

Creativity Lies at the Edges of Chaos- Reducing Complexity in IT Projects

Abrar Haider

School of Computer and Information Science, University of South Australia, Adelaide, SA, Australia., abrarhaiders@gmail.com

Follow this and additional works at: <http://aisel.aisnet.org/amcis2012>

Recommended Citation

Haider, Abrar, "Creativity Lies at the Edges of Chaos- Reducing Complexity in IT Projects" (2012). *AMCIS 2012 Proceedings*. 22.
<http://aisel.aisnet.org/amcis2012/proceedings/Posters/22>

This material is brought to you by the Americas Conference on Information Systems (AMCIS) at AIS Electronic Library (AISeL). It has been accepted for inclusion in AMCIS 2012 Proceedings by an authorized administrator of AIS Electronic Library (AISeL). For more information, please contact elibrary@aisnet.org.

Creativity Lies at the Edges of Chaos- Reducing Complexity in IT Projects

Abrar Haider

School of Computer and Information Science
University of South Australia
abrar.haider@unisa.edu.au

ABSTRACT

Contemporary businesses operate in an environment that is riddled with continuous economic, technological, and social change. Fuel of this change is the inherent complexity of market forces that compels businesses to innovate for their competitiveness or even survival. To keep up with external pace of change, businesses go through a process of corporate renewal aimed at continuous improvement and maturity of organizational design, structure, processes, and infrastructure. As a result contemporary businesses are information intensive, which, in principle, integrates them internally and nurtures their responsiveness to external forces. However, amid the chaos in overall business environment, selection, implementation, utilization, and institutionalization of information technologies, which acquire, process, and maintain information, is subjected to various complexities. These complexities thrive on unknowns relating to internal and external forces that shape value profile and use of information technologies in the organization. As a result, business managers are faced with the question of how to position, assimilate, and utilize information technologies in the organization so that they are aligned with strategic information needs of the business, help the organization address competitive challenges, and cope with future information requirements of the business. Information technology projects move along the continuum of being standalone and independent projects towards being highly complex and turbulent. Their level of stability also changes from being highly predictable at the independent stage to being uncertain at the highly complex. The focus of project managers, therefore, is to reduce complexities relating to their implementation, behavior, and value profile of these technologies.

Complexity reduction in information technology projects has three critical aspects, i.e., chaos, structure, and self organization. Chaos deals with the behavior of dynamic and unstable systems that continually change or evolve randomly. Structures build on the dynamics between stable and instable properties of a system and lead to forewarning of the unforeseen consequences; whereas self organization refers to the relations of agents and systems following peculiar patterns of interaction in order to respond to events and to learn and grow accordingly. In doing so, each agent and system is guided by its own behavior and collectively they are guided by shared principles governing group behavior. However, it is important to maintain 'that' level of complexity which drives creativity and innovation and makes the organization learn, adapt, and grow. Complexity of an operative system is connected to both its efficiency and effectiveness, *ceteris paribus*; therefore, by reducing complexity of a system its efficiency and effectiveness can be improved. Two different kinds of levers can help managers cope with complexity, i.e. complexity reduction levers, which reduce complexity at a physical level; and complexity management levers, which reduce the impact of a certain amount of physical complexity on system's performances. Complexity control levers tend to have an impact on both efficiency (cost) and effectiveness (service) performances, whereby they shift an organization's efficiency and effectiveness trade-offs. Extant literature is replete with various theories for managing complexity, including systems thinking, self organization, soft systems methodology, and autonomic and holonomic systems. However, this paper argues that complexity also makes an organization thrive. Business managers, therefore, have to find the right balance that leads to creative chaos so that value profile of information technologies continuously evolves in the organizational context, while preserving the overall character and stability of the technology infrastructure. This research concludes that in order to reduce complexity, organizations need to craft their technology implementation, management, and governance strategies around four pillars, i.e. strategic alignment, transparency of control, total value chain perspective, and sustainability of operations.

Keywords

Complexity management, IT management, IT projects.