Proposal of a Model for effective Management and Development of virtual Teams

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Abstract: *The main aim of this paper is to present a pilot proposal of a model of "Virtual Development Management System" (ViDeMaS) which will facilitate more effective management and development of virtual teams. Management and development of virtual teams is not a simple concept. It comprises a body of knowledge from a number of fields and scientific disciplines. The complexity of the concept may not be simplified as it is absolutely essential for full understanding of its nature. In order to gain better orientation in the concept, different perspectives will be used in the description of the model, which will enable us to achieve the goal of the work and to present the main results of the work (creation of a model for Virtual Development Management System). The present paper thus describes from different perspectives the proposal of a sufficiently detailed and complex model that may be utilized both on theoretical and application level.*

Key words: virtual team, virtualness, technology-mediated communication, trust, teamwork, virtual work

1. Introduction

Virtual team work and use of communication technologies in organizations have been the focus of a number of meta-analyses aiming at identification and summarization of the concepts and approaches used in specialist literature. These analyses present an overview of current knowledge from different angles of research, in particular from the field of effectiveness of communication, quality of decision-making, information processing in virtual teams and the implications ensuing from these findings for the field of virtual team management (Baltes et al. 2002; Curseu et al. 2008; Dennis et al. 2001; Ebrahim et al. 2009; Ganguli et al. 2008; Ortiz de Guinea et al. 2005; Powell et al. 2005). These works provide us with initial theoretical input, helping us conceptually grasp the issue and address such questions as: What is a virtual team? What are the typologies, methodologies and techniques of virtual teams?; or What are the most important benefits of virtual team work?. We can find various definitions, paradigms, researches, concepts, theses, studies or descriptions of the benefits of implementation of virtual work in framework studies from the field of virtual team management.

There are two main reasons for the growth of virtual teamwork, and the use of communication technology in organizations. First, the emergence of virtual teams was a response to various challenges organizations of the 21st century faced and still face. (Curseu et al. 2008) Rapid changes in the business environment, globalization of the marketplace, a growing popularity of inter-organizational alliances combined with a tendency to design more flexible and versatile organization structures, has accelerated the need for organizations to coordinate work across geographical, functional, intra- and interorganizational as well as temporal boundaries (Armstrong and Cole, 1995; Lipnack and Stamps, 1997; Townsend et al., 1998). Second, the rapid development of communication technology during the last decades, made the distribution and the coordination of work much easier and much faster across time and across different geographical locations (Montoya-Weis et al., 2001; Kirkman et al., 2004; Hertel et al., 2005).

Therefore, communication technology facilitates the transfer and use of knowledge across time and space. As a consequence, virtual teams perform a wide variety of tasks like: new product development (Schmidt et al., 2001), decision-making (Poole et al., 1993; Dennis, 1996; Warkentin et al., 1997; Benbunan-Fich et al., 2002), brainstorming and idea generation (Pissarra and Jesuino, 2005), implementation of inter-organizational alliances (Maznevski and Chudoba, 2000), the development of marketing strategies (Montoya-Weiss et al., 2001), and elaboration of business plans (Jarvenpaa et al., 2004). In contemporary organizations, virtual teams mostly perform information-processing tasks like decision-making and problem solving (Martins et al., 2004; Hertel et al., 2005). The use of

communication media implies important managerial challenges, because it induces radical changes in team processes (e.g., coordination, planning), the development of the emergent states (e.g., trust, team identity, cohesion), status differences and leadership (Curseu et al. 2008).

Management and development of virtual teams is not a simple concept. It comprises a body of knowledge from a number of fields and scientific disciplines. The complexity of the concept may not be simplified as it is absolutely essential for full understanding of its nature. Such simplification may be illustrated by the opinion that management of virtual teams is focused only on the process of implementation and use of information and communication technologies in virtual work. To gain better orientation in the concept, different perspectives will be used for the purposes of the proposal of the model (see the division in Beckman 1999; Bures 2007), which will enable us to achieve the goal of the work and to present the main results of the work (creation of a model for *Virtual Development Management System).* Individual perspectives are as follows:

- conceptual perspective,
- organizational perspective,
- managerial perspective,
- human resources perspective,
- technological perspective,
- methodological perspective,
- process (implementation) perspective.

As regards individual perspectives, it is necessary to keep in mind that they represent only points of view on the issue of management and development of virtual teams. It is therefore necessary to utilize them to the maximum extent and thus ensure complex and systemic approach to management and development of virtual teams. Interconnectedness of the perspectives is their fundamental property which cannot be ignored.

