Consumer Adoption of Online Collaborative Co-Design

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Abstract
Social networking is being combined with the co-design process, which permits customers to express their product requirements and execute product realization processes with option tools so that a customer can choose an individualized combination of product specification.

Keywords
network, co-design, playfulness, mass-confusion

Disciplines
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Comments
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Introduction. Online social networking, a computer-mediated-communication technology, is gaining widespread recognition by the media and general public (Sledgianowski & Kulvivat, 2009). Social networking is being combined with the co-design process, which permits customers to express their product requirements and execute product realization processes with option tools so that a customer can choose an individualized combination of product specification. It results in an online environment where customers and co-designers correspond with each other and contribute input (e.g., level of liking, ideas for improvement) for a design. This can be termed, “collaborative co-design” (Piller, Schubert, Koch, & Moslein, 2005). The co-designers are customers who act as creators and/or evaluators of designs that may ultimately be sold on the site (O’Hern & Rindfleisch, 2008). Adding social networking to co-design may offer advantages (Needham, 2008; Simmons, 2008) and drawbacks (Teresko, 1994) for customer adoption of collaborative co-design processes. However, “Mass Confusion”(MC) can occur, due to variations in comments, postings, and ratings by other users (Teresko, 1994). Consumers may Perceive Social Risk(PSR), which is subjectively determined expectations of disappointment (Forsythe & Shi, 2003) from reactions to co-designers’ postings and feedback.

Conceptual background & hypotheses. The extended technology acceptance model (Moon & Kim, 2001) was applied to the collaborative co-design context. The effects of external variables (system characteristics, development process, social networking) on intention to use are mediated by perceived usefulness (degree user believes technology will increase job performance), ease of use (degree user believes a particular technology is effortless to use), and playfulness (degree a user senses enjoyment and pleasure) contributes to understanding acceptance and usage of information technology. Additional variables, such as mass confusion and perceived social risk, aid in predicting direct and indirect social networking influence on customers’ intentions to use a collaborative co-design website. Thus, the purpose of this study is to predict Perceived Usefulness (PU), Perceived Ease of Use (PEOU), and Perceived Playfulness (PP) will have a positive effect on Intention to Use (IU) a collaborative co-design website. MC will have a negative effect on user’s PEOU, PP, and IU of a collaborative co-design website. PSR will have a negative effect on user’s PP and IU in a collaborative co-design website.

Method. A scenario-based online survey method was used to collect data. The scenario included web snapshots of actual collaborative co-design website features and use instructions from Threadless.com (name was removed from snapshots). A total of 202 usable surveys were gathered from undergraduate students (age 18-25) enrolled at a large U.S. Midwest university.
The survey included 7-point Likert-type scales with items adapted from existing valid scales with acceptable reliabilities (α>0.70). Demographic and Internet shopping experience questions were also included.

Results. Confirmatory factor analysis in structural equation modeling (SEM) using AMOS 4.0 resulted in uni-dimensional factors. Standardized factor loadings above .40 on the factor, but below .30 on other factors guided development of factor structures. Cronbach’s alpha coefficients ranged from .71 to .93. Comparison of resulting fit indices with corresponding recommended values provided evidence of good structural model fit ($\chi^2 = 493.62$, $df = 288$, $p < .000$, CFI=.95, RMSEA=.058). Based on standardized path coefficients and significance levels, $= PP (\beta=0.747, p<.000)$ positively affected IU and PSR ($\beta=-.13, p=.031$) negatively influenced IU. Unlike the hypothesis, MC positively led IU ($\beta=.204, p=.002$). Other relationships were insignificant.

Conclusion. Findings suggest that the hedonic-related factor (PP) is the strong indicator of wanting to use collaborative co-design website; whereas, utilitarian aspects (PEOU and PU) are not as important. Thus, the hedonic nature of social networking during the collaborative co-design process appears to be more important than the instrumental nature of the site to the user. Future research can test whether MC’s positive impact on intention to use collaborative co-design website may be explained in terms of flow (Csikszentmihalyi, 1990). MC may offer the challenge, thereby, encouraging customers to use the online collaborative co-design website.

References


