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Organizational Psychology in the Context of Project Management

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Content

A. Findings from Organizational Psychology and their Significance for Project Managers

There are three reasons why heading a project team is a particularly demanding task: in most cases, projects are under great time pressure and pressure to succeed. Quite often the tasks are of such a complex nature that they can only be solved by heterogeneous teams, and often the head of the project is not provided with the necessary influence and leadership experience of a classical superior.

Apart from necessary contextual conditions for successful project management, the National Competence Baseline (NCB 3.0) of the Deutsche Gesellschaft für Projektmanagement GPM e. V. also describes the necessary experience for dealing with methodical problems of project management as well as the personal attitude expected from a project manager (GPM 2008).

Particularly, the attitude-related standards show a close reference to organizational psychology. Personal and social skills, such as motivation and leadership behavior, play a crucial role and serve as a reference base for the personal certification of project managers.

Basically, competence models such as NCB 3.0 can be developed and continued in a variety of ways (Sarges 2000): model or target ideas worked out by experts may serve as a starting point, just as development trends derived from scenarios. Competences can be investigated by analyzing the "reality", by using actual demands project managers are confronted with in the context of projects, by help of standardized, work-scientific methods or by way of interviewing and observing. Another possibility to collect hints at relevant competences and the specific ways in which they appear in actual situations is provided by systematically assessing the results of behavioral science research.

Particularly suitable for this are meta-analyses, which are summaries of empirical primary analyses by way of quantitative, statistic means, providing reliable results and allowing for deriving generally valid statements. While taking current studies and meta-analyses into consideration, this article is meant to analyze in how far results of organizational psychology may contribute to the support and further development of competence models for project managers.

In most cases, projects are carried out by teams which have been specially selected for the respective project. According to NCB 3.0, the project manager is responsible for the structure, the continuous further development and the performance of the team. Team processes must be grasped and controlled. The success of the team's work depends considerably on the project manager's ability to create a team spirit in case of heterogeneous team members, while not losing the performance of individual team members out of sight and, if necessary, working against wrong turns. Furthermore, he/she is supposed to deal with the typical challenges during a team's various development stages and to work out and implement development and leadership strategies which are suitable for individual stages.

Thus, current questions and insights from organizational and staff psychology on the six essential tasks of project managers shall be presented:

1. Bringing together a project team: Why should "soft" factors be taken into consideration for bringing together a project team?

2. Providing sufficient communication within the project team: Why is the use of singular information in the course of projects essential for success?

3. Leading the project team: What are the actual effects of leadership behavior on the success of the project?

4. Dealing adequately with problems in the course of the project: What are the connections between leadership behavior and conflicts? And which role do irrationalities of human behavior play within projects?

5. Motivating the project team: What are the effects of result-oriented and behavior-oriented assessments? Which development possibilities are offered by project work?

6. Keeping together the project team: How does commitment develop and what are its effects? How could affective ties to a project be supported?

B. Current Organization-Psychological Findings on essential Tasks of Project Managers

1. Putting together a Project Team

According to Tannenbaum et al., a team's effectiveness depends on the characteristics of its task, among others, but is essentially determined by

- Team-structure (e. g. norms, communications structures),
- Team-processes (e. g. conflicts),
- Characteristics of the team as a whole (e. g. feeling of togetherness, heterogeneity) as well as
- Characteristics of its individual members (e. g. attitudes, motivation, personality) (Tannenbaum et al. 1996).

Thus, the structure of a team essentially determines its performance and the extent to which a goal is achieved. Whereas for the time being we have no evidence that heterogeneous personalities make a team successful, professional heterogeneity is in most cases a precondition for solving complex tasks, for which it is decisive that each member contributes undivided information by each member (Moser 2009). However, successful teamwork does not only require members who, due to their knowledge and skills, are able to fulfil the subject-related parts of a task, they must also be able to effectively influence team processes. Especially for the latter, "soft" factors, such as an individual´s characteristics, values as well as cognitive and emotional intelligence, play an important role.

The Influence of "Soft" Factors on the Success of Project Teams

Not only for organizational-psychologic questions, the five-factor model (FFM) – in short: the Big Five serve as a framework for grasping personality traits. The Big Five are a psychological model which assumes five main dimensions of personality. Somebody´s personal traits can be structured into his/her:

- Emotional stability (neuroticism)
- Sociability (extroversion)
- Openness towards experiences
- Good nature in respect of interpersonal contacts (agreeableness)
- Conscientiousness (McCrae 1987).

