IT-based Business Process Redesign – Example from Public Health Care

Case: Satakunta Macro Pilot

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Abstract

Business process reengineering (BPR) is a topic that has been approached from different angles during the 1990's. Recently process redesign has been applied to the Finnish public health care sector, because there are many pressures for change on both social work and health care services. Costs for service providers are increasing while at the same time the resources of public sector are decreasing, or at very least not keeping the pace with the cost increase. Mainly for this reason, there are many similar and overlapping health care redesign projects going on in Finland concentrating on IT-based process reengineering.

Strategic process reengineering with the help of IT is, however, difficult in an environment which hasn't got an actual business background and therefore staff specialised in business processes. Furthermore, there are social work and health care organisations that have very little or no experience in information systems and technology.

In the theoretical background we introduce a business process redesign model that aims to achieve strategic change in an organisation. We also demonstrate an approach that is based on IS as process enabler. Through a case study we discuss how the process redesign can be planned at the public health care and present some findings of our ongoing research.

Keywords: BPR, information technology, health care, public sector
BRT Keywords: HA08, HA12, HB15, HB20

Introduction

Traditionally, more than a half of the health care services are provided by the public funding in several European countries – in Finland too. Therefore economic efficiency has not been the primary issue in health care activities. However, the challenge of the following decades will be a demographic change which means growing number of elderly people and therefore increasing need for health care services (Ragupathi 1997, 81-82; Saranummi 1995). This puts Finnish public health care in a tightened financial situation. Furthermore, quality issues and rapid technological changes are increasing the pressure

(Lumijarvi 1991, 3-5) at the time as the private sector has intensified competition. The answer to these challenges is thought to be found in information technology, which could help to reorganise the customer care routines and the services offered in a more efficient way.

However information technology itself is not enough to solve the existing problems, but also an overall change in the work processes is needed. The interest for the process engineering in health care sector has recently grown rapidly and there are several smaller or larger redesign projects going on in different parts of Finland, like in Turku, Oulu, Northern Karelia and Satakunta area.

Aim of the research

Aim of the research is twofold. First, some business process reengineering (BPR) models are shortly introduced. The research concentrates on a BPR approach that leads to strategic and stepwise change in an organisation instead of a very radical change in a short period of time. Information systems are seen as one enabler of the process redesign and in this article Earl's (1993, 10) organisational approach is introduced as a model of process enabler.

Second, we are interested in finding how the business process reengineering models that mainly have been designed for private sector companies can be applied to the public sector organisations. In the empirical part we discuss the planning of the process redesign done in a public health care organisation and the distinctions found in that case. We also pore over the challenges and risks that come up from the case study, which isn't purely traditional reengineering project.

This is an ongoing research. The process reengineering at the case organisation will still continue at least for two years and the actual implementation phase hasn't started yet. For this reason, in this paper we can only present some preliminary findings from the planning phase and discuss the potential prospects of the project's continuation.

Theoretical background

The discussion on business process reengineering (BPR), also known as redesign or process innovation, has been going on from the beginning of the 1990's when Davenport (1993) and Hammer and Champy (1993) introduced their ideas about radical business process reengineering through information technology. BPR of the early 90's can be defined as "*the critical analysis and radical redesign of work flows and business processes in order to achieve dramatic improvements in organisation's performance*" (Martinsons 1995, 254; Altinkeimer et al. 1998, 381). One manager even explained BPR to be about changing the engines of a flying plane (Stoddard and Jarvenpaa 1995, 83). During the last few years the "absoluteness" of the BPR principles is however dispelled and Stoddard and Jarvenpaa (1995) found that for example the BPR model that e.g. Hammer introduced, was not even typically practised.

BPR has changed to the direction where it is considered more as model of strategic change of an organisation rather than a radical change or a "quick fix" (Kettinger et al. 1997, 56). The small projects with strategy linking are emphasised. Nyman and Silén (1995, 13, 24) call this comprehensive "macro level " change, which sometimes needs a creation of new vision and strategy. The critical analysis of the

processes should then be based on those two concepts. The process change is portrayed as strategy driven based on an assessment of competitiveness factors (Kettinger and Grover, 1995, 12). In addition to the structural change of the organisation, strategic business process reengineering normally changes the subsystems within the organisation. According to Kettinger and Grover (1995, 12) the transformational subsystems are

- business processes
- management
- information technology
- structure
- people.

