Ph.D. Dissertation Defense

Candidate:	Ziyi Xiong
Degree:	Doctor of Philosophy
School/Department.:	School of Business / Business Administration
Date:	Friday, April 21, 2023
Time:	8:30 – 10:00 am
Location:	Online (Zoom: https://stevens.zoom.us/my/ziyixiong)
Title:	Blockchain-based Ecosystems: Fundraising, Innovation and Trust
Chairperson:	Dr. Rong Liu, Information Systems, School of Business
	Dr. Chihoon Lee, Analytics and Decision Science, School of Business
Committee Members:	Dr. Yan Chen, Management, School of Business
	Dr. Feng Mai, Information Systems, School of Business
	Dr. Hemang Subramanian, Information Systems and Business Analytics, College of Business, Florida International University

Abstract

The three essays presented in my dissertation proposal examine the early-stage success of blockchain-based ecosystems. Drawing on the fundraising and early growth stages of applications enabled by blockchain technology, they address the following three research questions, respectively: (1) How to achieve initial fundraising success; (2) How to promote the underlying novelty of blockchain technology among early users; (3) How phishing scams risk the formation of user trust and hinder the early growth of blockchain-based applications.

The first essay, *"Concrete Achievements and Coherent Plans: Linguistic Properties in Initial Coin Offerings (ICOs)"* proposes the necessity of matching the disclosed content with appropriate linguistic styles to facilitate the communication and therefore investors' decision-making. This empirical research draws on construal level theory to examine business roadmaps, an important but often overlooked type of disclosures for ICOs. It suggests that achievements and plans in the roadmap differ in hypothetical distances, tend to trigger mental construals at different levels, and thus should be communicated through different linguistic features. Furthermore, the concreteness of achieved activities has a greater impact on older projects, and the value of coherent plans increases with market sentiment. Overall, this study showcases the value of disclosing information through congruent linguistic features in crowdfunding.

Second essay, *"Overcoming the Novelty Discount: The Roles of Open-source Development in the Initial Coin Offerings (ICOs)"*, recognizes the existence of negative novel bias against novelty during the fundraising of blockchain-based applications. It investigates how to mitigate this negative bias against novelty for blockchainbased projects through reducing the technical uncertainty. It proposes that OSS development—and especially signaling the activeness, richness and popularity of the development process—can alleviate information asymmetry and technical uncertainty, helping dissolve or even reverse the negative bias against novelty in new venture fundraising.

Third essay, *"Who to Trust? Phishing Scam Identification and Impact on Post-ICO Performance of Blockchain Applications"*, studies the impact of phishing scams, which have become a main security threat to blockchain ecosystems. Built on a customized graph neural network model, it innovatively proposes a method to measure the risk generated from phishing scams. This measure is then used to evaluate the impact of phishing scams on the early growth of blockchain-based applications. The results show that risk generated from phishing scams negatively affects the application usage, the user base expansion, and the market appreciation.