Economia Aziendale Online

The interpretation of the project team between collectivity of practice and community of practice

Paolo Canonico, Ernesto De Nito,
Gianluigi Mangia e Marcello Martinez

The interpretation of the project team between collectivity of practice and community of practice

Paolo Canonico, Ernesto De Nito, Gianluigi Mangia e Marcello Martinez

Abstract

In recent years managerial studies have dealt quite extensively with the organizational issues of project teams. In particular the analysis have focused on the interpretation of the social dimensions in such settings. Two different research perspectives have emerged, concerning the relationship between project team and Community of Practice (CoP). One, departing from Wenger's theoretical considerations, defines the two concepts clearly by excluding the possibility that the project teams may also be figured out as communities of practice (Wenger, 2000; Lindkvist, 2005). In the second research perspective the contributions made by the Scandinavian School of Project Studies (Bragd, 2003) are included, whereby the possibility is claimed that once having satisfied certain conditions for functioning, the project teams also assume the form of communities of practice. This paper proposes an analysis of the possible interpretations of the concept of project team in the light of the theoretical perspectives indicated above.

Keywords: team, community of practice, collectivity of practice, mainstream, critical

1 - Introduction

In the last few years organizational literature has been frequently dealing with the theme of projects, spurred by the widespread diffusion of this tool throughout the world of business. One of the most fertile areas of reflection has been the one that analyzes the social dimensions of the project team.

In the literature two different research perspectives may be identified with reference to the relationship between project team and Community of Practice (CoP). The first, and more consolidated approach, starting out from Wenger's theoretical considerations, defines the two concepts clearly by excluding the possibility that the project team may also represent a community of practice (Wenger, 2000; Lindkvist, 2005). In the second research perspective the contributions put forward by the Scandinavian School of Project Studies (Bragd, 2003) are included, in which it is claimed that in some cases the project teams may assume the form of communities of practice.

This paper proposes an analysis of the possible interpretations of the concept of project team in the light of the theoretical perspectives indicated above.

The present contribution is articulated into two sections. In the first, the concept of Project Management (PM) is investigated highlighting research trends that differ in their basic premises, analysis methodologies and study approaches. In addition to the more consolidated research trends, an alternative literature also exists, which dwells severally on its critical state and on its potential hazards (Hodgson and Cicmil, 2006).

In the second section, attention is directed towards the study of the concept of project team, which is analyzed in its constitutive parts, with respect to the two possible interpretations of collectivity of practice and community of practice (Orr, 1990; Wenger, 1998; Lindkvist, 2005). If the concept of project team had initially assumed well-outlined and explicit surroundings, in the current literature there is an intense debate

Paolo Canonico
Dipartimento di Economia Aziendale, Università degli Studi di Napoli Federico II, Napoli
E-mail: pcanonic@unina.it

Ernesto De Nito
Dipartimento dell'Organizzazione Pubblica, Economia e Società, Università degli Studi Magna Graecia di Catanzaro
E-mail: denito@unicz.it

Gianluigi Mangia
Dipartimento di Economia Aziendale, Università degli Studi di Napoli Federico II, Napoli
E-mail: mangia@unina.it

Marcello Martinez
Dipartimento di Strategie Aziendali e Metodologie Quantitative, Seconda Università degli Studi di Napoli, Capua
E-mail: Marcello.Martinez@unina2.it

about a new interpretation of the project, embarking "soft" elements as key elements of reflection..

The paper ends with some criticisms on the need to consider the concept of project team consistently with the theoretical perspective adopted.