However, apart from personality traits, also value orientations are considered to be comparatively stable human characteristics which essentially determine somebody´s acting, motivation, attitude

and behavior in the project team. E. g. the project team members´ collectivist orientation, that is their readiness to put the group´s interests before their own, as well as generally preferring teamwork instead of autonomous work, may be considered values which are of particular relevance for the composition of a project team.

Another feature relevant for a team's success, apart from its members´ cognitive skills, is also their emotional intelligence. Here, emotional intelligence is meant as a collective term for personality traits and skills concerning how to deal with one´s own and other people´s feelings (Salovey, Mayer 1990).

A current meta-analysis by Bell (Bell 2007) provides an interesting contribution to answering the question of how far the influence of comparatively stable psychological characteristics in teams on the group´s performance can be proven by experiments or field studies. In this context, apart from personal traits and value orientations, also the cognitive and emotional intelligence of teams were considered (Fig. 1). The meta-analytical evaluation of a total of 89 studies produced the result that the degree of the team members´ sociability and their openness towards new experiences were strong predictors for a team´s performance. But also other personality traits proved to be relevant for a team´s performance. For example, apart from the team members´ average conscientiousness, also their general emotional stability played a role for the team´s performance. The team members´ extraversion does not seem to be a personal trait necessary for the successful work of the team. However, particularly for assessment centers it constitutes an essential selection criterion.

The meta-analysis also analyzed the influence of two different value orientations on a team´s performance: the general, collectivist value orientation of a team correlated strongly with team performance, while the members´ preference of teamwork to individual work correlated clearly, but not to the same degree with the performance of the team. Furthermore, apart from cognitive intelligence, also emotional intelligence proved to be a predictor for successful teamwork.

	influence on the team's performance
personality traits	
conscientiousness	strong correlation↑
agreeableness	strong correlation ↑
openness	strong correlation↑
emotional stability	weak correlation →
extrovesrion	no correlation↓
values	
prefering teamwork to autonomous work	medium correlation↗
collectivist orientation	strong correlation↑
cognitive intelligence	medium correlation↗
emotional intelligence	weak correlation→

Fig. 1: "Soft" factors and performance of the team

"Soft" Factors as Criteria for Selecting Project Members

What are the consequences for project managers? Different from selecting executives, in the context of recruiting project members a systematic selection for personal traits being taken into consideration can seldom be made (West et al. 1998). However, empirical research shows that for project managers it is definitely worth the effort to optimize the selection of team members by taking the above mentioned factors into consideration, since there is evidence that a favourable team composition in respect of the personal traits of good nature, conscientiousness and openness, the values of collectivism and preference of teamwork as well as in respect of cognitive and emotional skills, is a factor for successful project work. These insights can be operatively implemented by the use of appropriate suitability-diagnostic tools, e. g. personality tests such as the "Bochumer Inventar zur berufsbezogenen Persönlichkeitsbeschreibung (BIP)" (Hossiep 2003).

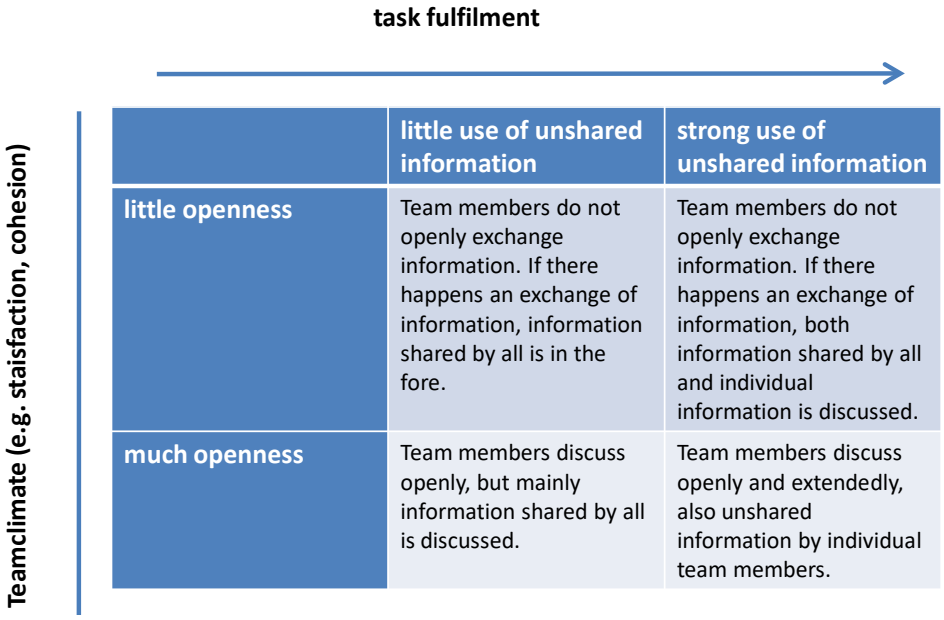
2. Providing Good Communication within the Project Team

