

# Virtual Teams – A New Paradigm in Management Theory

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## Abstract

This paper studies the types of teams in management and identifies the essential characteristics of organizational models applied in management practice: work group – team – self-managed work team and virtual team. The focus is put on **virtual teams**. The key prerequisites, regularities and processes associated with the design and functioning of **highly effective** virtual teams are analyzed. The indicators of team effectiveness are specified and the factors influencing immediate results are analyzed.

*Keywords:* Group; Team; Self-managed work teams; Virtual teams

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## INTRODUCTION

In modern management **virtual teams** are a new paradigm in theory and management practice. Information and communication technologies transform the economy, business and institutions in society. For a long period of the development of management the emphasis has been on establishing a sustainable environment, hierarchy, traditional roles and routine operations. The intensive market penetration in all sectors of the economy, globalization and development of means of information communication necessitate a change in the behavior of the organization associated with the growing demands of consumers, the shorter lifecycle of products, technological developments, political and economic instability. The driving force of these transformational changes are communication and information technologies. The new opportunities for generating and providing information change the lifestyle, way of working and way of thinking. The requirements are increasing at every level, from the individual through the team to the global. The unprecedented number of corporate bankruptcies and corporate mergers in recent years illustrates a negative trend in business today. It is characterized by the inability of a number of organizations in different sectors of the global economy to adapt to dynamic changes in the external environment.

This requires a reassessment of a number of management schemes that were considered indisputable until now and generating new starting points and organizational solutions.

Risk and uncertainty dominate in modern global and national economy. In research, processes of evolution of the concepts, changes in attitudes and generally accepted truths are occurring that lead to qualitative development of accumulated knowledge.

In the business world the focus is increasingly placed on the need for teamwork on consultancy basis as a basic factor to achieve competitive advantage in an environment of high uncertainty. Teams are a natural supplement to individual initiative and realization as they include greater commitment to the common achievements. Despite the general recognition of the need for teams in Bulgarian organizational practice, subconsciously this phenomenon is highly underestimated by the management. This is an insurmountable barrier to realizing the potential of the team.

## **I. TYPES OF TEAMS IN MANAGEMENT – NATURE AND DIFFERENTIATION**

In theory and management practice the terms ‘group’ and ‘team’ are used as synonyms, although they identify different organizational models. In many situations the boundaries are blurred and undefined. Groups in management have a broader meaning than teams and are applied to a large number of social and organizational forms<sup>1</sup>. Research into group dynamics (therapeutic groups, T-groups, etc.) have shown that the main task of the group members is the implementation of individual goals. The term ‘group’ is a generic concept and is distinguished from the work group by two main criteria – differentiated roles and tasks performed by the members.

The team is a small group of people with additional knowledge and skills (technical, functional, interpersonal, social, cognitive) that are directly related in achieving specific common goals and

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<sup>1</sup> Hackman, J., 1987. The design of work teams. In Handbook of organizational behavior. Englewood Cliffs, NJ: Prentice-Hall, pp. 315–342

unique results through an approach which holds them mutually responsible<sup>2</sup>. If you remove the phrases ‘specific common goals’, ‘unique results’ and ‘mutual responsibility’, then this definition can refer to the groups. The main characteristic of team work is **coordination** through which team members self-regulate in the implementation of planned goals. The functional requirements that are identified as key features of the team environment are concurrency (parallel execution of activities) and consistency (team tasks and intermediate results are input for other members of the team).

In work groups the individual roles and responsibilities are the basis of the result. Group activities are related to the sharing of information, formation of basic values and making critical decisions. Their main characteristic is that the group members perform interchangeable functions. In the context of teams, roles and responsibilities are expanded (enriched) and functions and tasks previously distinguished.

Traditionally, teams have a history and future, while groups in management are created to fulfil a specific purpose and disintegrate once the task is performed. But this should not be absolutized, since some types of teams (e.g. project) also have a transitory nature and are determined over time. Furthermore, some work groups function relatively constant in business organizations.