2. Conceptual perspective

Conceptual perspective may be characterized by analysis of a range of issues concerning the definition of virtual work as such. This perspective is particularly relevant for the theoretical level of research on virtual teams. As regards business practice and practical implementation of virtual work, this perspective is significant in particular as a source of a framework within which virtual work is perceived by concrete people in the given organization and according to which it is also implemented and realized. In designing the model, concepts dealing with performance of virtual teams from different points of view have been analysed.

Virtual team performance depends on several factors that are influenced by technology, such as: the quality of communication (Maznevski and Chudoba, 2000; Kayworth and Leidner, 2000; Sproull and Kiesler, 1986), planning and project management (Kayworth and Leidner, 2000), coordination (Maznevski and Chudoba, 2000), developing a shared context (Hinds and Bailey, 2003), trust (Jarvenpaa and Leidner, 1999; Jarvenpaa et al., 2004; Kanawattanachai and Yoo, 2002), commitment with the team and team members' satisfaction (Caballer, Gracia and Peiro´, 2005), team identity development (Bouas and Arrow, 1996, Warkentin et al., 1997, Fjermestad and Hiltz, 2000), training and team building (Kaiser et al., 2000; Warkentin and Beranek, 1999), and cohesion (Lurey and Raisinghani, 2001; Maznevski and Chudoba, 2000). In order for technology to foster team performance, it should enable proper social interactions between the team members and fit the requirements of the task. (Curseu et al. 2008).

3. Organizational perspective

Organizational perspective is primarily focused on the issues of **a) typology of virtual teams, b) dimensions of virtualness, c) organizational culture and virtual teams.**

The table below shows the basic components of the level of social engagement and learning of Virtual Work Teams, Virtual Communities of Interest and Virtual Communities of Practice.

Table 1.
Level of Social Engagement and Learning of Virtual Work Teams, Virtual Communities of Interest, and Virtual Communities of Practice

Component	Work Team	Virtual Community of Interest	Virtual Community of Practice (VCoP)
Organizational Focus	Focuses on specific work related task output utilizing technology to disseminate and collaborate in order to prepare deliverables (Palmer et al., 1998)	Self-organized when people engage around a common interest online. Exhibit relatively few permanent structures with fluid membership (Palmer et al., 1998)	Members select the topic themselves, create their own structure, and develop their own culture (Wenger & Snyder, 2000) May be related to an issue, discipline, problem, scientific/scholarly inquiry, and integration of knowledge Rarely existing in any one organization's setting (Zarb, 2006)
Membership & Purpose	Frequently assigned by management and usually work related to complete an assignment Rely on employer empowerment (Geisler, 2002)	Self selected based on interest Low degree of individual awareness, trust, social learning, and shared understanding (Couros, 2003)	Self-organized, self-managed social learning that crosses structures, cultures, organizations, time, and space to learn from each other, develop new knowledge, and continuously improve know-how (Lueg, 2000; Kimble et al., 2001)
Motivation	Identity relates to work related environment and rewards, and stable until the task is completed	May have strong sense of identity to the domain focus and topic, but not job related (Couros, 2003)	Learning and co-learning for the sake of sharing new knowledge Self-confidence, self-awareness, and strong motivation to learn and share know how with others (Bellarby & Orange, 2006)
Permanence	Disband when task has been completed or until the next re-organization (Wenger & Snyder, 2000)	Some degree of permanence as long as members stay interested	Permanence continues often as long as an issue requires learning and improvement (Wenger & Snyder, 2000)
Strength of Social Relationship	Job requirements and recognition hold the group together (Wenger & Snyder, 2000)	Mutual needs hold the community of interest together (Wenger & Snyder, 2000)	Co-learning passion, commitment, and identification with the group holds the group together (Wenger & Snyder, 2000)
Meeting Format	Low level of individual awareness, and low shared understanding (Couros, 2003)	May never meet face-to-face, but may chat online	Online collaboration does not exclude face-to-face meetings (Zarb, 2006)
Trust	Trust level varies depending on the task orientation of the team, and the positive development of trust and reciprocity.	Trust is vested in the interest area and web domain, not other members of the community	High level of trust, social relationships, collaboration, sharing, and sense of belonging as a valued member

Tab.1: Level of Social Engagement and Learning of Virtual Work Teams, Virtual Communities of Interest, and Virtual Communities of Practice (Sobrero 2008)

Organizational perspective also deals with the types and dimensions of virtualness (Cajthamer, 2009). Bell and Kozlowski (2002) use four notions on the basis of which the authors define the level of virtualness:

- temporal distribution,
- boundary spanning,
- lifecycle,
- member roles.