2 – An investigation into project management: two different interpretations

The scientific interest in the theme of project management is undoubtedly associated with its practical diffusion (Whittington *et al.*, 1999), which is particularly intensive in the case of certain specific industries (Ekstedt *et al.*, 1999). The study of project management has a great operational significance linked to the performances achieved by the companies that have recourse thereto. It is expedient to make reference to some interesting international research that has pointed out how a misapplication of project management brings about highly negative effects on business firms' achievements. According to the Standish Group's CHAOS Summary 2009 report, "This year's results show a marked decrease in project success rates, with 32% of all projects succeeding which are delivered on time, on budget, with required features and functions, while 44% were challenged which are late, over budget, and/or with less than the required features and functions and 24% failed which are cancelled prior to completion or delivered and never used".

Following Engwall's and others' contribution (Engwall, Steinthórsson and Söderholm, 2002), Bragd (2003:5) claims that: "[….] time-limited organisational structures (project organisations) represent a larger share of the operations of modern organisations".

In the entrepreneurial world, the diffusion of models of highly project-oriented organisational macro-structure (Hobday, 2000) is associated with the creation of complex products/services, which for their development require competences localized in different functional areas and, typically, in markets characterized by a high rate of exchange and by high-technological uncertainty (Gann e Salter, 1998).

Research into the subject of project management has progressively assumed a more markedly multi-disciplinary connotation by creating in a broad sense growing interest among scholars of organisational and managerial disciplines. With the passing of time Project Management has become an instrument utilized to bring activities to a close which could not be managed efficaciously by traditional organizational structures. From this viewpoint Clarke (1999) has defined Project Management as a lever for introducing change, that is to say an operational instrument for modifying a classical bureaucratic and functional structure through the introduction of figures of integration, which work according to horizontal-type log-

ics in support of the performance of traditional activities.

With regard to the theoretical orientations to be found in the literature it is possible to make reference to two macro-trends of research. The first that may be considered of a more institutional (mainstream) dimension, interprets projects as simple instruments of managerial intervention, and so the very idea of project management may be traced back to a set of models and techniques for the planning and control of complex systems of activity (Archibald, 2004).

This research trend starts out from the analysis of projects and management methodologies (Kerzner, 2005) and deals with the functioning characteristics of the project-based organisational structures (Sydow, Lindkvist and DeFillippi, 2004). The idea of mainstream is associated with the prescriptive nature of the competences and the managerial skills indicated in a considerable number of contributions existing on Project Management. In these works, the themes connected with organisational management of projects are systematically related to issues of control (Nieminen and Lehtonen, 2008).

In this approach (Kerzner, 2005), Project Management is related to a view of engineering-type organizations which associates the development of the firms with the possibility of constantly refining the instruments and methods of organisational coordination and change that serves to manage activities that are difficult to implement through a traditional functional-type scheme.

Project management is experiencing a phase of renewal in which the internal cultural dynamism and the imperative of innovation see a focusing not so much towards the hard logics of planning as towards the soft ones of the organization and coordination of activities, and above all of human resources. Cleland and Kerzner (1985) define the project as «A combination of human and non-human resources pulled together into a temporary organization to achieve a specified purpose».

Studies on project management traditionally carried out in the mainstream area have as their objective the identification of the activities to be achieved in the phases of the life cycle of the management of the projects, by analyzing the aspects connected with planning, execution and monitoring the progress of the activities that make up the project.

These studies have put a multi-disciplinary body of knowledge at the disposal of the management, techniques and practices which when opportunely integrated should allow an efficient management of the work outputs, in respect of timing, cost and quality, paying attention to the control of the risks, to the care of communications and sources of catering.

As a first step the mainstream approach to project management provides the definition of the Work Breakdown Structure (WBS) that consists in identify-

ing the elementary activities (tasks) into which to sub-divide the project, and which can be further assembled into macro-activities (work packages). To each activity are then assigned the human resources and the necessary materials, the opportune times for its completion, as well as the interdependence links with the other activities. The prescriptive conception of project management studies in the mainstream 'channel' makes use of specific instruments, such as Gantt's diagram, to identify the interrelationships between the various components of the project (macro-activities, elementary activities and output) on a time axis.

