Lambton-Howard et al., 2019).

The success of the first WhatFuture session resulted in a repeat session which engaged 120 countries, 421teams. They produced more than 80,000 messages. The winning submissions became the basis for the Red Cross's 2030 strategy. Additionally, they gained valuable data about how to design frameworks for crowdsourcing (how to categorize and frame data, types of challenges and size of teams for best results using digital platforms). The project was nominated for an international Digital Communications Award as an example of innovative internal communication (*WhatFutures*, n.d.).

4.1.3a IFRC: Key Insights

In developing and enacting the WhatFuture project, the IFRC created a framework for positive change that was at once immersive, collective, creative, futuristic, and global. The WhatFuture project presents exciting and interesting ways for organizations to partner with technology at scale and across cultural differences and time zones. By engaging its community of volunteers in decision making, the organization was able to facilitate knowledge sharing. Further, by using a "gamified" format, the organization provided creative ways to engage members and was able to garner a large number of ideas in a short period of time and use them to plan risk response strategies ten years in advance, increasing its chances of being resilient in the face of climate crisis.

4.1.4 Case Example 4: Open Labs Escape to the Future

In 2019, Thomas Nappey, Daniel Lambton and James Hodge at Open Labs at Newcastle University were approached by the IFRC (Red Cross) to create an immersive experience for their yearly General Assembly with 1,000 leaders from around the world. Similar to the WhatFuture

project (previous case) the IFRC wanted an experience that would immerse attendees in a challenge to design the future and help the organization go from "reactive" to proactive and circumvent their hierarchal culture to gain insights from their young volunteers.

One of the most interesting aspects of this case in terms of facilitating change, is the speed at which Open Labs was able to create the Escape to the Future experience. They had two months to design the concept, come up with the interactive elements, consider and plan the user experience, find and test technology that would support the types of experiences they wanted to offer, transport the experience to Austria and reassemble and test it there.

One of the challenges Open Labs faced was one that is faced by games for social change. They had to achieve just the right balance between gamification and strategic planning in order to ensure participation and achieve their targeted learning outcomes. The three teammates who have backgrounds in game design, UX/UI and immersive reality, were concerned with the question of how to facilitate stronger collaboration and networking between attendees from around the world. One way that they employed, was to put information essential to solving problems on each of the four walls of the Escape to the Future rooms, making it necessary for participants to work together in order to solve challenges. Escape rooms, by their nature, create a sense of urgency. Participants have to solve the problems presented in order to "escape." This, in and of itself, helped to create a sense of challenge and competition in terms of solving problems for the future.

The team employed change management methods, where participants had to go back into the past, find tools and ideas from there, and use them to come up with new strategies for the future. To further motivate participants, the rooms immersed participants in the experience of potential disaster stories. For example, in one room, they watched as a pandemic slowly spread across the world. Interestingly, this was in 2019, a year before COVID-19 hit, showing that Nappey, Lambton and Hodge were using *foresight* to imagine a potential future scenario.

Open Labs created the experiences based on a list of key areas the IFRC wanted to explore. 1) health, 2) crisis response, 3) identity and data, 4) values and inclusion, and 5) climate

change. In order to ensure that participants solved for these challenges from a global rather than region specific focus, they were careful to present challenges in ways that were neutral. For the climate change challenge, for example, they were careful to create forest fires that appeared universal so as to avoid participants jumping to conclusions that they were based in California. Participants had 30 minutes in each room and after each challenge, were brought together to share and debrief with the other thousand attendees. What resulted in the end, was a fully designed 2030 strategy for the IFRC.

The Open Lab team addressed the hierarchy challenge of IFRC by giving attendees walkie talkies they could use to call out for help. In this way, they could receive immediate feedback and support to solve challenges. This was in stark contrast to everyday operations at the IFRC, where office leaders often had to go through channels and wait a considerable time before receiving support and created a new paradigm for attendees. in which all of their leaders and many of their volunteers had participated. This was a powerful step in the organization's step towards fast, agile decision making using the strengths of their community and moving away from time consuming hierarchy.

Additionally, participants expressed *awe* at having designed the 2030 strategy without realizing it. They had been so immersed in the "play" and storytelling aspects of the Escape to the Future Challenge, that they had not realized they were coming up with viable solutions at the same time. Further, many expressed the fact that they now understood IFRC's mission and objectives far better than when they were presented with multi-page reports.

4.1.4a Open Labs Escape to the Future: Key Insights

Escape rooms have become highly popular as an interactive and experiential method for supporting people to think critically. Escape to the Future is one of the strongest examples of an organization using immersive experiences that covers all of the aspects of positive change posited in this paper. It involved storytelling, and games to spur *collective intelligence,* employed time travel to facilitate *creative thinking, and foresight* and set up a framework in which participants were forced to work together and consider each other's needs in order to survive. . This teamwork framework also promoted community decision making, sensing, knowledge

share, empathy and *holistic decision* making that considered impact on a global scale. The success and impact of Escape to the Future and the ability to build it so quickly, demonstrates a powerful way for organizations to create transformation across organizations using experiences.

4.2 Case Examples for Creativity Building for Positive Change

4.2.1 Case Example 5: Royal de Luxe

Royal de Luxe, a French company that for two decades has held live interactive events across cities using giant puppets has proven that creating wonder at scale, accessible to all, can rebuild a city economy. The group has held two events in Liverpool as well as multiple cities around the globe. During their last Liverpool event, they attracted more than one million people (Smart, n.d.). Royal de Luxe's giant puppets are remarkable and range from 40 to 100 feet tall, expertly manipulated by teams of operators. Many have remarked on how "real" and human these puppets seem, due to their natural movements. The puppets are moved throughout the city over the course of a few days and each move is a part of a story. In this way, Royal de Luxe participated collectively with the public. This framework not only builds tourism through the number of visitors, but because it prompts visitors to explore the entire city in order to catch different "chapters" of the story. Along the way, they often visit shops, restaurants and other attractions, pouring money into all parts of the city economy.

Royal de Luxe was founded in [Aix-en-Provence](), in the south of France, in 1979 by Jean-Luc Courcoult.(Smart, n.d.). Jean-Luc had a vision of re-creating free public theater that would "lift people's hearts" (Smart, n.d.) and make performances that are often prohibitive due to cost, available to the public. Included in the "Saga of the Giants" exhibits which began in 1990 are the Big Giant, Little Giantess, Xolo the Dog, Giant Grandmother, and Little Boy Giant as well as a giant elephant which strolled through London. Each puppet takes approximately four years to build from initial concept to performance, and involves masses of old and new technology from industrial designers who carve the wooden pieces, to expert crane drivers to electricians (Taylor, n.d.).

All of the development is expertly overseen by Jean-Luc Courcoult whose loyal teams work tirelessly to bring each puppet to life. It is a hierarchical decision-making system that works because of the shared passion everyone has for the projects (Gwenaëlle Raux, 2020).

