A Case Study of Disaster Relief Supply Chain

TREO Talk Paper

Yun Wan
University of Houston - Victoria
wany@uhv.edu

Qi Zhu
University of Houston - Victoria
zhuq@uhv.edu

Abstract

This research project aims at exploring the IT-facilitated collaboration of state and local participating organizations in long-term recovery of Hurricane Harvey survivors. The disaster relief supply chain for Hurricane Harvey survivors consists of two layers of organizations. On the top layer, we have FEMA and American Red Cross, on the second layer we have charitable foundations, such as United Way and local participating non-profit organizations, such as BakerRipley and Catholic Charities.

In the long-term disaster relief supply chain of Hurricane Harvey survivor, United Way plays a leading role because of its 2-1-1 help line. Between August 28 and October 10, 2017, 136,077 residents placed 211 calls to this center. Of those, 51,596 unique callers requested service referrals due to the effects of Hurricane Harvey (Wu et al. 2017). United Way raised almost $61.4 million for mid- and long-term recovery from National and Local funds for Hurricane Harvey recovery. A large portion of these funds were managed by BakerRipley. BakerRipley was a local non-profit community development organization founded by Alice Graham Baker in 1907 during the 1900's Settlement House movement. As a United Way partner in Hurricane Harvey disaster relief, it not only receives funding from United Way for relief case management but also manage United Way's funding to other local charitable organizations, such as Catholic Charities, in disaster relief. This collaboration allows United Way to use BakerRipley as the single point of entry for its long-term relief management. During the life span of a disaster relief case, United Way, BakerRipley and other charitable organization involve in the case needs to verify a survivor and track the case information for accountability and auditing purpose from time to time. This brings in the CAN system, developed and maintained by American Red Cross.

Our initial analysis led to the identification of two types of challenges in this disaster relief supply chain: The external challenges to reach out disaster survivors and make relief information accessible and the internal challenge of efficient coordination among local participating organizations.

According to a joint investigative report by Kaiser and Episcopal foundations (Hamel et al. 2018), among those 20% residents in the Texas coastal 24-county area experienced severe Hurricane Harvey damage to their home, most say either they have not received assistance, or that any financial help they have received would cover very little or none of their financial losses. The 2-1-1 data confirmed this challenge too. For example, zip code 77084 was hit the hardest by flooding due to Addicks reservoir breach during Hurricane Harvey, making its 5631 survivors the greatest number of FEMA IHP homeowner registrants. However, only 1202 of 211-calls were received from the same region (Wu et al. 2017). This indicated roughly 80% of residents in this region may not aware that they could receive relief from local charitable organizations. How to reach out more survivors immediately after disaster with a combination of different technology platforms needs to be more thoroughly considered to overcome this challenge.

The internal challenges come from at least two aspects: regulation hurdles and information silo. During our interview, one case manager mentioned they dare not to share any customer data when the case contains health-related information, such as survivor complaints about their health conditions caused by mold in the flood damaged house, due to HIPPA regulation. Thus, large amount of data can only stay in Apricot and are not accessible to any other organizations, even CAN in such case. How to overcome this challenge, reducing system silo, and improve recovery data exchange is currently being considered by all participating organizations. A shared data hub and collaborative single-entry point platform is proposed by Data Workgroup under Long Term Recovery Committee of Texas. This could be the first step towards overcoming this challenge.