Exploring Role of Social Media, and Technology for Managing Disaster in Himalayan Region.

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ABSTRACT

Purpose- The purpose of this paper is to broaden the body of knowledge on Social Media, Artificial Intelligence and Technology in Disaster Management and Mitigation by presenting a systematic review of literature and role, application and framework for improving the effectiveness of disaster response in Himalayan region.

Design/methodology/approach- In total, 150 conceptual and empirical research papers from various journals of online databases were systematically selected and reviewed thoroughly and summarized under strategic, functional and operational papers.

Findings- The present paper explores the crucial role of Social media in amalgamation with artificial intelligence and technological platforms that can be highly effective in disaster preparedness and mitigation by facilitating disaster informatics and dissemination for disaster planning, capacity enhancement, training and development of early warning system disaster management. The researchers pointed out various challenges like digital literacy and digital divide, technological limitations, privacy issues, data informatics and analytics, purpose, skilled man-power, data integration issues and strategic guidelines and policy issues etc.

Originality/value- The study addresses gaps in this field and explores the crucial role of new media and technology with an opportunity for future research.

Paper type- Conceptual.

Keywords-*Disaster Management, Social media, Artificial Intelligence, Technology, Information, Himalayan Region.*

INTRODUCTION

Himalayan region has faced great calamities in last few decades. The Himalayan states are highly vulnerable to various disasters like flash floods, landslides, earthquakes, forest fires, avalanches, cloud burst etc. These disasters have causes us severe loss of lives and properties. In natural disaster response, Information and knowledge management can directly affect the efficiency and success of relief work. The use of computer and web-mediated communication in times of emergency is gaining momentum and is the focus of much existing research. Social media allow users to generate content and to exchange information with groups of individuals and their social networks. Networked talks online between the impacted publics and spectators providing assistance first came to light in the wake of significant disasters like the Banda Aceh Tsunami. These interactions have been particularly in focus during extreme events. (Palen, Vieweg, Liu and Hughes, 2009; Scaffidi, Myers and Shaw, 2007; Majchrzak, Jarvenpaa and Holingshead,

2007). A recent study by the Pew Internet and American Life Project found that 19% of all Internet users share updates about themselves on Twitter or another similar service (Fox, Zickuhr and Smith, 2009). Modern technologies, especially remote sensing and GIS in collaboration with artificial intelligence have been used to monitor the situation, to locate damaged areas, and to assess severity. Artificial intelligence is facilitatingDecision Support systems with the wearable device, virtual reality and agent-based system. Yet despite this, the full potential of geospatial data generation and dissemination mediated by information technology has not been fully realized in crisis situations (NRC, 2007). Social networks have proven critical in such situations, because they are able to mobilize the necessary volunteers; to provide the means to share tools; and to facilitate the loose kinds of dispersed organization that are needed to make the efforts of volunteers run smoothly.

REVIEW OF LITERATURE

. **A)** How emergency managers use such technologies to coordinate in response to disaster as they conduct rescue activities (White et al., 2009; Bharosa, Appelman and de Bruin, 2007; van de Ven, van Rijk, Essens, and Frinking, 2008). **B)** How those affected by disaster utilize social media to locate information and to seek or provide support (Hughes and Palen, 2009; Sutton, Palen and Shklovski 2008). Social media has spread too many domains, including the realm of disasters (Lindsay, 2011). Disaster planners, responders, and researchers

frequently exhibit optimism regarding social media's potential to facilitate improved disaster communication and operations (Lindsay, 2011; Fraustino, Liu, and Jin, 2012; Reynolds and Seeger, 2012; Williams, Williams, and Burton, 2012). Jaeger et al. (2007) note that compared to traditional media, web based social media technologies are characterized by greater capacity, dependability, and interactivity, each of which may be advantageous for disaster communication. In addition, Mills et al. (2009) assert that an ideal emergency communication system is a low-cost, easy-to-use, scalable, mobile, reliable, and fast network that provides capacity for one-to-many communication, includes useful information, and has GIS (geographic information systems) capacity and visualization tools. Rouhban (2007) revealed that knowledge management and education can aid local communities in risk-prone locations to better understand how to manage risk. Mistilis and Sheldon (2006) It has been suggested that the challenges facing relief organisations in real-time decision-making scenarios are how to gather pertinent, timely, and accurate information; how to store, organise, and manage information so that resources can be accessed and shared; and how to reuse knowledge from previous experience to support current decision-making. For example, in the aftermath of Katrina, the few local community networks, such as public libraries, that were able to function were effective in helping to rebuild neighborhoods and communities (Jaeger, Langa, McClure, and Bertot, 2004, 2005, in press).

CHALLENGES- Despite of having such benefits, it is really challenging to utilize social media effectively for disaster management in Himalayan region due to various social, technological, legal and economic constraints stated below.

1. **Digital fluency and digital divide**- Low digital literacy rate and digital divide are the biggest challenge in this. For ex. Having the population of 10.5 million, only 2 million people are active in social media out which 70% are residing in non-hilly districts. Similarly, having the literacy rate of approx. 80%, only 15 % are digitally literate. Residential internet service in India is six to ten times more expensive than it is in the Middle Kingdom, according to the World Bank.

2. **ICT Infrastructure** - Due to its specific geography, Himalayan region also face technological limitations like lack of State of the art IT and telecommunication network, Broadband and internet coverage, latest equipment and technology

3. **Nuance and Intentions**- Sutton (2009) detailed the issues emergency management PIOs encountered during the DNC in Denver in their attempts to integrate the myriad of online news sources and conversations. However, in the study, PIOs relied on more conventional one-way information transmission techniques used on blogs and alternative news sources rather than interactive modes of data collection through social media.

CONCLUSION- Social media can help users to exchange information, timely share information and knowledge that they have known with others and get feedback from knowledge accepters. The fusion of social media with artificial intelligence and technological system can be real asset to manage disasters. It is rapid, informative, and flexible so that it can satisfy the demand of knowledge management system in disaster response. Furthermore, extensive research and development is required to design sophisticated models and dedicated framework so that a fine man-technology can be developed for Himalayan region. Finally, it is needful to say that social media has the **Response-Ability** at the time of disaster and also the **Responsibility** to do right

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