

Implementation of Groupware Technology in a Large Distributed Organization - Lessons Learned

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Introduction

This paper deals with implementation of groupware technology. Based upon an extensive empirical study of the introduction and use of a groupware application – Lotus QuickPlace™ – in a large Scandinavian financial organization we discuss implementation issues of groupware. Lotus QuickPlace was introduced to support collaboration between geographically dispersed organizational units and groups working together in a newly merged company (called Summa in this paper).

Lotus QuickPlace is a flexible technology that offers users a web-based shared workspace (called a QuickPlace, hereafter QP, while we refer to the product as a whole by LQP) with a folder structure, notification functions, support for custom document types and support for simple workflows. Lotus QuickPlace presents itself on the web as being very easy to implement - "A QP is a place that you can create on the Internet in 30 seconds to communicate with your team, share resources, and keep track of your project". As known from the literature, the implementation of this type of technology is often difficult. CSCW researchers like Bullen and Bennet (1990), Orlikowski (1992), and Grudin (1994) have early identified technological as well as organizational and social factors influencing the implementation. According to Grudin (1994) groupware requires a careful implementation in the workplace - implying that consultation on how to use the product should go hand in hand with the acquisition of the product, and/or be integrated in the product (built-in support). In the paper we describe the implementation process of LQP in Summa and reflect on some of the problems encountered.

The paper draws on data from an extensive study of LQP in Summa. The first part of the case study was primarily based on semi-structured interviews with managers and users of three selected QPs, and with persons involved in the implementation process. In addition it also involved analysis of the technology, and an analysis of the documents in the three selected QPs. Later the case study was supplemented with a questionnaire and an analysis of server log files.

The implementation of Lotus QuickPlace in Summa

The decision to introduce Lotus QuickPlace to support the post-merger organizational units and projects in Summa was taken quickly without thorough studies of needs and possibilities. QP was a "quick and dirty" solution: it was web-based, needed no integration with the existing IT security infrastructures of the pre-merger companies, and could thus be implemented very quickly. One month after the merger, the Communications Department was commissioned to distribute LQP in Summa.

Our study showed that the number of active QPs had been growing steadily within its first year at Summa. In the first month of our log-period there were 805 active users in 80 QPs. The growth continued during the 10-month log-period to 1618 active users in 126 QPs in the last month. Further analysis of the log-files has shown that the activity measured in terms of the various operations grew by 275% in the 10-month log-period; measured in terms of the average number of operations in a QP the growth was 138% in the same period. The study further showed that the application was used for quite different purposes: To support communication and coordination in organizational units, to support different recurrent tasks like translating the quarterly financial reports and the corporate news letter, and to support communication and coordination in projects or professional interest groups, like Java programmers.

However problems arose: three months into our study the Communications Department told us that LQP was probably going to be closed down. According to IT Security, LQP had some features violating Summa's IT security policy. Eventually LQP was not shut down. A compromise was agreed and IT Security took over issuing QPs. We briefly outline three main conflict areas.

When the opening of a new QP is granted, at least two QP managers are assigned centrally by IT Security. Hereafter, the appointed QP managers define the structure and access rights to "their" QP. The distributed security model also enables a manager to create new "sub-rooms" potentially without access from the other QP managers originally appointed by IT Security. The author of a document solely defines who is able to read and edit it. It is obvious that LQP hereby compromises the hierarchical and centrally managed security model normally used in Summa. The central security unit, IT Security, does not have any way of controlling access to rooms or documents,

nor does a QP manager have any means of controlling what is in “his” QP, or have access to all documents.

Each IT-system in Summa has designated a system owner. The system owner is typically the manager of a business unit responsible for the system. The role of the system owner is to define the purpose of the system, and rules for its proper use. However, it has been rather difficult to find someone willing to play the role as system owner of LQP. This is due to the difficulties of exercising the system owner’s role in LQP because of its decentralized and distributed security structure. Nobody but the managers of the individual QP have access and define who have access to their QP and the various rooms in the QP. Thus we see that the system owner role used in Summa is not very useful for LQP, as it is reduced to formulating criteria for starting and closing down QPs.

IT systems in Summa have a Standard Operating Procedure (SOP) attached to its use. The SOP describes what the system should be used for, by whom and how it should be used. Each time an IT system is put to use, a SOP is written by the system owner for the use of the system. The SOP contains guidelines on how the system should be used, as well as the rights and responsibilities of the various user groups. It has been very hard for the people responsible for the implementation of LQP to actually formulate a SOP for LQP. One year after LQP was introduced, a 5 page SOP was issued containing information about how to open and close down a QP. As a comparison, the SOP for the Intranet of a pre-merger company is a 50+ page document.

Lessons learned

We have described how LQP in terms of its security structure, finding a system owner, and formulating a SOP has created problems for Summa's IT Management. How can we account for these problems? What we see in Summa's IT management is a policy of centrally managing both technology and the use of the technology. This model is not geared to handle a technology like LQP where both access rights, decisions about what the system should be used for, and how it should be used is defined at the level of the individual QP.

An important lesson is that the implementation of a QP takes place at two different levels. There are activities at a central level to establish the QP-server, initiate the individual QPs, etc., i.e. establishing the infrastructure at a server level, or a macro level. And there are activities at a local level, or a

micro level, when an individual QP is set up, i.e. defining its structure and access rights, and the dynamic reconfigurations of the structure and content when the QP is in use. We can thus explain Summa's problems with LQP as being caused by only identifying and providing guidelines for the macro level of implementation and ignoring activities at the micro level.

In retrospect we can say that Summa to some extent failed to understand what kind of technology they were dealing with. They treated it as a traditional bank IT application with a system owner controlling the use, and a SOP for its proper use. Hereby, the open-ended nature of the application is not well captured. With the understanding of QP as a traditional IT application follows the intended use of traditional IT management, or implementation, models that only provide very superficial guidance for the implementation process for LQP.

Our case study of the implementation and use of LQP has illustrated some difficulties with implementing open-ended, context-specific IT applications for communication and collaboration in a large organization. We think that the difficulties are typical and prevalent in organizations with bureaucratic traditions for centrally managed IT systems with a strong emphasis on IT security and stability. We would like to draw a general conclusion from our study that is both relevant for organizations that already have, or are planning to implement open-ended communication technologies like LQP. Implementation efforts should be directed at two levels: towards a macro level (establishing infrastructure, general information about availability), and towards a micro level (guidelines for facilitation and for establishing local use patterns).

References

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