Since their inception, Royal de Luxe has created experiences in cities in France, Germany, Chile, Mexico, Australia, Belgium, Portugal, Iceland, Spain, Switzerland and Canada. (Smart, n.d.) Each performance generally revolves around travel and friendship and often they build on the key aspects of a city. For example, in 2012 in Liverpool, they celebrated the city's naval and fishing history with a final voyage with the giant deep-sea diver, the little giant girl, and her dog, Xolo" (Smart, n.d.). In this way, Royal de Luxe activated collective memory and imbued meaning for inhabitants through interaction.

In 2009, the group came to Berlin with the Diver and Little girl puppets and enacted a simple story throughout the city. Attendees rushed from the Spree (a river running through the center of Berlin) to the Brandenburg Gates to witness the 100-foot-tall diver and the little girl slowly came down the central pathway of Tiergarten. The next day, they became separated and began searching for one another. In order to find his niece, the diver dove into the Spree. In another part of the city at a different time, the little 40-foot-tall girl rode the spree in a ship, looking for her uncle (Bonime, 2021).

Today, in the Pandemic, Royal de Luxe has decided to retire its giant puppets and is moving into augmented reality with a new spectacular event in mind that will involve a giant silver baboon (Gwenaëlle Raux, 2020). The choice was carefully decided upon by Jean-Luc as a reminder to people of climate change and the importance of our natural world.

4.2.1a Royal de Luxe: Key Insights

Royal de Luxe's success proves that *immersive experiences* can be used to subsidize tourism and lead to economic rejuvenation. The manner in which the company uses scale to inspire awe, and its plans to translate that into digital technology and to open up exciting opportunities for other organizations to use the same methods to create positive change by inspiring awe. The size and awe-inspiring qualities of the puppets is impossible to imagine without experiencing it first-hand. Much like watching an Olympic Athlete win the gold or a climber free-climb El Capitan in Yosemite, experiences like these leave us with a sense of human greatness and allow us to step into possibility, which in turn, often fuels *creative thinking and the capacity to imagine the future differently*. Their city-wide events which promote

collective intelligence between cities and inhabitants could be used for civic engagement by local governments. In some ways, we saw this effect utilized by the Biden administration during the inauguration (culture et al., n.d.). The use of norms in their storytelling promotes *holistic thinking* through shared moments. In the Berlin performance, the story of the little girl lost from her uncle, is one that almost any parent who has temporarily lost their child can connect with.

4.2.2 Case Example 6: Cirque du Soleil

The world of circuses had been dying for decades when Cirque du Soleil arrived on the entertainment scene. How then, did Cirque du Soleil become a billion dollar business? How have they managed to remain strong in the face of COVID which has shut down all access to most live in-person performances? Some credit Cirque du Soleil's success to *blue ocean* thinking, aka, instead of tweaking the existing marketplace, they created an entirely new one. While definitely a key part of the company's success, the real secret to Cirque du Soleil's success has come from its ability to inspire awe, which, as previously discussed, is a key component of change.

Their performances are unlike any seen before in live theater. The acts are more death defying, more spectacularly beautiful, more creatively original than any that have been seen outside of the movies. Named for the energy and vitality of the sun, Cirque du Soleil started with humble beginnings in 1984, in the tiny Quebec City suburb of Baie-Saint-Paul, with a group of street performers called the "the High Heels Club." The lack of circus culture in Canada allowed the troupe to experiment. Guy Laliberte lobbied to have the group create a celebration called Cirque du Soleil to celebrate the 400th anniversary of the discovery of Canada by Jacques Cartier who claimed it for France in 1534. To raise money, he convinced his partner Mr. Ste-Croix to walk 56 miles in stilts (Gittelson, n.d.). The organization began with a concept of "polish the pearl" which meant, practicing and refining performances to perfection. The organization then went on to shock and delight the international scene starting in 1987 with their first tour "Reinvent the Circus." In 1993, Mystere became a permanent show in Las Vegas and a huge tourist draw, supporting the city's economy (Gittelson, n.d.).

Today, Cirque du Soleil is using the technology and the limitations of the pandemic to explore new opportunities by unveiling digital programming. With their new platform Cirque Connect, they are offering master classes in creativity, behind the scenes peeks at the process of

producing the shows, and live 30 minute shows offered free to stream on their digital platform (*Fall into Fun! Cirque Du Soleil Launches All-New Cirqueconnect Digital Experience with Even More Original Content*, n.d.). They are also producing a movie called *Drawn to Life* with Disney (Courchesne et al., 2019). This move represents a current trend towards hybridization, across industries, a merging between virtual and real worlds which also reflects the growing number of industries exploring human computer interaction. It will be interesting to see how the company's foray into digital immersive experiences evolves.

4.2.2a Cirque du Soleil Key Insights and Suggestions

Cirque du Soleil's move into partnerships with digital technology beyond those it uses for its live performances represent interesting opportunities for other organizations to provide content remotely and to engage *collective intelligence* for positive change to a global audience. This can sometimes result in broader reach for a much smaller financial investment. The company's ability to inspire awe through spectacle presents and interesting idea, that spectacle can be used for change. This is not dissimilar to early religious pageants. Cirque du Soleil's move to online education also represents interesting ideas for remote learning.

4.2.3 Case example 7: Ars Electronica

Ars electronica has developed a "Connected Cities" initiative (*Connecting Cities*, n.d.). The organization, which was started in Linz in 1979, has since become the most important digital media festival in the world with over 75,000 visitors (*Ars Electronica Linz*, n.d.). More than a yearly conference, the organization is also an innovation lab for thought leaders creating the latest in digital research and development. Since 2015, their Connected Cities project has been serving to create entirely new ways for cities to connect with one another around the globe and work with their inhabitants on local challenges through a mix of interactive installations and immersive experiences (*Connecting Cities*, n.d.).

How Ars Electronica began. In 1979, the city of Linz was facing a tough challenge and a reputation for being a "steel city" leftover from WWII when Hitler had utilized the city for military equipment production for the war. The reason city of steel ended up going the most

unlikely of routes to rebuild its reputation was due to the convergence of several minds that were interested in collective public engagement, technological experimentation and electronic music. Hubert Bognermayr, who was a pioneer of electronic music at the time, approached Hannes Leopoldseder who was the youngest director of ORF, the Austrian Broadcasting Corporation with an idea to create an electronic music event. Leopoldseder countered with the idea of something much grander than a concert, a large-scale event in a public space. He had a vision of putting focus on upcoming technologies and to "let activities relating to the future shape the new image of Linz." In his words "the basic technology of microelectronics is changing our work, our economy, our thinking and ultimately our culture…" (Hirsch et al., 2019). The event was to turn out to be a first step towards transforming media into a means of communication.

On the evening of September 18, 1979, half of the city of Linz's population (100,000) gathered along the Danube to experience the "Cloud of Sound" (Klangwolke) (Hirsch et al., 2019), a light show and public broadcast of a recording of Bruckner's last symphony. The "sound cloud" was created by asking inhabitants to play the music on their radios and put them in their windows. Taxi drivers joined in, playing the music on their car radios and rolling down their windows. The event was extraordinary on multiple fronts. Radio had mostly been used for news rather than a communication device used as a crowd sourcing tool for immersive experiences (Hirsch et al., 2019).

