mHealth Technology: Collaborating for Good

TREO Talk Paper

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Abstract

The purpose of this research is to share insights on an action research project aimed at building a virtual reality simulation to improve the health outcomes of people living in India’s urban slums. In India, over 64 million people live in urban slums where conditions like hypertension and diabetes are growing. In fact, India ranks 28th out of 33 countries in life expectancy in the Asian region, and 67th out of 172 countries overall in deaths due to hypertension. Hypertension leads to heart attacks and strokes, which are among the top five causes of death in low-income areas. Technology has the potential to address some health problems given its ability to equip and inform people. In recent years, access to mobile devices has surged. An estimated 64% of residents in India subscribe to mobile cellular networks. However, mobile technology use to support health (i.e., mHealth technology) is limited in low to middle income countries like India.

The project examined in our research brings together a group of cross-sector, cross-cultural and cross-industry partners in a social innovation collaboration to design and implement a virtual reality simulation, delivered on a mobile tablet platform, that teaches marginalized populations living in India about hypertension. Designing this application involved the contributions of four organizations: a hospital, a university, a technology company and an animation company. The university was based in the United States, and the other organizations were based in South India. Most of the organizations donated resources to the project for humanitarian reasons—desiring to help the people of India. Needless to say, as the stakeholders collaborated to build the virtual reality simulation, a number of contradictions arose. Using an interpretive case study approach, the following research questions emerged from our data analysis: (1) What contradictions arise when building a VRS to improve health outcomes of slum residents of India? (2) How are contradictions prevented from moving to conflicts that negatively impact building the VRS?

Our research has some preliminary findings with regard to contradictions and conflict management approaches. One contradiction (i.e., control vs. empowerment) is related to the university’s control structures. In this case, the university’s Provost office funded the project to build research capabilities that address serious social problems like health and poverty. This effort to empower researchers was misaligned with the university’s existing control structures, resulting in a research team negotiating university control structures and managing interdepartmental hand-offs. For example, the project quickly fell behind because of various checks the university had to go through before sending the vendors payment. A second contradiction (i.e., quality vs. delivery) related to the virtual reality component. The team spent a considerable amount of time building a culturally-appropriate animation. This included a story and characters that the target users could relate to, utilizing their preferred languages. We developed the animation in three different languages: English, Kannada and Hindi. In the end, the team was satisfied with the product; however the virtual reality component was postponed to achieve an on-time project delivery.

This research has implications to existing research in technology development. In particular, many technology development theories do not consider stakeholders with humanitarian motivations that override profit motivations. Further, research on the roles of creativity and cultural humility in systems development is limited. Much of the IS literature on culture examines cross cultural collaborations where Indian developers develop systems, often for the west. In this study, Indian developers are developing a system for their own people, with the United States university funding, shaping and managing the project.