

Innovation in Healthcare: Success Factors for Innovative Healthcare Change Processes

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Abstract: Many factors contribute to increasing the need for innovation in healthcare. Global demographic developments with falling birth rates and increasing lifespan mean that the proportion of elderly in society is expected to increase dramatically in all developed countries. Moreover, continuous scientific advances afford possibilities for higher effectiveness in healthcare processes. Innovation can and does take place in the form of medical discoveries which enhance the efficiency of treatments or in the form of technological advances, for instance, in ehealth, which provide increased options for healthcare delivery. However, innovation can also be of an organisational nature since healthcare organisations are complex organisations with legal and ethical constraints that are difficult to manage effectively. Organisational innovation requires change processes of various kinds. The purpose of this paper is to explore success factors for innovative change processes in healthcare organisations. Change processes related to digitalisation are of particular interest. Qualitative methodology was chosen in order to gain a deeper understanding of the area and not to exclude aspects based on preconceptions. A multiple case study has been carried out. To achieve focus, the study population was limited to public hospitals in Sweden. Change processes, usually involving digitalisation, in seven hospitals of various sizes have been studied. Individual qualitative interviews were chosen as the method of data collection. Between two and nine interviews were conducted, giving a total of forty interviews. The respondents were people who had participated in the change processes, mainly nurses, physicians, and administrative staff, some of whom had managerial positions on lower levels. The data from the interviews were analysed using the constant comparative method from the grounded theory approach. The analysis yielded a number of categories depicting success factors under different conditions. A framework was constructed depicting the factors and their internal relationships. The categories and the framework should be valuable for managers of healthcare organisations as well as for increasing the conceptual understanding of the field.

Keywords: innovation, change, hospitals, healthcare, digitalisation

1. Introduction and purpose

Globally, we can see an increasing need for innovation in healthcare. Many factors of various kinds contribute to this. In the majority of countries in the world, there is a demographic development characterised by falling birth rates and increasing lifespan. The consequence is that the proportion of elderly in society is expected to increase dramatically in all developed countries during the rest of this century. In consequence, growing demand for healthcare leading to higher costs for society is expected (Christensen and Kenagy 2000).

In a separate development, continuous scientific advances afford possibilities for higher effectiveness in healthcare processes. These developments can be of various kinds. The development within the fields of medicine and technology is perhaps most apparent. Innovation can and does take place in the shape of medical discoveries which enhance the efficiency of treatments but also in the form of technological advances, for instance, in ehealth, which provide increased options for healthcare delivery. However, innovation can alternatively be of an organisational nature. Healthcare organisations are complex organisations with legal and ethical constraints. This makes effective management of them challenging.

Consequently, organisational development is valuable. Innovational organisational initiatives may be helpful. Organisational innovation requires change processes of various kinds. However, change processes in complex organisations are complicated, and they often fail to a greater or smaller extent. Organisational innovation in healthcare may be exceptionally difficult since changing the behaviour of clinicians, medical practices, and organisations add additional challenges (Lansisalmi et al. 2006). Changing clinical practices and implementing new management systems in healthcare has thus been found to be complex (Ovretveit et al. 2012). Studying ways of successfully changing healthcare organisations should therefore be valuable. In healthcare, ehealth, using digital tools of various kinds for health purposes, is becoming increasingly popular (Vial 2019). However, the organisational consequences of implementing ehealth solutions are not well understood.

Organisational change processes can be in the form of significant restructuring, such as implementing value-based health care (Porter and Teisberg 2006) which has been experienced as contentious in Sweden (Ovretveit et al. 2012). However, smaller change initiatives that are far more common are equally valuable to study. Patterns of implementation differ according to the type of innovation, and internal context factors are vital (Ovretveit et al. 2012).

The purpose of this paper is to explore success factors for innovative change processes in healthcare organisations. Change processes related to digitalisation are of particular interest. The remainder of the paper is structured as follows. First, the theoretical framework that the study is based on is briefly introduced. Next, the methodology that has been employed in the study is described. Subsequently, the findings and analysis are presented. On this basis, a framework has been constructed, and it is presented in the next section. Then limitations and implications for practise are discussed. Finally, the conclusions are presented.

2. Theoretical framework

The theoretical framework is based on contributions from quality management theory. Associations between strategic quality management and technology transfer competence have been identified in research (Bolatan et al. 2022). In addition, implementing quality management has been found to be beneficial for productivity (Ruales Guzmán and Castellanos Domínguez 2022). Modern quality management is a system that consists of different components (Hellsten and Klefsjö 2000). It has been argued that the different components are at different levels depending on how profound the effect on the organisation as a whole is and how clearly visible and concrete they are (see Figure 1) (Lagrosen and Lagrosen 2003).

