The role of the quality manager in large public sector organizations: Project proposal

1. Background

Information systems development (ISD) involves risk, and failures remain common despite advances in development tools and technologies. While the Norwegian Tax Authorities (NTAX) have generally received positive publicity with respect to their efforts on improving public services, there is a high level of complexity in running software development projects and maintaining software solutions. There is a high level of interaction between departments within NTAX and a low tolerance for error. The organization is constantly being monitored by the Department of Finance (FIN) and the Auditors General (AG).

As strategy for preventing problems, NTAX use various quality assurance methods, such as developing and improving technical schemes and management methods, certifying personnel to international standards, and participating in networks for sharing best practices.

The current quality assurance approach is developed as a set of policies, strategies and standards, defined as a part of the information security management system (NTAX, 1996), and to be used as a part of the general NTAX management system. The Quality Management System (QMS) was operationally implemented five years later by appointing a Quality Manager for coordinating the Quality Function (Quality Management Organization) (NTAX, 2001).

There are many challenges in managing the Quality Function, and from the point of view of NTAX, it is important to understand how to organize and utilize quality management in a manner that both generates efficient quality improvement and fits with corporate culture (NTAX, 1997; DNV, 2005).

2. Quality management in complex bureaucratic organizations

A recent external investigation of the IT function of NTAX concluded that NTAX could be interpreted as a Machine Bureaucracy developing in the direction of an Administrative Adhocracy (Mintzberg, 1983; Statskonsult, 2002). When standardized and repetitive routines of the tax administration are taken over by computers, the computer department automatically grows in power, regardless of how power may have been defined according to the organizational charts.

From a quality management point of view, this is interesting in two aspects. Firstly, the power relationships defined on the organizational charts may not be the best way to understand the operational QMS. Secondly, the IT strategy and the methods of further computerizing the Machine Bureaucracy could have a major strategic importance for how the QMS is maintained and improved.

As quality management normally works within the paradigm of viewing the organization as a cybernetic system to be optimized (Morgan, 1997: chapter 3), the Administrative Adhocracy produces a challenge in terms of a paradigm of complexity, flow and growth (ibid: chapter 8). Some writers (e.g. Kelly, 1994: 196) have pointed out that the Japanese quality management practices (for the IT function) follow this new paradigm (Liker, 2004; Womack & Jones, 2003).
One of the core ideas in complexity theory as applied to management problems, is to let go of central planning and control, but rather distribute the system into weakly tied units and let this loosely connected system steer itself bottom-up (e.g. Kelly, 1994: 468-469).

However, in order to let loose on the overall control, more control much be put into each separate unit. Kelly (ibid: 469) describes this as the “Fourth Law of God”, stating that “the only way to make a complex system work is to begin with a simple system that works; […] an ecology] is created from assembling it incrementally from simple modules that can operate independently.”

If we regard the QMS as a Complex Adaptive System (CAS) (Battram, 1996), the Fourth Law could be interpreted as controlling and improving the complete QMS by making sure each weakly tied unit follows a strictly deterministic logic like, say, a computer program. According to the CAS theory, this would constitute a robust strategy for making the organization “automatically” grow, long-term, in the direction of “organizational excellence” (Oakland, 2001).

Without explicitly referring to the theory of CAS, it is my impression that similar ideas are prevalent in the information systems research environment at UiO. It has, for instance, been suggested (Hanseth, 2005) that insights from current research on broadband deployment and development of communication standards (research that reveal CAS-like structures and strategies), should be used for implementing information systems in health-care organizations.

At the moment there seems to be much interest in applying complexity theory into the area of organization and management research (Stacey et al, 2000; Urry, 2003), including the problems of quality management (Dooley et al, 1995). The idea of seeing the quality manager as an actor (component) within a CAS seems to be implicit in some of this research (e.g. Dooley, 2002), but investigations of the role of the quality manager as a leverage node of the system (and what the programmable logic of this node might be) appears to be unexplored territory.

3. Research Objective

The object of the research is to investigate the problem of quality management within the dynamics of an organization transforming itself from a Machine Bureaucracy to an Administrative Adhocracy, narrowing in on the role of the quality manager as a node of the QMS viewed as a CAS.

There are three main questions I would like to address:

- Is it possible to describe a simple logic of quality management as if the quality manager and the rest of the quality management personnel were robots?
- How does one create “robotic” quality coordinators as actors in a CAS?
- What is the impact of this approach?

