Chapter 41
A Semi-Automated Content Moderation Workflow for Humanitarian Situation Assessments

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ABSTRACT

Although online social media has been recognized as a source of information that is potentially relevant for humanitarian organizations, it remains to demonstrate positive impact. The authors argue that relevant information isn't yet incorporated effectively into decision-making because the key role of humanitarian situation assessment experts and their methodologies hasn't been sufficiently recognized and incorporated into information systems design. In particular, the authors focus on the content moderation process (i.e. on examining, correcting and enriching data and controlling its dissemination) and argue that existing systems, which often follow a human-is-the-loop approach, either lack automation support or flexibility. In contrast, they present an interactive, semi-automated content moderation workflow and an instantiating prototype that follows the human-is-the-loop approach and centers on assessment experts. The evaluation of the new system practitioner interviews and serious games suggests that it offers good compatibility with experts' work practices, moderation quality and flexibility.

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INTRODUCTION

The humanitarian charter and minimum standards in humanitarian response state that effective humanitarian response must be based on a comprehensive, contextualized diagnosis. Agencies must systemically understand the nature of the disaster, who has been affected, and people's vulnerabilities and capacities; all of this in relation to the political, social, economic, and environmental context within the wider population (The Sphere Project, 2011, 11, 53).

Situation assessments aim to build situation awareness through "an active process of seeking information from the environment" (Endsley, 2000, p. 16). Situation awareness can be defined as "the perception of the elements in the environment within a volume of time and space, the comprehension of their meaning, and the projection of their status in the near future" (Endsley, 1988, p. 97). Humanitarian organizations routinely conduct assessments, "to both quickly and accurately ascertain the needs of an affected community, i.e. the beneficiaries, including quantitative information on crisis area and population, and derive the logistical implications for the planned or currently executed humanitarian operation. It is the objective of the assessment phase to deliver a decision basis, i.e. the information necessary to decide whether or not a humanitarian operation is begun, i.e. whether it is necessary and feasible to start, continue or close an operation, to define the priorities of an operation, to plan the implementation of these priorities, and to pass on information to the international community, donors and other actors present in the crisis. Assessment is not done uniquely at the beginning of an operation but rather conducted continuously during the entire life-cycle of the operation" (Blecken, 2010, p. 128). In the first weeks of an emergency response, organizations often conduct joint assessments under the leadership of a coordinating body, wherein they use a single methodology and tool to build shared situation awareness, and disseminate their findings to decision-makers (ACAPS, 2015, pp. 4–5).

Assessments rely on a multitude of data sources (ACAPS, 2015, pp. 50–54), such as national institutions (e.g. government ministries), databases (e.g. EM-DAT) and news websites (e.g. ReliefWeb). In recent years, online social media has been recognized as another data source that can potentially contribute to situation awareness in disaster contexts (Imran, Elbassuoni, Castillo et al., 2013; Vieweg, 2012; Vieweg, Hughes, Starbird, & Palen, 2010; Yin, Lampert, Cameron et al., 2012). Participating users have evolved their own form of bottom-up self-organizing to determine the value of information (Starbird, Palen, Hughes, & Vieweg, 2010). Despite being a hot topic in crisis information systems research, practitioners still find it difficult to incorporate information from social media into decision-making; the impact of relevant information on situation awareness at operational humanitarian agencies is unclear (IFRC, 2013; Tapia, Moore, & Johnson, 2013). If social media is to inform humanitarian response, it must be utilized systematically in combination with other sources of information.

Most social media analysis currently taking place that is aiming to support crisis management, is in the hands of digital volunteers. These participants are international, digitally connected grassroots volunteers and technical communities that sense, tag, map and curate data to support crisis management (Liu, 2014; Vidolov, 2014). Everybody can become a digital volunteer, by harvesting social media data and attempting to identify relevant information, with "absolutely no experience necessary; all you need is a big heart and access to the Internet" (Meier, 2015, p. 1). But although everybody can do something, not everybody can do the right thing that increases operational effectiveness. To reduce information dearth without increasing information overload, professional methodologies prescribe the definition of information needs before collecting data. This process is hardly possible without previous experience from similar disasters and operations, and encompasses two of the many characteristics required of

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