Microblog 911

Vision (Small Project)

Version 2.0

Revision History

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| --- | --- | --- | --- |
| **Date** | **Version** | **Description** | **Author(s)** |
| 9/6/2011 | 1.0 | Initial Release | Kassie Bowman |
| 9/17/2011 | 2.0 | Minor updates due to team restructuring | Kassie Bowman |
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# Introduction

The purpose of this document is to collect, analyze, and define the high-level needs and features of the ACS 560 Microblog 911 Project. It focuses on the capabilities needed by the stakeholders and target users, and why these needs exist. The details of how the ACS 560 Microblog 911 Project fulfills these needs are detailed in the use-case and supplementary specifications.

## References

None at this time.

# Positioning

## Problem Statement

|  |  |
| --- | --- |
| The problem of | Slow notification to emergency services personnel and the public when an emergency situation or natural disaster occurs |
| affects | Anyone who is in the vicinity of the emergency situation and first responders who need to respond quickly to alleviate the situation |
| the impact of which is | Emergency situations and natural disasters result in higher impact, including loss of life and property |
| a successful solution would be | Providing accurate information regarding the emergency situation to emergency services personnel and the public so that they can respond appropriately, based on the situation, to resolve or reduce the impact of the emergency or disaster. |

## 

## Product Position Statement

|  |  |
| --- | --- |
| For | Members of the public and emergency services personnel |
| Who | Desire a means to be provided information about an emergency as it happens |
| The Microblog 911 | Is a web-based application |
| That | Analyzes microblog posts to identify an emergency situation or natural disaster and provides notifies subscribers of the situation and how best to respond |
| Unlike | Traditional notification methods via the radio or television news |
| Our product | Provides notification of the event as soon as it occurs. |

# Stakeholder and User Descriptions

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Responsibilities** |
| Dr. Tanik | Professor | Responsible for overseeing project performance and progress. |
| Kassie Bowman | Owner | Responsible for designing, developing, and testing the software to ensure it performs the intended task and satisfies user needs. |

## User Summary

|  |  |  |  |
| --- | --- | --- | --- |
| **Name** | **Description** | **Responsibilities** | **Stakeholder** |
| Emergency Services Personnel | Primary User | Responds to notification of an emergency or natural disaster by dispatching personnel as appropriate | Kassie |
| Public Subscribers | Primary User | Responds to notification of an emergency or natural disaster as recommended by the notification (for example, avoiding the area of a fire) | Kassie |

## User Environment

The working environment would be a typical mobile device, such as a smartphone. Only the user is required to perform a task. Tasks include subscribing to application notifications, communicating details of an emergency via existing microblogging applications, and receiving notification of ongoing events of interest. The application would require access to Wi-Fi or cellular service.

## Summary of Key Stakeholder or User Needs

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Need** | **Priority** | **Concerns** | **Current Solution** | **Proposed Solutions** | |
| Receive notification of an emergency situation | 1 | Need to ensure notification is accurate, timely, and relevant to users | Users are alerted to ongoing events through their social network or the news. Social media is timely but can be inaccurate or irrelevant; the news is accurate, but less timely. | | Provide notification to users in the affected area via text message or other notification as soon as situation is identified. |
| Provide information about an observed emergency | 2 | Need to find a way to assess the credibility of users to ensure information is factual | Users must call 911 to report an emergency. This is typically only done in the case of personal emergencies (such as injuries and house fires) and often not done when weather or traffic emergencies are observed. | | Users will use their normal social media application to report details of an observed emergency. |
| Set preferences regarding notification method and frequency | 3 | Need to allow users to specify about which types of events they wish to be notified | There is no way to filter this information in social media or the news. | | The application will provide user opt-in settings for the different types of notifications (such as traffic, weather, terrorism, etc.) |

## Alternatives and Competition

One alternative to this problem is to monitor news media to keep informed of ongoing events and possible emergency situations. Unfortunately, this requires effort to be exerted by the user. Additionally, news reports can lag events by several hours, preventing users from responding appropriately as the event is occurring.

Another alternative would be to monitor social media for information about current events. This has an extraordinary advantage of providing almost real-time information. However, this information may also be erroneous or irrelevant to the user (due to difference in location, etc.)

# Product Overview

The product will analyze microblog data through public APIs in order to determine when an emergency situation is occurring or has occurred. Such an emergency could be weather-related (storms, hurricanes, tornados, etc.), traffic-related (such as accidents which impede traffic), or acts of violence/terrorism (including shootings, bombings, etc.) Once the product has detected one of these situations, a notification would be sent to emergency services personnel in the affected area so they could respond to alleviate the situation. Notification would also be sent to members of the public who subscribe to the service, allowing them to respond appropriately. The product would depend on the existing microblogging applications in order to provide real-time information about events of interest.

## Product Perspective

The program is meant to be a standalone application; however, it may be used as an intermediary to other applications as a plugin or batch processor.

## Assumptions and Dependencies

This document assumes that sufficient information will be available from microblogging applications to detect an emergency situation and determine its location.

# Product Features

1. Gathering and analyzing data from microblogs
   1. The product will communicate to existing microblogging applications through publicly available APIs in order to gather real-time data posted to the application.
   2. The product will analyze the collected data to determine the occurrence and location of an emergency situation.
   3. The product will apply a confidence threshold to detected events to prevent the possibility of false alarms.
2. Notification of emergency personnel
   1. The product will provide notification to emergency personnel of detected emergency situations through existing communication methods.
   2. The product will notify the appropriate emergency services group based on the type of event detected (for example, the fire department will be notified of events involving fires).
3. Notification of public subscribers
   1. The product will provide notification to subscribers of emergency situations that are relevant to subscribers, based on location of the event and user settings.
   2. The product will notify the subscriber using the user-specified method, such as: text message, voice mail, etc.

# Other Product Requirements

The user-interface portion of the product should run on a typical mobile device with modest system requirements. The data collection and analysis portion of the product will be hosted on a system with high performance. The algorithms used to analyze the collected data will need to be robust and accurate in order to prevent false alarms.