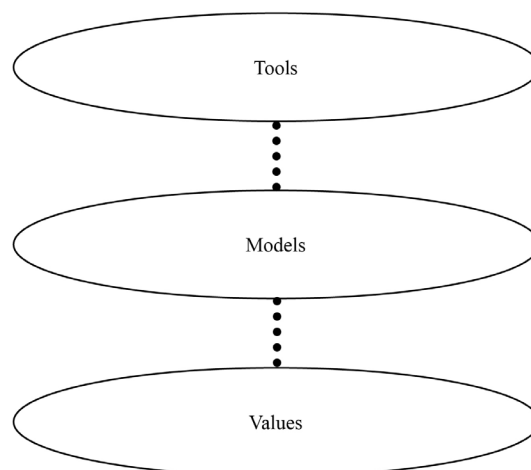


Figure 1: The levels of quality management

At the most superficial and most obvious level, there are a number of techniques of various kinds. They can be statistical methods, decision support, creative meeting techniques etc. They are useful and often practical, but they have a limited effect on the organisation as a whole. The next level contains models. These are more cohesive systems that consist of a large number of points from which to analyse different parts of the organisation. This gives a more radical effect on the organisation, and when used correctly, the models can contribute to extensive improvements. The deepest level contains the values - what mindsets managers and employees should have and what basic principles they should follow. It is these values that determine whether organisations succeed in creating quality. The presence of them is a prerequisite for the other two levels to be able to have their total value. At the same time, the techniques and models can be a help in building the values in the organisation. Thus, all three levels are connected.

The values are sometimes called principles (Dale 1999) or cornerstones (Bergman and Klefsjö 2001). In a review of the literature, the following six were found to be the most common (Lagrosen 2006):

- Customer orientation. This is about the organisation's need to consider whom it should create value for - whom it exists for - and then focus its activities on satisfying its needs and desires.

- Committed leadership. Managers at all levels throughout the organisation should have quality as their primary focus.
- Everyone's participation. A quality department cannot keep track of or understand everything that happens everywhere in the organisation. Therefore, all employees must be involved in quality work.
- Continuous improvement. This part comes from the Japanese influence, and together with the previous value, it forms what is called kaizen. It's about not settling for a quality level but always trying to find ways to get better.
- Process orientation. Organisations should focus on the activities that take place and not lock themselves into fixed structures. The most critical processes need to be mapped out, and management has to make sure that there are process owners - someone who takes responsibility for each process so that nothing falls between the seats.
- Fact-based decisions. Basically, this assessment is about having a good decision basis for the decisions that are made.

Research has shown that the values above are crucial for well-functioning quality (Lagrosen and Lagrosen 2005). But it may be worth bearing in mind that beneath them are deeper core values such as trust and confidence, which can also be essential to understand in order to create a quality culture (Lagrosen and Lagrosen 2012). Studies of the most successful and innovative companies in Silicon Valley have shown that they have a strong culture based on an engaging vision where innovation and entrepreneurship are at the centre (Steiber and Alange 2016). If there is a strong quality culture, no extensive control mechanisms are needed.

3. Methodology

The study was carried out in the Swedish public healthcare system. Qualitative methodology was chosen in order to explore the area without being limited by preconceptions. Students trained by the authors carried out in-depth interviews in seven Swedish hospitals. The hospitals were of varying sizes, but the majority were fairly large hospitals located in major cities. Between two and nine interviews were carried out at each hospital, giving a total of 49 interviews. The respondents were mainly clinic managers, project leaders, and nurses. In addition, some physicians, assistant nurses, ICT staff, and paramedics were interviewed.

4. Findings and analysis

The interviews yielded a large amount of data which was condensed into summaries. These were analysed using the constant comparative method from the grounded theory methodology. This analysis of the data yielded the following categories.

4.1 Inclusion

Including the users in the procurement of digital equipment is vital in order for them to appreciate the change that the technology brings. In the same way, concerning organisational change processes, involving those employees that are affected by the change is vital. This is also connected to empowerment. The employees need to be empowered so as to have the possibility to really influence the way the projected changes affect their work situation. Moreover, if the employees are empowered to initiate potential change projects, their engagement will be higher, and the possibility that the change process will be successful will increase.

4.2 Engaged managers

Managers at all levels should be committed to achieving the best possible outcome of the project. In close collaboration with their subordinates, they should make sure that the projected change is of maximum value to employees as well as to patients and to the health system at large. For this to be feasible, they need to be familiar with, and themselves have ample knowledge about the processes that they are leading. Thus, they need to be trained health professionals, e.g., nurses, physicians, or physiotherapists, themselves. Having managers with purely economic or managerial training will not be sufficient. The leaders should also be close to the operations that they are leading physically as well as organisationally. Furthermore, continuity is crucial. Therefore, managers should not be changed too often. They should stay on their posts long enough to gain complete familiarity with the processes and the people that they are managing. Also, when conducting change processes, it is vital that the managers do not leave while the project is not yet completed. Instead, they

should stay during the entire process and make sure that it is developing in a suitable way, that the employees are involved and satisfied, and that all stakeholders' viewpoints are considered.

