Work practice/IT alignment in Healthcare

Jenny Lagsten, Malin Nordström
Örebro University, Linköping University
jenny.lagsten@oru.se, malin.nordstrom@liu.se

Abstract. In this paper we investigate the IT governance practice in a large Swedish healthcare organisation by studying how two maintenance teams apply the IT governance model pm^3. We have compared the teams' way of working in daily operations with the logic inherent in the IT governance model in order to draw conclusions on problems and obstacles that needs to be overcome in order to better align IT to the care practices.

Introduction

The goal of IT governance is to achieve and sustain a better alignment between work practice and IT (Weill, 2004; De Haes and Van Grembergen, 2004, 2009). Hence the goal for implementing IT governance processes, structures and relational mechanisms in healthcare organisations is to establish good alignment between care practices and IT. Governing "large-scale, integrated and interconnected workplace information technologies" (Monteiro et.al., 2012) are top priority for CIO and IT managers in healthcare in order to establish sustainable work practice/IT alignment. Models used for IT governance could structure the technologies, the organisational pathways and behaviour and thus having a long term impact.

Our interest in this study is to find out what issues that are problematic or prevents alignment between care practices and IT. Investigating hinders for alignment will generate useful knowledge for both practitioners and researchers in the field. Our main aim is to compare the IT governance model pm^3, in concept, with deployments of pm^3 in practice. During the study we also gained knowledge about IT governance in the health care sector in Sweden since pm^3 is the dominant IT governance model in large Swedish healthcare organisations.

The empirical data in the paper originates from an action research (Susman and Evered 1978) study in a large Swedish healthcare organisation. We have compared two maintenance teams use of pm^3 with the original model where the first team was maintaining the web based communication and the second was responsible for specialist medical records (e.g. pregnancy, physical therapy). Each team selected two cases of change management, which they had performed, for

empirical investigation together with the researchers, one case that had succeeded and one that had failed. The cases were then "unwrapped" through workshops and interviews with the two separate teams. The pm^3 champion, responsible for the overall implementation, participated in the study and was interviewed during our time at the site. We also analysed an extensive amount of documents (as protocols, plans, requests for changes, steering documents, project documentation). The main analysis was performed by comparing the logic of the pm^3 model with how the teams were working in daily operations.

pm^3 - an IT governance model

pm^3 is a model for IT governance. In the last 15 years pm^3 has grown to be the de facto standard for IT governance in Sweden. The idea of work practice/IT alignment in pm^3 has its roots in the Scandinavian perspective on information systems (Ilvari and Lyytinen, 1996). The pm^3 model originates from academia and has been theoretically grounded in action/practice theories and in a sociotechnical perspective (Nordström, 2005). The model developers stress the need for good organising of maintenance practise and compare the maintenance practice to the significant project tradition in the IS field (Nordström and Welander, 2007). pm^3 has been further developed and refined through hundreds of implementations and in organised knowledge cooperation with the pm^3 user organisation and the pm^3 vendor.

Work practice/IT alignment in pm^3 is organised through maintenance objects, assignments, roles of responsibility and governance processes. Basically pm^3 organises IT maintenance and governance on two levels, on a team level and on an organisational level. Central mechanisms on the team level are: Maintenance object, Maintenance assignment and Maintenance team. A *maintenance object* contains work practice-components and IT-components in support for a defined work practice. Maintenance objects are a way of delimiting responsibility for maintenance teams. Maintenance plans has the function of a project plan, governing IT service management and IT development for a maintenance object. The plan contains a time-limited *maintenance assignment* for the team were goals and maintenance results are clearly defined. *Maintenance team,* the central mechanism of the team is to create collaboration between the units and the IT-department, the team is proportionally staffed with competencies from both work practice and IT. The team is working goal based according to a maintenance plan.

Central mechanisms on the organisational level are: Maintenance Object Architecture (MOA) and Steering committee structure. The *MOA* is an overall description of all maintenance objects in the organisation categorised and grouped into portfolios based on the type of work practice support. On the organisational level there must be a *structure of steering committees* with explicit roles,

responsibilities and relations to each other. The governing structure is for example responsible for approving maintenance plans, making priorities and coordination.

Empirical findings

The implementation of pm^3 in the healthcare organisation had begun in late 2010. Establishing the IT governance model included: education, analysis and definitions of roles, redefinition of all the IT-systems and applications into 19 maintenance objects in an overall MOA, recruitment and staffing maintenance teams. Each team had set up separate plans with yearly assignments for their maintenance object.

