Using mental models to understand the ICT adoption process

TREO Talk Paper

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Abstract

Despite a large and growing literature on ICT acceptance, it is not known how well individuals move from initial acceptance to the assimilation of an ICT. There are different reasons that explain why current models aren’t so effective to predict actual use. One of the reasons is that researchers have mostly utilized cross-sectional survey-based approaches to study adoption. Traditional survey-based approaches will help us understand adoption because it’s a complex process in which events flow both in time and space. As adoption process is multidimensional, it can be analyzed from multiple perspectives. How individuals make sense of the technology is one such perspective. That is, while people interact with a technology, they develop mental models (MM) that will be used later to generate actions. Furthermore, MM are dynamic and can evolve with time as new information appears from the environment, causing individuals to substitute their initial disposition toward a new ICT.

We have initiated an investigation analyzing the MM of people who work in small Chilean restaurants. Figure 1 shows changes in an owner’s MM as his organization moves through the adoption of a system. Initially, he showed enthusiasm (a), then he became skeptical and considered withdrawing the system (b), and finally, he was satisfied with the system (c). In the first phase, owner’s MM was influenced by performance expectation. Later, his MM changed because of the influence of two antagonist groups in the organization: pro- and cons-on supporting and rejecting groups. Initial expectations lost importance due to the unleashed conflict that produced even more problems in his home. It caused the owner to evaluate the scenario of removing the system. The final decision was keeping the system because group supporting the system was more influential. In the post-implementation, once the system was assimilated, owner’s MM changed again. These preliminary findings are promissory, showing a novel perspective for research on ICT adoption. Although, the results partially coincide with the existing theoretical models, this open new questions, e.g., how much and how can the influence of other members of the organization threaten the adoption of a new technology? In short, MM helps us to understand how and why individuals change their perception of a new technology as they progress during the adoption process.

Figure 1. Excerpts from a user’s mental model showing its changes during three phases of adoption.

Finally, this talk is designed to be an invitation to other researchers to collaborate. We have collected relevant data from small Chilean restaurants. Studying this kind of businesses has the advantage that are relatively standard with diverse but well-known roles. Qualitative data (in Spanish) have been collected from interviews, focus group, participant observation, etc. Data have been also separated according to the adoption phase. Therefore, different approaches to MM also can be used to study the adoption process, some theoretical/methodological approaches that we suggested, but not limited to them, are: actor-network theory, small group adoption, discursive analysis, mapping of social networks, etc.

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