The authors at the same time point out that virtual teams may not be fitted only into these four characteristics and they note that there is a wide range of other variants and subtypes that may be described on the basis of the four characteristics mentioned above. The dimensions of virtualness comprise risk factors (discontinuities) that may have a negative impact on communication and thus pose a threat to the flow of information. Literature (Cajthamer, 2009) most often refers to six main discontinuities: organizational discontinuity, geographic separation, temporal dimension, cultural differences, operating procedures, and technological discontinuities.

Organizational structure as one of soft factors of management has a significant influence on hard factors of management of a business/organization/team. (Jancikova, 2008). The role of organizational culture in the life of an enterprise is, however, underestimated or ignored altogether by a number of managers (Karahanna et al., 2005). This is mainly due to the fact that managers prefer such elements of management that are measurable and easy to influence, i.e. hard elements of management. Cultural aspects of functioning of an organization tend to be seen by them as something intangible and indefinite (Schein, 1999). Understanding that "cultural aspects dominate hard elements of a business, such as organizational structure, strategy, management systems, and others" (Schein, 2000, in Ashkanasy, Wilderom, and Peterson, 2000, p. xxiii) is, however, quite crucial for successful management in the long term perspective. Organizational culture is delimited by the authors as structured phenomenon comprised of individual elements (Schein, 1992, Lukasova, Novy et al., 2004, Denison, 1990 and others). The elements of organizational culture are constituted by basic structural and functional elements of organizational culture. The elements of organizational culture most frequently mentioned are artefacts, norms, attitudes, values and basic assumptions. According to Edgar Schein (1992, 1999), basic assumptions concern three areas, i.e. external adaptation, internal integration and the deeper essence of life.

4. Managerial perspective

Managerial perspective can be seen as subsuming various procedures that lead to formation of virtual teams and their effective development. It concerns mainly the following:

- managerial procedures,
- measurement and evaluation of intellectual and social capital (see e.g. Bontis 1999)
- management of tacit knowledge (see e.g. Bush 2001, Mladkova 2007, Owen 2001)
- measurement of motivational climate, (see e.g. Hronik 2006)
- management of work performance, (see e.g. Armstrong 2000, Bacal 1999, Koubek 2004)
- creation of suitable organizational culture. (see e.g. Schein, 1992, Lukasova, Novy et al., 2004

Managerial perspective is strongly connected with implementation of knowledge management into management of virtual teams. This implementation is not an end in itself; we always expect some benefits. These benefits may be defined as **a) realization of knowledge processes with use of certain technologies** (enhancement of knowledge sharing, enhancement of learning, elimination of loss of know-how) or **b) enhancement of the very basic goals of the organization** (increase in performance, increase in profit, implementation of new operating procedures, reduction of costs (Bures 2007).

Kubatova (2008) states in her work that the assumption of the possibility to create effective virtual teams has influence on the decision of the organization to support migrant behaviour of its employees. Conviction about virtual work groups may be verified by answering the following questions:

- Are the managers convinced that virtual teams enhance flexibility of the organization and its ability to respond to new stimuli?
- Are the managers convinced that virtual teams may be equally effective and cohesive as traditional/face-to-face work groups?
- Are the managers convinced that members of virtual groups may communicate and cooperate as effectively as members of traditional/face-to-face groups?

- Are the managers convinced that the members of virtual work groups enjoy the same work satisfaction as members of traditional/face-to-face work groups?

Answers to the following questions then verify to what extent the management of the organization believes that information and communication technologies (ICT) are important for individual performance of the employees:

- Do the managers believe that ICT contribute to increase of employee productivity and effectiveness?
- Do the managers believe the employees will use the provided ICT? (Kubatova 2008)

5. Human resources perspective

Human resources perspective focuses on the impact of implementation and realization of virtual work on human resources management and human aspect of organizations in general. In human resources perspective the issues regarding **a) social perception in virtual teams; b) team dynamics and team effectiveness; c) competencies and competency models; d) personal development in virtual teams and multi-source feedback** (Vaculik, 2010).