Communication is social acting, in the context of which problems are solved by way of exchanging signs. It is always determined by the respective situation, it happens by mutual reference and is based on previous experiences and participation in social life. By communicating with others, new thoughts, ideas and solutions for problems are developed which would not emerge in this way if one would work on his own (Beck 2007). Knowledge-based project teams are employed to create a pool of a variety of skills, in order to work out solutions for problems which are of higher quality than those achieved by individuals. The sharing of information makes it possible for the team members to jointly use the specific information resources found with each individual (Stasser, Titus 1987). To be able to realize these synergies in the context of projects it is essential that unshared information is exchanged among the team members. How could this be guaranteed? Again, the head of a project is in charge. According to NCB 3.0, he/she is responsible for the efficient, target group-appropriate, formally and methodically adequate exchange of information among those participating in the project. He/she is supposed to ensure purpose-oriented, clear, comprehensible and systematic communication.

This gives rise to the question of which psychological factors may influence the effectiveness of communication – most of the oral communication, which makes up to 90% of executive communication (Pribilla 1996) – and which restrictions for information management exist from a psychological point of view.

Using singular Information and Openness

The exchange of information within teams can be characterized by two dimensions (Fig. 2): first, if information is necessary for fulfilling the tasks but only available to individuals and can thus be taken up by the whole team, and second, the team's general openness towards exchanging information. Openness in this context means the willingness to share information and to thus increase mutual trust and cohesion within the team.



	little use of unshared information	strong use of unshared information
little openness	Team members do not openly exchange information. If there happens an exchange of information, information shared by all is in the fore.	Team members do not openly exchange information. If there happens an exchange of information, both information shared by all and individual information is discussed.
much openness	Team members discuss openly, but mainly information shared by all is discussed.	Team members discuss openly and extendedly, also unshared information by individual team members.

Fig. 2: Two-dimensional connection between the exchange of information within (project) teams and the results of a team´s work (Mesmer-Magnus, DeChurch 2009)

Most of all the use of information which is only available to individual knowledge bearers but also openness among team members result in improved performance, in respect of the quality of decision-making and in respect of subjective and objective performance criteria. Unfortunately, within many project teams these two dimensions are not sufficiently developed: often, discussions contribute to consolidating preconceived individual opinions, the exchange of information retreats to the back and teams tend towards spending more time on discussing already existing information than on passing on singular information. This is questionable in so far as a current meta-analysis by Mesmer-Magnus & DeChurch (72 independent studies on the exchange of information within teams) gives evidence to the great significance of sharing information for a team's performance, cohesion, satisfaction with decisions and knowledge integration (Mesmer-Magnus, deChurch 2009). Most of all for a team's performance, passing on information proves to be a reliable predictor.

Supporting the Exchange of Information

The authors of the meta-analysis identified three factors as being particularly supportive for sharing information:

- Team members´ awareness of the necessity of the exchange of information
- Structuring and systematizing of discussions and
- Relative homogeneity of members.

Teams whose members are told they will be able to achieve particularly good solutions if they use their entire pool of information, will rather be ready to contribute and integrate unique information. Providing a positive atmosphere in the team and a previously determined structure for discussions will also support the exchange of information. Team members are more reluctant in respect of sharing information with people they perceive as being very much different from themselves. As a consequence, this means that teams which, due to their diversity, would benefit most from sharing information, e. g. teams consisting of experts from different disciplines, are least doing so. It must be assumed that these effects will occur even more clearly with the exchange of information among project (sub)groups, since in this context some of those factors generally supporting the exchange of

information, such as common identity, trust and cohesion, can be identified to only a small degree or not at all.

For project managers this means that already at the moment of the project kick-off they should work out rules for cooperation and communication behavior – in an ideal case together with their teams – and only then should turn to the project matter (Streich, Brennholt 2009). Also the use of creativity techniques, such as the Six Thinking Hats, a method developed by Edward de Bono, in the context of which a problem is considered from different points of view, may be taken into consideration. A group is provided with six symbolic hats, each one representing a certain way of thinking. The group members may put on these hats while taking turns and thus may take over a specific point of view and support it in the group (De Bono 1999).

