

Chapter 36

M–Government for Emergency Notifications

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ABSTRACT

This study examines the use of mobile devices for the delivery of emergency notifications to end users from a mobile government (m-government) perspective. The study is informed by the task-technology fit model, technology acceptance models, and the literature on emergency management. Our findings indicate that the task, technology, behavioral, and to a lesser extent situational characteristics affect the use of m-government for the delivery of emergency notifications. Additional themes of equity and dependence emerge as relevant to user perceptions. This paper contributes to the m-government literature by examining and presenting findings relevant to emergency management and provides insights on the user perceptions of m-government for emergency notifications. This study also has implications for all levels of government including local, state, and federal. Lastly, as mobile technology use grows in the public domain this type of study advances the goal of using information and communications technologies (ICTs) to benefit human well-being.

INTRODUCTION

In 2004, the federal government of the United States developed the National Incident Management System (NIMS). NIMS represents a set of guidelines that agencies and organizations can follow in response to emergency situations. The primary stages involved in becoming NIMS compliant are: (1) utilization of standard products and methods; (2) integration of responses across different jurisdictions; (3) ordering and tracking response assets; and (4) establishing an effective communication mechanism (FEMA, 2012). Effective communication of events is a critical component for handling the response to a disaster, and this includes informing all relevant parties in a timely manner.

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This research focuses on the fourth phase of NIMS compliance: *establishing an effective communications mechanism*. Traditional methods for communicating information about an emergency include television, radio, face-to-face, and e-mail. However, each of these methods has its own set of challenges. For example, the emergency alert system (EAS) which provides emergency alerts via radio and television was cited by some as unreliable and faulty (Government Accountability Office, 2007). Face-to-face communication is limited because of its low reach, and email synchronicities can result in delayed receipt of messages.

A more contemporary medium for the delivery of emergency notifications is via a mobile platform. The global population has witnessed widespread adoption of mobile technologies and applications. Mobile applications present an opportunity to directly communicate real-time information about emergencies to individuals. One of the main factors driving this delivery option is the exponential increase of mobile device adoption. Notably, in January 2012 there were over 100 million smartphone subscribers in the United States (comScore, 2012). This represented a 24% growth from 2011 and it is projected that from 2012 – 2016 there will be an increase in excess of 66% of smartphone users in the United States (statista.com, 2013). Given the increased adoption of mobile devices, mobile notification of emergencies increases the number of distribution channels available to government agencies.

This research examines factors associated with user perceptions of m-government services. First we explore the user's perception about emergency notifications delivered via text messages. This leads to the first research question: how do end-users perceive the use of text messages for emergency notifications? Then we specifically examine emergency notifications delivered via text messages from government entities via an m-government platform. This leads to the second research question: how do end-users perceive the use of m-government for emergency notifications. The main difference between the first and second research questions deals with the context. The first question investigates the broader context of text messaging for emergency notification. The second question addresses the more specific context of text messages for emergency notification in the government domain. The difference is important because there can be emergency text message notifications from non-governmental entities such as private employers, radio and television stations, non-governmental agencies (NGOs), personal contacts, and others.

The structure of this paper proceeds with a review of the relevant literature, theoretical model, and results. We then present a discussion followed by a conclusion of the research. Throughout the paper we also demonstrate that this study makes three specific contributions. First, this research shows the value of text-based emergency notifications delivered via mobile devices. Second, this study examines a previously un-researched area of user perceptions associated with the delivery of emergency notifications via an m-government platform. Lastly, the study presents an opportunity for both researchers and practitioners to broaden the knowledge base with respect to the use of mobile devices for emergency management.

EMERGENCY NOTIFICATION SYSTEMS (ENS)

The 911 emergency system, first implemented in Haleyville, AL (Curry, Phillips, & Regan, 2004) is a first level reporting system in the event of an emergency or disaster in the United States. Information conveyed to the 911 dispatcher initiates a set of events for the relevant authorities to evaluate and respond based on the type and level of the emergency. The efficiency of a disaster response is affected by the disaster

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