



A new orientation to deal with uncertainty in projects

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Abstract

This paper argues that uncertainty is a general feature of projects, occurring in technological, organizational, and social contexts. In situations of uncertainty, rational plan-oriented action is only practicable and successful to a limited degree. Based upon empirical research of project work, forms of experience-based action to deal with uncertainty will be presented. This kind of work action has only marginally been investigated by scientific research and has been widely disregarded in practice. This is essentially due to the fact that plan-oriented rational action is a deeply rooted guiding principle for professional work and management in Western cultures and societies. For this reason, this paper first outlines from a sociological perspective that dealing with uncertainty in projects has to be seen in a comprehensive societal context. Thus, a new way to deal with uncertainty requires fundamental re-orientations concerning the understanding and investigation of work and organization. Empirical findings in this field are presented and discussed, and the concept of a dual uncertainty in project work is exposed.

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1. Introduction

The term of management, according to prevailing interpretations, refers to planning, governance and control. This understanding is linked to the effort to conquer and eliminate uncertainty as far as possible. In this context, uncertainty appears as an obstacle or even as a threat to successful management. This idea usually also applies to project management, at least up to now. The present paper approaches project management from a sociological perspective, considering changes in dealing with uncertainty in projects in the context of overarching social developments. It presents the *thesis* that projects are characterized by a dual uncertainty, the consequences of which are not (completely) foreseeable and can only partially be managed by plan-oriented methods.

Firstly, this paper argues that changes in dealing with uncertainty in projects touch upon fundamental socio-cultural convictions, deeply rooted in modern societies. So they require equally fundamental cultural and institutional reorientations (Section 2). The changes in dealing with uncertainty in projects are, moreover, embedded in general trends of science, technology, and organization, presenting new challenges for dealing with uncertainty in general. Recent approaches critically discuss the traditional concentration upon preventing or eliminating risks in projects, suggesting instead to consider the positive potentials of uncertainty in projects (Section 3). Against this backdrop, the changes in dealing with uncertainty in projects get an overarching and trend-setting significance for society as a whole. Drawing on the authors' empirical investigations and results, the thesis is put forth that a dual uncertainty is existent in projects (Section 4). Experience-based work action in projects is an important strategy to deal with these uncertainties. The dimensions of this kind of work action are presented using the example of selected empirical situations occurring during the project process (Section 5). The results are summarized in a concluding section (Section 6).

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2. Planning and elimination of uncertainty as a guiding principle in the culture of modern societies

In social science, the evolution from the traditional agrarian society to the modern industrial society is often described in terms of a transition from stability and certainty to change and uncertainty. According to this description, a hallmark of modern societies is the “destruction of old certainties” (Bonß, 2010) by dissolving traditional communitization, religious worldviews, and experiences of agricultural and handicraft work (Giddens, 1995; Joas and Knöbl, 2004; Nassehi, 2006; Wehling, 1992). This goes along with the diagnosis of a permanent change of the scientific, technological, social and cultural areas of life. There is no doubt that scientific and technological change is closely interlocked with social and cultural change, but the respective ways on how to deal with uncertainty are very different. The guiding principle of the scientific and technological change in Europe is mastery of nature, accompanied by the conviction that “one can, in principle, master all things by calculation” (Weber, 1919/1988, p. 594). Thus, the “maturity of mankind” advocated in the enlightenment era, the “disenchantment” (Weber) of the world, is mainly directed to the disenchantment of nature by calculation. So the natural sciences become the model of modern science. The idea of autonomy developed by the 17th and 18th century enlightenment finds its first and foremost expression in the mastery of the powers of nature. In central Europe, this perspective increasingly became the guideline for the behavioral demands to individuals in social processes as well. Rationalization of action is considered as a development that not only allows for options of action but also makes individual action understandable and predictable for others (Weber, 1919/1988). This means that both uncertainty (invention of the unknown) and certainty (calculation and calculability) are essential features and requirements of industrial societies, but these two features have met with very different interpretations and value judgments. Whereas the guiding principle of “mastery of nature” and the production of certainty connected to it have been valued as the comprehensive signum for conscious and economically successful human action, uncertainty has received the signum of powerlessness and has been interpreted as the consequence of individual resp. collective failure to control the environment.

Industrial societies have developed a formidable repertoire of strategies and institutions to overcome and remove uncertainty. Among the most important are science, technology, and organization. Especially the natural sciences became the epitome of the ability to progressively decipher and master nature’s secrets. Technological progress was seen as proof that it is possible to systematically apply and master the given conditions of nature, and the bureaucratic organization seemed to show that it is also possible to plan, govern, and control social processes. This is evident in technological developments geared to seal themselves off to a large extent from the potential “risk factor man”. Upon the organizational level, enterprises follow the guiding principle of Taylorism, which results in an effort to largely eliminate the subjective side of the workforce.

This constitutes a twofold task for the management. On one hand, they have to align management action to this principle; on the other hand, they permanently have to produce and reproduce the preconditions for the plannability, governability and controllability of the technical and organizational processes. In this context, uncertainty appears as a deficiency and a disturbing factor that should be eliminated as far as possible. This can best be effected if the technical and organizational processes are stable and steady and if internal as well as external influences are known and can be controlled. However, the strategies to eliminate uncertainty are also applied to events and processes that turn out to be beyond complete control.

The concept of risk is a manifestation of this tendency. It refers to the effort to describe events and processes that are not completely predictable and controllable as precisely as possible, calculating the probability of their occurrence. Upon this basis, it appears possible to plan how to deal with risks, with reference to the probability of their concrete occurrence, and to develop an appropriate risk management in order to estimate and calculate their concrete forms of occurrence. By this operation, uncertainty is being differentiated into two forms: risk (known unknowns) and uncertainty proper (unknown unknowns). An important task of risk management is to transform uncertainty into risk as far as possible in order to make it plannable and controllable. So it seems possible to plan how to deal with risks (Lupton, 1999).

Against this backdrop, it has seemed only natural to transfer the general principles of business management to the organization of projects. This means that if unforeseen incidents or disturbances occur in the course of a project, the cause is seen in insufficient project planning, management, and control, individual misconduct of the project participants, or “extraordinary events” that cannot be expected or calculated under normal circumstances. The basic assumption is that limits of planning and control met in actual practice will be overcome in the future and that they are conquerable in principle. It is doubtlessly necessary to plan projects and to guide and control their implementation. It is also true that a respective project management is indispensable and that the development of suitable procedures and tools to guarantee project quality and efficiency is an important task. However, the question arises whether these traditional concepts and procedures are sufficient for successful project management and project work. This is the subject of the following section about new challenges in dealing with uncertainty.

3. New challenges in dealing with uncertainty—from elimination to utilization

Since the 1980s, a change in dealing with uncertainty has been taking shape in the highly industrialized societies. This development is not without brisance, as uncertainty is now emerging in a new form precisely in the areas where the strategy of elimination of uncertainty had been eminently successful in the past.

Within this evolution, science turns out to be not only an institution producing reliable knowledge and certainty but also

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