Association for Information Systems
AIS Electronic Library (AISeL)

ICIS 1997 Proceedings

International Conference on Information Systems (ICIS)

December 1997

Coordination and Control of Globally Distributed Software Development Projects: The GOLDD Case

Paul van Fenema
Erasmus University Rotterdam

COORDINATION AND CONTROL OF GLOBALLY DISTRIBUTED SOFTWARE DEVELOPMENT PROJECTS: THE GOLDD CASE

Paul C. van Fenema
Erasmus University Rotterdam

Advanced information and communication technologies (ICT) enable cooperation of individuals and teams from globally distributed locations. Professionals from all over the world contribute with their expertise in projects which take on the character of *globally distributed projects*. While experiences with such projects in the manufacturing industry are well publicized and documented, during the last decade similar developments have become widespread in software engineering projects. Often, these developments take the form of outsourcing or consultant-client relationships, where part or all of the information systems (IS) development effort may be outsourced to an offsite vendor. As the offsite part of the work, mostly program development and testing, but increasingly design, migrates to distant software centers in Bangalore, India, Dublin, Ireland, and Singapore, these software projects are taking on the characteristics of globally distributed projects.

In IS research and practice literature, coordination and control have been key issues in managing IS development projects. Preliminary research indicates that four factors affect the coordination and control of globally distributed projects: (1) geographical distributedness of sites, (2) differences of time zones, (3) cross-cultural differences, and (4) differences in ICT infrastructure. Despite the increasing use of offshore IS development projects, academic research on the management (coordination and control) of globally distributed IS development projects is limited.

The aim of this research project, therefore, is to investigate the impact of these four factors on the coordination and control of offshore IS development projects.

Based on organizational and economic theories of coordination and control, an integrative theory of project coordination and control is developed, i.e., the theory comprises the identification of coordination and control mechanisms, as well as the contingencies and conditions for use of these mechanisms. Guided by this theory, propositions are formulated with respect to the effects of the four factors on the use and effectiveness of the mechanisms in globally distributed projects.

A longitudinal qualitative case study was conducted at a Fortune 100 multinational manufacturer of cars and trucks to empirically test the theoretical propositions. The case study included interviews which were structured in advance according to the theory developed. Interviews were conducted either face-to-face or by using e-mail or video-conferencing. Documents from the project were collected and one key informant who participated in the project for eight months made weekly logs.

The project comprised the development of a Global On-line Dealer Database (GOLDD) system, providing on-line information on the multinational's network of dealers. The project started operationally in May 1996; completion of the system design is anticipated in the fall of 1997. Upon initial implementation in the US, a roll-out of the system is envisioned for Europe and ultimately the rest of the world. Throughout the project, people from the multinational's sites in Detroit and Cologne (Germany) cooperated with a team of programmers located in Bangalore (India) from an outsourcing vendor. The team in Detroit is responsible for system analysis and implementation; the German team has the overall responsibility for the project and its coordination and is involved in database design. Apart from occasional visits, team members frequently communicate by e-mail, phone, and audio/videoconferencing. For

coordination between the teams in Cologne and Bangalore, the vendor positioned one liaison manager permanently in Cologne. Two Indian team members fulfilled, in turn, coordinating roles in Cologne and Bangalore.

ACKNOWLEDGEMENTS

The author would like to thank Prof.dr. Kuldeep Kumar, Amanda Cijntje, and the company involved in the research project for their generous contributions.