In order to make it clear that this event was focused on innovation and technology and a marketing tool to rebuild the city's image, The SPA 12 robot developed in New Jersey was flown in and not only delivered the opening address (via nearby human speakers) but also mingled throughout the evening with the crowds. The sound cloud covered the entire city of Linz with music. It was an idea of involving the public that had never been seen on such a large scale. It remade the city of Linz in the world's eyes overnight and became a model for other city leaders. It also immediately established a clear message for Ars Electronica: that it would be focused on a combination of the arts and the future of technology (Hirsch et al., 2019).

Today, the Connective Cities program continues to focus on three key objectives: 1) creating networked cities through interactive media facades, 2) creating visible cities by

analyzing and visually sharing city flows, and 3) creating participatory cities through interactive public media where citizens can participate and contribute ideas regarding key topics and challenges (*Connecting Cities*, n.d.). The program not only connects inhabitants and city planners, but is also creating a network between cities where citizens can share globally with one another.

4.2.3a Ars Electronica: Key Insights

The Ars Electronica Connected Cities program presents interesting possibilities for urban planners and government leaders to build resilience through global connectivity. Connected smart cities, for example, could share resources and knowledge quickly and easily in the future, much like the way in which trees share resources with other trees through a system of mycelium. It represents a likely future given the current trends towards interconnectivity , collaboration, and global economies. Ars Electronica also serves as an example of new ways that organizations can promote innovation within their organizations by attracting innovators from around the world.

4.2.4 Case Example 8 : Tomorrowlands

Tomorrowlands has become the "Disneyland" of festivals. As a vehicle for entertainment, it might seem an unlikely choice for research about change, however, Tomorrowlands is more than a music festival. It is also a digital experience with a global audience and an NGO. It has defied the odds since its inception in 2005 under the vision of brothers Manu and Michiel Beers ("The Magnificent History Of The World's Most Popular Festival," 2015). It launched in a field of competition from already established and highly attended global festivals and yet managed to become the most sought after festival in the world without investing any money in marketing. Using only word of mouth, two million people vie for the 60,000 tickets which sell out in seconds every year ("The Magnificent History Of The World's Most Popular Festival," 2015). Within the festival, attendees pay for food and drink and other items using pearls that they have to purchase online before the event. This eliminates the need for cash transfers during the festival and is reminiscent of Burning Man's Decommodification principle.

Why is this festival so popular? It started by bringing together a huge array of global electronic music performers that people couldn't hear anywhere else. Then, much like Disneyland, it went on to create more and more fantastical worlds for attendees to experience. This has definitely been a large part of its appeal. The desire to be immersed in awe and spectacle is what has made Disney and Burning Man so popular. Before the pandemic, the festival featured five floating islands performers could only reach by boat, nearby high-roller living quarters, and it is the only festival to feature a 2-star Michelin restaurant featuring some of the best chefs from around the world. (Pajaro, 2018).

Therefore, when the pandemic hit and the festival had to announce it was cancelling the 2020 event, it looked for a moment like Tomorrowlands might go the way of so many other real life events. Tomorrowlands announced its cancellation on April 15, 2020, and it looked like gone would be the support for its non-profit arts education for children in Africa programs.

Instead of going under, the organization pivoted to digital, and on July 25 and 26th, less than three months later, held a full online digital festival. Like Burning Man, Cirque du Soleil and Royal de Luxe, who turned to digital when the world went into lockdown in March 2020, Tomorrowlands had to figure out how to adapt. It took a much different approach, building a "metaverse" on a level of sophistication akin to the special effects of Hollywood movies. This resulted in participant immersion in an awe inspiring world through web portals. The richness of the experience allowed the organization to charge $20 a ticket, and instead of selling to 65,000 visitors, it sold to one million (McGlynn, 2020).

How the company was able to pivot from location based entertainment to one of the most exciting online immersive experiences in the world in only three months, serves as a great example of not only willingness to change and innovate, but also the decision to make use of the collective intelligence of multiple other stakeholders. The organization was also able to adapt due to the fact that like Burning Man and Greenpeace, it unites its employees, volunteers, participants and stakeholders through shared principles it calls PLUR (Peace, Love, Unity, and Respect) (Pajaro, 2018).

In order to facilitate its swift adaptation to digital, Tomorrowlands took a highly organized collective and technological approach working with 200 passionate organizers and partnering with some of the most cutting edge virtual reality companies like Dog Studio to create a virtual world called Pāpiliōnem. This digital universe included 280,000 virtual attendees and eight lifelike stages set in mythological worlds based on Sao Paulo, Brazil, Sydney, Australia, Los Angeles, California, and Boom in Belgium. The project "resulted in more than 60 artists filming brand new sets on 6x8x8-metre green screens. Companies with experience designing virtual sets for the Super Bowl and the Olympics were tapped as well. Real life artists performed in this virtual world and included David Guetta, Dixon, Charlotte de Witte, NERVO, Stephan Bodzin, Katy Perry, Eric Prydz, NGHTMRE and ANNA(McGlynn, 2020).

When asked what the biggest challenge to producing Papilionem was, Tomorrowland press officer Debby Wilmsen answered "TIME!" "Everyone really needed to work 24/7 to get everything ready. It was very time consuming to render all the images. Eight stages, 60-plus artists, 16 webinar sessions, extra activities. Also because of COVID-19, everyone was working remotely from home in different time slots. So in addition to the complexity of the experience they were working to create and the number of different stakeholders and organizers involved, there was the added difficulty of communicating across time and distance. (McGlynn, 2020).

Another challenge was adapting existing technology to be able to work in new ways. When Tomorrowlands began the project, digital effect studios generally specialized in live broadcasts in which action was live and there was no opportunity for retakes. The kind of Hollywood movie special effects they wanted for the experience involved the luxury of time and unlimited "takes." Companies they partnered with had to design new technology that could employ both instant, single cut and high level digital Hollywood effects at the same time(McGlynn, 2020).

Tomorrowland's move to digital immersive experiences opened up an entirely new world of business opportunity (McGlynn, 2020). Like many companies moving to digital experiences, they discovered that this space made it possible for them to expand their customer base.

4.2.4a Tomorrowlands Key Insights

Tomorrowland's shift to immersive digital worlds serves as an example of how organizations can pivot from location based experiences to digital in ways that result in greater numbers of customers and higher profits. Of the one million who purchased tickets to Tomorrowlands' 2020 event, millions more continue to watch the video on YouTube. What makes their case remarkable, is the speed at which they developed new technologies at scale This kind of innovation and adaptability at speed will be particularly important for companies as climate crisis increase. Further, through the process of creating an immersive experience working with partners, Tomorrowlands used c*ollective intelligence* and *stepped into the future* by designing new technologies.

