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RiskResQ

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INTRODUCTION

Natural disasters can have devastating impacts on individuals, communities, and entire regions. In Sri Lanka, where disasters such as floods, landslides, and droughts are common, having access to accurate and up-to-date information is crucial for preparedness and response. The aim of this project is to develop a disaster information app that will serve as a centralized source of information on disasters in Sri Lanka. The app will provide users with real-time updates on disaster situations, education on disaster preparedness and response, and connections to relevant resources. By providing a user-friendly and comprehensive platform, this app will help reduce the impacts of disasters and improve disaster resilience across Sri Lanka.

Types of disasters:

Ø Natural disasters

- Flood
- Landslide
- Wildfire
- Tsunami

Ø Biological disasters

- Pandemics
- Bioterrorism attacks

Ø Environmental disasters

- Environmental degradation (falling levels of groundwater, soil erosion, water pollution)
- Climate change
- Droughts
- Desertification and deforestation.

Ø Cybersecurity disasters

- Attacks on critical infrastructure
- Data breaches (protected or confidential data is copied, transmitted, viewed, stolen)
- Cyber terrorism
- Hacking of servers to disrupt communication
- Defacing websites and making them inaccessible to the public thereby causing inconvenience and financial losses

Ø Societal disasters

- War
- Civil unrest
- Terrorism

PROBLEM DEFINITION

Natural disasters are a major cause of death, injury, and displacement in Sri Lanka. One of the biggest challenges faced by disaster responders is the lack of timely and accurate information about the disaster situation. Many deaths occur because individuals did not receive information about the disaster in time to take appropriate action. Even if the disaster is reported on news channels, people may not have access to television all the time.

In addition, many people do not know what to do in emergency situations caused by disasters, leading to further injuries and fatalities. Emergency responders such as police, firefighters, and paramedics may also struggle to locate and reach individuals in need of assistance in a timely manner.

After a disaster has occurred, it is critical to determine the number of people who have been injured or displaced so that resources can be directed to those in need. However, this can be a challenging task, especially in the aftermath of a large-scale disaster.

Moreover, even when there are people who are ready to help those affected by disasters, they may not be able to directly access them without the aid of media channels or volunteering agencies. This lack of direct access can slow down the rescue and relief efforts.

Lastly, during a disaster, civilians who are willing to help rescue those affected may not have a proper way to locate the people in need. This can cause a delay in providing aid, which can be critical in disaster situations.

SOLUTION

To address the above-mentioned problems, we propose the development of an innovative mobile application named RiskResQ. RiskResQ will be an all-in-one platform designed to provide essential information on disasters, connect emergency responders with those in need, and enable donors, volunteers, and civil society to offer their support. The app will provide real-time updates on disasters, including information on evacuation routes, shelter locations, and safety guidelines. By providing timely and accurate information, RiskResQ aims to reduce the risk of injury or death due to disasters.

RiskResQ will also help emergency responders to locate and reach those in need, even in remote or hard-to-reach locations. By leveraging the power of geolocation and mapping technologies, the app will enable emergency responders to track and locate individuals in need of assistance, thereby reducing response times and improving the effectiveness of relief efforts.

Furthermore, RiskResQ will provide an avenue for donors, volunteers, and civil society to offer their support during and after disasters. Through the app, donors can make monetary contributions to relief efforts, while volunteers can offer their time and skills to assist with relief and recovery efforts. The app will also enable civil society to coordinate their efforts and collaborate with other organizations to maximize their impact.

KEY FEATURES

Ø Real-time tracking and monitoring

Real-time tracking and monitoring system that uses satellite imagery, drones, and other sensors to gather information about the disaster and its impact

Ø Communication and collaboration

The platform can have a communication and collaboration tool that enables different stakeholders such as emergency responders, government officials, and affected communities to communicate and collaborate in real-time. This can help to ensure that everyone is on the same page and working towards the same goals.

RiskResQ will provide a unique feature that allows users to create a family unit by scanning the QR code of their family members. This feature will enable users to track the location of their family members in real-time during a disaster through GPS.

Ø Resource management

A resource management tool that enables organizations to manage and allocate resources such as food, water, medical supplies, and equipment to different areas affected by the disaster. This can help to ensure that resources are used effectively and efficiently.

Ø Situation analysis

Situation analysis tool that enables organizations to analyze the impact of the disaster on different areas such as infrastructure, housing, and agriculture. This can help to identify the areas that need the most attention and resources.

Ø Predictive analytics

Predictive analytics to forecast the potential impact of disasters and help organizations to prepare and respond more effectively.

Ø Language Support

The application should be available in multiple languages, including Sinhala and Tamil, to ensure that it is accessible to all users in Sri Lanka.

INTENDED CUSTOMER BASE

Ø Community members

Individuals and families who want to stay informed about potential disasters and receive real-time updates during a disaster.

Ø Emergency responders

Police, Firefighters, and Paramedics who need to locate and provide assistance to individuals in need during a disaster.

Ø Donors and volunteers

Individuals or organizations who want to offer their support during and after a disaster.