The method of assessment centre (in our conception a virtual diagnostics-development assessment centre) makes it possible to judge a person's personality and the behaviour that he/she is likely to exhibit. This is a process of forming of an impression of other people and its evaluation, i.e. social perception. Social perception lies on the boundary between cognitive psychology, social psychology and personality psychology. The notion of social perception collectively denotes all processes belonging to the sphere of formation of impressions of other people and their evaluation. Evaluation of others is a subset of thinking about the social world. On the level of mental processes social perception involves cognitive processes – perception of other people and information originating in them, and subsequently processing of this information by using memory, reasoning, decision-making and imagination. Social perception also includes the sphere of emotions. Evaluation is influenced by the current emotional condition or the general emotional state of the evaluator.

Social perception is susceptible to various inaccuracies involved in the process of information processing, attribution tendencies and emotional states. The inaccuracies affecting information processing include cognitive shortcuts, implicit personality theory, and distortion following from social categorization.

Competencies represent the core of observation and evaluation of behaviour. Aptly selected competencies enable formulation of a prediction of future behaviour of a person in the team, enabling differential diagnostics of skills or they may be used for people development. **Not all competencies are suitable for any purpose of *virtual development centre*. The choice of competencies must conform to the particular purpose.**

Definition of competencies is very diverse and ranges from definition by means of abstract psychological constructs to defining through behaviour manifestations (Schippmenn et al., 2000; Tett et al., 2000; Voskuijl, 2005). Our definition of competencies is based on the KSAO model. According to this model competencies are comprised of knowledge, skills, abilities and other characteristics of the personality. Correctly defined competencies are formed by behaviours that are related but are not mutually exclusive. Another important aspect is that specific behaviour manifestations are concerned – competencies do not overlap, they are conceptually different, i.e. that competencies are formed by behaviour that may be subsumed under one competency. It should be however noted that the requirement for absolute specificity of competencies is merely an ideal that we may only approach when defining competencies for the purposes of *Virtual Development Management System*.

6. Technological perspective

Technological perspective examines in particular the ways in which individual information, communication and knowledge technologies may render the work of virtual teams more effective. The range of issues analysed under technological perspective includes: **a) methodology of Computer Supported Cooperative Work (hereinafter CSCW)**; **b) technologies that support social infrastructure** (*virtual worlds, social and collaborative software*); **c) tools of organizational network analysis** (see the link to methodological perspective).

The aim of technologies is to support information and knowledge infrastructure within organization. Generally speaking, infrastructure creates the framework providing the basis for individual processes that should be realized and it must be created so that individual knowledge flows may be effected. For

this reason (Borghoff 1998 in Bures 2008) suggests that every organization answers the following questions:

- What kind of information technologies can facilitate realization of knowledge flows and support their conversion from explicit to tacit and vice versa?
- What kind of information technologies can best support explicit knowledge owned by the company?
- What kind of system is needed for support of exchange of tacit knowledge in the organization?
- In what way can the volume of explicit knowledge be managed effectively?

If we were to provide a more specific **typology of team communication** in virtual teams, an interesting categorization is brought by the study of Massey, Montoya-Weiss and Hung (2003). On the basis of cluster analysis of team interactions in a specially designed discussion forum the authors have identified four main ways of communication in a virtual team:

- *Message-oriented communication* is represented by sharing of thoughts, ideas and perspectives. Its core is constituted by exchange of information between individual team members. However, the contributions are not subject to more detailed clarification or evaluation by other participants of the discussion.
- *Focused communication* is connected with decision-making and problem solving. The participants take an active part in the discussion and they critically examine the contributions of others. Focused communication often contains evaluation of contributions of other people or expression or advocacy of an opposing attitude.
- *Social or relationship-oriented communication* is officially not concerned with the task, or is not essential for its direct fulfilment. Even though such communication may seem on the face of it redundant or even distracting attention from the task, the results of several researches have shown its positive connection with more quality decisions and higher satisfaction after completion of the task.
- *Process management communication* is aimed at management and clarification of the work process. It comprises notes and comments relating to the current position or the progress made during fulfilment of a task with regard to the final deadline. (Juhanak 2009)

7. Methodological perspective

Methodological perspective analyses methods concerned with diagnostics and development of virtual work. This perspective has particular relevance for theoretical level of research on virtual teams. As regards business practice and practical implementation of virtual work, this perspective is significant in particular as a source of a framework that may be used in implementation perspective for the proposal of a design of *Virtual Development Management System.*

Methodological perspective analyses the following methods a) **sociometry** (sociometric-rating questionnaire), b) **SYMLOG, c) sociomapping,** and **d) psychodiagnostic methods.** In addition to delimitation, we also assess validity of the methods for *Virtual Development Management System.*

The methods mentioned above are based on the assumption that development of relations in a team is considerably enhanced if team member are able to express their opinions on qualities and skills of individual members. This enables remarkably fast development and strengthening of mutual trust, understanding and openness (Whitmore, 2007, p. 162).