A second macro-trend presents Project Management as a real organizational archetype rather than as a set of operational applications. PM is interpreted as a dynamic way to conceive organizations that are able to adapt and change rapidly on the basis of the project's characteristics (Andersen and Jessen, 2003). In this way the viewpoint with regard to the classic conception changes, favouring the role of the project as production modality of the desired output. The project, in fact, is no longer defined as an instrument, a coordination mode, but as a push towards the construction of new organization mechanisms that are consistent with the unique characteristics of each complex objective to be reached.

Thus, during the last few years (Hodgson and Cicmil, 2006), a new research trend emerged in the literature which has attempted to create a theoretical organic reflection in order to interpret more thoroughly the Project Management phenomenon. The contributions which can be included within this second macro-trend, sharing a critical view of Project Management reveal certain peculiar features which go beyond the more traditional elements relating to the understanding of projects.

In this perspective certain authors (Sydow *et al.*, 2004) have questioned the usefulness of the traditional project tools. In their view, the focus should move from efficiency measures to the nature of project understood as organizational form. Further criticism moved against the traditional view of project management is that it places a strong rationalistic emphasis on the deliberated action of the actors of the project, which in fact are not encountered in empirical reality. In the critical management studies stream, the main effort is devoted to the understanding of the effects produced by PM within organizations.

According to Packendorff (1995), in the conceptual transition from the idea of "project as instrument" to that of "project as temporary organization") greater attention is shown to be given to the organizing process and more especially to the social interaction that takes place between individuals who work together in order to realize a reciprocally shared task. The planning process and its structuring may be relevant factors to be considered, but the determining factor of the work efficacy of the project team is to be found in the convergence of the participants in attributing significance to the formulated plans or to the coordination mechanisms adopted.

The sequence between the typical phases of the view of the project as instrument (planning/control/evaluation) is less easy to find in the view of temporary organization, in which a continuous process of enactment is encountered by the participants who learn through experience.

In the first column of Table 1, the development phase distinguishes the participants' adopting a plan and a formal structure: on the basis of the specification of the tasks to be performed, the work is divided into segments controllable through the assignment of resources and the formalization of a budget.

In the second column, in contrast, it is shown how some expectations are initially formed among the participants to the project team with reference to the nature of the project itself, relying on previous experiences or on the ability of the formal documents to represent the actual organizational reality.

At the moment of implementation the division of the tasks and the management of unforeseen events are achieved. Thus organizing the project means eliminating the potential margins of equivocalities among participants regarding the nature of the project.

Table 1 – *Different goals in Project Management research e basic assumptions of the idea of project*

Project metaphor / Research focus	Project as a tool	Project as a temporary organization
Development	Planning	Expectations
Implementation	Control	Action
Conclusion	Evaluation	Learning

Source: Packendorff J. (1995)

The 'normalization' of the shared meaning implies a process of permanent enactment on the part of the group members of the creation of sense.

The expectations-action-learning cycle may be replicated several times during the project's life-span at the end of which the relative organisational processes are concluded with the desired achievement of the initial objective, together with the disbanding of the group.

3 – The project team and the collectivity of practice

One of the more interesting research themes from an organizational point of view is represented by the formalization of the project activity.

In fact following a consolidated scheme it is possible to distinguish various hypotheses depending on the degree of structuring and formalization of the units and the organizational resources responsible for the activities associated with the project.

There is a more extreme initial hypothesis whereby the management of the activities relating to the project is entrusted to specialists who remain hierarchically subordinate to those responsible for function in absence of a project manager.

In this case, one cannot technically speak of a project team since the conditions previously indicated are shortcoming. Apart from this first alternative, a continuum is identified which has the organizational solutions of the weak matrix and the strong matrix at its two ends (Youker, 1975).

In the traditional (mainstream) view the project team is analyzed mainly in its structural elements arriving at a definition which substantially approaches the elaboration of a form of archetype (Archibald, 2004).