4.3 Case Examples for Foresight and Positive Change

4.3.1 Case Example 9 : Greenpeace MobLab

In 2010, Greenpeace, one of the world's most respected Earth advocacy organizations could not have faced a tougher prospect. They had just experienced a resounding defeat at the Copenhagen Climate Conference from 115 world delegates. (Miller & Gibson, 2017) The ground activism framework that had brought the organization so much success since their first ship sailed in Alaska against nuclear testing in 1971, was no longer working. Fortunately, Greenpeace president Numi Naidoo recognized that the organization needed to shift and supported the creation of a "Center for Excellence," that would operate as an independent innovation hub within the organization (Miller & Gibson, 2017).

MobLab was born out of this decision by Naidoo, as an experiment within Greenpeace, under the expert guidance of Michael Silberman and Tracy Frauzel. They implemented a multi-focus strategy around five key buckets: autonomy, comfort with failure, bottom-up leadership, and digital integration. MobLab proved a great success. In five years, Greenpeace had pivoted nearly 180 degrees across its 27 global offices. Many of the new practices implemented by MobLab focused on the observation that in the new digital age, grass-roots advocacy had shifted to a democratic "people-powered" framework (Miller & Gibson, 2017).

"Since the 1990s, the widespread adoption of email, mobile phones and social media has unleashed a new kind of campaigning—one that enables a passive audience of individuals to become participants in collective action at historic speed and on their own terms. Movements from MoveOn.org and the Obama campaign to the Arab Spring and Black Lives Matter have permanently redefined advocacy, forcing traditional organizations to adapt not just to new tools, but to the democratization of activism and a new ethos of shared leadership." ~ Jed Miller, Cynthia Gibson

MobLab created strategies that targeted four key areas. 1) interpersonal change, which looked at ways to shift Greenpeace activists so that they would accept the new digital approaches they were recommending. Age groups within the organization varied greatly from teenagers to those in their 70's and while many younger members were eager to adopt new methods, many older members were resistant. 2) organizational structure which addressed the perceived need to create better access between volunteers and members with leaders. Many of these ideas, once these conduits were opened, proved highly valuable. 3) communication flows which looked at how the organization could communicate with and engage volunteers through digital channels. 4) digital, which looked at how to use new technology to build grass-roots activism and support people around the world to launch Greenpeace campaigns on their own by providing digital tools (Miller & Gibson, 2017).

Some of the results of focusing on these four areas included the creation of a department dedicated solely to engagement with the creation of new roles such as "Chief Engagement Support Officer" (Miller & Gibson, 2017). These people supported staffers around the world with mobilization campaigns and provided digital training. They also implemented and ran skill share events by partnering with Aspiration, an events group. These brought together experts within Greenpeace from around the world as well as heads of organizations outside of Greenpeace, such as MoveOn.org. This developed a new and effective vehicle for knowledge sharing, providing space for cross-pollination of ideas and experience. MobLab also worked with Red Hat to create an open-source web building platform to support groups around the world that

wanted to join Greenpeace's efforts and created a library of case examples on the platform (*Greenpeace Turns to Red Hat to Scale Its "Planet 4" Global Engagement Platform*, n.d.).

Communication flow was implemented by promoting design thinking, using smaller mobile units and bringing in tools such as root-cause analysis and system mapping to increase understanding of the impacts of decisions across the organization. They created mini hubs and structured new projects so that they would have a natural ripple effect. As a result, MobLab made it easier for Greenpeace to react quickly to crisis around the world. For example, when 30 Greenpeace activists were imprisoned in Russia, they were able to mobilize groups from around the world to work on freeing their colleagues (Miller & Gibson, 2017).

If Michael Silberman and Tracy Frauzel had introduced the many steps for each of these areas all at once, it is likely they would have received pushback en-masse and the initiatives would have failed. Instead, they wisely introduced new methods and strategies in stages, sometimes simultaneously other times separately. This was an interesting approach that utilized a commonly recommended change management method put forth by Kotter, to generate short-term wins, while also building long-term wins at the same time (Miller & Gibson, 2017).

Before implementing any of these changes, Silberman and Frauzel took several other valuable steps. First, they ensured free-reign support from leadership. Second, they created a culture of "listening" by focusing first on establishing trust within the Greenpeace community by asking questions. This was particularly successful for Greenpeace, as a large part of their success has been due to its many passionate, rebellious volunteers, not an easy group to wrangle or to convince to follow new approaches by outsiders. "When MobLab began," I said to Michael, "Don't try to tell people you've got something brand new, pull from our own history," said Naidoo. (Miller & Gibson, 2017) By taking the time to ask questions, Silberman gained an understanding of the organizations history and how and what to bring forward. Third, they created MobLab with complete autonomy, ensuring it could operate freely in new ways as a testing ground for new experiments in activism and organizational structure.

Silberman's biggest objective with MobLab, was to digitalize Greenpeace's efforts. Younger staffers were eager to utilize email campaigns and social media but previously, these efforts had been handled by remote volunteers without a cohesive focus. MobLab set up training in new technology across the organization so that all members could contribute to digital campaigns equally (*Planet 4 Project Background*, n.d.).

MobLab then partnered with Planet 4 to create an open source software platform for website and campaign building that includes a library of case examples to support not just existing Greenpeace offices, but to provide a platform where anyone who wants to support Greenpeace could become involved and create their own campaigns. This was a big part of MobLabs new "people-powered" approach that acknowledge that the public weren't just supporters, they could become activists. The development of unified campaigns, the involvement of everyday people, and the move to digital campaigns allowed Greenpeace to mobilize globally and apply pressure in greater numbers, instead of three hundred protesters outside of the Coppenhagen Climate Conference. In the past, world leaders often responded to Greenpeace requests with "show me the people." Now they could.

Another powerful change that MobLab, together with Naidoo implemented, was the creation of the "7 Shifts" a list of principle pivots in terms of how the organization would move forward. These included switching focus from symptoms to root-causes; going from reinforcing old stories to building new ones, from operating in secret to creating open source platforms, from fearing failure to encouraging fearless innovation, from celebrating "lone heroes" to acknowledging everyone as heroes, from seeing advocates as supporters to seeing them as change agents, and celebrating dogmatic defenders as champions of the "impossible." (Hilliger, 2016). This was a radical redefinition of not only the fundamental structure of Greenpeace but of its interpersonal relationships to both its employees and outside organizations and it set the stage for new ways of thinking.

4.3.1a Greenpeace MobLab: Key insights

The Greenpeace MobLab case demonstrates multiple examples of how large organizations steeped in decades of tradition can pivot and change. By implementing events,

MobLab immersed leaders and volunteers in their culture and values. By inviting a larger number of voices into the conversation within the organization, they were able to harness their *collective intelligence* and make better decisions. By partnering with technology and working with community in more democratic ways, Greenpeace was able to inspire creative thinking and collect data to make more informed decisions for the future. Building on their history, the organization was able to sense what they needed and remember important approaches that had been used in the past and could be brought into the future.