As far as psychodiagnostic methods are concerned, Hogans tests will be analysed from the perspective of management of virtual teams. These tests are applied widely within human resources management. They may be used in practically all situations when it is necessary to get to know an individual as best as possible and compare him/her with others. Their application is possible within recruitment and selection, work adaptation, training and development, assessment and remuneration, planning of professional career, relocation, promotion, succession, outplacement and also for employee departures (Wagnerova, 2008).

8. Process (implementation) perspective

Process perspective defines processes, methods and procedures that enable successful implementation of *Virtual Development Management System* for the purposes of virtual teams:

- critical factors of success,
- assumptions and problems,

- anticipated benefits,
- proposal of a design of methods and competencies matrix,
- use of the methodology of Participatory Process Prototyping for an information system design.

Methods and competencies matrix

When designing the model for *Virtual Development Management System* we should address the following questions:

- What competencies will be included in Virtual Development Management System?
- What type and contents of methods will be included in Virtual Development Management System?
- In what way will the validity of the obtained data be evaluated?
- In what way will ethical principles for realization of Virtual Development Management System be ensured? (Vaculik, 2010, p. 62)

Provided the answers to these questions are available, it is possible to prepare a methods and competencies matrix/an expercise by dimension matrix. This matrix constitutes the core of the design and contains all competencies and methods included in *Virtual Development Management System*.

The design of *Virtual Development Management System* is comprised of competencies and methods that serve to measure and develop. They are jointly connected into a matrix of methods and competencies. In order to create such a matrix it is necessary to have thorough knowledge of the types of competencies and methods that may be included in the design.

One of the first steps of realization of the method of *Virtual Development Management System* is the selection of measured competencies. To this end, job analysis or, as the case may be, a more extensive analysis of the situation in the organization is used. In recent years new approaches to job analysis have occurred (Shippmenn et al. 2000), taking into consideration to a greater degree the less stable and ambiguous conditions faced by organizations. This is also aligned with novel approaches to identification of these characteristics. These include competency modelling (Schippmenn et al. 2000), strategic job analysis, or future-oriented job analysis (Voskuijl, 2005).

In contrast to traditional approach, the more recent approaches show a greater focus on the environment in which organizations find themselves, on the goals of the organizations, and they are also more oriented to the future. The main base of competency modelling, which is in comparison to plain job analysis standardized only to minimum degree, is focus on effectiveness and success of the whole organization both in the present and in the future. Competency modelling is used for identification of key competencies that are common to all individuals in an organization and that are important for the success of the organization as a whole.

Competency modelling (Schippmenn et al., 2000; Voskuijl, 2005):

- focus on organization as a whole,
- focus on current and future situation,
- focus on people and their skills,
- focus on personality traits and values,
- identification of key competencies common to all individuals in the organization,
- access to data collection and their analysis is freer, procedures are not standardized,
- focus on long-term goals and business strategies of the organization.

PPP methodology

For the design and implementation of the information system for *Virtual Development Management System* the Participatory Process Prototyping (PPP) methodology will be used. This methodology has been designed by Gappmaier. His methodology (Gappmaier 1997, Repa 2007) is characterized as holistically designed methodological approach to management of knowledge processes. This approach combines new methods with the traditional, mature ones, not only from the field of modelling, analysis and construction of processes, but also from the field of change, project and team management. Through this expedient combination of methods PPP facilitates joint – mutually interconnected development of processes, technologies, and human potential. **This methodology emphasizes the role of cooperation, feedback, and builds on practical applicability of results and feasibility of processes**.

In terms of thought, PPP is based on the so-called "Holistic Business Process Management (hBPM), built on the principles of:

- permanently balanced improvement of the process on the level of human resources, activities, technical resources,
- awareness of the need to take care of both hard and soft matters,
- conceptualization of organizational processes as a dynamic and open socio-technical system.

