Research Paper

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An Integrated Framework for Disaster Management: Preparedness, Response, Recovery and Mitigation

COMPUTER SCIENCE

KEYWORDS :

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ABSTRACT

India is a land with a variety of climatic conditions, ranging from the snowfall of the north to the sweltering heat of the south. Natural disasters are very common in this country which is blessed and cursed with diversified yet unique climatic features. Even with the advancement in science and technology, the casualties in terms of human lives have only multiplied. The early disaster warning and the evacuating guidelines can have a major impact in reducing the resultant damage caused to lives and property. The major objective of our proposal is to provide an early disaster warning based on the information provided by various governmental monitoring agency and to ensure that all the endangered people are evacuated to a safer place before the disaster occurs.

Introduction

The major focus of any disaster management system must be on giving our early warning through alerts and ensuring the safety of lives and properties. The flow of disaster management cycle comprises of Preparation, Response, Recovery and Mitigation. Each phase is incorporated with a multitude of activities to be activated at a specific period of time. The role of disaster management should cover all these phases. Existing framework for disaster management opens towards either an alert system or logistics tracking system. However, there comes a need for an integrated framework which plays a role of efficient disaster management which addresses all the issues occurring during, before and after a disaster strikes.

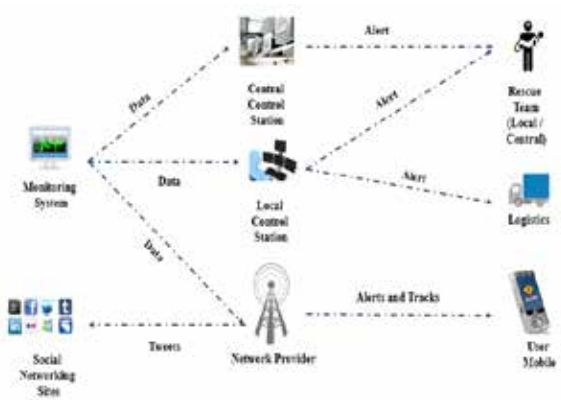
An important issue which has not been addressed by any of the prevailing architectures proposed for disaster management is the evaluation of the information source. The source of information from agencies whether governmental or private needs to be validated and verified against falsifications. India being a tropical country is subjected to variety of natural calamities like floods, earthquakes, droughts, etc. The Government of India holds diversified bodies like National Disaster Management Authority (NDMA) for disaster monitoring system. The data with respect to climatic changes, cyclone formation, earthquakes can be obtained from different data source maintained by the monitoring agencies. The uniqueness of our proposed system lies on

- Short Messaging Service (SMS) for alerting system
- Reduces the communication and storage overhead

There is a great impact of smart phones on humans, this doesn't ensure that everyone will be having a smart phone. So the best form of alert can be in the form of SMS and tweets in the social networking sites. Updates in the social networking sites alerts more number of peoples and paves a way for disaster restoration funding. As our framework relies on the network provider alerting system, it reduces the involvement of centralized service (register/ unregister for a service with user information like phone number, etc.). This in turn reduces storage need and communication between the service and the centralized server. Once the network provider receives an alert information, it processes with respect to the

- Number of base stations in the disaster prone areas
- Number of user in each base stations

The alert is sent to all the user in the base station available in the disaster prone areas. This type of alert not only warns the residential persons but also the tourists. These are the major areas where the framework proposes to upstage the existing disaster management system.



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