4.3.2 Case Example 10: LEGO

Lego is an important case example to include in this research, because it has built immersive experiences around tangible games. It is also a powerful story of the perseverance of true entrepreneurship and how a company's understanding of the importance of immersive storytelling became the key to recovery. When LEGO's sales began to drop in the mid 1990's, and their attempts to rebound using the "theory of more" (aka, more product categories, more variations) failed, they switched to design thinking, and it almost put them out of business in 2003. This is in contrast to the "wins" that most research shows that design thinking provides. However, it is important to look at LEGO's adoption of design thinking in two ways. On the one hand, it almost bankrupted the company. On the other, it led to experimentation that produced the success that LEGO enjoys today with a valuation at nearly 40 Billion. Because LEGO did not give up when many companies would, and managed to adapt and change, it is an inspiring example of how to create positive change using immersive experiences. (Robertson & Breen, 2013).

The first step that LEGO took was the creation of a new vision which said "We want the LEGO brand to be the strongest brand of families with children by 2005." So why didn't the new vision work at first? In 1994 when sales leveled off, the company "thought outside the box' by creating new categories of toys in addition to their signature Lego building bricks. By tripling the number of new toys, they increased their supply chain and materials costs which offset any new sales. Next, they tried working with Hollywood, creating a male action figure doll called Galidor which, like the movie, was a complete flop. They also interviewed kids extensively to find out that while they liked. In response to feedback that kids didn't like how long it took to put

LEGO's together they began making toys with bigger bricks and non-brick parts. These became oversimplified which resulted in kids rejecting them. However, it led to the concept of integrating LEGO bricks with other parts and characters which would help them in the future (Robertson & Breen, 2013).

The company also created a "digital design" platform to build on the knowledge they had discovered about how users were engaging with digital games. The digital platform built community and engagement. They then engaged with their first ever licensing project with Star Wars, but failed to stock enough quantity and quickly ran out. Then they made the mistake of restocking the following year based on the popularity of the first year but no Star Wars movie came out that year so they had tons of stock leftover, so much that it nearly broke the company in 2003 (Robertson & Breen, 2013).

Out of these failures came one success, Bionical, the first robot with interchangeable parts. LEGO realized they needed to create a story around these robot characters in order to make them appealing so they created a mythical island where Bionical robots battled bad robots. Kids loved the immersive story aspect of the game and it spurred sales in new areas. Kids were as eager to purchase tee shirts, books, PC games and comics based on Bionical. LEGO's experiments with mix and match parts, licensing and character development had built a connection to the immersive experiences of films and spurred their decision to release a LEGO Batman movie. Batman led to the wildly popular Ninjago characters, virtual reality games, theme parks and a multitude of licenses. During this process, LEGO also discovered the power of digital collaborations. Batman's signature "hey computer" became so popular on the app, that when kids would say "hey computer" to their iphones, Siri would answer (Robertson & Breen, 2013).

Without realizing it, LEGO had created a new kind of design thinking, one in which success came from thinking "around the box," aka considering not just how to change one toy, but how to change the entire world around a toy, instead of the traditional "think outside the box." From these evolved the Ninjago series where good Ninjas fight bad Ninja characters. Without realizing it or meaning to, LEGO had created an entire immersive world around its

products. They had created a "talent agency" for toys (Robertson). Today, through a relentless and fearless pursuit of vision despite near bankruptcy, LEGO is worth 40 Billion a year in sales (Robertson & Breen, 2013).

4.3.2a LEGO: Key Insights

The LEGO story presents several ways in which companies can adapt and change using *immersive experiences* to facilitate *collective thinking* with its consumers, as well as, *creative thinking* through the creation of exciting alternate worlds and game play. Further, by bringing their physical LEGO toys into the digital Metaverse, LEGO was able to engage in *global thinking* about its products. Their willingness to test and experiment will hopefully give other companies the courage to change. Experimenting to the point of bankruptcy may not be necessary, if companies develop autonomous internal innovation hubs like Greenpeace's or Epic Games open software platforms.

4.3.3 Case Example 11 : Epic Games

Epic Games serves as a poster child for resilience and adaptability. During its 25 year history, the company has managed to constantly adapt to changing markets, overcome lawsuits and partnerships that were bad fits, bounce back from profit declines, and reinvented itself. In looking at the company's history, Epic has had four lives, Epic 1.0, 2.0, 3.0, and now, 4.0. "The company should have already died three times by now," says Tim Sweeney, Epic Games founder. The company attributes its success to the vision and intuition of Sweeney. He on the other hand, attributes the company's success to "following the money." Due to this mindset, the company has demonstrated a culture of constant willingness to pivot, and partner with others. Regardless of who is right, the company has shown remarkable foresight through the years. For example, rather than sitting on the success of their open game developer platform Unreal Engine, they saw the potential of collaborative play as early as 1999 when they held their first Unreal Tournament.

Epic began in 1991, as a shareware developer selling games through the mail. This ended during the PC piracy years. They then moved into the game console market with the help of

Microsoft. At one point, they tried their hand at publishing and saw success in 2006 with *Gears of War*. However despite the fact that the game made $100 million its first year and cost only (in comparison) $12 Million to develop, succeeding years saw costs of developing next versions continuing to climb. Sweeney could see disaster coming.

In 2012, that the Chinese game company Tencent offered to purchase 40% of the company. They not only brought stable cash flow, but also, as the largest game publisher and third largest internet company in the world, knowledge of how to release games at scale. "They're not a game developer…their expertise is how to operate these games on the large scale and to really appeal to customers and we found that their values are very similar to ours and that we had a great deal we could learn from them" (Sweeney) (*The Four Lives of Epic Games | Their Future Is Epic*, n.d.).

About this time, Epic recognized that one of the games they had developed called Fortnite could thrive under a free to play, evolving system. In this respect, Epic has followed the success of numerous app and web platform start-ups that recognized the power of providing free access to build up a customer base. Today, that is still a key part of Epic's success.

Today, Epic is looking to create a Metaverse, a shared collective space that connects physical reality with augmented and virtual reality and the web simultaneously. When that goal is realized, most likely in the next few years, it will redefine how we go about our daily lives and connect in numerous ways (*The Four Lives of Epic Games | Their Future Is Epic*, n.d.) XR (extended reality) is being heralded as the next social media and with the number of groups already using VR platforms such as Microsoft's Altspace VR, this is very likely true.

A high number of XR firms are moving into professional sports and the Olympics just announced they will be offering eSports competitions. These have become extracurricular activities for high school students and a way to win scholarships for college. Having already conducted multiple virtual "World Cups over the years, Epic stands poised with the backing, know-how and software to do so.

One of the areas where gaming and XR are being heralded and pursued the most is education. Facebook, Microsoft and Google are all working fast to form partnerships with schools to provide virtual education. Now that Epic is moving into schools with a recent partnership with PlayVS, an eSports platform that offers schools access to games for $64 a month, it will be interesting to see if they bring the same transformation to education that they have brought to the virtual and gaming worlds (*The Four Lives of Epic Games | Their Future Is Epic*, n.d.). Epics four worlds that include the game, a create your own game platform, the social space Epic Royale, and Save the World, offer interesting possibilities for educators. Create could serve as a platform for teaching kids to design games and code and virtual social spaces are popular with kids.

