

Work-requirements and commitment in knowledge-intensive projects

Abstract:

Knowledge work, especially in innovative sectors of the high-tech-, media- and IT-industry is always to a certain degree project-driven. Project organisation meets complex customer demands in a flexible way and gives answers to growing strategic uncertainty of firms. In spite of differences in the level of standardisation (professionalisation of project management, certification and project-careers) in knowledge-based industries a tendency towards an intensification of steering and control methods prevails. Better process control, though, does not compensate the weaknesses of the initial phase of assignment and contracting, which is a structural deficit of many projects. As a result of the struggle between autonomy and control most projects – often established as (semi-) independent cost centres – are forced to organise their work under a entrepreneurial or intrapreneurial perspective. If they take this perspective additional participatory demands of project members are generated. Instead of hierarchical coordination a mutual understanding and negotiation about goals and resources is required and becomes prerequisite of commitment and good project performance. As a consequence, workers claims for integration into vital decision-making processes rise. The paper discusses how firms and workers handle these challenges.

1. The projectification of work and organisations

Markets and product innovations are subject to increasing dynamics, forcing a growing number of companies to react with new forms of organisation and co-ordination. These new forms seem to be more appropriate to the handling of uncertainties. They should also integrate interdisciplinary knowledge. The classic fordistic company with its specialised functions, its detailed instructions and hierarchical decision-making has limited capacity to cope with complex tasks, difficult decisions and growing flexibility demands. Changes in economic structures demand a different formal and informal company structure and work-organisation. As a consequence, project-organisation and –management become more important. In contrast to the storage and distribution (intra- or interfirm) of knowledge within the traditional line-organisation (or functional organisation) – projects have the advantage of networking and of knowledge integration in a flexible and problem-centred way.

Empirical foundation of the analysis are two studies of our Goettingen-based Institute for Social Research (SOFI), carried out between 2002 and 2006. Based on more than 100 expert interviews with line managers, project-managers and project members we conducted 10 case studies in the ICT industry and 5 of these studies in the R&D

department of a car manufacturer. A third focus was the media- and consulting-industry, condensed in 3 case-studies. Both branches contract rather frequently free-lancers. We do not consider this special group in our analysis. Interfirm projects, scrutinised in a different SME study of the software, internet and multimedia sector (Reichwald et al 2004), are not presented. We concentrate on internal projects.

Our findings confirm the general tendency that a) more and more tasks which are knowledge-intensive are accomplished in interdisciplinary projects and b) that projectification is a common feature of post-fordistic economies. As Ekstedt et al. (1999) put it: projects are a core element on “neo-industrial organising”.

Boltanski and Chiapello (1999) stated that the “the project regime” is the current social regulation mode. They discovered project driven management techniques as the “new spirit of capitalism”. The project-regime is not only a result of changes in the ways of material production but also a powerful legitimation system of the “fluid capitalism”. The latter has successfully established a new cultural model, absorbing the traditional critique of capitalism. Critical objections against rigid hierarchical structures, impersonal organisation, alienation and reification are converted into an affirmative model which holds that projects are enablers of individuality, autonomy, self-organisation, emotions and personal enhancement. Concepts of autonomy and self-organisation, in former times regarded as subversive claims, are now part of the regular capitalistic exploitation. Subjectivity, i.e. emotions, creativity, spontaneity and personal experiences have become the raw material and legitimation source of the modern economy. The “new spirit of capitalism” position, widely inspired by Weber’s action theory (legitimation, sense-making) is contested by representatives of a materialistic political economy tradition (Deutschmann 2005), stating that structural factors are more decisive than ideologies. We do not intend to take up this debate.

There is a variety of reasons why organisational theory and industrial practitioners concentrate on post-fordistic types of work and organisation, breaking with the tayloristic tradition of “programmable” industrial work. Literature affirms that the new type of project work will gain influence in a qualitative and quantitative dimension. The new regulation mode will have an impact on other types of work. The number and size of projects are increasing every year. In all kind of industrial organisations projects become more relevant. More and more employees work in projects (VW Coaching, 2002, GPM 2003). As a consequence organisations which contribute to a professionalisation of project management and cater for certification are becoming popular (in the US PMI, in EU: IPMA, in Germany GPM).

Defintions of projects and their typology

When it comes to the question: “What is a project?” then numerous answers are suggested. Characteristic catchwords are “goal orientation”, “limited timespan”, “singularity” or “uniqueness”, “a novel type of task” and the involvement of several organisational units and different disciplines. Authors who go deeper into its meaning and definition generally come to the conclusion that the delivery of a proper epistemological definition is not possible, because ambiguity and blurred boundaries are genuine characteristics of projects (Engwall 1998, Lundin, Midler 1998). There is a clear difference, though, between projects as temporary organisations and the regular permanent organisations to which up to now economic and organisational researchers dedicated most of their attention.

