Ph.D. Dissertation Defense

Candidate:	Jiali Qi
Degree:	Doctor of Philosophy
School/Department.:	School of Business / Business Administration
Date:	Thursday, August 15, 2024
Time:	2:00 - 3:30pm
Location:	https://stevens.zoom.us/j/95247959411
Title:	Digital Co-creation in Platform-centric Ecosystems: Three Studies of the Gaming Industry
Chairperson:	Dr. Aron Lindberg, Information Systems, School of Business
Committee Members:	Dr. Jeffrey Nickerson, Information Systems, School of Business Dr. Bei Yan, Information Systems, School of Business Dr. Wei Zheng, Management, School of Business

Abstract

This dissertation investigates digital innovation co-creation within platform-centric ecosystems in the gaming industry through three studies:

The first study, *"A theoretical revisit of the digital co-creation process from a knowledge perspective,"* examines the digital co-creation process within platform-centric ecosystems, where organizations harness external knowledge to foster digital and innovative outcomes. From a knowledge perspective, this research investigates interactive knowledge work among organizations, communities, and individuals, utilizing an exploratory study within a gaming ecosystem where in-house developers, community modders, and end users engage in collaborative game development. This study unveils four distinctive co-creation mechanisms, culminating in a conceptual model of the digital co-creation process. The study implies the significant role of collaborative knowledge work in shaping the digital co-creation process, contributing valuable insights to our understanding and opening up opportunities for further exploration in digital co-creation.

The second study, *"Understanding the reactive practices of third-party developers,"* aims to understand the nature of third-party software developers' work by systematically investigating this workforce from a practice perspective. In particular, this study pays close attention to third-party software developers' behavioral responses towards platform changes. Through a case study, this study identifies four reactive practices enacted by third-party developers: recognizing, processing, adapting, and influencing. This study generalizes the observation into a model of the reactive mechanism. The study contributes to the theorizing of platform-centric ecosystems by highlighting the critical role of third-party developers.

The third study, "*Collaborative processes in agentic artifact development: an empirical study on NPC design in digital games*," explores the complex evolution of Information System (IS) artifacts as they increasingly exhibit agency, autonomy, and intelligence. It specifically examines the collaborative design processes of non-player characters (NPCs), a typical example of agentic artifacts, within crowd-mediated environments such as digital gaming forums. The study addresses how the development of NPCs is shaped and how this development is influenced by collaborative interactions between community members and developers. Employing a mixed-methods approach, this study integrates quantitative Latent Dirichlet Allocation (LDA) topic modeling with qualitative analysis informed by grounded theory. It identifies three key areas of focus in NPC development: integrating NPCs into the game environment, evolving NPC faction agency, and dynamizing NPCs and player interactions. The findings highlight distinct characteristics of agentic artifact development within the gaming industry and shed light on broader implications for collaborative agentic artifact development.