JetRek

How organisational identities slowed down speedy requisitions

Siri Benjaminsen and Aksel Hn Tjora, Norwegian University of Science and Technology, Department of Sociology and Political Science, 7491 Trondheim. E-mail: aksel@tjora.net

Abstract

The development in the area of information and communications technologies (ICTs) has had great impact on the use of more advanced instruments for diagnostics and therapy in the hospital sector. However, ICTs have only to some degree been implemented as tools for administrative and communication purposes. Now, when large information systems, for example electronic patient records (EPR), are introduced in most hospitals, the implementation processes are usually experienced as complex and difficult.

This paper reports from a study of the introduction of an electronic requisition system on handheld PCs, “JetRek”, in two departments in a large Norwegian hospital. By semi-structured interviews of developers, physicians, nurses and secretaries, the background for developing, and motivation for using, the JetRek system is studied.

The hospital’s requisition process is an interesting task from a sociological point of view, since in involves a range of professions (nurses, doctors and administrative personnel) and departments (wards, laboratories, radiology dep., and so on) in the hospital. Accordingly, it is found in this study, that what seemed to be a straight-forward implementation task from the developers point of view, turned out to challenge informally established requisition practices in the wards. The result is that nurses and secretaries would be more willing to use JetRek than doctors.

These findings are discussed using Gouldners cosmopolitan-local construct (1957), focusing on organisational and professional orientation and loyalty. The analysis implies that an understanding of the distribution of organisational identities may be needed to implement organisation-wide systems successfully.

Keywords: Information technology, hospital organisation, local-comsopolitan identity

Introduction

The development in the area of information and communications technologies (ICTs) has had great impact on the use of more advanced instruments for diagnostics and therapy in the hospital sector. However, ICTs have only to some degree been implemented as tools for administrative and communicative purposes. Now, when large information systems, for example electronic patient records (EPR), are introduced in most hospitals, the implementation processes are usually experienced as complex and difficult.

This paper, which is based on a master thesis in sociology, reports from a study of the introduction of a more limited system, an electronic requisition system on handheld PCs, called “JetRek”, in two departments in a large Norwegian hospital. In this presentation we will focus on how the introduction of the JetRek system challenged the practical working
order and sharing of work tasks in the hospital departments. From a theoretical point of view, we apply Alvin Gouldner’s cosmopolitan-local construct (1957) to analyse how the users’ organisational identities may have slowed down potentially speedy requisitions.

I will start the presentation by introducing the case, ”JetRek”, then say a few words about methodology and about the theoretical perspective that I have used. Finally I will present the analysis and findings.

The case: ”JetRek”

JetRek is software for handheld pocket PCs developed for use in hospitals for filling in requisitions for laboratory tests, X-ray images, physiotherapy treatment, and so on. The Pocket PC that is used (Hewlett Packard Journada 680) consists of a small screen and a small keyboard. The idea is that the doctors carry the pocket PC with them on their rounds so that they are able to fill out the requisitions at the bedside. After they have finished their rounds, the requisitions will be printed with the Pocket PC in a docking station. At this stage, the requisition forms are still sent in paper format to the recipients.

The JetRek system was developed by a firm called Sem & Stenersen in collaboration with a large hospital in Oslo. The objective of introducing JetRek is to make the work associated with requisitions more efficient, so that the personnel will have more time for patient-oriented tasks. Before the introduction of JetRek, requisitions were completed using paper-based forms. During the rounds, the doctor would collect all required information by a patient’s bedside and make a note, that he would pass on to the nurse on the round or to the ward clerks, who would fill in the requisition forms.

An important feature of JetRek that may contribute to make the requisition tasks more efficient, is what the developers have called “must fields”. The ”must fields” refer to compulsory fill-in sections of a requisition form. Such sections include the patient’s personal information, his medical condition, requirements with regard to further treatment, etc. In the paper-based requisition forms, doctors would often omit filling in some of these sections.