The output of this model includes process products and services that can be measured in terms of cost, quality, customer satisfaction, flexibility, innovation or shareholder value (Figure 1) (Kettinger and Grover 1995, 12).

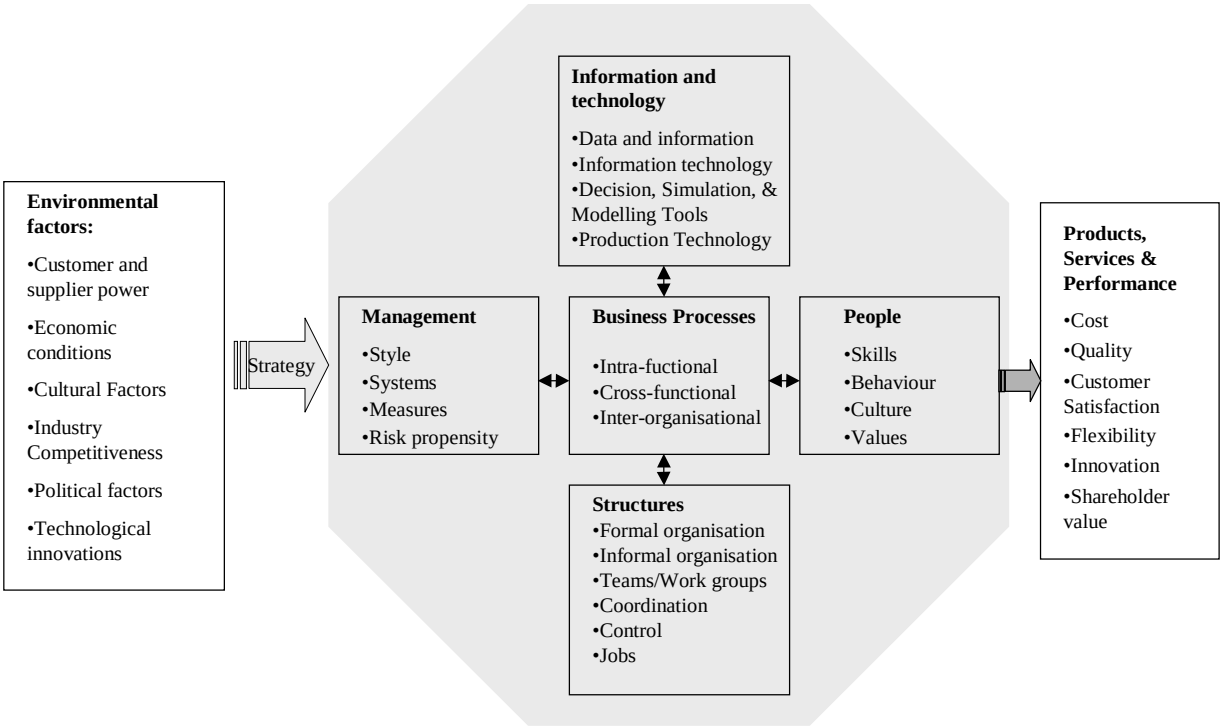

Figure 1: Business Process Change Model (Kettinger and Grover 1995).

The integration between IT change and process redesign can be found from Earl's (1993, 10) organisational approach. Originally Earl's approach is used in strategic information systems planning (SISP) and it is based on IS decisions being made through continuos integration between IS function and the organisation. The emphasis is, however, on processes, especially on management understanding and involvement (Earl 1993, 10). Some companies who applied a major SISP method, found out in retrospect that it had been as much a process enabler as an analytical investigation.

Earl (1993, 10-11) lists six factors which help make the organisational approach work:

1. Focus on themes
2. Evolutionary change

3. Teamwork
4. Education
5. Devolution of IS function
6. Eclectic use of methods

One way of increasing the chances of process redesign is to concentrate on one or two themes at a time rather than developing large application portfolios. Example of the themes in health care could be “seamless service chains”. Another way is to attempt change in small steps. Eventually all the small evolutionary steps can lead to a radical change, but more effectively than by “big bang”. The benefit of this evolutionary change is that it reduces risk, because the process redesign is done in phases and change is not even tried to perform in one go.

