

# USERS AS KNOWLEDGE CO-PRODUCERS IN INFORMATION SYSTEM DEVELOPMENT PROCESS

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## ABSTRACT

Information system development (ISD) is understood as a process that developers transform user requirements into system design and then carry out according system to fulfill these requirements. User participation in information system development (ISD) has long been studied by researchers. Theorist pointed out that including uses in the development generate positive impact by increasing productivity and improve users' attitude toward the system (He and King 2008). The consequence of lacking user engagement is that extra cost and time are required for rework when the final systems do not ultimately meet users' required functionality and requirements (Procaccino and Verner 2009).

Based on one emerging perspective, ISD can be viewed as a value co-production process in which users and developers work closely to determine the system requirements and carry out the final system to support organizations' daily operation. Given that users operate the developed system in their daily work, they are considered as final customers of the information system development service. In addition, users may also engage in the development process to enhance the value of the developed system through assuring the product can truly reflect the users' needs. Furthermore, ISD is a knowledge intensive process and the developed system can be viewed as a new knowledge which combines the IT knowledge from the developers and business domain knowledge from the users. The value created through the development process can be viewed as a co-production process.

ISD process includes two stages - design and development. Co-production literature points out that customers can play a role in these two stages through providing requirements and facilitating the

development process (Ives and Margrethe 1984). However, past user participation studies treat user participation as a second order construct and examined its direct impact on project outcome. The over-parsimonious concept and relationship reduces the power of explanation, leads to inconclusive results, and increases the difficulty in understanding the role users can play in different development stages. Therefore, it is critical to investigate this issue empirically through exploring what users should perform in different stages.

This study aims at understanding how users can act as knowledge co-producers in design and development stages. We hypothesized that, to assure the project team can accomplish predefined goal within budget and schedule, users can contribute their expertise to facilitate requirements determination and improve system development process. Specifically we argue that, as knowledge contributors, users can better add value to the design process when they possess common knowledge with developers. When common knowledge is low, relationship between developers and users play a substitutive role in assuring system design quality. Furthermore, in the development stage, although better project performance can be assured with high quality requirement elicited in the design stage, users can also contribute to system development through reviewing works carried out by the developers to improve the system performance. If system design cannot reflect users' needs, inadequate designs can be revealed and possible remedies can be taken to bring system development back to the track.

This study use quantitative method to confirm the purpose of research. All of questionnaire has strong construct reliability and validity. Data collected from 269 IS professionals supported our hypotheses. The findings from our survey indicated that common understanding has a positive impact on the knowledge integration which results in better project performance. The impact of common knowledge on knowledge integration is contingent on user-IS relationship and user review moderates the relationship between knowledge integration and project performance.

Based on above the research result, this study advanced our understanding about how users can serve as knowledge co-producers in the design and development process. As indicated, in the design stage, better system design can be accomplished when users and developers possess knowledge about each other's domain. Furthermore, when common knowledge is insufficient, relationship between developers and users plays a substitute role. In the development stage, users should participate in the reviewing process to assure the integrated knowledge (system design) is truly carried out by the developers. They can detect or recognize inappropriate designs in the early stage so as to reduce unnecessary cost.

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