Project literature usually describes them as goal-orientated systems of action. Authors following the contingency approach highlight external influence factors when assessing a project and its outcomes. Their features are 1) the scope of project organisation, 2) firm size and technological environment, 3) the relation between projects and the companies’ functional organisation and 4) the technological uncertainty of tasks (Söderlund 2002, Shenvar/ Dvir 1996). It is a topic of project literature that in knowledge-intensive projects open-end solutions are likely. In these projects risks of goal-attaining with given resources “in time”, “in budget” and “in quality” are high.

Analysing the car industry we concentrated on the development of a new product line. All in all about 10.000 workers of the company were involved. The process of product development (within the overall time span of 4.5 to 5 years) was organised in project phases and milestones following a tight weekly planning rhythm. Organisational steering and support were established in a highly standardised manner. The project organisation was matrix-based, dominated by the line-organisation. Product development was mainly commissioned to five R&D departments. Experienced line managers served as project managers. But their decisional power during the project was limited, with line-management and R&D managers dominating the project. This was a problematic issue: in the ongoing project assignments and alignments were withdrawn and reversed uncoordinated. As a consequence, project commitment decreased and the chances for further assignments got lost.

In the ICT industry we analysed international companies working in complex projects in various countries. In contrast to the above-mentioned car industry these firms cater for on-site specific solutions for their clients. Often in those branches project

managers have three or four career tracks, qualifying for different project levels (A, B, C, D level). Project managers receive from their line-management a “letter of empowerment”, a project contract which defines competences, resources and other structural support. The organisational form of these projects is a matrix organisation. Project managers are authorized to act as entrepreneurs. In several cases, though, projects were neither finished in time nor in budget. As a consequence more standardized tools were employed and procedures for bid/ no bid decisions were introduced. These measures were taken to reach a better expenses/returns ratio.

2. Professionalisation of project management

2.1. Professionalisation in the engineers’ perspective

The two examples have shown that project type and the specific context are decisive for the kind of project management. These and other circumstances have an impact on different approaches on ways of improving project management. Improved project management tools and techniques are widely regarded as a promising way of overcoming low project performance. As we mentioned before, projects gain more importance because they are adequate answers to specific challenges and problems of modern economies. They are a permanent issue in literature and practical discourses, due to the fact that 1) project- and line-organisation per se constitute strained relations; 2) in any company both organisational forms compete for limited resources; and 3) proven ways of bureaucratic routines in task scheduling and “programming” are not appropriate for project work, especially for knowledge-intensive work.

As the number and complexity of projects are increasing rapidly, accordingly a growing interest in professionalisation of project management can be observed. Professionalisation means (better) standards, certification procedures and legitimated special career tracks. Professionalisation, though has various meanings and practical consequences, for example (a) the participation of middle management in seminars about the issue, (b) the establishment of special (three or four level) career models for project managers, (c) the writing of project management handbooks and the implementation of complex models of project management, defining the organisation with its steering committee, project roles, competences and phasing plans, d) the prescription of tools and methods (defined in the handbooks), which regulate the structures and network-plans to be used, milestones, risk-analysis, controlling instruments etc.

Following the path to professionalisation most companies rely on the application of formal rules. Formalisation usually is associated with bureaucracy: It always means a limitation of the freedom of action. But this is not per se a negative result. In complex contexts formalisation is a necessary vehicle for sense-making and a solution for problems of mutual understanding. Formalisation supports the development of shared meanings and can contribute to overcoming the Babylonian confusion of professional languages and group specific dialects used in practical project contexts. The positive side of formal rules is their regulative function for the communication and interaction of all actors involved by creating a repertoire of well defined terms and a common frame of reference.

However, the existence of formal rules does not necessarily mean that they have a strong impact on behavioural patterns. In the professionalisation process the application of formal rules is a frequent approach to achieving more perfection in planning and control. The engineers' discourses on project management methods are dominated by their interest to achieve precise planning and steering. In the companies we visited we observed the dominant interest in rationalising project work by means of a better methodology in procedures and operations. Frequently highly sophisticated IT solutions for project management and systems of indicators were employed to extend control and to apply methods of work rationalisation to the tasks of highly qualified employees, who have been hardly affected by them since years. It is true that a set of methods and instruments are indispensable for the effective management of both large and small projects. But these models of project-optimising become contra-productive when they lead to restrictive procedures and a bureaucratisation of formerly loosely-coupled structures. They narrow the scope of action. A certain self-determined scope of action is indispensable for creative solutions of problems and innovation challenges.

Loss of control and control-needs

It is not surprising that engineering-based models of the professionalisation of project management are driven by the interest of a perfect project planning and steering, due to the fact that line-management perceives a project organisation as a loss of control. Formal models promise to compensate the imminent or real loss of control.