4.3 The connection between people and technology

Concerning changes that involve digital tools or technologies, there is a common contradiction between the local needs and wants of the various clinics on the one hand and the need for the central IT department to have a manageable portfolio of digital alternatives. Often specific clinics have special needs for IT solutions, and they are unsatisfied with the way that the IT department handles those needs. While the clinics want customised solutions for their specific situation, the IT department wants more standardised tools in order not to have a rampant flora consisting of countless different systems, which they cannot handle and update in an appropriate way. This sometimes leads to the clinics themselves, or with external IT providers, developing their own digital systems. The IT department usually does not approve of this, and a conflict ensues. Consequently, it is vital that higher managers ensure that the IT department and the various clinics that it is serving work closely and effectively together based on a mutual understanding of each other's needs and possibilities.

More general technical issues are also included in this category. Many employees have a particular "fear" of technology, feeling very insecure when having to learn new systems. This must be handled with a certain delicacy. Furthermore, new technology needs to function correctly from the start without irritating bugs etc. All systems should also be user friendly, and there should be interoperability between different systems so that they fit together into an integrated wholeness.

4.4 Organisational structure

The way the change project organisation was structured, as well as the overall organisational structure of the organisation, was found to be pertinent to the success of the change initiatives. In general, change processes need to be handled by a strong project group with ample authority, clear purpose, and clear guidelines in order to be successful. In some circumstances, employing external project leaders for a specific project was found to be useful. Focusing on the process rather than on the result was often helpful. In the case of digital tools, pilot testing on a small scale before broad implementation is desirable. A well-developed system for assessing the results of the change process, including economic measures, is also helpful. Sufficient resources are also necessary. If the change implies that the employees will learn new ways of working, training is obviously of utmost importance.

For the general structure of the organisation, stable organisational conditions were usually considered preferable. Nevertheless, sometimes the change process may imply a more overarching restructuring of the organisation. In any case, the organisation should ideally work continuously to improve its products and processes. Bureaucratic structures that complicate processes and require time spent in an unproductive way must be shunned.

4.5 Organisational culture

Having a strong organisational culture based on strong and common core values is a great benefit when implementing change processes. Ideally, the employees should be enthusiastic regarding the changes and engage wholeheartedly in them. On this basis, endurance and pragmatism can be built. In this way, adaptability and flexibility can be achieved. This is necessary since change processes often meet unexpected hurdles and deviations. Thus, a combination of stability and adaptability is needed, and this can only be achieved when the organisational culture is strong and there is a base of shared core values.

5. A framework

Combining the findings from the interviews and the categories thus developed with the theoretical framework. We can see that there are many common areas. Again, we see that the values, this time expressed in the form of the organisational culture, form a basis for success which the other aspects depend upon. Therefore, we would like to propose the framework depicted in Figure 2.

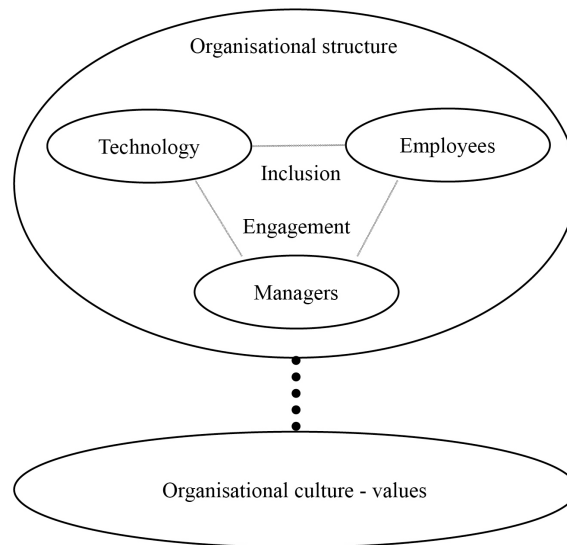


Figure 2. A framework for successful organisational innovation in healthcare

The basis is the organisational culture which heavily depends on the values in the organisation. On this basis, a suitable organisational structure should be constructed. The vital parts of the organisation are the managers, the employees, and the technology. The interaction between them should be characterised by inclusion and engagement. In this way, an organisation that is both stable and adaptable can be formed. This will give change processes maximum possibility of succeeding. For a more elaborate understanding of the framework, the categories above should always be included.

6. Discussion, limitations, and implications for practice.

The study has identified several categories, and a framework has been developed. The framework should be useful for managers of hospitals and other healthcare organisations when planning for change processes in their organisations. By studying the framework and the categories that it is built on, managers can frame their organisations in a suitable way for undertaking change processes.

There are several limitations to the study. Most importantly, it was carried out in seven hospitals in Sweden. The possibility of generalising the findings to hospitals in other countries or to different kinds of organisations is uncertain.

7. Conclusions and suggestions for further research

To a large extent, the conclusions reside in the framework that was developed. It shows the findings of the study in a graphic form. Together with the five categories that were found; inclusion; engaged managers; the connection between people and technology; organisational structure, and organisational culture, this constitutes the findings of the study.

For future research, it would be valuable to conduct similar studies in other countries as well as in other healthcare organisations.

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