Bio

Kalle Lyytinen is Iris S. Wolstein professor Case Western Reserve University, USA, adjunct professor at University of Jyvaskyla, Finland, and visiting professor at Helsinki School of Economics. He serves currently on the editorial boards of several leading information systems and requirements engineering journals including *Journal of AIS (*Editor-in-Chief*), Journal of Strategic Information Systems, Information&Organization, Requirements Engineering Journal, Information Systems Journal, Scandinavian Journal of Information Systems, and Information Technology and People,* among others. He is AIS fellow (2004), and the former chairperson of IFIP 8.2 and a founding member of SIGSAND. He also led the research team that developed and implemented MetaEdit+ which is the leading domain modeling and metaCASE platform globally. He has published over 180 scientific articles and conference papers and edited or written eleven books on topics related to nature of IS discipline, system design, method engineering, organizational implementation, risk assessment, computer supported cooperative work, standardization, and ubiquitous computing. He is currently involved in research projects that looks at the IT induced radical innovation in software development, IT innovation in architecture, engineering and construction industry, requirements discovery and modeling for large scale systems, and the adoption of broadband wireless services in the U.K., South Korea and the U.S.

The title and the abstract

Kalle Lyytinen, *Case Western Reserve University and Helsinki School of Economics*: Distributed Innovation in Classes of Networks

Abstract

Developments in information and communication (ICT) technologies have brought to fore new challenges in explaining innovation not well recognized in current organization science. In this talk we outline a taxonomic framework of contexts of innovation based on the structure and nature of the network in which the innovation knowledge originates and diffuses. This taxonomy is offered as a means to differentiate between socio-technical networks that build up different innovation contexts and follow alternative innovation dynamics based partly on their IT infrastructure. These networks consist of both social elements -actors and their behaviors- and technical elements -communication networks, digital repositories, and digital tools. The networks as a whole form a distributed cognitive space in which innovation knowledge emerges and diffuses through a set of translations. The translations map ideas, actors, digital artifacts and physical elements together during the innovation trajectory. We propose two distinct sets of translations 1) cognitive translations - the need to understand the innovation domains differently and freshly. These are enabled by divergent mappings between ideas, artifacts and actors; and 2) social translations- the need to relate differently to other actors in the network as enabled by digital technologies. We posit that advances in digital technologies 1) reduce communication costs and thus increase the scope and reach of communications between actors; and 2) increase digital convergence which help integrate unconnected activities, artifacts and capabilities. These developments stretch networks in two ways: 1) they increase the distribution of control and amount of coordination among actors; and 2) they increase the heterogeneity in knowledge

available. Accordingly, we conceptualize four types of innovation contexts that rely differently on digital technologies and erect different innovation networks: 1) singular forms of innovation, 2) distributed form of innovation, 3) systemic forms of innovation, and 4) doubly distributed forms of innovation. We argue that the translations and the necessary IT capabilities to support cognitive and social translations in these networks will vary from one type of network to another. We record several implications of the proposed framework for innovation research in organization theory. In particular, we call for new research that admits more flexible and richer ontology and epistemology of innovation and the growing importance of distributed forms of innovation which call for distributed analysis of innovation forms.

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