Consequently, the recipients of the requisition, laboratories, the radiology department, and so on, would not get the information that was required to carry out their service. This problem could be discovered by one of the ward nurses who would find the doctor to complete the form or the form would be returned from the recipients of the requisition. Incomplete requisition forms represented a major factor of unnecessary time spent by nurses, secretaries and doctors, as well as laboratory.

By digitalising the forms in the JetRek system it is possible to automate an imperative of completing the requisitions, by the use of “must fields”. As JetRek only has a small screen, only one ”must field” will appear on the screen at a time. The user cannot proceed in filling in requisition forms until the current “must field” is filled in. In this way the requisition forms are completely filled in, and queries from the recipients are avoided. This was believed to be a great time-saver for both the requisitor and the recipients.

A secondary objective of JetRek is to improve the quality of the requisitions. The developers think that JetRek will bring the quality to a higher level because the design of all requisitions will be identical when using JetRek. In addition, reading the requisitions will prove easier as they are no longer hand-written, by hand-writers of diverse quality, but data input is done using a keyboard.
The JetRek users were thought to be doctors, but the device may also be used by ward clerks and nurses. The users have been given the opportunity to actively participate in the development of JetRek. Project meetings have been arranged where all groups have had a chance to take part. The idea behind involving as many potential users as possible, was to develop a technical system that was as close to work practice as possible.

**Research methods**

The study of JetRek was undertaken during a three-month period during the autumn 2001. I made use of in-depth semi-structured interviews of 12 people in total, 2 JetRek developers, 4 physicians, 4 nurses and 2 ward clerks. These interviews provided information both from the developers’ point of view and form various users. With a rather even distribution of professions among the users, we were hoping to be able to identify a possible relation between professional position and attitude towards JetRek, and whether such attitudes influenced the use of JetRek in any way.

I carried out the interviews approximately one year after the introduction of JetRek, the benefits of this being that the users then had become familiar with JetRek over the course of a longer period of time. In addition they had gone through several stages of the introduction process, the planning stage, the introduction stage itself and the stage of stabilisation, where the day-to-day use of JetRek would take shape.

**Theory: Organisational identity**

One of the objectives of this research project has been to examine how attitudes and experiences of the users affect the way they perceive, assess and use, or to put it in other terms, how the JetRek users socially construct the meaning and use of JetRek. So, the project’s understanding of how users approach technology is constructivist. By using a constructivist approach, we may acknowledge that potential users of JetRek have, or may develop, different interests and attitudes towards JetRek, and that these attitudes may influence how they understand JetRek.

Nevertheless, we have hypothesised that different roles and identities of the various actors within the hospital organisation are relatively stable. In order to examine this in more detail we may apply Gouldner’s concept of cosmopolitans and locals (Gouldner 1957; 1958). The distinctive feature of the cosmopolitans is their high degree of commitment to their specialised skills and a weaker loyalty to the employing organisation. They feel that there are very few employees in the organisation with whom they can share their professional interests. They would like to have more time freed up to carry out work within their specialised areas as that makes them see their work as more rewarding.

The locally oriented actors, on the other hand, demonstrate a stronger loyalty to their employer and less commitment to their specialised area. Their actions will therefore be guided by what they consider to be most beneficial for the employing organisation as a whole. These concepts may represent the various professions within the health service. The doctors will be characterised as cosmopolitans, since they demonstrate a stronger loyalty to their own profession and specialised area than to their own hospital. Furthermore, they would not like to spend more time on tasks that are outside of the main core of their medical work.
Nurses often show a more local orientation. They feel a stronger loyalty to the employing hospital than to their own profession. They would therefore act according to what they consider to be most beneficial for the hospital as a whole.

**Analysis: My time vs. organisational time**

I will now move on to the analysis. One main question is how are the JetRek users influencing the social construction of JetRek, and how do the attitudes and the experience of the users affect how they perceive, assess and use JetRek.

I found that there is a correlation between the users’ attitudes towards JetRek and their professional position at the hospital. Eight of my respondents were positive about JetRek, whereas two of them were negative. During the development stages, only the doctors remained negative. The ward clerks and the nurses turned out to be positive during the process..