Our analysis of the maintenance assignment for the first maintenance team (web based communication) showed that work practice parts of the maintenance assignment were missing in the maintenance plan and that it therefore was impossible to staff the entire maintenance assignment. Similarly, the analysis of the maintenance object showed that the work practice parts of the maintenance object were missing. Due to this, all their stakeholders were not identified. However, the parts that the existing maintenance team covered fulfilled the intention in pm^3. The roles of responsibility were clarified, and the role structure coordinating work practice and IT roles was defined. The team shared responsibility for different parts and the maintenance team had general and shared work procedures. The collaboration was characterized by a buyer-vendor relationship and the role holders acted with a high degree of professional attitude and behavior. The most problematic issue for this team was due to the fact that the level of responsibility exceeded the maintenance team's mandate, which made it hard for them to decide on central questions. This could be explained by an organisational decision in the implementation process of pm^3. The summary of this analysis is: the role structure was clarified, the work procedures were described and working and the team members had a high degree of professionalism.

The analysis of the maintenance assignment for the second maintenance team (specialist medical records) showed that the definition and management of objectives did not work. Therefore they had difficulties, as the first team, to reach a staffing in line with the maintenance assignment. In the maintenance plan we found clarified stakeholders, clarified roles of responsibility, and a role structure that coordinated work practice roles with IT roles. But the case analysis told us about a maintenance team that did not share responsibilities and that also lacked general and shared work procedures. We partly traced this back to the role holders' lack of professional attitude and behaviour, which had lead to a non-working buyer-vendor relationship. We also identified a problem with the mandate for the maintenance team, similar to the one for the first team. Our conclusion from this analysis is that the structure of the roles was clarified but the

team lacked general and shared work procedures and a professional attitude in order to execute the maintenance assignment in daily work operations.

Discussion and conclusion

From our analysis we could see that the studied healthcare organisation seemed to have problems at the "heart" of IT maintenance and governance - the work practice/IT alignment. Maintenance objects and teams focused on IT components, separated from their work practice context, this, we believe, is a consequence of an IT biased implementation. Our conclusion is that it is hard to reach work practice/IT alignment when only scooping IT and engaging IT people. Implementing IT maintenance and governance in large healthcare organisations is a complex undertaking. IT maintenance and governance models are compound and operates cross organisational borders involving all management layers. In order to gain the benefits from an IT maintenance and governance model there has to be a broad understanding of the models mechanisms especially among managers. Another finding we did was that a less structured maintenance practice can perform successfully (first team, web based communication) through a high degree of professionalism by the role holders. Correspondingly, well-described maintenance plans and role structures (second team, specialist medical record) are not enough; the role holders must take on professional attitudes and behaviours in order to execute processes and structures into a successful work performance.

References

De Haes, S. and Van Grembergen, W. (2004). 'IT Governance and Its Mechanisms' *Information Systems Control Journal*, Vol. 1, pp. 27-33.

De Haes, S. and Van Grembergen, W. (2009). 'An Exploratory Study into IT Governance Implementations and its Impact on Business/IT Alignment' *Information Systems Management*, 26:2, pp. 123-137.

Iivari J.,and Lyytinen K. (1996): Research on information systems development in Scandinavia - unity in plurality, *Scandivian Journal of Information Systems*, Vol 10 (1 & 2), p 135-186.

Monteiro, E., Pollock, N., Hanseth, O., and Williams, R. (2012): 'From Artefacts to Infrastructures', *Computer Supported Co-operative Work*, DOI: 10.1007/s10606-012-9167-1

Nordström, M. (2005) *Styrbar Systemförvaltning – att organisera förvaltningsverksamhet med hjälp av effektiva förvaltningsobjekt.* Doktorsavhandling, Institutionen för Datavetenskap, Linköpings Universitet. [In Swedish]

Nordström, M. and Welander, T. (2007). *More Work practice Like Maintenance Management, Studentlitteratur*, Lund.

Susman, G. and R. Evered (1978). "An assessment of the Scientific Merits of Action Research." Administrative Science Quarterly 23(4): 582-603.

Weill, P. (2004) 'Don´t Just Lead, Govern: How Top-Performing Firms Govern IT' *MIS Quarterly Executive*, 8(1), pp 1-17.