USER STORY

Ø COMMUNITY MEMBERS

For community members, RiskResQ offers three membership options:

1. Guest - Guests can access information about disasters but cannot access the family unit, volunteers, or emergency responders.
2. Basic member - Basic members can access information about disasters, as well as volunteers and emergency responders, but they cannot access the family unit.
3. Full member - Full members have access to all features of the app, including the family unit, real-time updates, volunteers, and emergency responders.

This allows community members to choose the level of involvement that best suits their needs, whether they want to simply stay informed about potential disasters or actively participate in disaster relief efforts. To sign up, community members can simply download the app and choose the membership option that best suits their needs.

Community members have the option to donate to the Disaster Relief Fund through the RiskResQ app at any time, not just during a disaster.

Ø EMERGENCY RESPONDERS

RiskResQ provides emergency responders with real-time information about disasters, as well as a way to locate and communicate with those affected by a disaster. Upon signing up, emergency responders can create a profile and select the types of disasters they are trained to respond to, as well as their availability. When a disaster occurs, emergency responders can use the app to locate and communicate with affected individuals and families, as well as other emergency responders. They can also receive real-time updates and coordinate relief efforts with other responders and volunteers.

Ø DONORS AND VOLUNTEERS

RiskResQ enables donors and volunteers to quickly and easily connect with individuals and families affected by a disaster, as well as emergency responders and other relief organizations. Upon signing up, donors and volunteers can create a profile and select the types of disasters they are interested in helping with, as well as their availability. When a disaster occurs, donors and volunteers can use the app to locate and communicate with affected individuals and families, as well as other donors and volunteers. They can also receive real-time updates and coordinate relief efforts with other donors, volunteers, and emergency responders. Additionally, donors can make financial contributions through the app to support disaster relief efforts.

Ø ADMIN GROUP

The RiskResQ app also includes an admin group responsible for updating information and connecting with stakeholders.

Stakeholders in Sri Lanka who are involved in disaster management and response:

Government agencies

1. Disaster management center (DMC)
2. National building research organization (NBRO)
3. Meteorology department
4. National water supply and drainage board

Non-governmental organizations (NGOs)

1. Red cross
2. World vision
3. Oxfam

Community-based organizations

1. Village-level disaster management committees

Private sector

Private organizations that can provide resources and support during a disaster, including funding, equipment, and expertise.

Media

Communities and individuals

It's important to note that civil users cannot sign in as admins, as this role is reserved for individuals with specialized knowledge and expertise in disaster management and relief efforts.

COMPETITION IN THE MARKET

The Sri Lankan market currently lacks an app that provides all the features and services of RiskResQ. However, after studying similar apps available internationally, we have identified some case study apps that offer useful features.

- Disaster Alert
- Zello - Smartphone turn into walkie-talkie when cellular networks may be overloaded
- Safe & Well - helps people inform their loved ones that they are safe
- MySOS - access critical information such as location, medical information, and emergency contacts
- Esri Disaster response program - predictive analytics to forecast the potential impact of disasters

DETAILS OF FINANCING

The founders of the product will be the initial shareholders of the company, as they will be creating the app and bearing the cost of hosting the app and initial marketing.

The funds collected through the app will be handled by the Disaster Management Centre (DMC), which is a government agency responsible for disaster management in Sri Lanka. This ensures that the funds are used in a transparent and accountable manner for disaster relief efforts.

In addition, the app can also explore other sources of revenue such as in-app advertisements and sponsorships.

TECHNOLOGY

It is planned to create a web application for the courier centers to enter the details of the products to be delivered. This data will be stored in a cloud server using a NoSQL database such as MongoDB or Cassandra. The web application will be developed using modern front-end technologies such as React or Angular, while the back-end will be implemented using Node.js or a more scalable technology like Java or Python.

To develop the mobile apps for both Android and iOS platforms, modern cross-platform frameworks such as Flutter or React Native can be used. These frameworks allow for efficient code sharing across multiple platforms and can help speed up development.

To ensure secure authentication and authorization, a suitable authentication protocol such as OAuth2 or JWT can be implemented. Additionally, the courier service company can be provided with individual accounts for each center, with an admin account for the head office. The web app can also have an admin account for system administration, which can be managed by the courier service company or a third-party vendor.

To ensure secure data transfer between the web app, the database, and the mobile apps, suitable encryption protocols such as SSL or TLS can be implemented. This can help protect sensitive data such as customer information, delivery addresses, and payment details.

MARKETING PLAN

According to ComputerLiteracystatistics-2020-Firstsixmonth (source: Department of Census and Statistics of Sri Lanka), 50% of the people aged 5 to 69 are able to use their computer or smartphone on his/her own. Therefore, most of the users will be able to join to this system easily.

To advertise and to bring forward this new implementation we would be using digital marketing platforms which enables the individuals to read and understand what this mobile app.

To strengthen up the marketing strategy, we would be using social media platforms such as Facebook, Instagram, YouTube, Twitter, WhatsApp and Telegram groups to raise the awareness of this new project.



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