3. Leading the Project Team

According to NCB 3.0, a project manager must know different leadership styles and must know how to apply them according to the situation. NCB 3.0 suggests some typical features of the transformational leadership style as desirable patterns of behavior, e. g. establishing a basis of trust, supporting the development of staff members, communicating visions, an attitude which is based on natural authority as well as motivation by inspiration. From the point of view of organizational psychology, three questions can be derived: Which leadership style is appropriate for which situation? In how far can leadership styles be learned? Must a leadership style which is appropriate to the management of projects show the essential elements of transformational leadership?

Varieties of Leadership Behavior in the Project Team

Between 1940 and 1986, 65 classifications of leadership behavior were developed (Fleishman et al. 1991). Almost all of these models have in common that they distinguish between an executive´s behavior in respect of fulfilling his/her tasks and staff member-related ways of behavior.

Among the task-related ways of behavior is:

- Transactional leadership
- Task orientation (initiating structure) and
- Communication and cooperation within networks (boundary spanning).

With the help of transactional leadership, exchange processes are organized as follows in order to make the optimal achievement of a goal possible: a staff member who performs as expected is given a positive feedback or is rewarded as incentive or at least he/she is spared of negative sanctions. Task-oriented leadership behavior is characterized by achieving the goal by way of consistently attributing roles and minimizing conflicts as a result of clear organization and instructions. With this kind of leadership there is hardly any possibility to participate for staff members. Apart from influencing at the (micro) political level, boundary spanning includes the establishment and use of networks, the management of interfaces as well as communication and cooperation with the project's environment.

Among the staff member-related ways of behavior are:

- Transformational leadership,
- staff member orientation (consideration) as well as
- motivation and
- empowerment.

Transformational leadership is characterized by the idealized commitment of a charismatic leader who is capable of transforming the values and motivations of those being led by way of intellectual

stimulation, inspiring motivation as well as individual care. Models of transformational leadership postulate that a good executive must be dominating and is the main source of steering and motivating his/her staff.

According to Bass & Avolio (Bass, Avolio 1994), the characteristics of transformational leadership are:

- Idealized influence: (charisma): exemplary function in respect of subject and moral, creation of trust and respect.
- Inspirational motivation: filling the staff members with enthusiasm by way of attractive and convincing visions,
- Intellectual stimulation: stimulating the staff members to think innovatively and to question what has previously been,
- Individualized consideration: coaching the staff members, recognizing their needs as well as systematic support.

However, these factors will only be effective if they appear together. But in this context charisma is not considered a stable personal trait but is based on attribution by the staff members. Accordingly, transformational leadership is considered to be trainable, at least partly.

Staff member-oriented behavior supports social relations and cohesion within the team by way of open communication, trust, respect, participation and taking the needs of staff members into consideration. Empowerment, the support of self-competence, aims at more self-determination and autonomy of staff members. They are supposed to be able to support their matters in a self-responsible and self-determined way. Finally, motivating leadership behavior includes the rewarding and recognition of achievements just as striving to meet the values and needs of staff members as well as the readiness to support staff members.

Current Findings on the Connection between Leadership Behavior and Team Success

Which way of leadership behavior in project teams is really suitable - not in respect of the climate but in respect of the team's performance? And in how far could the effects leadership has on a team be proven at all? A meta-analysis by Burke et al., in the context of which 50 studies (with more than 3,000 teams) were evaluated, provides interesting hints at the connection between different ways of leadership behavior and the performance of teams (Burke et al. 2006). Furthermore, it was possible to give general empirical evidence to the great significance of leadership for the success of project teams. On the whole, Burke´s study distinguished seven different sub-aspects of leadership behavior:

- transactional leadership
- transformational leadership
- task-orientation (initiating structure)
- staff member-orientation (consideration)
- communication and cooperation within networks (boundary spanning)
- empowerment
- motivation

With transactionally headed teams – here, the organization of incentives comes to the fore –no significant connection to the team's perceived achievement of goals occurred. In contrast to this, task-orientation, which means leadership behavior characterized by clear guidelines, as well as the organization and use of networks, so called boundary spanning, correlated positively with a team's success. Furthermore, a positive connection between transformational and staff member-oriented leadership and a team's effectiveness could be investigated. Also empowerment, the support of the self-responsible acting of staff members, correlated significantly with a team's success. Also

interesting was the clear connection between empowerment and observed learning effects within teams.