To understand more clearly the concept of project team in this approach it is useful to refer to the idea of collectivity of practice (CiP), as proposed by Lindkvist (2005: 1190), who claims that these typologies of groups are generally formed by individuals who have never met previously, who are to activate a rapid process of socialization within a very limited space of time and who are specifically responsible for tasks within the constraints imposed by the project in terms of cost, time and quality.

For a group of people to constitute a project team it is necessary to meet certain preliminary conditions. In the first place the members of the team are required to be explicitly identified by defining their roles and responsibilities precisely. In particular, identification is referred to those people who have an interest, a responsibility and a power of decision regarding the project and its outcomes.

Furthermore, it is necessary that the group objectives are clearly formulated and shared by the various members. According to Briner *et al.* (1990) the team members must be aware of the existence of the multiple expectancies relating to the project team's performance. These authors propose analyzing the theme of performance and the results obtained by project team with reference to the criteria of objectivity and excellence.

According to Lindkvist (2005) the project objectives perform the role of 'boundary objects' (Star, 1993) since they are sufficiently flexible to be adapted to the constraints and needs, and solid for representing a point of anchorage common for the specialists of the functional areas involved.

The project team represents a coordination mode used by functional specialists who have their own tasks which are complementary to each other. The occasional nature of the meetings among the participants emphasis the idea of a form of collectivity of practice which does not aim at creating an shared interpretation but responds to a need for integration.

From the viewpoint of the operational activities it is necessary that the project team works on the basis of a realistic plan that is accepted by the participants and that also chronologically defines the work phases and the contributions made by each member.

A further aspect which is examined refers to the theme of leadership which is typically analyzed with reference to the role of the project manager, who must give perspectives, orientation and support to the action of the project group members.

The role of project manager is also particularly important with regard to the management of conflicts within the project teams.

The literature agreed on considering that the activity of a project team must necessarily consider a certain level of conflict that typically regards the following areas:

- the identification of the priorities among projects;
- the definition of management procedures ;
- the scheduling of activities;
- cost control.

A final theme examined makes reference to the system of rules which defines the functioning of the project team with regard to its objectives, to the circulation of information, to the communication mechanisms and to the management of meetings. The procedures disciplining the project team's actions may be referred back to the system of rules already in use within the organization and may be specifically codified within formal documents relating to the project.

4 – The project team and the community of practice

In the previous paragraph it was mentioned how within the mainstream one may interpret the concept of project team by referring to the notion of collectivity of practice.

According to the alternative approach, in contrast, the qualifying element of the project team is represented by the relational component and by the possibility of having a knowing community within the groups relying on the semi-formal or completely informal social structures and on the social mechanisms of knowledge sharing (Bragd, 2003). In these contexts the members of the project team participate in constructing the shared identity and the social context which reinforces the identification process.

A second element to be highlighted regards the structure of the project teams. Reference is made to the fact that the members are chosen firstly in correspondence with the common experience matured as colleagues who have known each other for years and who have learned to share experiences and previous knowledge.

The criteria of identification of the members (more or less formalized) are conditioned first and foremost by the organization's basic functioning logics, by shared values, and by the human resources management policies.

The project team concept here is inspired by the idea of tinkering (Bragd, 2003; Ciborra, 1994) which favours the role of practice in the learning processes. Bragd (2003) states: "Tinkering is looking for a local fit, intuitively, between the questions asked and received.

Studying a problem, an idea, hearing something during lunch, or listening to someone in a meeting, the project team … tinkers … with the possible solutions". The idea of tinkering refers to a dynamic dimension of the interpretation of reality made by group members, who continuously reappraise their own rules of behaviour and their own evaluation parameters on the basis of the experience they have accumulated, giving rise to a process of constant reinterpretation.