With regard to the users’ experience I found no discrepancies between the users that actively took part in the introduction and the users that remained more passive.

What separates the positive users from the negative users is the fact that the positive users opt to use JetRek when completing the requisitions while the negative users would use the paper-based forms to fill out the requisitions. As noted by one non-user physician, the argument that the organisations as a whole might save time if everybody used JetRek, is not good enough:

"I think the "must fields" could have been improved, done in a different way. We should not have to enter everything because that is the time-consuming part. There are seldom problems concerning requisitions that are so particular that it would be necessary to enter it in the form. When we have to go through a form and enter information that seems unnecessary, I will of course opt to use the paper-based forms. The point is being made that the whole system would save time when everybody are using JetRek, but this is irrelevant to us when we have to spend extra time on this" (physician).

It may serve as an illustration of the cosmopolitan orientation among many physicians. Some of the physicians in the two departments that we studied, tended to look at their own time as more important than other professionals’ time. They were more concerned about their own working hours, and they claimed that JetRek would result in them having to participate in the work associated with the requisitions to a greater extent, tasks they would rather continue delegating to the ward clerks and the nurses.

"I do not find JetRek interesting; I like working with people and I was negatively inclined from the very start. Before the introduction of JetRek, the requisitions were distributed between the ward clerks, the nurses and the doctors, a solution that worked very well. I did not have to spend too much time on these tasks then, and that is important during a hectic working day. I have a number of demanding work tasks, and for that reason I would not like to spend time familiarising myself with a new technology. I was of the opinion that JetRek would not work well here, it would prove too time-consuming" (physician X)

Even though many doctors were negative towards having to use the JetRek system, they were willing to see that it might lead to more effective requisition practice. However, they were not willing to invest time to get to know the system.

"We were offered training and invited to take part during the planning stages of JetRek, and that is a good thing. I think most of us did accept these offer – they were really keen to get us
all involved. It is important that everybody is consulted and taken seriously in a process like this. But I never used these opportunities” (physician Z)

According to Gouldner (1957), cosmopolitan actors would like to free up more time to carry out work within their specialised area. Accordingly, the physicians would argue that they did not have time to join the training programme that was offered to potential JetRek users. As long as the physicians are relatively autonomous employees, one may interpret this lack of time as lack of interest. They would not like to spend time on work that would not result in increased knowledge or prestige within their specialised area. When stating their reasons for not taking part in training and project meetings, they would mention that “they are doctors”.

But as seen from the above situation, some physicians were willing to see reasonable arguments for using the system and did, on a general basis, acknowledge that the system might improve the requisition work for the organisation as a whole. Moreover, some physicians did actually find the JetRek useful.

"When I learned to know JetRek, I discovered the benefits it had. I experienced that it had a positive effect. [...] I guess I just needed a little time to get use to a computer, so I was just sceptic for a short time. Maybe I just had some technology aversion? Don’t tell anyone - Hi-Hi” (physician).

It is signalled in the statement above that it is expected that the physicians at the hospital have great confidence in using various technologies, so also the JetRek system. To join training sessions together with nurses and administrative personnel could be experienced as humiliating for a physician, who in other areas was considered an expert.

Conclusion

In the analysis of the introduction of the JetRek system, it is especially one theme that stands out as important: how some employees will stay to their time priorities. And we have applied Gouldner’s (1957; 1958) local-cosmopolitan construct to give perspective to these professional strategies. This priority problem may be a symptom of two aspects of the JetRek introduction process.

First, the hospital management did not instruct the employees to use JetRek. The introduction of JetRek could have been better anchored within the hospital management, which in this particular hospital consists mainly of doctors. By such a strategy, one may have developed a stronger commitment from the medical profession to using the training opportunities and learning how to use JetRek.

Second, that the developers of JetRek did not know well enough the actual practice and priorities of writing requisitions. Even though writing requisitions is the doctor’s responsibility, it is the nurses that in daily practice fill in the forms. A current ethnographic turn in information systems development may be a result of these kinds of misunderstandings of the contrast between regulations and actual practice.

References