4.3.3a Epic Games: Key insights

Epic games presents and interesting example for the future in which the ideas of *collective intelligence, creativity, foresight and holistic decision making* may mostly take place through games or in virtual and extended reality worlds or both. Organizations, regardless of whether they are in the game world, should take heed and look for ways to integrate immersive experiences into their business strategy. Epic supports the ideas in this paper that immersive experiences can support collective intelligence, creativity, foresight, global thinking.

From a change standpoint, the company serves as a great example of adaptability and resilience facilitated by some savvy strategic decisions.

4.3.4 Case Example 12: Walmart

Walmart presents an interesting example of how immersive experiences can support training and education in the workplace. It also represents a good example of how a very large, very complex organization can incorporate VR into its business strategy. In 2016, Walmart was facing a tough challenge as a retailer with 4,700 locations and 1.5 million employees. There was an urgent need to train new employees on how to deal with stressful situations, but no way to do so on the floor without disrupting customers. Previously, Walmart had followed the same model as most other companies, giving in person trainings. Walmart wanted something better (Lewis & Lewis, 2019).

They turned to Strivr in Palo Alto. At the time, it was an athletic training company that was using VR as a way for athletes to perfect their skills when they weren't actively exercising. The founder, Derek Belch had used VR to train football players and the project was so successful that Stanford provided Belch with the funding to start Strivr. When Walmart approached him, he had never considered using his method for retail (Lewis & Lewis, 2019).

In creating a pilot program for 20 of Walmart's stores, the group had to carefully consider what types of training worked for VR and which didn't (Lewis & Lewis, 2019). To find the right balance, Belch took a strategic approach to making sure that every experience provided business value by tying it to an ROI metric. The first experience was done with 360 degree cameras. They had put a camera in one of Walmart's store for 30 minutes. This immersed trainees in a virtual experience of a real life, typical store interaction. Employee excitement over the 360 degree experience create the greenlight to go for the full VR experience that Walmart wanted for its training program and in 2018 they approved the acquisition of 18,000 Oculus Go headsets for its 200 Walmart Academies (Gale, 2021).

From initial trainings, the project has expanded and Walmart is determined to have VR headsets in all of its stores. To facilitate this, they've had to address challenges such as finding new space to store the headsets and ways to train employees on how to use them before they arrived so that they would be ready to train. As of 2017, 31 of the Walmart Academies had headsets. After classes, students discuss what they experienced. "When you watch a module through the headset, your brain feels like you actually experienced a situation…" ~ Andy Trainor. The in-store training program is targeted at all of Walmart's employees including loaders and janitors. As a result, Walmart is giving its employees the technical skills they need for the future and their commitment to the program has made it clear to employees that they are valued.

According to their senior director of operations, Brock McKeel, "Yes, we're focused on helping people do their jobs better every day. But the VR training we've designed is also hopefully training for life. That person walks out of their store with new skills and confidence than they had before, - that's the passion behind this project (Morozova, n.d.).

Another way in which VR helps to facilitate positive change through training employees for the future, is in its experiential impact. Currently, soft skills like creative thinking, empathy and leadership are some of the hardest for companies to find and fill. As a result, Walmart included HR in the journey and now it is being used to see which employees express the talent for management during trainings. The VR space allows the company to see how employees make decisions and react to challenges. They also brought HR along, because they wanted to ensure they valued the power of VR training and would be on board (Morozova, n.d.). Walmart's commitment to VR training goes far beyond the investments made by other companies and is likely to position them as even stronger competitors in the retail market and they will continue to evolve.

4.3.4a Walmart: Key Insights

The Walmart examples suggests that despite the huge investment, VR training may well be something that all organizations should invest in (Morozova, n.d.). The Walmart case study demonstrates how immersive experiences can be used to support *creative thinking*, critical decision making and learning. It also demonstrates how a large company can use immersive experiences on a large scale, for strategic business decisions, and develop *holistic thinking* by increasing the capacity for empathy and understanding between its workers. Organizations that are struggling with how to train thousands of employees using VR or AR (in their case, millions), their step by step approach of first testing in 20 stores, and then developing a retail strategy that includes VR in every store can serve as an example to emulate. Further, the practice by large chains such as McDonalds and Walmart of creating "in-company" schools, may well point to a future where universities and colleges are almost all operated out of retail and tech giants. The fact that VR can connect thousands of people at once, holds interesting possibilities in terms of large scale experiences for companies.

4.4 Case Examples for Holistic Thinking & Positive Change

4.4.1 Case Example 13: World Bank

Not everyone knows what the World Bank does so it is worth giving a short overview. They are a collective with one main goal, to "bridge the economic divide between poor and rich countries" (Amadeo, 2021). To that end, they work to reduce the population of the world that lives below $1.90 per day to 3 percent. Originally, the World Bank was created to help European nations rebuild after WWII. Since its inception in 1947, the organization has funded more than 12,000 projects. The World Bank has now joined the UN's 2030 climate change goals and pledged 83 billion to improvements to help nations impacted by climate change (Amadeo, 2021). It is not the first organization one thinks of when considering virtual reality or immersive experiences as a fundamental policy making tool. However, in 2017, the organization's Printing and Media unit, at In-Plant in Landover, Md, gave the greenlight to Jimmy Vainstein to begin making virtual reality films of war torn and climate torn areas of the world (Milan, 2021).

The virtual reality experience was filmed in the Solomon Islands, an area torn by conflict. The goal of the film crew was to immerse key World Bank and global decision makers in the lives and spirit of the native islanders to generate better understanding of their challenges and to build empathy. What they discovered during the process, is that virtual reality can do more than build empathy. "Despite the image of VR as an isolating or goofy solo activity, it can actually bring people together…and transcend other boundaries like bias" (Bradley, 2017). Virtual reality experiences can help decision makers experience natural disasters on the ground, remotely. This can be a real boon in assessing what supplies and staff are needed first, where and in what numbers. It can also, by putting them inside the experience, assist with making social impact based decisions that consider the well-being needs of those impacted (Bradley, 2017).

"*VR is potentially* more *effective than putting an executive or a decision-maker on a plane and taking them to a community to see issues directly. Because community 'visits' immediately create an oft-uncomfortable imbalance between the visitor and those whose lives are being interrupted." ~ Thomas Veer, World Bank* (Bradley, 2017).

Another interesting discovery that came out of the Vainstein team's virtual reality projects, was the introduction of VR headsets to islanders. In remote areas of poor nations, inhabitants are often isolated from one another. In areas torn by conflict, immersing inhabitants in the lives of other people within their country and letting them virtually witness their

challenges, VR promotes a sense of shared identity. This identity has the potential to lead to conflict resolution which could be powerful in areas that have been torn apart by war for decades (Bradley, 2017).