In this way a collective dimension is shown which is confirmed by the subsequent idea of mixed practice zone, which Bragd defines as an organizational space in which the project group participants discuss, negotiate and share experiences by reconstructing meanings relating to the project's objective. This process is manifested in a series of formal and informal instances of social exchange among the group members (Jackson and Klobas, 2008).

These highlighted elements give evidence of a very close affinity between the concept of project team and that of community of practice. The scientific literature has for some time now been concerned with the question of community of practice (CoP) (Wenger, 1998, Lave and Wenger 1991; Brown and Duguid, 1998) by attempting to define both its structural aspects as well as its relationship mechanisms and the managerial actions that may be undertaken in support.

It is not easy to give a precise definition of community of practice, but it is possible to identify several of its peculiar features (Wenger, 1998):

- it claims mutual relationships;
- it favours the sharing of the way of doing things;
- it provides a shared language and gives the possibility of discussing as part of a continuous process;
- everyone knows what the others are able to do;
- it thrives on the sharing of symbolic elements.

According to Wenger in order to define CoP structurally it is necessary to reflect on three themes (Wenger, 1998: 52). The first is developed on the basis of the fact that the creation of meaning is connected to a definite process of negotiation of meaning. The second theme makes reference to the fact that the process of negotiation of meaning is connected to the two dimensions of participation and depersonalisation. The last theme is linked to the fact that interaction between these two dimensions is fundamental in the process of creating meaning.

The process of negotiation of meaning is activated through continuous interaction between the historical dimension, that coincides with the individual experience and the current/dynamic dimension which is associated with the practice that is being experienced. In other words, the interpretation of the practice depends on its content and on its past history. In order to interpret the content of the practice it is necessary to implement logics of participation and depersonalization. Participation represents a process of construction of relationships with other individuals which determines activation- as well as connection phenomena. The depersonalization dimension implies a process of formalization of individual and collective experience within the CoP. This brings it about that the symbolical manifestations of the CoP in terms of objects, artefacts, stories, sagas, refer to certain shared concepts and meanings (De Nito, 2008).

The two dimensions of participation and depersonalization are linked together by a duality relationship which implies complementariness and interaction. A process of reciprocal reinforcement is grafted whereby participation increasingly strengthens as common and shared meanings within the community are gradually elaborated, which in turn allows participation to be fostered.

The concept of community of practice is, moreover, linked to the theme of doing, and assumes a temporal dimension as well as a social one (Bellini and Canonico, 2008; Canonico, De Nito and Mangia, 2007). The temporal dimension identifies the CoP's

shared development. The construction of a common meaning is the fruit of a members' joint course of actions. It should be emphasised how in the construction of a CoP both "history" and the individual and collective stages of development are extremely relevant.

The social dimension refers to the interaction existing among the CoP members. In this sense practice may be interpreted as a process of social interaction and cannot be considered as a resource that may be coded and transferred from one individual to another.

Among the factors which facilitate the creation of community most relevant is the role of the construction of interpersonal relationships through carrying out activities of social interaction that endure through time.

From a managerial viewpoint Wenger claims that a specific managerial task consists in favouring the growth and development of the communities (Wenger, 2000).

It is possible to identify certain guidelines to stimulate the development of the community of practice (Wenger, 1998; Lave and Wenger 1991; Brown and Duguid, 1998). The factors tending to favour a process of integration among the various members and to create that relational fabric that permits the formation of the socialization refer to issues such as the organization of internal events, the development of a sense of belonging, and the attribution of specific meanings to the organizational artefacts (Wenger, 2000).

