THE HONG KONG POLYTECHNIC UNIVERSITY
DEPARTMENT OF MANAGEMENT AND MARKETING

Departmental Research Seminar

Battle of Wits: Strategic Opacity in the Cyber Offensive and Defensive Use of Digital Objects
By

Prof. Carol Hsu
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Date : 30 Oct 2024 (Wed)
Time : 10:30 am – 12 noon
Venue : M802, PolyU

Abstract

This study investigates the adversarial dynamics between cyber threat actors and defenders during the takedown of a global botnet infrastructure, focusing on how both parties deploy and respond to strategic opacity. Drawing on a revelatory case study of the Avalanche botnet takedown, we develop a theoretical framework that delineates different forms of strategic opacity and their implications. Our analysis reveals that cyber threat actors use proprietary and public digital objects to create opacity in the form of encipherment, compartmentalization, overload, and multivalency, effectively shielding their operations from defenders' scrutiny. Defenders, in response, deploy their own strategic opacity, such as duality and circumvention, during intelligence surveillance and threat neutralization, ultimately gaining control of the infrastructure. This research contributes to the IS cybersecurity literature by extending our understanding of how opacity is strategically created and dissipated in prolonged cyber confrontations. Additionally, we offer practical insights into how defenders can increase the costs of opacity for threat actors, improving resilience against future cyber threats.

Prof. Carol Hsu is a Professor and the Head of Business Information Systems Discipline at the University of Sydney Business School. She received her Ph.D. in Information Systems from the London School of Economics and Political Science. Her research interests focus on information security management, information technology adoption and digital transformation. Her work has been published in *MIS Quarterly, Information Systems Research, Journal of Management Information Systems, Information Systems Journal,* and other outlets. She has received the Sandra Slaughter Service Award from the Association of Information Systems. She currently serves as Senior Editor at the *Journal of Strategic Information Systems, Information Systems Journal, Information & Management* and on the editorial board of the *Journal of the Association for Information Systems*, and the *IEEE Transactions on Engineering Management*.

All interested are welcome.

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