"What's impressive to me as a manager is that my team took a cool and cutting-edge technology and made it applicable to the core mission of The World Bank by creating an immersive media environment in which viewers got to experience bank projects in action," says Dave Leonard, division manager. (Milan, 2021) The World Bank team was given the Organizational Impact Award during the In-Plant Printing and Mailing Association (IPMA) conference in Pittsburgh for the film *"The Price of Conflict, Series,"* which followed on the heels of its first project from 2016 March4Earth (*Making a Virtual Reality Documentary for the World Bank*, 2016).

4.4.1a World Bank – Key Insights

The World Bank presents an interesting example of how large humanitarian organizations and governments can potentially reduce conflict using immersive experiences to generate empathy or to incentivize individuals to put aside their differences and work towards a common purpose. It's a particularly interesting case because it demonstrates that traditional business organizations can pivot to creative methods. The World Bank's use of VR for global decision making conferences demonstrates a new way that bureaucratic government organizations can facilitate better *collective intelligence, long-term planning and global decision making*.

4.4.2 Case Example 14: Doctors Without Borders, Forced From Home

"A raging sea, an orange raft bobbing on its swells, crowded with people. A tangled web of exposed wires snaking through the squalid Shatila refugee camp in Lebanon." These are the type of immersive experiences that are included in the Doctor's Without Border's Forced From Home experience. The event attempts to not only bring home the plight of refugees and build empathy, but to share the experience by putting visitors through an analogous experience (Gibson, 2016).

During the exhibits, attendees face similar heart wrenching choices and fears as refugees: the desperation of being in a small craft crossing an ocean in fear of capsizing or drowning. They face having to choose between precious necessities like prescription drugs or a phone under tight time frames with organizers shouting things like "10 seconds left, hurry!" In this way, visitors don't experience the lives of refugees objectively as they do in so many 2D exhibits, where, despite feelings of sympathy, there is still distance between their lives and those who they are learning about. Forced From Home transports visitors from the comfort and certainty of their lives into what it is like to lose your home, leave the people and things you love behind, endure dangers from nature and human traffickers, only to arrive with nearly nothing in a new country with foreign customs. It turns the refugee crisis from a "us and them" experience into a "woah, this is something that could happen to me."(Anzilotti, 2017)

With the rise in climate change related natural disasters, countries are going to have to increasingly grapple with the challenges of hosting foreigners. They will not only face the economic and infrastructure challenges of jobs and housing, but also figure out ways to maintain political stability by changing the minds and attitudes of their citizens which often feel threatened by an influx of new cultures. The weight of assisting those in need is going to fall increasingly on aid organizations which are largely funded by government organizations and on the private sector (P. Scoblic, 2020). Weighing the predicted number of increasing disasters and projected numbers of displaced people against decreases in tax revenue through lost jobs, it is likely that government coffers will be increasingly strained. After that, it is important to take a look at past failures in creating change at scale, and the future can appear dire and full of challenges that may not be able to be met by technology alone.

Interestingly, Forced from Home was inspired by a previous exhibit created in the mid-1990's that also addressed the refugee crisis. It was called "A Refugee Camp In The Heart of the City" and was located in Central Park, New York (Anzilotti, 2017). For a decade, the exhibit travelled the US and Europe. However, due to the timing of two decades ago, it lacked the power of today's virtual reality and 360 video technology. (Anzilotti, 2017)

The exhibit is working. During the tour, visitors hear from doctors and aid workers and the personal stories and sight of children covered in blood and ash after bombings in Syria have

prompted people to write the White House and ask for more aid, and it is slowly but surely achieving its goal, which is to raise public awareness of the world refugee crisis. At the moment, there are 65 million refugees and a minimum of another 140 million predicted to join those ranks by 2050 according to the UN. (*Forced From Home – DOCTORS WITHOUT BORDERS PRESENTS: A FREE INTERACTIVE EXHIBITION ON THE REFUGEE CRISIS*, n.d.)

4.4.2a Doctors Without Borders: Forced from Home: Key Insights

The Doctors Without Borders, Forced From Home case example addresses the four foundations of resilience building for creating superfutures put forth in this paper. By immersing attendees in a simulation of refugee life, and by demonstrating the similarities between refugees lives and theirs, it is building *collective intelligence* and inviting attendees to add ideas for how to solve the refugee challenge. It is providing a novel experience that makes it possible for people to think more *creatively* about solving the refugee crisis. It makes people realize how dire the refugee situation is, and encourages them to think about the necessity of *thinking long-term* in order to proactively address these challenges now. Lastly, it creates a rich sense of empathy by allowing attendees to "walk a mile in another's shoes," leading to the likelihood of spurring people into action and to *think globally.*

If we apply Forced From Home's immersive approach to another industry, say, the homeless challenge in the US, it is possible that cities could create civic engagement and apply collective intelligence of an entire city to solving the problem.

4.4.3 Case Example 15: Local Projects

Another aspect of global thinking is the capacity to access memory through the preservation of history. Local Projects is a unique interactive exhibit firm that has created an entirely new genre for museums and exhibits by bringing history to life through a combination of fully immersive experiences and interactive exhibits. Their projects range from immersing people in creative experiences of creating their own designs at the Cooper-Hewitt Design Museum to creating platforms for civic engagement at the Museum of New York where participants can add suggestions to city planning projects (Bonime, 2020).

The company was founded in 2001, by Jake Barton who was inspired by an experience he had in the third grade, when his class visited the Brooklyn Museum in New York. He noticed how much excitement his classmates received from seeing history in those halls. Years later, after an architecture degree from Northwestern and a variety of stage design projects, he began to notice the static relationship between museum objects and people and how many objects museums have that no one can access. His team of designers and researchers use the latest technology together with outdated technologies, often adapting them to create entirely new devices and achieve unusual effects. At the London Mithraeum for example, the walls are lined with holographs of Greek gods and statues while booming music plays. Placed inside a crypt beneath the city, the experience feels very much like going back in time to Greek theater (Bonime, 2020).

Many deplore what they see as a degradation of grammar through social media and emoticons, fearing that future generations will lose valuable understanding of the power of language. At the same time, many have been at a loss for how to engage a younger generation that has grown up communicating through acronyms such as LMO and LOL. Planet Word attempts to bridge that gap by bringing language to life through immersive experiences of language. Using interactive holograms, electronic brushes that visitors can use to paint visual images inspired by words, and by exploring modern poetry through rap and karaoke, Local Projects is building a kind of collective intelligence between generations (Bonime, 2020).

At the Legacy Museum, visitors helped to realize that slavery is still present in American's prison systems through holographic interviews with black prisoners on death row. The Greenwood Rising Exhibit takes visitors into virtual recreations of daily life in the thriving neighborhood before it was attacked and burned down by white supremacists in 1921 (Bonime, 2020). Yet another project that bridges the gap between generations is their recent collaboration with Time, on the creation of The March, in which they used VR to recreate Dr. King's famous 1963 speech "I Have a Dream," in the March for Jobs and Freedom on Washington, D.C. Through cutting edge film industry special effects, using live actors to program movements, visitors feel as if they are actually standing in front of Dr. King (Bonime, 2020).