The third factor, teamwork, stresses multidisciplinary teams which in other words means that IS professionals need to be members of all teams that matter in the process reengineering projects. The presence of an IS professional is important, because this person can suggest why, where and how IT could help (Earl 1993, 10). Process change led by teams is often slower than structural top-down approach, but teams will result in greater building of commitment (Earl et al. 1995, 35). It is impossible to introduce changes in the organisation without the people in the organisation feeling the impact of the change (Lorenzi et al. 1995, 33). When the change is planned in teams, the employees have an opportunity to influence the decisions and to conduct the change to the direction they are interested in.

People learn through teamwork, but there are also other educational elements, like educational events for management teams, team visits to technology demonstrations etc. to be considered.

Devolution of IS function means that the IS function is devolved down to the lowest levels of the organisation so that IS personnel can identify and develop IT opportunities wherever those arise. The sixth factor points out that the approach is not without method, but methods are employed as required and to fit a particular purpose.

Earl’s (1993, 10) organisational approach gathers together all the different elements of Kettinger’s and Grover’s (1995,12) business process change model. The only element which is not that much stressed in Earl’s approach is management. However, it is important not to forget it, because the main reason for business process reengineering failures is the lack of top management commitment and involvement (Martinsons 1995, 258).

An illustrative case

The empirical part of this paper concentrates on the process engineering work that is going on in the province of Satakunta under a project called Satakunta Macro Pilot. The research is conducted as an action research, when there is always a strong interaction between the scientist and practitioners (Kerola and Reponen, 1996, 14-15). In this case the interaction mainly took place in working group meetings in which the researcher's role was to bring the information systems knowledge into the work. The interaction in those meetings was good; there were lots of discussion and open expression of ideas and opinions.

Background

In the first half of the year 1998, the Finnish Ministry of Social Affairs and Health, the Ministry of Trade and Industry and several other state offices, like the National Research and Development Centre for Welfare and Health, the Social Insurance Institution and the Association of Finnish Local and Regional Authorities, announced their interest to start and support a large experiment on information technology in health care sector (Hankesuunnitelma 1998). They were looking for a regional coalition to be a pilot area for the study. The volunteer coalitions were supposed to enrol in at the latest in June 1998. The project interested many coalitions - not least because there was about 100 million marks available to this project. September 1st 1998 the Province of Satakunta was chosen to be the pilot area. The project was given a name Satakunta Macro Pilot – social and health care development. Macro indicates its broad scope and Pilot investigating the new and trying something in use.

The Province of Satakunta is located at the Southwest coastal area in Finland. There are 28 municipalities in Satakunta. Seven municipalities of those 28 take part to the Satakunta Macro Pilot project: Lappi, Merikarvia, Noormarkku, Pomarkku, and Siikainen as well as the towns of Kankaanpää and Pori. Altogether there are about 110000 inhabitants at that Macro Pilot area.

The primary goal in Macro Pilot is to develop seamless services, which means that clients will receive a minimum of "run-around" by making relevant information available. Another goal is to improve the ability of the citizens to be served at their homes. Information is to be moved electronically wherever possible. To achieve these goals, there are about 150 persons employed to do the main projects. About 20 of them work permanently whole day and rest part-timely. As the subprojects start there will be dozens, if not hundreds, of project workers more. The main projects, that the employees are divided to work in, are:

1. Regional network architecture and technical solutions
2. Seamless care and service chains
3. Support for independent access of elderly and disabled
4. Information and client services
5. General processes in health care

This study concentrates to the support independent access of elderly and disabled people. The planning of the new project started in January 1999 and continued until the end of March. After the planning phase the new processes, as well as the IT solutions supporting them, will be implemented and tested. The pilot will be going on until the end of the year 2000.

How the process redesign work is arranged in the Satakunta Macro Pilot

The planning of the new health care processes was started in January 1999. The project leaders of all five main projects gathered a team around them and settled the schedule for planning, which in this case was two months. There were originally 12 members in the team that planned the support for independent access of elderly and disabled people, but as the planning went on there came four more so that in the end the team consisted of 16 members. Most members were from social and health care organisations of three different municipalities, but there were also a lawyer from Social Insurance Institution, analyst from the National Research and Development Centre for Welfare and Health,

customer representative, two employees from Oulutech Ltd. and information systems researcher from Turku School of Economics and Business Administration. The working group held seven meetings that altogether took 4,5 working days.