On the whole, it could be stated that staff member-oriented ways of behavior seem to influence a team's effectiveness and productivity more than task-oriented ways of behavior do. Only sometimes and in a moderate way, transactional leadership behavior and task-related ways of behavior contribute to the effectiveness and performance of teams. Staff member – oriented ways of behavior – most of all empowerment – have clearly more effect and support learning within the team (Fig. 3).

	Which share of the variance of success dimensions with teams is due to leadership behaviour?		
leadership behaviour	achievement of goals by the team (%)	productivity of the team (%)	learning success of the team (%)
task related (gen.)	11	4	-
staff member related (gen.)	13	8	31
transactional	6	-	-
transformational	11	6	-
task-orientation (initiating structure)	10	4	-
staff-member-orientation (consideration)	6	5	-
communication and cooperation within networks (soundary spanning)	24	-	-
empowerment	22	10	31
motivation	-	-	-

Fig. 3: Leadership behavior and success of teams

Even if only 4% of differences in productivity – as with task-orientation – are due to the executive's behavior, this is significant, given the complexity of today's organizations. Furthermore, the results of the analysis show that task-oriented and relationship-oriented leadership behavior are both success-relevant almost to the same extent. Project heads should be trained in both ways of behavior. However, of particular significance are boundary spanning and empowerment (coaching, feedback, monitoring, participation), as both ways of behavior explain quite a high share of the variance of a team's performance. Here, it must particularly be recommended to offer appropriate development steps for project managers.

4. Dealing adequately with Problems during the Project

Conflicts within the project team are driven by disagreement on the setting and agreeing on goals (assessment conflicts), different opinions on ways of achieving goals (judgement conflicts), quarrels about funds necessary for this (distribution conflicts) or they are a result of disturbed social relations.

The probability of conflicts rises with the interdependency of tasks to be fulfilled. Within project teams this mutual dependence is naturally very distinctive: the project will be successful only if every member of the team fulfils his/her tasks within the appropriate span of time, often a work chain or dependence on the quality of some previous activity exists. Reasons for conflict may also be that project members are in each other's way when working or that help and support are not given.

According to Moser & Galais, it is the task of project managers to quickly recognize conflicts and deviations and to work against them while at the same time leaving enough space for creative changes and adjustment (Moser & Galais 2009). NCB 3.0 demands that project managers must on the one hand be skillful negotiators and masters of the techniques of conflict management; on the

other hand they must also take over the role of an advisor or coach. But which role does the leadership behavior of the project manager him/herself play as a factor which might trigger off conflicts?

Leadership Behavior and the Probability of Conflicts

Improved didactic interaction between the members of a team will improve the quality of decisions, but may just as well affect the social climate of the team if affective conflicts arise from cognitive conflicts and as a result tensions, anger or even hostility disturb the team's ability to work. Thus, it is a challenge for heads of projects to on the one hand support topical conflicts but on the other hand to prevent them from turning into affective conflicts. A study by Kotylar & Karakowski (Kotylar, Karakowski 2007) gives evidence on the one hand that cognitive conflicts are better supported by a transformational leadership style than by transactional leadership, but that, on the other hand, transformational leaders succeed less with terminating discussions at the right moment. The higher activation level of motivations in case of transformational leadership supports the readiness to discuss of those being led, as their self-esteem is connected to pushing through with their own ideas. Accordingly, decision-making processes take much more time than necessary. By transformational leadership behavior starting at the self-concept of those being led and at their need of recognition, dysfunctional affective conflicts within the team are supported, which may reduce both the quality of decisions and the commitment. In addition to that, it becomes obvious that a balance of task-related and relationship-related leadership techniques must be strived for.

Irrationalities of Human Decision-Making Behavior during Projects

However, not only the wish for recognition may result in problems with carrying out a project. Behavioral economics (Kahneman, Tversky 1979) deal with the irrationality of human judgement in the context of economic decisions. This is expressed e. g. by the fact that often humans base decisions on rules of thumb and not on rational analyses. For example, according to the so called availability heuristic, certain facts or events are considered more important only because of their immediate chronological or physical presence. The player's wrong conclusion is a logical wrong conclusion including wrong ideas, e. g.: a coincidental event seems to be less probable because it has not happened for quite a long time or, the other way round that is precisely why it is considered more probable. Additionally, there is often an asymmetry regarding decisions to purchase or keep resources. Furthermore, the distinctive feeling of regret which is connected to every decision of giving up on objects to which one has strong emotional ties (e. g. the project) counts among the anomalies of economic decision-making.

