

Augmented Reality, Arizona State University Capstone Project





Everyone Is a First Responder



First Response

Resonating Preparedness Messaging Through AR Technologies

Crisis Communications – In the aftermath of a disastrous event the entire community is in immediate need to communicate. Each effected region represents a diverse audience that will seek information that is imperative to them. The question is "How does the incident **affect** civil order, jobs, safety, community...?" These questions demand a common denominator to answer communicating needs with each audience.

After closely examining the eclectic audience base, it is exceedingly important to assign a spokesperson to communicate a preparedness messaging overview to each aspect of citizenry. The spokesperson in this case takes the form of an "**Augmented Reality App**" for handheld devices. The next step is to script preparedness messages and AR experiences illuminating preparedness information. Writing messages during an incident is all but impossible due to the pressure caused by "too much to do" and "too little time to do it." Therefore, it is best to script message templates in advance under the scrutiny of mitigating and preparedness principles.

FirstLine's AR preparedness messaging network becomes the spokesperson concept using information developed during the risk assessment of each audience. The risk assessment process identifies scenarios that would require communications with stakeholders. There may be a multitude of different scenarios but the need for AR communications will relate more to the potential impacts of a disastrous event:

- AR Communications
- Medical Assessment
- Property Damage
- Shelter
- Provisions
- Special Needs
- Resources and Documenting Events as they Unfold.

Our mission is to enable interoperable communications to ensure coordination and collaboration among the audiences within the whole community.





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"There Is nothing in business today that provides as much economic and social benefit, on as many levels, to as many stakeholders, as a strategic public-private partnership between any combination of the nonprofit, for profit, education and government sectors when focused on the greater good that,

"Everyone is a First Responder"

Nothing else even comes close."



What Does it Take to Build a Preparedness Culture!

The most important *questions* about individual and community resiliency begins with; How do we break through the cyber-app noise? How do we create preparedness messaging that resonates with all aspects of citizenry? How do we get people to embrace their own responsibilities regarding readiness? There have been endless attempts by both private and public sectors to connect with and motivate businesses and individuals to prepare for the "What If Factor." Contrary however, to popular beliefs there is a "no" one size fits all preparedness plan for individuals and communities.

Risk management involves strategically organized resources to lessen the harm caused by the disastrous event. Mitigation involves a systematic approach to managing the responsibilities of disaster prevention, preparedness, response, and recovery.



For **Mitigation** to lessen the impact of disasters we must reexamine how we present, communicate and or teach preparedness principles and address causal risk factors.



FirstLine follows the principles of disaster mitigation, prevention, preparedness, response, and recovery. However, today the disturbing reality about public sector organizations is that they have completely failed to recognize that "Everyone is a First Responder." Preparedness only occurs when citizenry is ready and willing to receive qualified preparedness information and training.

Mitigation and prevention efforts aim to reduce the potential damage and suffering disasters can cause. Mitigation specifically refers to actions taken that can lessen the severity of a disasters impact.

FirstLine's AR preparedness messaging concepts articulate visualizations that translate universally to businesses, individuals, and families. Once the AR messaging process interlinks into product culture labeling, there is an immediate connectedness to a preexisting product network (times millions). A network with endless possibilities for interactive and participatory AR experiences designed to convert app

users into "Preparedness Pals."



AR bleeding edge App and VPN technologies power motivational concepts that drive human responsibility. FirstLine's "Preparedness Messaging Network" integrates incentives, storytelling, and compelling information into the very fabric of the VPN and App functions.

Business cultures embedded in private sector organizations are the very fabric needed to incentivize and reward the participation of "Preparedness Pals and Business Heroes."

The AR App.

All app's have two mission critical elements in common, *recruiting end users at a highly fast pace* and *causing constant user experiences allowing for interactive and continuous participation.*

AR App Design. UI/UX Design Trends for 2022

 FirstLine end users can use speech to engage with software functions using Voice User Interface (VUI). Although the VUI applies to apps and digital devices, it is most known for its use to create virtual assistants like Siri, and Alexa. VUI allows our end users to navigate and interact with FirstLine applications.



- Augmented Reality, like VUI, is an important aspect of the user experience. In the tech world, AR and VR are exploding and are quickly becoming the standard. AR and VR open new worlds for consumers by allowing them to interact seamlessly with virtual settings, and the B2B industry is no different.
- 3D visualization is actively winning its position among the app technologies. Virtual and Augmented Reality (VR/AR) popularity among businesses to catch the attention of their customers.
- The global VR and AR market expect to reach \$300 billion by 2024. Corporations and small businesses are using 3D to make their websites and mobile apps more engaging. They use 3D eye-catching elements in their apps to promote new products or simply give a 'wow impact' to various site components, making it more engaging.





AR App Content.

- Augmented reality is one of the engaging technologies for human-computer interaction. Its specificity lies in the fact that it visually combines two initially independent spaces in a programmatic way.
- FirstLine supplies a 3D augmented reality platform that makes the production of AR preparedness messaging campaigns possible. Through the power of 3D AR, we can transform reality by building a more intuitive world of edutainment.
- The AR preparedness messaging network is a first-of-its-kind that expands the collaborative abilities between agency stakeholders, citizenry, and business heroes.
- AR experiences exemplify preparedness concepts throughout the "Maze of Edutainment." The maze is gamified to supply an ongoing variety of engaging and interactive AR learning vignettes.
- Information generated from these digital interactions helps to identify with end users, analyzing their preferences, actionable patterns, and willingness to engage with diverse types of messages.
- Additionally, our 3D AR platform brings interaction and product labeling together using handheld digital devices. When viewers point their iPhone camera at a product label, they can see an array of different options including videos, 2D/3D content, social media sharing options and marker-less content that lets you see products provided by business heroes.
- A Business Hero is simply any company or organization that support the initiative that "Everyone Is a First Responder." The business hero with their product label owns unlimited potential for AR audio/visual communications.
- Kids can also get in on the augmented reality fun with apps like Preparedness Pals, an augmented reality coloring book and app that can bring your child's-color pages to life. You can download a free and premium image packs from First Lines website filled with a variety of cartoon characters



and animals or educational scenes and images that you can then print out and color with your child. Once done, you can fire up the First Line app, aim it at the colored page and watch the image come to life with animations and special effects.



