Methods for Evaluating Innovation Projects for Disaster Communications at UNICEF

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Quantitative methods rely on data or measurements that are concrete and typically able to be studied using mathematical techniques (“Quantitative research,” 2015), usually categorized into discounted cash flow models and real options approaches (Schilling, 2012). The most common discounted cash flow methods are net present value (NPV) and internal rate of return (IRR). Because quantitative methods inherently rely on data, cash flow methods' results are only as accurate as the data used (Schilling, 2012). Inaccurate or incomplete data or data that is not collected via a consistent process can render quantitative methodologies useless (“Quantitative research,” 2015), and the need for actual data limits their application as an effective long-term assessment tool. A real options approach focuses on tangible assets as opposed to financial information (“Real Option Definition,” n.d.), and is more flexible than discounted cash flow methods (Fink, 2001), but technology innovations are difficult to predict so they don't always harmonize with the assumptions made during the evaluation.

Qualitative methods rely on aggregated, subjective data (Dixon-Woods, Shaw, Agarwal, & Smith, 2004) and typically are used to reveal observable patterns (“Quantitative research,” 2015). Surveys, project maps, and q-sort are the most commonly used qualitative methods. All these methods rely on collecting data from a group of people who are making interpretations and subjective decisions (Schilling, 2012), so the biggest obstacle facing qualitative research is validity or credibility. Surveys or screening questions can be used to create a framework for discussion (Schilling, 2012) and reduce respondent bias (“Screening Questions,” n.d.), but if used incorrectly they can decrease the validity of the collected data (Dixon-Woods et al., 2004). Project maps or aggregate project plans assess the balance of projects within an organization, and are particularly effective in allocating resources for a project by providing an organizational form and timelines for completion (“Aggregate project plan,” 2015). Q-sort or Q methodology is a method of subjectively sorting or categorizing data points based on specific factors (Schilling, 2012), and is effective at revealing how people think about a topic (“Q methodology,” 2015).

To determine the best innovation for UNICEF’s disaster area communication challenge, I would recommend using the aggregate project plan methodology. This will allow UNICEF to compare several potential innovations at once while providing a framework for successful implementation of the solution. Because this methodology requires collecting subjective, iterative data from stakeholders, it’s difficult to determine if my selected innovation – amateur packet radio – would still be recommended, but I believe that because of packet radio’s proven success in natural disasters (“Amateur radio,” 2015, “Amateur radio emergency communications,” 2015; Chief of Wireless Telecommunications Bureau & Chief of Public Safety and Homeland Security, 2012; Coile, n.d.), inexpensive cost (Dave, 2011), and focus on emergency communication (“Field Day (amateur radio) - Wikipedia, the free encyclopedia,” n.d.) it would still be a strong contender for the recommended innovation.

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