Museums have faced increasing competition from the digital worlds of social media and gaming. Local Projects used The Cleveland Museum project to re-design the museum experience. In talking to museum staff, they discovered that a huge percentage of items museums own are never seen due to space and budget constraints. Through interactive displays, they were able to make many more of these objects shareable to visitors. For example, if a visitor was interested in Grecian vases, they could access photos of hundreds of other items in the museums storage. (Bonime, 2020).

4.4.3a Local Projects: Key Insights

Clearly, Local Projects presents ideas for how museums can adapt and change through immersive experiences. However, I see additional value for organizations trying to facilitate resilience. Through the interactive components, Local Projects supports *creative thinking*. Participants add their own unique perspectives and help to build new *collective visions* of solutions to challenges that range from urban planning to inclusion. Local Projects' frequent inclusion of voices from other regions or around the globe triggers empathy and encourages visitors to think globally. By finding new ways to preserve history and make it relevant, Local Projects has made it possible for groups to tap into memory and use that memory to solve problems in the future. They have also shown that it is possible to combine old and new technology in order to connect with large numbers of people in ways that are engaging.

Companies can use Local Projects examples to facilitate change through Kotter's emphasis on creating urgency through immersive experiences of potential threats. In order to create buy in through a shared sense of purpose, organizations could build on the power of memory by designing immersive experiences of the company's history, achievements and mission. This could potentially be a great catalyst for action and overcome the employee push-back that so often thwarts change methods (McKinsey).

4.4.4 Case Example 16: NeuroSociety

Neurosociety, founded by David Byrne, former Talking Head's front man, explores how people make decisions. Byrnes together with Mala Gaonkar who serves on the head of the

Economist and is a trustee of the Tate are both science buffs. The immersive and interactive event which first took place in the heart of Silicon Valley, has now moved to Denver, Colorado.

The location based experience in many ways models Nudge Theory by taking people through three different rooms, each of which, tests different aspects of decision making. The first room, called Game Show: Moral Dilemmas, is just that. While in this space, participants are asked questions such as, "Would you tackle a man if you knew doing so would prevent a future where the Nazis take over the world?" It then goes on to escalate the questions until people are asked "would you shoot him in the face?" The purpose of this ever increasing severity in the questions is aimed at helping people realize how moral judgements tend to shift in response to small situational tweaks (Heller, 2017).

The second room is called Classroom: Predicting Politics and examines our personal biases when it comes to elected officials. In the classroom, visitors look at headshots of politicians who competed against each other between 1995 and 2005 and have to make a decision based on their faces as to which politician won. "This (experience) should provoke conversation. I think that's the point of this. It's not to sort of dictate a lesson …(it's more about) when you learn about these biases, how does that change how you make decisions over time?" ~ Gaonkar (Robbins, 2017).

In the third room, called the Spa Room: Equiluminance, visitors are put through visual and light experiences such as windmills that appear still until they put on glasses. Then they are put into a mind-bending VR experience in which they suddenly see themselves as having been transported into the body of a doll. The doll faces various challenges that feel real, such as, having scissors put to their neck. The idea of this last experience is to give people room to observe how changes in self-perception influence our decisions. They are asked questions by guides such as, "Do you think that you are real?" "Is it possible we are surrogate avatars walking around interacting with and processing data in our virtual reality?" (Robbins, 2017).

Byrnes and Goankar spent a great deal of time interviewing and working with leading neuroscience researchers and psychologists from top universities including CalTech and

Harvard. The research of Alexander Todorov, a professor of psychology at Princeton, inspired the senate candidate room. Data collected from people's interactions is being collected and will be shared publicly (Heller, 2017).

While Neurosociety might seem like another public interactive space or remind people of the Exploratorium in San Francisco, it is addressing one of the most important challenges of our time. In this era of fake news and deep fakes, helping people to understand how and why they make biased decisions is of paramount importance. Neurosociety provides a fun yet interesting way to help people make better decisions. The experience also segues nicely with virtual and augmented reality research by implementing neuroscience, mental health and mindfulness research. (Heller, 2017)(Robbins, 2017).

4.4.4a Neurosociety: Key Insights

Neurosociety presents a unique experiment in *collective intelligence* in that it focuses on the complexities of cognition and decision making, whereas most location based experiences focus more on engagement. As a case example focusing on the mind, it Neurosociety presents interesting ideas for triggering holistic thinking and critical decision making. This type of approach could be particularly interesting and powerful if used by tech companies as a way to collect feedback data during device or software development. It could also assist with inclusion and accessibility in tech design by providing a fun way to test bias in their products. The kind of critical thinking that Neurosociety promotes can also support individual resilience. Additionally, it could provide new and better methods of mental health testing by putting people into low risk real world scenarios to see what types of experiences trigger different mental health issues. Currently, despite numerous companies exploring XR for mental health, most of it is focused on how to change mind states - very little of it involves explorations of mental health in the context of lifestyle.

5.0 CONCLUSION

In conclusion, these 16 case examples demonstrate how creative organizations are using various forms of immersive experiences (XR, VR, AR, MR, AI, LBE, 360) to create positive change. It is also evident, that while these immersive technologies are supporting these organizations to be resilient and adapt to change, there are additional factors that are part of their success. In the Burning Man case for example, it is the use of multiple methods of decision making (hierarchal, communal, democratic) together with clearly outlined and shared principles that makes the organization effective. In the Walmart case example, it is evident that the decision of leadership to test and support the implementation of VR for learning across their organization is what has made this possible at scale. In the case of the World Bank, the use of immersive experiences is having unforeseen implications towards resolving conflicts and responding to crisis. In summary, superfutures need a combination approaches including leadership support of immersive experiences, uniting people through shared vision and creating a strong coalition that works together through shared "agreements," and values. When these are in place, immersive experiences can help facilitate collective intelligence, creativity, foresight and holistic decision making. This suggests that organizations looking to create a superfuture, would benefit from not just looking at immersive technologies, but also careful analysis of their culture, leadership, engagement and decision making frameworks.

Remaining questions

Many questions remain, such as, just how effective experiences such as virtual reality are over time, how to overcome the physical stresses of being in virtual reality for long periods of time and how soon immersive technologies will develop to the point where they integrated themselves into our lives with the same intuitive ease as smart phones? Additionally, long-term studies on the behavioral impacts of immersive experiences for engagement, creativity, foresight and holistic decision making need to be conducted. These will provide more specific metrics organizations can use to plan more specifically how, when and where to use immersive technologies.

Next Steps

As part of the process of researching organizations using immersive experiences to find new ways to facilitate effective change within organizations that is positive for individuals, organizations and the planet, I worked on developing a new approach. This approach uses elements of immersive experiences together with gamification and change methods, including virtual reality collaboration platforms, cards, game play, quests, storytelling, role-play and time-travel to facilitate change. The next step will be to set up small test opportunities After that, it will be important to experiment with employing this method at scale within large organizations. If successful in initial tests, the third step would be to look at ways to employ these methods over time and evaluate their long-term impact.

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