Beyond the “Point of No Return”: Constructing Irreversibility in Decision Making on the Tetra Standard in Dutch Emergency Communication

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ABSTRACT

This article analyzes the role of ‘irreversibility’ in the decision-making process for a standard for the national Dutch emergency communication network. In the late 1980s, ETSI, the European Telecommunication Standards Institute, started the development of the so-called Tetra standard. Tetra is a standard for digital radio communication and is mostly applied in emergency communication (for police, ambulance, and fire brigade). In the early 1990s, several European governments decided to replace their analogue radio equipment for emergency communication by advanced digital communication systems. The Dutch involvement in Tetra started around 1992, but it took until November 2001 before the official governmental decision to launch the national C2000 network was taken. This article argues that at that moment the ‘point of no return’ of the C2000 project had already passed (in the mid 1990s). We explain this using the concept of ‘constructed irreversibility’. We analyze a number of core decisions and choices of the Dutch government in the C2000 project that resulted in irreversibility. We conclude by discussing the disadvantages and the advantages of irreversibility in this innovation project.

Keywords: Cognitive Dissonance, Decision Making, Emergency Communication, Irreversibility, Science Technology and Society Studies, Tetra Standard

INTRODUCTION: RISKY DECISION MAKING IN LARGE INNOVATION PROJECTS

In the early 1990s, the Netherlands was among the first countries in Europe to get involved in the development and implementation of the Tetra standard in a nationwide network for emergency communication. Large technological projects such as C2000 are often characterized by a multitude of problems: they take much longer than expected, the costs are hard to predict and
often overrun, and their development is characterized by many risks and uncertainties (Flyvbjerg, Bruzelius, & Rothengatter, 2003). This can be explained by the complexity of such projects: C2000 is a project in which several technological and organizational innovations had to be combined. The heterogeneity of these projects—their interwovenness with, for instance, political ideals, social changes, user practices and financial considerations—makes them highly complex to manage. Moreover, taking into account that innovation processes are never linear and that their outcome and added value can remain highly uncertain for a long time, it is not surprising that the development of such projects is often difficult and problematic.

Many examples of such risky projects can be given in the Netherlands and worldwide. Given that large areas of the Netherlands are below sea level and the ensuing threat of floods, the Delta Plan and the Oosterschelde storm surge barrier are at present considered to be the crown jewels of Dutch water engineering. But they have been realized with a ten year delay and a budget increase of 30 percent (Bijker, 1993, 1995). The Delta Plan required technological, organizational and economic innovations: Rijkswaterstaat, the Dutch departmental ministry for waterways, established a new research institute for water management that competed with existing institutes, a new on-site training site for young engineers was introduced, and new contracts had to be made with construction and water works companies. In the 1970s, the political circumstances changed: the taken for granted authority of institutes like Rijkswaterstaat declined and there was more attention for the environment. Political pressure rose and the closing of the Oosterschelde became a topic of heated political debate in the early 1970s. Eventually the decision was taken to build a permeable storm surge barrier that could be closed in case of high tide (Bijker, 1993). Other large technological projects in cities, such as the Boston Central Artery/Tunnel project (Hughes, 1998), the reconstruction of Utrecht’s railway station area (Hommels, 2005) and the Channel Tunnel between the UK and France (Flyvbjerg, Bruzelius, & Rothengatter, 2003) show similar processes of complexity, delays and huge technological and financial risks.

Trying to understand the complexities and risks involved in large technological projects as C2000, we foreground one important mechanism: the role of irreversibility in innovation projects. The Tetra standard, initiated by the European Telecommunication Standards Institute (ETSI) since the late 1980s, was still very much under development when the Dutch had to decide on the C2000 infrastructure they wished to implement. In the early 1990s, not many manufacturers had the expertise to develop infrastructures that complied with the Tetra standard. But the Netherlands, being a small country with a small market, wanted to engage in Tetra development because building its own national network would be far too expensive. Having chosen for Tetra around 1994, it took until 2001 before an official governmental decision was taken to start the national roll-out of the C2000 network. In this article we argue that this 2001 decision was taken long after the “point of no return” in the C2000 project had been reached. What factors had made the choice for Tetra irreversible? We attempt to answer this question with data from archival research, i.e., by analyzing reports, correspondence between those involved in...
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