Steering- and control problems of management stem from different factors: (a) management does not have a permanent face-to-face contact with project members; (b) they are confronted with interdependent work processes. Their capacity to define the essence and to apply strict planning is limited. Further (c) in knowledge-intensive projects there is a gap between professional competence and decisional power. In a growing number of cases

superiors can not evaluate the contributions from various professional disciplines and experts. They can not decide if these are wrong or right. Besides, immaterial work is a process going on in the head of each project member. The observation of the work process is more or less impossible. The main part of the used knowledge for problem solutions is implicit knowledge. Also projects have a tendency to create different project sub-cultures, defending their autonomy against any unreasonable demands of control.

Uncertainties, ambiguities and unclear borders are genuine characteristics of knowledge-intensive project work. Attempts to avoid them by formal structures, detailed planning and control will not be successful. If the project-management is focussed on its control demands and concentrates on the elimination of redundancies, then the subjective potential and the interdisciplinary processes of cooperative learning and understanding are very likely to be blocked. This is an obstacle for any development of potentials for self-organisation and informal structuring; for the unfolding of typical patterns of action which guarantee successful project work (like, for example, intrapreneurship). A project trajectory which continues with the logic of centralised information and centralised decisions (how to devise resources etc.), thus not breaking with the distinction between planning and decision making, this management concept follows the notion of a mechanical project-management. Actors involved have to cope with the inherent friction between formal management and the claims of highly skilled employees for autonomy.

One of the most dangerous factors which influence the projects' success is that the actors involved lose their commitment, because tight control impedes to realise the "entrepreneurial attitude", which is officially demanded. However, for highly qualified employees work autonomy (and the chance to move something and to exercise influence) has outstanding importance.

2.2. Sociological dimensions of Professionalisation

Experienced experts state that the quality and the productivity of project work is less dependent on methods, technologies and tools, depending rather on "weak" or "cultural" factors. Compared with the implementation of methods and tools, creating a project culture composed of informal norms, values, rules and specific interaction forms is a far more stressful and long-lasting process. Contributions of social scientists highlight that formalisation is hardly able to solve the contradictions, ambiguities and general problems of project management. Models based on a mathematical/ technical understanding of science will fail; as social reality is different.

The problem of models is that they disregard decision-processes and power-constellations and the informal dimension. A professionalisation of project management should start with the social process of organising, should concentrate on the behaviour and interactions of the actors involved in the project. From this point of view projects are not just the outcome of a planning process of organisational units, but emerging processes, constituted by shared meaning, emotions, power and commitment. Or, as Lundin/Midler (1999: 235) put it, what matters is “sense-making, mutual understanding, leadership, learning capacity, involvement, solidarity etc. All these are social phenomena on which every project is based as a collective, creative co-operation.” The objection against the argument, that the principal goal of project management is the perfect improvement of the work-planning process is as follows: “It is commitments, dependencies and expectations developing in the process of interaction which drive the project to realization. Ambiguity regarding objectives may be beneficial, because participants can transmit to the project a meaning according to their interest and context“ (Koskela/ Howell 2002: 9). But “the project techniques are a direct extrapolation of production techniques that have not much to do with the learning side of the project approach“(Lundin und Midler1998: 235).

Projects are a political issue too. As mentioned before there is a strained, conflict-laden relation between permanent line and temporary project organisation. The discrepancies of different organisational principles create contradictory demands and frequent role conflicts and ambiguities for project workers and their project managers. This is one reason why a project-management job is a nerve-racking task. The discrepancy between formal responsibility and real authority and resources must be endured.

The diversity of professional cultures, rationalities and viewpoints collude in project teams. As a result communication barriers, co-operation problems and blockades of knowledge transfer occur. They are a consequence of overt and hidden interest conflicts which derive from a variety of different forms of work engagement, different performance goals (acknowledgement of one’s achievements, peer pressure), career ambitions and conflicts to exercise influence, attempts to gain resources, privileges and security etc.

In projects work-behaviour and motivation are quite different from regular routine work. Special personal traits like taking responsibility, autonomy, commitment, risk-taking and a high task identification are required. Project workers necessarily have to bring in emotions and subjectivity. This influences work relations and coins the nature of the psychological contract (with superiors and the company). The projects productivity is widely dependent on

social competence. The personal traits and social qualifications described above promote the team-spirit and qualify project members to cope with contradictory demands and interests.

3. Attitudes of knowledge workers and the control mode

Control mode: “responsible autonomy”

As the steering and coordination of intellectual knowledge intensive work and its achievements are different from the routines of normal work in a line organisation, there must be other ways of solving the principal problem of “transformation”. The latter is due to the fact that any work contract is incomplete (the active participation and involvement of the worker is required). Facing the issue of steering and controlling management is challenged to find additional better measurements.