The planning was started by defining what actually is included in the support for independent access of elderly and disabled people. The defining phase preceded the survey of the current situation. The survey was done to four municipalities: Kankaanpää, Lappi, Noormarkku and Pori. One person from both social and health care organisations in each municipality was interviewed. In addition a representative of private sector health care, a volunteer from the congregation of Pori and four specialists were interviewed. The specialists gave their point of view from their specific area to the current situation. One of the specialists was a disabled customer of Pori's social work and health care organisations. All the interviews were taped and transcribed.

The working group had to identify subprojects to accomplish the process change. Some ideas to the subprojects were decided already beforehand and some were based on discussions held in the work group. One subproject proposal came from the customer representative and one from a high-tech company called Oulutech, which develops the instruments to the elderly and disabled people. The subprojects are:

- social work and health care co-operation network
- home hospital
- service centre
- common database of instruments
- systems for home safety and electronic shopping
- support for relatives who take care of the customer
- support for alcoholics
- service guidance
- rehabilitation of elderly and disabled

The subprojects have different timetables. Some of them started immediately after the Easter, some will start during the summer and autumn of 1999. In principle every subproject has its own pilot area, according to the interests and resources of municipalities. There are, however, some subprojects, like social work and health care co-operation network that will be tested in two communes or towns. Each project is tested in order to see how it works in real situations and to find out the parts that have to be improved before the actual launching of the new process. At the end of the year 2000, all the tested and improved subprojects will be compiled together as one new, redesigned way of organising the social work and health care.

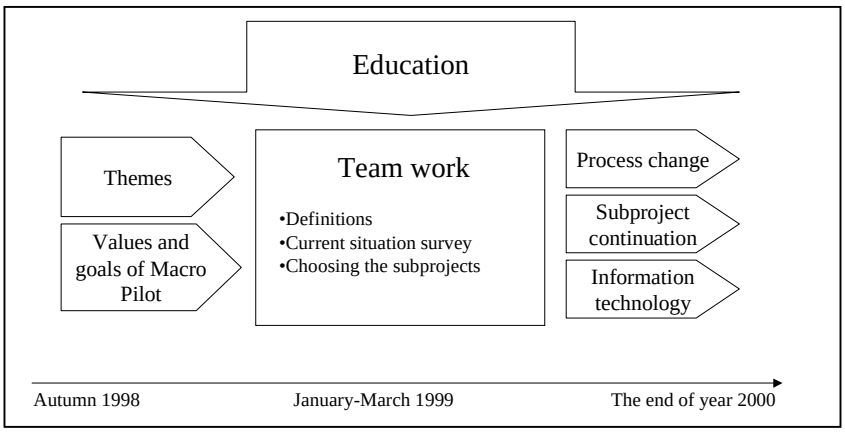

Figure 2: The process redesign planning phase at the Satakunta Macro Pilot

Current problems in the home care processes

The interviewees in the current situation survey mentioned several things that could be improved in the current way of organising the home care. However, there were three main problems that came up almost in every interview. The problems were:

- the organisation centricity
- the complexity of offered services and benefits
- the lack of information technology

The organisation centricity

Finnish public health care is very strongly organised around independent health care organisations. There are about 452 municipalities in Finland that have autonomy and self-government by the clauses of Finnish constitution. Every municipality produces independently for instance social and health care services for its inhabitants. In addition, within the municipalities the social work and health care are separated into two independent organisations. This has led to the situation where all the social work and health care organisations work autonomously and unintegrated.

There are several disadvantages in this autonomy. First of all, customers' information doesn't move from organisation to another. For example, it very often happens that the customer is either discharged or taken into a hospital, but the hospital personnel has forgotten to inform the home-helper.

> *"…There was just a situation that an elderly man was sent home from the hospital of Satalinna and we didn't know anything about it before he saw a home-helper to walk on the street and knocked to the window to attract her attention…And this is not the first time that this happens." (Home-helper 1)*

> *"It often happens that customer has been taken to the hospital during the weekend and the hospital forgets to inform us. We go then to ring the customer's doorbell on Monday morning just to find out that she or he is not there. It takes rather long time before I get to know where this person is. First I call to the relatives and if they don't know, I call to the hospitals. I have to do this until I find the customer, because we can never leave him or her… – you never know what has happened." (Home-helper 2)*

The situation is the same with customers' case records. They normally arrive late, if at all, and often they are incomplete. For this reason for example the laboratory tests are always retaken when the customer moves from organisation to another. This is not only hard and time consuming for the customer, but also very expensive to the health care organisations.