I plan to investigate these questions by researching literature, interviewing quality management personnel, finding out what they do and why. To which extent the quality managers can document significant trends of organizational improvement (7 years or more), as a result of the quality management approach, will be of particular interest.

Framework for literature research and interviews will be drawn from clause 5.5.2 in ISO 9001:2000 and various aspects of CMM / ISO 15504, ISO 12207, ISO 19011, CobiT, TickIT,
ITIL, internal goals and regulations of the organization and what else might help define the role of the quality manager.

4. Research Methods

The method will focus on building a general QMS model based on the CAS point of view. The model should be sufficiently abstract to fit various organizations, but also sufficiently detailed to be used for predicting performance (on a simple level) of a concrete Quality Function, such as the NTAX Quality Function, and also other organizations if possible.

For building such a model, literature on organizations, management and complexity need to be done, emphasizing the dynamics of an organization from a Machine Bureaucracy to an Administrative Adhocracy.

Data collection will focus on interviewing and assessing the quality manager and key personnel within his circle of influence. The assessments will be structured according to various quality management standards, and will be based on available documentation. Interviews will be done partly to validate the assessments and partly as interpretive investigations in order to understand how the world-view of the quality manager is compliant with the conditions of the CAS model. If there seems to be a reasonable level of consistence, then the method will focus on how to use CAS as a language for discussing management issues.

A typical way of doing assessments of the quality manager could be to ask the questions in ISO 9004 (ISO, 2000c: Appendix A) and categorize the results according to the ISO 9004 maturity scale from 1 to 5. The parts of the CMM / ISO 15504 and CobiT assessments standards that relate to quality management could be used in a consistent manner.

In general the research will follow the conventions of Management Research (Easterby-Smith et al, 2002; Collis & Hussey, 2003), including aspects of Action Research when needed, although further details have to be discussed with each of the quality managers that are to be used as research subjects in the investigation.

5. Research Design

The larger part of the empirical work will have to concentrate on the quality management organization of NTAX, but in order to have reference data, similar types of interviews and assessments should also be done for other organizations, e.g. NTAX subcontractors, DNV and USIT.

Prof. Jens Kaasbøll of UiO has accepted the role of primary supervisor on behalf of UiO. Dr. Lars Bratthall of Det Norske Veritas (DNV Research) has accepted the role of secondary supervisor on behalf of DNV.

If it will become necessary to look for further case studies (independent organizations) for comparative analysis or testing ideas in other environments, Dr. Bratthall has suggested DNV may be able to provide samples on a case to case basis.

At the moment, UiO is carrying out research related to the development of information systems in healthcare, both nationally and in third-world countries. It seems reasonable to expect that there should be much to benefit from a co-ordination between the research proposed in this document and organizational and management research already being carried out.
6. Expected outputs

The general output questions formulated as part of the research objective (questions a, b, and c in section 3 above) are expected to be answered by creating the following outputs:

(a) One or more models, describing how various quality managers are understanding their organizations; analysis and discussions of these models in respect to how they appear useful within the framework of TQM and complexity theory.

(b) Descriptions of various types of patterns of behavior for the quality manager (i.e. what the quality manager actually does, regardless of what the mental models identified under point a might indicate); analysis and discussion of this behavior related to the aim of quality management in complex organizations and some general guidelines on what might be an optimal approach given the type of organization under consideration.

(c) Development of an hypothesis or some ideas in respect of how the CAS approach can compensate for management commitment, change of leadership, internal politics and other issues that are critical for more standard approaches to quality management.

Although the focus of the research is on the role of the quality manager, the way to evaluate the work of the quality manager is through the quality, productivity and flexibility of the organization in whole. It is expected that the output of the research will contribute in saying something about how the performance of the quality manager contributes to the performance of the organization in whole.

The results are expected to be published in journals dealing with quality management, organizational change and information systems (information infrastructure), such as Quality Management Journal, Journal for Quality and Participation, Information and Organization, Organization Science, Organization and The Scandinavian Journal of Information Systems.

7. Other benefits

The research process is expected to benefit internal quality monitoring and control in the organizations investigated as we try to integrate the research with what is the current quality control focus of each particular organization.

In the case of NTAX the most interesting improvement areas are expected to be those already being monitor by FIN and AG.

8. Budget

The research is fully financed by the Norwegian Tax Authorities.

Researcher’s Contact

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