These typical effects can be observed with project management. Thus, often fears of loss become manifest also with the behavior of project managers. If the failure of a project is connected to the realization of loss, displeasure with admitting the failure can be observed (Smith, Kell 2003). Project managers go on with investing in projects "going down", as they fear "sunk" costs and on the other hand they believe a turnaround to be more probable if there has already been a big investment.

Kahnemann & Tversky also provided evidence that anchors set completely arbitrarily, influence the decision-making process of individuals. For example, some information being the starting point for a decision-making process may serve as an anchor, no matter if this information is relevant for the decision or not. Thus, the way in which a problem or a decision is presented (framing) influences the acting of decision makers.

Accordingly, the critical questioning of one's own judgements also belongs to the management of projects. In addition to that, the sensitivity for sources of error in the context of decision-making, a critical view, the advancing and evaluation of a hypothesis as well as, if necessary, the readiness to admit failure and to terminate a project soon enough are also part of project management.

5. Motivating the Project Team

As you will have to motivate members of staff without having the formal authority of a classical superior, it is of particular importance for project managers to find adequate influence strategies, to be perceived as socially skilled and to secure support for their project within the organization. Among this the use of feedback tools also counts for measuring and controlling the project team´s performance. According to Cohen & Bailey (1997), the effectiveness of project teams does not only include

Quality and quantity of project results but also

- Team members´ attitudes, such as satisfaction and trust as well as
- Features of the staff members´ behavior, such as working hours lost and fluctuation (Cohen, Bailey 1997).

Result-Oriented and Behavior-Oriented Assessment of Performance

Although results of course play a crucial role within projects, a purely result-oriented performance assessment must be critically questioned, since often the criteria for results are contaminated and deficient and do not always adequately reflect both the commitment and the performance of team members. A behavior-oriented feedback on successful sub-steps or promising behavior should be applied. Often a fixation on results prevents learning from mistakes and failure and increases the risk of escalating commitment, a dysfunctional sticking to desastrous projects (Moser, Galais 2009).

It also has to be assessed in how far the attribution of clearly defined sub-tasks to individual project members, agreements on “smart” goals, clear responsibilities and deadlines – usually an expression of professional project management – may result in discouragement (“That’s not my business”-syndrome). Accordingly, Tannenbaum et al. assume that this might result in a transactional instead of a relational relationship to the project (Tannenbaum et al. 1996). The respective team member feels to be responsible only for his/her sub-task and focuses exclusively on it, as in a transactional relationship the steering of behavior happens by way of giving and taking in the context of agreements. A relational relationship is characterized by loyalty, more than average commitment and identification with the goal of the overall project.

Also, behavior-oriented assessment tools may be employed. It is recommended to develop a scale for assessing the performance of team and individuals – together with the team members and in a participative way – which both specifies the tasks and performance criteria of and for individual team members and refers the project to the enterprise’s goals. Thereby, preventing the group from performance obstacles within it – e. g. free riding –and a way of thinking which only focuses on one’s own department on the other.

Possibilities for Development in the Context of Project Work

Apart from feedback at regular intervals, providing development possibilities and attractive career opportunities may clearly increase the staff members´ motivation and satisfaction. In this context, work with and within projects per se must be considered an extremely effective development step, as it makes action-oriented, self-controlled or -organized learning during the work process possible. “Action-oriented” competences can be acquired on the job in the course of the project, learning transfer is immediately possible. For staff members, projects offer the possibility to pen up new career opportunities by way of adjusting their skills to current and future demands, to keep or increase their own employability, and at the same time, due to the challenging team situation, projects offer an opportunity to further develop one’s own personality. It is the task of the project manager to recognize any development need of his/her team at the levels of knowledge, intention,

ability and being allowed to and to initiate appropriate individual, group and collective steps. The following questions may be relevant for the four levels:

- Level of knowledge: Are the staff members sufficiently informed? Have they understood their task?
- Level of intention: Are the staff members motivated? If necessary, what discourages them?
- Level of ability: Are the staff members adequately trained? Are they experienced enough?
- Level of being allowed to: Do the staff members know their leeway for action? Do the staff members feel to be responsible for their fields of responsibility, for their project? Do they believe to be capable of acting creatively/collectively?