All the interviewed 10 health care professionals mentioned that their job would be easier and more efficient if they had access to other organisations' databases and customer information. The biggest restriction for this is again the organisation centricity, because basically each health care organisation has developed information systems of its own thus it is very difficult, if not impossible, and costly to make all those system variants to work together.

> *"I get all the information I need from our health centre, because we have same information systems, but the local hospital is world of its own! If I want to get*

something from there I personally have to go there and dig it out from the record files. It takes heaps of time! " (Home nurse 1)

The complexity of services and benefits offered

At the moment home-helpers work in social care and home nurses in health care. Home-helpers mostly help the customer to take care of the daily tasks at home such as cleaning, cooking or shopping. Lack of resources has however forced home-helpers to limit the services offered; for example they no longer do jobs like window cleaning or gardening. In these cases the customer is asked to turn to the private sector service providers or volunteers. Home-nurses concentrate mainly on the health care issues like giving injections, measuring blood pressure, etc.

An elderly customer, who needs both help at home and health care, has to deal with at least two different organisations, normally even more. All those organisations have their own working policies, schedules and resources. They all gather customer information into their information stores and make separate plans about how to take care of the customer.

"Since we have mainly the same customers with home nurses, the daily documentation would be very important so that we could see what home nurses have done and they could see our things. At the moment we don't have access to home nurses' databases, but we contact the nurses by phone for instance, and then manually feed the information to our information systems so that it is available when needed. " (Home helper 3)

Furthermore, the customer is usually justified for different financial benefits according to the situation. The problem from the customer point of view is that, the benefits are offered by several different state offices, and with different criteria. In order to get those benefits, customer has to first contact the offices and find out their criteria for the benefits. For an elderly customer the jungle of benefits can be impossible to through.

The lack of information technology and IT knowledge

The municipalities are in different stages when talking about the use of information technology. Sometimes there can even be huge differences within a municipality, e.g. in the town of Pori the social care uses IT in their every day work, but the health care hasn't even got computers at some of their offices. Generally the social work and health care organisations are just beginning to use information systems effectively and systematically. This means that generally there is very little knowledge on information systems within the organisations. The lack of IS knowledge makes some workers suspicious and prejudiced which causes resistance in applying new information systems.

"*Attitudes and the knowledge of information systems are the biggest challenges, not the computers – there is not a thing the engineers couldn't solve [laughter]… " (Specialist 1)*

"I am a bit afraid how this [IT] affects our work…It is interesting, but we have to be careful not to forget the customer service, so that we don't turn our backs on the customer and just concentrate on our laptops…" (Home nurse 2)

Employees' expectations for the future improvement

The employees' main expectations for the future improvement are based on the lacks at the current situation. However, the expectations were principally quite specific change desires instead of larger visions of the future. There was only one interviewee, a specialist from National Research and Development Centre for Welfare and Health, who mentioned more radical change ideas to the way of organising the social work and health care among the elderly and disabled customers.

The major expectation was a better use of the potentials of the current information systems. All the employees interviewed wanted to have an integrated system that could enable an access to the information gathered and stored by other organisations.

> *"The common information systems would save so much time and trouble. For example now the customer can say that she or he is on some kind of medication, but I can't find that information from his or her papers. It would be so easy just to check it from the computer, I mean some common database, instead of calling to the hospital, or doctors or…" (Home nurse 1)*

The employees, who work in the field as home-helpers or home nurses, are also interested in having a mobile information system with them when visiting the customers. A mobile system is already available in form of laptop computers or Nokia 9110 Communicator™ telephones (Prykäri and Tornberg 1999,13). The mobile system would enable a real time input to the customer databases and also a possibility to gain the information needed at customer's home. Employees were also interested in using e.g., the Internet to do the grocery shopping instead of the traditional visit to the grocery, which takes lot of their working time (see: Heikkilä et al. 1998).

The second major expectation was related to a tight co-operation between social work and health care. The interviewed specialist from National Research and Development Centre for Welfare and Health mentioned that in her vision there wouldn't be any segregation to social work and health care in the future, but just one organisation working for the customers' best. That would rationalise the working routines and possibly cut down the costs, because there would be only one administrative system instead of two.

