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Disaster communication governance and public trust: the case of TEPCO

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Abstract

The International Risk Governance Council (IRGC) Risk Governance Framework identifies five inter-dependent phases, of which the final phase, Communication, is of the utmost importance because effective communication is the key to creating public trust in disaster risk management. Extant government reports on the 2005 Hurricane Katrina and the 2009 Victoria bushfires in Australia (2009 Victorian Bushfires Royal Commission 2010) provide evidence that disaster communication governance deficits contribute to the slow disaster response and recovery operations and the erosion of public trust in government disaster management.

Keywords

tepco, disaster, case, trust, public, governance, communication

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insufficiently defined governance model for interorganizational collaboration under EE conditions, and (b) soft variables such as incompatible organizational cultures and practices. The governance model for EE response and recovery management needs to be negotiated and determined prior to the EE, otherwise frictions in the response efforts are inevitable. Also, while the technologies and organizational procedures might be technically sound, soft factors related to different or diverging organizational cultures and informal practices may interfere and make collaboration problematic and reduced in effectiveness.

Information and Information Needs. In EE management, information is the most valuable resource to responders, particularly, when geo-coded, current/updated, filtered/focused to task, and responder/purpose specific. While information asymmetries among EE responders are inescapable, the distribution of information should be open and forthcoming. Computer-mediated communication and social networking services have emerged as self-organizing complements to traditional channels for sharing and disseminating information. While high accuracy and quality of information are keys to trust in the shared information among responders, the principle of "satisfacing" in terms of timeliness relative completeness in EE response management has been emphasized.

Interoperability and ICTs. Institutional (enterprise-type) architectures, which integrate and help interoperate diverse ICTs, allow for virtual command and control centers across collaborating agencies and the use of shared knowledge bases in an EE. Due to built-in robustness and redundancy such ICTs can also maintain two-way communication even when major communication infrastructures are incapacitated. Geographical Information Systems are the backbone of such systems. In recent EE, computer-mediated communication via social networking systems have begun to play a major as self-organizing mechanism for informing the general public but also as a feedback mechanism conveying important EE-related information to responders in a timely fashion.
As case in point, the panel presentation assesses the readiness of field operations in a local government in terms of the capacity of switching from daily routine operations to EE response management along the lines of the four major areas of interest.

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A CASE STUDY RESEARCH ON TROUBLE AND FAILURE OF INFORMATION SYSTEM IN AN EMERGENCY PERIOD OF DISASTERS

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After Great Hanshin-Awaji Earthquake various emergency management systems based on ICT were developed and installed to local government. However information issues in an emergency period of disasters were not fixed up completely and in addition some new problems have arisen from new technology.

Our goal is to develop reliable information system which can use immediately after disaster and in this paper we consider factors of troubles and failures of information system under disaster to clarify the vulnerabilities. In this presentation we report troubles and failures cases in the Great East Japan Earthquake and past disaster in Japan and try to classify into categories.

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DISASTER COMMUNICATION GOVERNANCE AND PUBLIC TRUST: THE CASE OF TEPCO

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The International Risk Governance Council (IRGC) Risk Governance Framework identifies five inter-dependent phases, of which the final phase, **Communication**, is "of the utmost importance" because effective communication is the key to creating public trust in disaster risk management (IRGC, 2005, p. 14). Extant government reports on the 2005 Hurricane Katrina (GAO 2006; GAO 2007; GAO 2010) and the 2009 Victoria bushfires in Australia (2009 Victorian Bushfires Royal Commission 2010) provide evidence that disaster communication governance deficits contribute to the slow disaster response and recovery operations and the erosion of public trust in government disaster management. A better understanding of the relationship between disaster communication governance during crisis times

and public trust is critically important to improve vertical and lateral disaster information sharing practice. This paper addresses this research need by exploring two objectives: (1) to understand the Tokyo Electric Power Company (TEPCO) disaster communication governance over the failures at Fukushima Daiichi nuclear plants in Japan, "the most prepared of nations" (Time 2011) through case study analysis, archival analysis, and corporate website content analysis; and (2) to compare and contrast the TEPCO communication governance practice vis-à-vis the research literatures on leadership in crisis, corporate governance, and information technology (IT) governance to enhance disaster communication governance and build public trust.

TEPCO owns and operates the Fukushima Daiichi Nuclear Power Station (6 nuclear plants), Fukushima Daini Nuclear Power Station (4 nuclear plants), and Kashiwazaki-Kariwa Nuclear Power Station (7 nuclear plants). The Fukushima Daiichi Nuclear Power Station's safe shutdown earthquake (SSE) triggered the shutdown of the facility when it was struck by a magnitude 9.0 earthquake on March 11, 2011. However, the backup generator damaged by the tsunami failed to cool the over-heating reactors and fuel rods, releasing radiation leak. Japan's Nuclear and Industrial Safety Agency rated the nuclear disaster at a level 5, which is classified as a crisis.

TEPCO is aware of earthquake risks on its nuclear plants. The Kashiwazaki-Kariwa Nuclear Power Station in Niigata prefecture was struck by the 2007 Niigata Chuetsu-Oki earthquake. The ground motion sensors recorded "the site experienced nearly twice the ground shaking that was considered in the plant design", exceeding 0.5 g (Global Risk Miyamoto 2007, p. 60). TEPCO reported no major structural damage to the nuclear plants. The Kyodo News Agency reported that about 100 drums containing radioactive waste material had fallen, releasing radiation leak. While TEPCO downplayed the reported radiation risk, the seven nuclear plants were shut down after the leak was verified.

Despite the previous earthquake risk experience, TEPCO leadership during the recent nuclear crisis was slow in sharing disaster information with key stakeholders. According to Japanese and international mass media, both Japan's concerned citizen groups and international nuclear experts claimed that TEPCO and Japan's central government were underplaying the crisis' severity and misrepresenting information about the nuclear disaster risk. Chief Cabinet Secretary Yukio Edano admitted that "information had not been shared quickly enough." (Talmadge & Yamaguchi 2011) The paper discusses the key findings and insights by addressing the two research objectives.

13. DISASTER MANGEMENT

CHAIR: WILLIAM PETAK

LOCAL LEADERSHIP AND NETWORK: A MICROFOUNDATION OF EFFECTIVE DISASTER RESPONSE IN RURAL CHINA

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Providing effective emergency responses to large scale disasters in China has become one of the key responsibilities of national, provincial and local governments. Besides, more and more nonprofit organizations and business agencies, both local and international, have committed themselves to participate from different perspectives into emergency management. However, it is also one of the most complex endeavors with great amount of uncertainties for every single actor or collaborative initiatives to work together effectively. The feasibility and effectiveness of the policy is not only challenged by the *de facto* segregation between public sectors and other actors, but also by the asymmetry of essential information, the heterogeneity of local communities, as well as the emerging complexity driven by interconnected and adaptive local people who spontaneously respond to such disasters in different patterns. Considering such factors, even a most in-time, well-resourced, and highly-integrated policy can be easily crippled in the community level, especially in rural areas where local government officials in such complex settings have much less incentives or capability to pay attention to.

This paper intends to optimistically provide a rationale for understanding the microfoundation of effective disaster response in rural China after Wenchuan Earthquake. Adopting E. *Ostrom's Institutional Analysis and Development (IAD) Framework* and the philosophy of network analysis into the case, a model of local leadership and emerging network within the community has been established. On the one hand, it describes the dynamic structure which integrates the interactive residents, local government officials, and external aid organizations together; one the other hand, it explains a possible bottom-up process of learning which helps to maintain their community's resilience