Also here, the project manager should play the role of his/her team's development coach, since due to the intensive cooperation during the project there are particularly good opportunities to evaluate performance, to recognize potentials and to communicate them internally. Standardized feedback systems integrated into the course of the project may contribute to systematically recording performance and thus optimize matching and make successful placement for further projects possible (Moser, Galais 2009).

6. Keeping the Project Team together

Often, project managers do not have any real leadership function towards their team members. They are in charge of coordination and control but have less power and possibilities to influence than regular superiors. Accordingly, although they are often provided with expert power and in the ideal case with personal charisma, the power of their position is usually rather limited, and also their possibilities to reward or punish staff members are quite restricted. Even more important is a team members´ commitment to the project. For more than fourty years, commitment has been an important issue of organization-psychologic research, and it describes the "psychologic tie", the emotional ties of staff members to an organization or a project, which is necessary to control their acting (Mathieu, Zajac 1990; Meyer, Herscovitch 2001). This is of particular importance for projects, since the team members have only a temporary relationship which is only based on their common task.

The Development and Effects of Commitment

Commitment to a project may appear by three forms (Kraus, Woschée 2009):

- Affective commitment means the emotional ties to the project. The staff member is proud of "his/her" project, it is important to him/her, and he/she perceives his/her ties to the team almost like those to a family. The most important features of affective commitment are acceptance of and identification with the goals and values of the project, distinctive commitment as well as the wish to be allowed to stay with the project (Mowday et al. 1979).
- Normative commitment means the moral-ethical obligation staff members feel to have towards the project.
- Rational or calculatory commitment means that the staff member´s ties to the project are consolidated by the fact that leaving would be connected to costs, e. g. the loss of rewards, and that he/she does not see any more promising alternative.

The development of commitment depends on the characteristics of work, on leadership behavior, the respective staff member´s characteristics as well as the framework conditions offered by the enterprise. The contents of a project are characteristics of work and have an immediate effect on commitment. Accordingly, for staff members who fulfil interesting and complex tasks in a self-

determined way a higher degree of commitment could be proven. Characteristics of the enterprise, such as organizing career paths as an expression of organizational justice influence commitment only indirectly. General satisfaction with work is a special case. On the one hand it is considered a precondition for commitment or a commitment-supporting factor, on the other hand it must be considered the result of close ties. The staff member's "protestant ethos of work" and the perception of his/her own competence are closely connected to the appearance of commitment. Also a charismatic, transformational leadership culture correlates strongly with the staff members´ commitment.

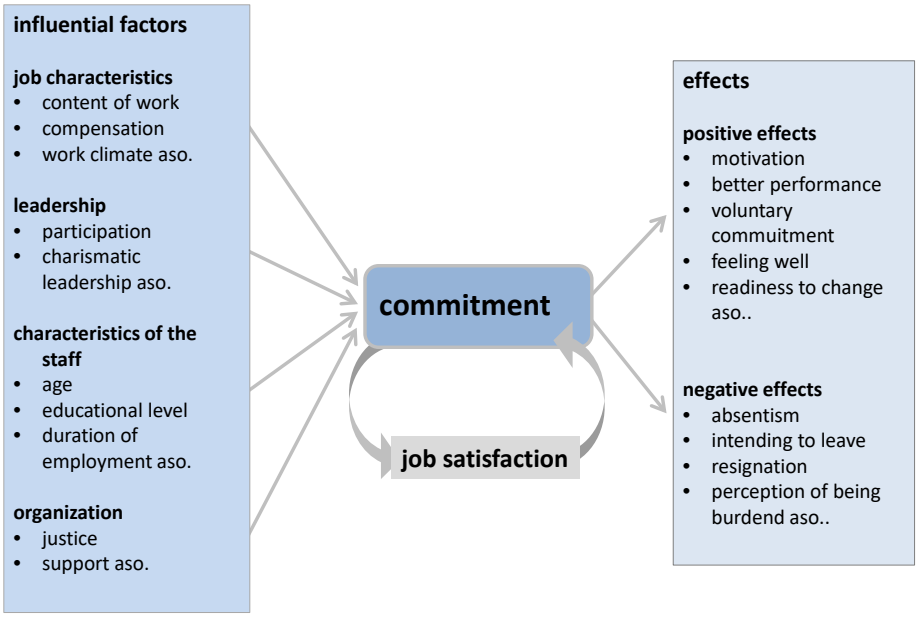


Fig. 4: Influential factors, effects and mutual effects of commitment (Kraus, Woschée 2009)