> *"Do we really need the social work and health care to be two different organisations? Wouldn't it make more sense it those two organisations worked as a one without that strict limitations of who is doing what, where and when?" (Specialist 1)*

The employees interviewed were on the contrary quite strict when talking about division of the labour between the organisations and none of them mentioned the integration of the organisations.

Discussion

Based on the experiences gained from the working group and the interviews, there really is a need and willingness for process change in public social work and health care sector. Both the customers and the employees mentioned several things that could be improved in the current situation. It can also be seen the current organisation centricity causes a lot

of cost and efficiency problems.

However, the IT based process engineering is not an easy task in an environment where several aspects, like laws about data security, privacy and patient care, have to be taken into account when redesigning the processes. In addition they have very tight both economical and personnel resources to accomplish the reengineering. Furthermore, health care organisations rarely have neither staff specialised into business related problem area nor have they knowledge of advancements in information systems (IS) and technology.

Therefore, health care process engineering should very clearly be a strategic change characterised by strategic transformation and interrelated organisational subsystems producing varied levels of impact (Kettinger et al. 1997, 56) rather than a radical "quick fix" done in a short time. Especially when we look at the problems in the current situation and the goals to be achieved, it can be seen that there is a place for holistic change in public health care sector.

However, the ongoing subprojects in the process redesign at the Satakunta Macro Pilot project, are evidently not the kind of projects that affect the strategic parts of the organisations presented in Kettinger's and Grover's (1995, 12) business process change model. Still all the projects by themselves are reasonable to solve certain narrow problem in the current situation. For example the database for instruments is not an easy job, but it is necessary to get the information on all available instruments into one place. However, the database doesn't change the chaotic situation where different organisations own and loan unknown number of instruments in various conditions. Neither does the database change the subsystems of an organisation apart from information and technology.

What has led to this result? First of all the Satakunta Macro Pilot project didn't really follow any kind of business process reengineering model at least in the planning phase. For example Kettinger's and Grover's (1995, 13) model is strategy-driven and the change is based on certain environmental factors. Even though the survey of current situation was conducted, the redesign of processes wasn't really based on it. For example, there were no quantitative nor qualitative measures drawn from the current situation survey and therefore there weren't any measurable objectives or goals set for the future improvement either. According to Martinsons (1995, 261) performance measures for redesigned processes must focus on operational characteristics and must be consistent with business objectives. The metrics should be defined and their rationale justified at the time the process is redesigned.

The reason for the lack of business process change models can be found from the organisational culture of Satakunta Macro Pilot. In general the BPR is only recently applied to the public health care sector and as already the name says: Satakunta Macro Pilot should be the pilot project for this kind of change in Finland. Therefore there isn't very much experience of BPR projects in public health care. Of course one could claim that this is not a good explanation since the BPR has been a hot topic during the 90's and there are lot of concrete results of the BPR projects – if not from health care, from other organisations anyhow. However, the health care sector hasn't been very interested in applying the models made primarily for the private sector. They have invented approach of their own called "seamless service chains" which is an applied version from business processes. The main difference is that BPR concentrates on strategic and organisational things like management or organisational structures where as seamless service chains stresses the customer point of view – the benefit for a customer is more important than the benefit for an organisation. The traditional BPR approaches are often seen inappropriate for health care sector, because the customer service is not emphasised enough. However, the idea of seamless service chains was also partly abandoned in this

particular Satakunta Macro Pilot working group, because it soon came evident that the organisational change cannot be planned only from customer perspective. These are the main reasons why no business process change model was used in the Satakunta Macro Pilot.

In addition to shortcomings in process reengineering, there wasn't enough knowledge about IT or technology. For example, if we think about Earl's (1995, 10-11) organisational approach in information systems planning and consider each one by one, we find out that the working group planning the support of elderly and disabled, followed Earl's (1995, 10-11) approach to a large extent, but there were some things that can be criticised.

First of all, the discussion in the working group up to now has been based on themes, as proposed in Earl's (1995, 10-11) approach. The primary theme was "Support for independent access of elderly and disabled" and all the details that it contains. That has been a good working method for the working group, because it seemed that the health care professionals were willing to find solutions and to make decisions by discussing quite large topic. The attempts to decide something specific, like set goals or timetables, where much more difficult for the people in the group. This may be the result of the lack of actual knowledge about process reengineering. The health care professionals are experts of their own area and they were able to discuss the details when it was question of their occupation, but not when it was time to construct new processes or information systems.

