State-of-the-Art in Humanitarian Visibility

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Abstract
This paper establishes basic supply chain visibility needs in humanitarian supply chains and explores the current state-of-the-art technologies employed to improve visibility in humanitarian supply chains as future direction to research, practitioners, and technology developers. The state-of-the-art of humanitarian visibility technology is described by reviewing technologies and pilot projects currently applied in the humanitarian sector. Information regarding visibility needs, technologies, and projects was collected through 22 semi-structured interviews and a review of current literature from a variety of sources. Conclusions are drawn comparing these technologies and addressing their weaknesses. Increased visibility has the potential to greatly improve humanitarian operations, specifically technology enabling tracking of location and inventory, temperature monitoring, tracing of product information, information sharing, and decision making support. This review demonstrates that current efforts to increase visibility in humanitarian supply chains each tackle different needs, but none satisfies all needs. Thus, today multifaceted and disjoined efforts must be employed to achieve visibility. Most importantly, for this information to be beneficial, information and reaction systems must be synchronized. Only actionable information is valuable. Thus, the greatest limitations are the lack of systems, procedures, and training that enable meaningful and appropriate reaction to the information provided. This research assembles and evaluates current needs and efforts in humanitarian supply chain visibility, which informs current research and practice of obtainable information and directs developers to existing gaps.