Conception and Implementation of Digital Government Projects: The Role of Knowledge Transfer

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Abstract

This paper examines digital government projects at the group level. I argue that knowledge transfer plays a crucial role in the conception and implementation of digital government projects. Empirical data from four case studies in the US and Switzerland give insights into the structure, interaction patterns, content, and process of knowledge sharing in the projects.

1.   Introduction

In recent years, the possibilities the Internet offers have increasingly gained in importance for government agencies. First, with tasks continuously growing in complexity and with more decentralized structures, Internet-related technologies have become a necessity for the functioning of government agencies. Second, the managerial mindset created by public sector reforms such as the National Performance Review in the United States (Osborne & Gaebler, 1992) or the New Public Management in Europe (Barzelay, 2001) demanded that the citizens' interests be put at the core of public administration's attention, advocating a customer orientation comparable to the private sector. Together with the information society as a driving force, this has led politicians and government officials all over the world to invest large resources in new technologies in order to make public services available online.

Generally, the introduction of these new technologies takes place in the form of a specific project (referred to as " digital government project" in this study). The project teams can assume any form between the two extremes of a tightly-knit work team with clear boundaries, whose members were recruited especially for the project, and a loosely-bound group of individuals spread across various agencies, who participate in the project on a voluntary basis. The success of digital government projects depends upon factors external to an agency, especially political endorsement and constituent satisfaction, as well as internal factors, such as the government officials' ability to manage innovation, and knowledge sharing within the agencies (among the many publications on success factors see e.g., Industry Advisory Council, 2002). This study focuses on the latter. Digital government has only recently been studied from a social science perspective (Fountain, 2001), and much remains uncovered at the organizational level. Taking on a knowledge-based view of the organization (Grant, 1996), I argue that knowledge transfer processes play a crucial role in the conception and implementation of digital government projects.

Empirical data are provided by in-depth field studies of four different digital government project teams in Swiss and US state government agencies with regard to their decision making processes: What role does formal/informal knowledge transfer play? How is knowledge transferred? How do public managers decide what to include and what to exclude in a project? How do they attribute priorities to various actions? What sources inform these decisions? What does their communication network look like? What determines an individual's choice to share his/her knowledge?

2. A conceptual framework for knowledge transfer in digital government projects

The framework described in this section (see fig. 1) is the combined result of a literature review on knowledge transfer, organizational forms, and group dynamics; and of observations made in the field. It attempts to bridge between the organizational context, i.e. structures influencing knowledge transfer within the team (coordination mechanisms); processes, i.e. the interaction between team members given their interdependencies (group dynamics); and the content of the knowledge that is being transferred.

2.1 Coordination mechanisms of knowledge transfer

The fact that individuals from different organizational units work on a common task (to fulfill the project objectives) creates the effect of a communication network on top of the functional subdivision of tasks within the organization. Kogut and Zander (1992) propose several coordination mechanisms for knowledge transfer operating on different organizational levels. They argue that transfer of knowledge from an individual to a group level occurs through the development of unique language or code which allows group members to learn who knows what and to coordinate their activities. On the organizational level the transfer of knowledge within the same function (horizontally) is realized by boundary spanners. At the same time, a vertical transfer of knowledge among different organizational functions relies on the use of higher-order organizing principles through formal and informal structures. Examples for formal structures are rules, directives, and routines; whereas social network ties or communities of practice are examples for informal structures of knowledge transfer.
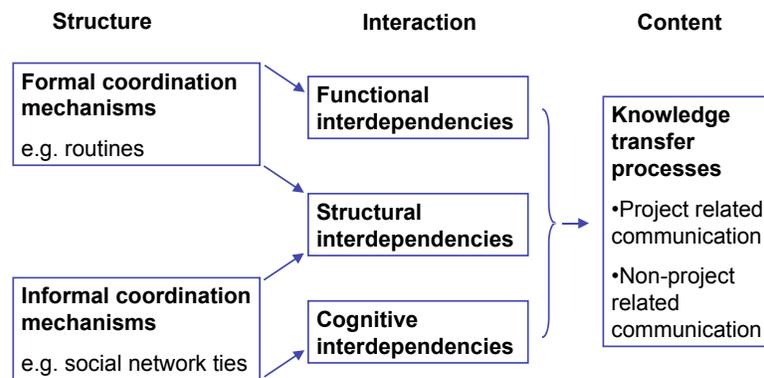

Figure 1: Conceptual model for knowledge transfer in digital government projects

2.2 Group dynamics

As the majority of decision-making processes concerning the conception and implementation of digital government projects takes place within the project team, group dynamics are a key ingredient to successful knowledge transfer. The way individuals interact in groups is determined by the interdependencies that exist between individuals. Research on group dynamics distinguishes functional, cognitive, and structural interdependencies (Lindenberg, 1997).