App Functions.

- Augmented reality over the years has enhanced medical break throughs, in the advertising industry, military, games, object monitoring, and in mobile devices.
- The basis of augmented reality technology is an optical tracking system. This means that the camera becomes the "eyes" of the system, and the markers become the "hands." The camera recognizes markers in the real world, "transfers" them to the virtual environment, superimposes one layer of reality on top of another, and thus creates a world of augmented reality.
- The following is a list of components supporting FirstLine's AR functions that are mission critical in deploying a preparedness messaging network. The following illustrations include but not limited to the development of the spokesperson concept.
 - Incentives and Rewards Rewards through AR experiences include



treasure hunts, participatory online events, fillin-the-blank push notifications, measurable value to preparedness information exercises and families together projects. The product label enticingly states, "Get the App, Get a Coupon."

• **Participatory and Compelling –** Augmented Reality vignettes are enhanced



preparedness learning experiences. Product cultures (pizza, soft drinks, and others) represent creative product labeling that allows the business heroes to tell compelling stories about their products and their position on community resiliency.

o Interactive and Engaging – AR flashcards provide a variety of entertainment



and learning vignettes. In addition, flashcards are the gateway to the "Preparedness Pals Maze." The maze is progressive and filled with animation. As the user progresses through the AR edutainment maze, the interactive information advances the user to a higher-level of AR learning experiences.



• Knowledge is Security – Resiliency occurs when preparedness

messaging concepts occur at a relevant and personal level, especially when the process of obtaining the preparedness information comes from captivating AR vignettes.

• **Making Preparedness Popular –** Pamphlets, printed materials and



lengthy speeches from the podium are boring and ineffective. Even worse these behind the times encouragements may turn people off completely. Celebrity driven theme-based projects like the "Tunnels to Towers Foundation" featuring Mark Walberg are extremely powerful.

• Membership and Connectedness – Our mission is to create a



business hero footprint proclaiming the theme that "Everyone is a First Responder." FirstLine creates membership by focusing on the local level, through the strengths of product labeling and AR story telling.

 AR App Monetization – FirstLine's incorporation of preparedness strategies, AR experiences, interactive content, app technologies and product



rategies, AR experiences, interactive content, app technologies and product labeling campaigns set the stage for business heroes. These interface designs are revenue engines creating top-of-mind interactive and engaging preparedness models benefiting stakeholders.



AR Mobile Devices.

Mobile AR apps have grown so much that Google is continuously **testing phones that are capable with a 5G ARCore.** At the end of December 2020, the total number of models that support ARCore numbered forty-four. The last five additions, among which was Samsung Galaxy M20, were mostly budget phones (Android Police, 2020).

iPhones also support augmented reality. With the release of iOS 11, all the latest iPhones could run apps with AR (Lifewire, 2020).

By 2022, predictions suggest that there will be 4.8 million consumer mobile AR-embedded apps in the market (Tractica). At the time, predictions also suggest that the number of mobile AR users will reach 2.2 billion (Statista, 2020).



Cultural Pathways – Consumable products represent an infinite number of personal interactions with consumers. Each AR experience allows the business hero to put their product at centerstage while telling their story that supports the initiative that "Everyone Is a First Responder."

- a. Domino's = Delivers approximately 45 million pizza boxes per month. It is the pizza box that is the canvas for AR experiences.
- b. Marriott = U.S. hotels saw 11 million room nights during May 2020
- c. AR Home Depot Currently uses AR for homeowners to stylize their homes
- d. Real Estate Networks Today, augmented reality real estate apps play a crucial rule in streamlining that process, making it easier for both realtors and their clients.



Summary.

While the physical world is three-dimensional, information however for decades, is just twodimensional pages and or screens. This gulf between the real and digital worlds prevents us from fully exploiting the volumes of information now available to us.

Augmented reality, a set of technologies that superimposes digital data and images on physical objects and environments, is closing this gap. By putting information directly into the context in which it was meant for, AR increases our ability to absorb and act on it.

AR is the new interface between humans and machines. Larger groups of people every day become more familiar with AR entertainment applications, such as Snapchat filters, but AR is destined for a higher purpose in the world of crisis communications.

Pioneering organizations are already implementing it in product development, manufacturing, coordination, marketing, service, and training—and are seeing major gains in quality and productivity.

AR improves how users visualize information, receive, and follow instructions, and interact with products. **AccuVein, for instance, uses AR** technology that converts the heat signature of a patient's veins into an image superimposed on the skin, making them much easier to locate.



Boeing uses AR to show trainees how to assemble an aircraft wing—and has cut the time it takes them to do that task by 35%. At GE, factory workers have achieved a similar gain in efficiency by using voice commands in AR experiences to perform complex wiring.

FirstLine would like to partner with public-private organizations to champion the cause for Augmented Reality and a preparedness messaging network.

Contact.

Bud Proctor FirstLine TaskForce 808 S 1750 W Cedar City, UT 84720 Bud4case@msn.com info@firstlinetaskforce.app (702) 355-3283