As far as basic understanding of the progress of a project is concerned, PPP is not markedly different from other methodologies; it is rather the specific and sophisticated combination of repeated deployment of expedient methods, approaches and techniques with the intention to balance the three basic dimensions mentioned above (technology, activity, people) that it differs in. PPP procedure comprises six steps:

Project step	Goal
Initial study	Development of the basic conception of *Virtual Development Management System* on the basis of*:* • development of management vision, • conceptual analysis
Detailed study	Development of an informal detailed model of processes on the basis of: • analysis of potential system
Design of systems of the process	Development of a formal detailed model of processes on the basis of: • workflow prototyping • process modelling
Development and implementation of a system of processes	Development of a workflow model on the basis of: • information system development
Installation and putting of the systems of processes into operation	Installation and putting of the system into operation
Continuous improvement of processes	Continuous use of feedback from processes

Table No. 5: PPP methodology procedure (Repa, 2007)

9. Virtual Development Management System

An important property of information technologies is the capacity to replace classical methods used in administration and management of projects with more clearly structured, more efficient and cheaper solutions. Requirements and possibilities, however, often form to a considerable degree two separate worlds in organizations. Problems in many cases arise as a result of incompatibility of performance requirements and current possibilities of the organization. When implementing systems and solutions of potential problems and dysfunctions of the business organism it is therefore necessary to take into consideration this duality of requirements and possibilities as a whole. It is vital for management of virtual teams to be aware of these requirements and to take them into account as the approach to management is often based on a harmonic development and resonance of "hard" and "soft" aspects of management. Two worlds – the world of computers, the internet, goals, and performance requirements and the world of human resources, motives, and barriers – meet in a synergic relationship.

The objectives of the model of Virtual Development Management System may be summed up into three problem areas of virtual teamwork– a combination of communication, coordination, and cooperation. The model will expand the classically designed systems most often operating on the time-task-technology basis with "soft" aspects of management. Thanks to the model the participants will be able to share visions and information effectively. The team manager, on the other hand, will get a tool that will enable him/her to monitor the motivational climate of the team and group dynamics.

The process of teamwork is categorized into the following sub-objectives:

- *individual human traits*, such as the manner of conversation, dialogue, determination of duties
- *organizational aspects*, that is, the structure and culture of the organization
- *problems of proposal of teamwork,* e.g. engagement of a participant in the process of cooperation
- *aspects of team dynamics*, speed of decision making in the work process

The applied technologies mainly concern:

- *communication mechanisms* that enable the workers to send and receive messages irrespective of their geographic location
- *means of remote workspace,* e.g. sharing of remote desktops
- *sharing of information tools* (databases)
- *means facilitating team activities,* e.g. cooperation on different version of the same document

The crucial task of the model is support of teams and workgroups in achieving common goals. A solution is provided by an interface to a remote workspace that is accessed by different individuals at the same time or at different times, from local or remote locations. The nature of the common goals and the workspace has a direct impact on the functionality and the character of the applications integrated in the solutions.

The model will therefore contain the following techniques and related tools:

a) development of a strategic vision (Management-level visioning),
b) development of a vision of a healthy team (Team-level Visioning),
c) psychodiagnostic tools for individual and group diagnostics
d) tools for social sharing of information (Social bookmarking)
e) team building (ReTeaming)
f) brainstorming application
g) feedback tools (Feedback Meetings).

10. Conclusions

Designing of a model for management of virtual teams is a great challenge. Effective management can help virtual teams overcome some limitations given by the virtual nature of the communication process and information processing. Building of trust, cohesion and strong team identity represent one of the hardest challenges faced by managers of virtual teams. In this respect there are not universally valid rules. Face-to-face interaction can play a significant role in this respect. In particular in the initial stages of a team project the advantage of a personal meeting is that the team members can become acquainted with one another. Direct contact is crucial for development of trust and cohesion. This aspect is, however, often not practicable, thus our focus is to ensure that Virtual Development Management System provides team members with the best and most complex input and diagnostic information.

At the present moment, the model is in the phase of workflow prototyping and process modelling. We have already carried out a detailed pilot study on five virtual teams that revealed both the benefits and the risks of the methodology proposed by us. The results of the study suggest that the greatest risks seem to be coming from the area of information ethics – what range of people and in what extent has access to the results of various diagnostic, feedback and rating information. And this is the aspect of the model that we will focus on in our further work.

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