Referring to the transformation problem, Friedman (1977, 1987) makes a distinction between “direct control” and “responsible autonomy”. Direct control aims at a maximum of control and surveillance, reducing the responsibility of each worker to a low level. Each single step of the workers tasks is specified (Friedman 1987: 100). For knowledge-intensive work this kind of control mode is not adequate. Other forms of self-co-ordination are required. New Interaction modes and autonomous action patterns could not unfold in the direct control mode.

“Responsible autonomy” is the widespread control mode of knowledge-intensive project work (see Kalkowski 2002). Management has to rely on a high commitment to project goals and tasks. In turn they have to meet the work demands and expectations of their qualified workers. These demands constitute the psychological contract with the company. If it is violated a decrease of productivity is very likely. Cultural dimensions are central to motivation and performance. Informal norms, rules, roles and other symbolic aspects have a strong impact on the work structure and the project’s relations with the organisational environment.

4. Negotiating tasks, competences and responsibilities

Work studies and behavioural science generally assume that role ambiguities and conflicts and contradictory demands *can* be avoided by a thorough design of tasks, competences and responsibilities. But this is not a promising solution for project workers. Contradictions between line and projects, role, value and resource conflicts are inherent parts of their work. Project workers themselves (and not people from the outside) have to cope with these conflicts, which will never disappear.

In project work the company can determine only to a certain degree the competences and responsibilities necessary for the fulfilment of the tasks. Handling them is to a great deal a result of a negotiation process with the project's commissioners (project sponsor) and decision makers and the project team. The relation between project workers and line-superior is also negotiated. Negotiating tasks and requirements for work organisation and adequate conditions is part of the necessary skills of a project worker. To illustrate the issue we show one example of our sample:

The development department of a car supplier introduced 15 years ago a project-management model which is regarded as a decisive factor of the company's success. The PM handbook is a simple guideline for project-phases and roles. The project management's good performance resides in two characteristics:

(1) Project tasks are not assigned from above. Projects are tendered. Applicants can bring in their personal interests, needs and skills. The organisation is person-orientated. When the kick-off workshop, which lasts two days, is finished, the work packages (work break-down) required by management are made up and a formal contract is set up. The team, too, has a formal confirmation of the project's commission. Development of work-packages is no one-man show of the project manager. It is a moderated joint process with all work-package owners. Project workers are entitled to reject unrealistic management requirements. Specialised moderators are assigned to act as project advocates, defending the project interests against line-management. They stress that a clear definition of the projects mandate is indispensable. They insist on clear relations between customers and suppliers. Moreover, as the team defines its own success criteria, team commitment is encouraged. Further identification of the team members is stimulated by discussions about the project's history and intentions, the stakeholders and the psychological impact and about possible critical situations and synergies.

(2) Workshops and milestones are directed by moderators who are continuously trained in didactics, methods and tools. They form a network of around 30 people spread all over the company. They look after the project-managers, care for quality standards and support the development of a project culture. As one of them puts it: "It is the personal commitment which enhances our performance". This is the main reason why personal goals are committed in evaluation talks instead of being ordered top-down.

Agreements on goals, review talks and personal assessment

In our example work-contracts are characterised by a vague, incomplete definition of work tasks and efficiency criteria. This is due to the fact that functions and tasks might change in the course of the project or from one project to the other. Explicit contracts must be supplemented by implicit, psychological contracts. The latter are supported by indicators and incentives (to overcome the transformation problem). Additionally, performance-based formal contracts are employed (Kalkowski 2002). They consist of agreements on goal achievement (of the project and the individual) focussing on the execution of work-packages and partial projects “in time, in budget and in quality”. These agreements, reviews and individual assessments have a formal character. They are signed by the project member and their superiors, which means they become formal contracts. They serve to co-ordinate and synchronise subtasks and to regulate efficiency. They can be used for career assessment in the human resource department and for a performance evaluation of each project member. They are instruments to regulate productivity and to assess and reward good performance.

5. Conclusion

We can summarise our empirical finding with the thesis that the paths of performance co-ordination (formally and informally) and contracting become a central part of practical project competence. To put it in a normative way: contracting – defined as the negotiation process with the contract as final result – should be used as an element of project-management to support processes of mutual interaction and understanding. Shared meanings and sense-making are indispensable prerequisites for cooperative-interdisciplinary learning and problem-solving. The joint elaboration development of binding goals and task definitions is a precondition for commitment or, in other words, it must be guaranteed that the project member is committed, mobilising his/her skills and interests. A further side-effect might be that they are becoming more and more “entrepreneurs” with entrepreneurial attitudes.

Contracting means not only relations to explicit contracts but also to implicit, psychological contracts, constituted by mutual expectations of the actors involved. Contracting is vital for the realisation of personal values and work demands. It determines workers’ understanding of job demands: are these regarded as fair or unfair? Contracting is decisive for the quality of project management.

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