Affective Commitment has far reaching consequences for a project's success: project members who feel to be emotionally connected to the project will stay with it during its life cycle, they will tolerate burden, will minimize their working hours lost and will thus avoid dawdling or disturbing the course of the project. In respect of intentions to resign or of fluctuation, Cooper & Viswesvaran reported that highly committed staff members are rather willing to accept work-connected burden and stress and to deal with disappointment (Cooper-Hakim, Viswesvaran 2005). This is important for the management of projects in so far as already a staff member's intention to resign may have negative effects in the form of reduced commitment, work to rule, or even stealing know-how. Furthermore, it could be proven that important factors for a project´s success, such as a good working atmosphere, voluntary overtime and great satisfaction, are closely connected to commitment and identification. If staff members feel to be emotionally connected to a project, the probability that they will show extraordinary performance and will behave altruistically will rise. Thus a purposeful strategic and operative relationship management in support of affective commitment may decisively influence the success of a project.

Strategic and Operative Relationship Management

By way of

- career and qualification possibilities,
- good technological equipment,

- adequate payment and
- support of a good overall atmosphere as well as
- developing trust in unwritten agreements between staff members and organization

strategic relationship management creates the preconditions for increased ties between staff members and the enterprise. Operative relationship management starts with organizing varied and challenging work contents and extending freedom for action in the context of the respective activity. Role conflicts and unclear roles should be avoided, since they will weaken the commitment. Project managers should grant self-competence, empowerment and as much autonomy and organizational freedom as possible. The reduction of hierarchies, participative decision-making, an appreciating team culture as well as the support of development and taking responsibility may also increase the staff members´ commitment (Felfe 2008).

Thus, the three essential fields of action are:

1. Project contents should be demanding and include a variety of activities, for which there exists as much freedom for action as possible, so that intrinsic needs can be met.
2. Inner-team relationships should be characterized by transparent and complete communication, the group should be included into decision-making, and appropriate support of and care for the project members´ well-being should be felt.
3. The team members´ roles should be clear and not contradicting, in order of avoiding commitment-affecting role conflicts and uncertainties.

Furthermore, research results on charismatic leadership (Bass, Avolio 1994) demand project managers who

- are convincing due to exemplary and credible behavior and putting aside selfishness, taking responsibility, showing readiness to perform and act according to moral and ethical principles (idealized influence),
- foster their staff members' enthusiasm and motivate them (inspirational motivation),
- stimulate independent and creative thinking (intellectual stimulation) as well as
- support their staff members' individuality (individualized consideration).

Just as a high degree of cohesion may have negative effects, strong commitment may equally be connected to risks. There is e. g. the danger of focusing too much on one´s own department and neglecting the interests of other units of the organization, which may be due to loyalty conflicts caused by staff member´s ties to different foci of commitment. Strong commitment to the project may result in acting disloyally towards the overall organization in favor of the project´s benefit.

C. Prospects

Research on project management comprises two intellectual roots. The first root are engineering sciences and applied mathematics which both deal with analytical techniques of planning and optimization as well as with methods of project management. Social sciences constitute the second root such as sociology, organization theory and psychology, the focus of which is on the organizational, systemic and behavioral-scientific aspects of project organization. Both disciplines are compatible with each other only to a limited degree, as one avoids insecurity in order of achieving determinism, whereas for the other insecurity and non-determinism are important basic assumptions. Particularly in the course of the past two decades, the behavioral-scientific discipline has gained significance, since looking at project management as an analytical project has too much neglected the systemic nature of most projects (Söderlund 2004). Furthermore, we may distinguish

the normative branch of the research on project management, representing guidelines, checklists, optimization strategies and the identification of critical success factors, as well as empirical project management research which looks at projects as phenomena that must be empirically investigated in order to gain insights on (temporary) organizations. Normative project management research – even if we distinguish branches and project types from each other and strive for a differentiation of success factors – assumes a general applicability of its insights. However, while investigating the reasons for successful and unsuccessful projects, gaining deeper insights on real-life project management and its embedding in social entities is sometimes neglected, e. g. the analysis of failed projects by way of methods of empirical social research.

This contribution discussed some selected topics of organizational and economic psychology while viewing at the further development of competence models for project managers, e. g. insights on different successful leadership styles, on information behavior or on the conditions for commitment and the motivation of project members. Thus, organizational-psychologic research is able to make an important contribution to the research on project management. Nevertheless, it is sometimes too generally related to teams and does not sufficiently consider the specific features of temporary projects. An explicit turn of empirical research to matters of project management would thus be desirable.

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