- *Functional* interdependence indicates the interdependence concerning group goals or tasks. This functional interdependence stands at the origin of group formation: Members of a group generally share a common goal or task that cannot be reached by an individual alone.

- *Cognitive* interdependence refers to informal social communication, informal social comparison, and norms: People depend on others for the validation of their beliefs, which they jointly adjust or newly form in groups.

- *Structural* interdependence comprises a vast array of structural relations, such as different communication structures according to the group atmosphere, or the existence of cliques within larger groups.

3. Method

The study combines a qualitative exploratory case study design (Yin, 1994) and a grounded theory approach (Glaser & Strauss, 1967), with the aim of theory building through the comparative analysis of case studies (Eisenhardt, 1989). Data were collected during field research in the period 2001-2002 by taking field notes on observations and conducting open-ended, semi-structured one-on-one interviews with government officials. All interviews were recorded on tape and transcribed. Field notes, documents, and interview transcripts have been coded with the assistance of a software package for qualitative data analysis (QSR N6 [NUD*IST], 2002).

The data interpretation process was carried out simultaneously with the data collection and a review of relevant literatures. This iterative process, of which the framework presented above is an intermediate result, is a distinct feature of the grounded theory approach (Glaser & Strauss, 1967), and it will continue until the completion of the project.

The sample consists of four digital government project teams. I selected the sample through theory-driven, progressive sampling; i.e. I chose the cases sequentially based on theoretical considerations. The cases needed to be comparable, so I chose a replication strategy for the sites, making sure that the sites were based on the same relevant characteristics over time. The sample parameters are 1. state-level government agencies in economically advanced countries with comparable jurisdictions, and 2. a clearly identifiable digital government project. For the informants, I employed a reputational case selection, i.e. the instances were chosen on the recommendation of an "expert" or "key informant". An overview of the case studies is given in fig. 2 below.

	CH1	CH2	US1	US2
Project start	2001	2001	2000	1998
Portal launch	end of 2003	March 2003	2002	2000
Interviews	7	5	8	8
Structure	Co-acting group	Embedded work team	Embedded work team	Co-acting group

Figure 2: Overview of case studies

4. Preliminary findings

The first level coding has yielded some descriptive insights into the motivation of the project, the forming of the team, and the choice of the team leader.

Motivation of the project: The motivation to start a digital government project stems from a mix of external and internal factors. External factors include image, prestige, and "making a tribute to the information society"; internal factors are mainly rationalization efforts in search for higher efficiency and lower costs. From what I have observed so far, external factors prevail as motivation to start a digital government project.

Forming of the team: Questions relating to how the project team was formed appeared to be rather difficult to answer, and the responses were somewhat contradictory. I observed in two cases that there

was no structured process behind the team formation; people came together on a voluntary basis, being driven by personal interests. This is not very surprising, as extra motivation is required, because overtime for meetings and discussions is not remunerated. I found two types of team members; "typical" innovators in digital government teams, i.e. those members of an organization who often come up with new ideas, who are restless, even within a rather rigid structure. The second type of digital government team members seems to have a particular interest in information technology, be it professional or private. However, after a varying period of time the project teams all got "institutionalized": Organization charts were rearranged to accommodate the growing teams, and (often following the recommendations of external consultants) new employees were hired to work exclusively on the digital government project.

Choice of the team leader: In two cases "outsiders" were hired, getting little or no political support. The remaining agencies appointed "innovators", who are described by their staff as politically well-connected, charismatic leaders. The projects of the latter agencies are in more advanced stages of project implementation, but the causal links will need to be analyzed further before drawing any conclusions.

The second level of coding (pattern or interpretive coding) indicates that the willingness of individuals in digital government project teams to share knowledge is related to 1. the perceived quality of leadership and the acceptance of the agenda-setter; and 2. the predominant mental models of the leaders and team members.

5. Conclusions

In this study, I propose that digital government projects are shaped significantly by the interactions between project team members. I suggest a conceptual framework that links coordination mechanisms of knowledge transfer to group dynamics. Taking into account the role of knowledge transfer processes might allow a more effective management of digital government projects.

6. References

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