5 – Some concluding considerations

In the light of the considerations presented in the previous paragraphs we claim that the interpretation of the concept of project team depends on the theoretical formulation adopted to define Project Management. In the approach that has been defined as mainstream, project teams are endowed with peculiar structure and functioning requisites, which essentially regard the clear formal identification of the participants, the occasional nature of the meetings, the adoption of a body of rules which defines the forms of behaviour and the communication, and the relational mechanisms adopted. It is thus possible to identify the project team as a collectivity of practice (CiP) (Lindkvist, 2005) characterized by a strong prescriptivity by occasional and superficial levels of socialization. According to this view the project team cannot be considered as a community of practice (Lindkvist, 2005). Wenger (2000:96) claims that rather than being able to be interpreted in itself as a form of community of practice, the project team must be more correctly considered as an instrument of support for the action and interaction of the communities of practice by carrying out the role of boundary object (Star, 1993).

According to the alternative view, in contrast, the project team presents certain characteristics which make its functioning less prescriptive and deterministic. In the light of this perspective it becomes possible to interpret the project team as a CoP (Bragd, 2003).

The possibility of comparing the concepts of project teams and communities of practice relies on the fact that in both cases considerable importance is acknowledged for creating meanings shared by their members. In both phenomena the utilization of symbolic instruments is highlighted which support the processes of constructing meaning.

According to this perspective the project team tends to achieve a shared process of interpretation, and in fact avails itself of functioning mechanisms typical of the community, such as storytelling, the sharing of knowledge, and the negotiation of meanings. As a consequence, a fundamental role may be attributed to the social relationships.

In both phenomena it is possible to recognize special attention being paid to formal and informal mechanisms that represent useful occasions for creating and consolidating relational bonds.

The fact that it is possible to consider the project team according to two different modalities is closely associated with the theoretical reference perspectives. For example, whereas in the mainstream approach the members of the project are considered as individuals that do not necessarily have reciprocal and consolidated knowledge, in the alternative approach the project group members are identified on the basis of their common history and previous mutual relationships.

Significant operational implications derive from recognizing the possibility of interpreting the concept of project team according to two different theoretical perspectives. The choice of considering the project team as a community of practice or as a collectivity of practice implies differences in the managerial actions in keeping with the one or the other view.

Thus the analysis of the effects that the various different managerial actions can exercise on the evolution, formation and development of the project teams within organizations still remains open.

References

Andersen E. and Jessen S.A. (2003), Project Maturity in Organizations, *International. Journal of Project Management*, 21 [457-461].

Archibald R.D. (2004). *Project Management*, FrancoAngeli, Milan.

Bellini E. and Canonico P. (2008), Knowing communities in Project Driven Organizations: analysing the strategic impact of socially constructed HRM practices, *International Journal of Project Management*, vol.26 n.1.

Bragd A. (2003), Knowing Management an Etnographic Study of Tinkering with a New Car, *17th NFF conference in Reykjavik*, 14th 16th August 2003

Bresnen M., Edelman L., Newell S., Scarbrough, H. and Swan, J. (2003), Social practices and the man-

agement of knowledge in project environments, *International Journal of Project Management*, 21 [157–166].

Briner W., Geddes M. and Hastings C. (1990), *Project Leadership*, Aldershot, UK.

Brown J.S. and Duguid P. (1998), Organizing knowledge, *California Management Review*, Spring.

Canonico P., De Nito E. and Mangia G. (2007). Projects as a tool to enforce the creation of communities of practice, *Proceedings of the 8th International Research Conference on Quality, Innovation and Knowledge Management*, New Delhi, India, 12-14 febbraio.

Ciborra C. (1994), From Thinking to Tinkering: the Grassroots of Strategic Information Systems, *The Information Society*, Vol. 8. n.4, [297-309].

Clarke A. (1999), A Practical Use of Key Success Factors to Improve the Effectiveness of Project Management, *International Journal of Project Management*, 17, 3, [139-145].

De Nito E. (2008), *Organizzazione, Conoscenza e Progetti,* Franco Angeli, Milano.

Ekstedt E., Lundin R.A., Soderholm, A. and Wirdenius, H. (1999), *Neo-industrial Organising: Renewal by Action and Knowledge Formation in a Project-intensive Economy*, Routledge, London.