The predefined composition of the working group set at the start of the project at a higher level of government has probably been the biggest failure in the planning process. Earl (1993, 10-11) stresses the multidisciplinary team as the third factor for successful change. The Macro Pilot working group was multidisciplinary from the health care point of view, but they didn't have any knowledge of information systems or technology other than when at the very end two employees from a high-tech company called Oulutech Ltd. joined the group. Until that the author was the only source of information systems knowledge. In a similar project in North Karelia, the working groups were formed so that 1/3 were social and health care professionals, 1/3 customers and 1/3 IT professionals. That could also have been the composition of Macro Pilot group. That could have given a wider angle to view the project. That could also have enabled a partly fulfilment of the of IS function devolution requirements mentioned as the fifth factor in Earl's (1995, 10-11) organisational approach.

Earl's (1995, 10-11) fourth factor is education and training, which there has been a lot in Macro Pilot and the educational angle has been taken into account in the subprojects too. However, there has been no training of the business process reengineering methods or about information systems, even though education and training are essential especially in applying the new information systems to an organisation and would have been necessary in Macro Pilot too. Instead, the training has been focused to the Macro Pilot project itself: to its general values and goals.

Earl's (1995, 10-11) sixth factor is the eclectic use of methods. In the planning process brainstorming and case examples were used. In the survey of current situation included both descriptive telling and flowcharts to describe the current processes.

There are many risks in this kind of situation, where there is neither a specific model to follow nor any clear goals set. Furthermore there is a lack of needed knowledge of process redesign and IT. Even though it cannot be said that the group totally lacked the elements of success still some challenges remained to be met.

The challenges related to information systems and process redesign concern the

planning of subprojects with different information systems. There is a risk to design information systems that are overlapping or have unmatched parts not working together. One problem is also that in Satakunta Macro Pilot some information systems of the projects are built before redesigning the actual process, such include the database of instruments as well as the social work and health care co-operation network information systems. The profound issue for the change will be the information system, not a new process. In a way the organisations expect the system to change the process, even though the idea shouldn't just be the automation of current processes (Hammer 1990, 104). That arouses a question of whether the new system really supports the potential organisational change and new processes, or is it soon again found inadequate, as many health care systems today tend to be.

One challenge will be met at the end of year 2000, when all the subprojects are gathered together into one entity of new ways of organising the social and health care. At the moment the subprojects are very independent ones. They are planned separately, and each of them forms a smaller or larger unit that doesn't have too much relationship or co-ordination to other subprojects. For example in the main project called 'seamless care and service chains' there are projects underway that are very similar to the social work and health care co-operation network planned in support for independent access of elderly and disabled. This means that there will actually be same kind of projects planned separately in different working groups. In this situation a risk to build complex and unmatched information systems is high. In the end the challenge is to try to gather all the different pilots together, although there hasn't been any systematic and integrated co-ordination during the planning and implementation phases of the subprojects.

Conclusion

The Satakunta Macro Pilot project didn't have any special business process change method which they would have followed during the planning phase. The process engineering work is however a challenging task in an organisation that hasn't got any background in regarding its work as a business or even further as business processes. Resistance and fear for the change can be seen as a business processes evolve. The general attitude is that the customer comes first and the process change is not allowed to affect the actual work done with customer. That is because the BPR is only recently applied to the public health care sector and they don't yet have experience in business process redesign. All these restrict the use of specific models like Kettinger's business process redesign model or IS planning models, because the models, mainly designed for private sector companies, are seen more as a threat than an enabler of the change. That's why even the word reengineering is rarely mentioned in health care, because it refers to change models that are considered too radical in that sector. There is also a certain fear of loosing jobs as the consequence of information systems.

Interestingly there still are several similarities when the planning process of the Satakunta Macro Pilot and Earl's approach are compared. According to this case study, it could be claimed that the organisational approach, or other similar approaches, could be applied to the public health care as well. The use of BPR models would also lead the health care projects to more concrete and measurable results.

Still we have to remember that this study is only about one working group and it sets limits to general conclusions. However, in health care sector Satakunta Macro Pilot is already considered to show the trend of the changes in public health care in the future

and therefore even the work done by only one working group can be valuable to be researched carefully. The future research concentrates on how the process change is conducted in Satakunta Macro Pilot. Then we can also draw better conclusions about the whole change process and see whether the planning phase was successful or not.

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