Engwall M., Steinthorsson R.S and Söderholm A. (2002), "Temporary Organizing – A Viking Approach to Project Management Research", in Czarniawska B. and Sevón G. (eds.) *The Northern Lights*, Liber, Copenhagen.

Financial Times (2000), *Whitehall Counts the Costs of IT Projects*, 14th January: 13.

Gann D.M. and Salter A. (1998), Learning and Innovation Management in Project-based, Service-enhanced Firms, *International Journal of Innovation Management*, 2, 4, [431-454].

Hobday M. (2000), The project-based organisation: an ideal form for managing complex products and systems?, *Research Policy*, 29, [871–893].

Hodgson D. and Cicmil, S. (eds.) (2006), *Making Projects Critical*, Palgrave MacMillan, Basingstoke.

Jackson P. and Klobas J. (2008), Building knowledge in projects: a practical application of social constructivism to information systems development, *International Journal of Project Management*, 26, [329–337].

Kerzner H. (2005), *Project Management. A Systems Approach to Planning, Scheduling, and Controlling*, Wiley, NY.

Kerzner H. and Cleland D.I. (1985), *Project/Matrix Management, Policy and Strategy*. Van Nostrand Reinhold, New York.

Lave J. and Wenger E. (1991), *Situated Learning: Legitimate Peripheral Participation*, Cambridge University Press, Boston.

Lindkvist L. (2005), Knowledge Communities and Knowledge Collectivities: A Typology of Knowledge Work in Groups, *Journal of Management Studies*, 42, 6, [1189-1210].

Morris P.W.G. (1994), *The Management of Projects*, Thomas Telford, London.

Nieminen A. and Lehtonen M. (2008), Organisational control in programme teams: an empirical study in change programme context, *International Journal of Project Management*, 26(1), [63–72].

Orr J.E. (1996), *Talking About Machines: An Ethnography of a Modern Job*, Cornell University.

Packendorff J. (1995), Inquiring into the Temporary Organization: New Directions for Project Management Research, *Scandinavian Journal of Management*, 11, 4, [319–334].

Rico, R., M. Sanchez-Manzanares, F. Gil and C. Gibson (2008), Team implicit coordination processes: a team knowledge-based approach, *Academy of Management Review*, Vol. 23, n.1, [163-184].

Scarbrough H. and Swan J. (2005), *Project work as a locus of learning: the journey through practice*, EGOS Conference, Berlin.

Shenhar A. and Dvir D. (1996), Toward a Typological Theory of Project Management, *Research Policy*, 25, [607–32].

Soderlund J. (2003), Building Theories of Project Management: Past Research, Questions for the Future, *International Journal of Project Management*, 22, [183–191].

Soderlund J. (2002), Managing Complex Development Projects: Arenas, Knowledge Processes and Time, *R&D Management*, 32, 5, [419-430].

Standish Group (1995), *Chaos*, paper on line at http://www.standishgroup.com/

Star S.L. (1993), "Cooperation without Consensus in Scientific Problem Solving: Dynamics of Closure in Opens Systems", in S. Easterbrook (ed.), *CSCW: Cooperation or Conflict*, Springer, London.

Sydow J., Lindkvist L. and Defillippi R. (2004), Project-Based Organizations, Embeddedness and Repositories of Knowledge: Editorial, *Organization Studies*, 25, 9, [1475–1489].

Wenger E. (1998), *Communities of Practice: Learning, Meaning and Identity*, Cambridge University Press, Boston.

Wenger E. (2000), Communities of Practice and Social Learning System, *Organisation*, 7, [225-246].

Whittington R., Pettigrew A., Peck S., Fenton E. and Conyon M. (1999), Change and Complementarities in the New Competitive Landscape: A European Panel Study, 1992–1996, *Organization Science*, 10, 5, [583–600].

Youker R. (1975), Organizational Alternatives for Project Management, *Project Management Quarterly*, 8, 1.