Leadership is another key distinguishing feature between teams and groups in management. It is an indisputable fact that different situations and organizational models require adequate and specific styles of leadership. Efficiency in the work groups is directly related to the optimization of the personal contribution and is functionally dependent on the potential of the individual parts. Leadership roles in this process are explicitly expressed. In a team environment higher levels of organizational efficiency are directly related to the synergistic effects – the whole is larger than the sum of its constituent parts. Leadership roles are shared among team members and are a function of the circumstances and the specifics of context. Effective leaders instinctively focus their efforts on the team results rather than on the perfection of performance of activities and individual achievements. This requires additional multifunctional skills that unite the individual

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<sup>2</sup> Hadjiev, K., 2005. Management process and team work in management, NBU, Sofia, p. 154

competences to achieve common objectives and tasks. All this leads to a strong mutual responsibility.

Studying teams in management has reached a qualitatively new level with the establishment of the SMWT-concept (self-managed work teams)<sup>3</sup>. The SMWT phenomenon is a new management paradigm that creates preconditions for a unique balance between business, technical and social system. The SMWT members have the power to modify the technical characteristics of their work and daily social behavior, which leads to minimizing costs and maximizing immediate results.

Self-managed work teams (SMWTs) are a group of employees who are responsible for the management and implementation of specific tasks related to the production and marketing of goods or services intended for internal or external consumers. Usually, teams consist of 5 to 15 employees responsible for the management of particular work processes or activities, including for example planning and scheduling, monitoring and raising human capital. They are also responsible for the technical aspects of the activity. Here the special is that the members of a SMWT usually alternate periodically in performing **these managerial and technical responsibilities**.

In the literature the term ‘work groups’<sup>4</sup> is often used instead of self-managed work teams. It should be noted that SMWTs are not work groups, as defined by Johnson and Johnson, because **the interdependence between the members of the work group is usually low and the work responsibility is concentrated mainly on the individual rather than the group as a whole**. SMWTs are not teams with short-term goals, like virtual teams and teams for the implementation of a specific project. On the other hand, it is logical to expect that many of the factors that are important for the good performance of SMWTs are applicable to the work groups and short-term teams.

SMWTs function in a complex working environment. Members of the group are given the opportunity to use different skills, to perform interrelated tasks, to take important decisions and to

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<sup>3</sup> Hadjiev, K. 2010 Self-managed work teams. D. A. Tsenov Academy of Economics - Svishtov, p. 62 and subsequent.

<sup>4</sup> Johnson, D. W., Johnson, F. P. (1994). *Joining together: Group theory and group skills* (5<sup>th</sup> ed.). Englewood Cliffs, NJ: Prentice-Hall

receive adequate feedback on achieved results. This combination satisfies individuals who need independence, responsibility and significant tasks.

The SMWT-concept, as a derivative and evolutionary model of team philosophy, is the result of international competition and dynamic changes in the external and internal environment. This motivates businesses to seek adequate ways to implement this new management technology. The immediate benefits from the involvement of corporate networks in SMWT are higher levels of organizational effectiveness and implementation of the planned activities at the costs of less costs. Of course, these results are difficult to prove statistically due to the difficulty to isolate self-management individual effects from the action of many other factors at the workplace. For this reason, the effects of SMWT can be determined best by the use of methodologies that are closely related to qualitative research (case studies) rather than qualitative analyses.

Studies have shown that under appropriate conditions SMWTs achieve much better results compared to employees organized in a hierarchical traditional structure. The reason is that invest not only technical, but also managerial skills. Moreover, decisions taken by SMWTs are much more efficient because their members are directly involved in the entire workflow. This creates prerequisites for innovation and creativity.

The basic competitive advantages of SMWTs are expressed in the achievement of high levels of cooperation and degree of substitutability in the implementation of planned activities. They are able to allocate roles and responsibilities based on the needs and competence. Compared to the traditional working environment, in SMWTs the number of supervisors is reduced, as the members have larger managerial responsibilities.

On the other hand, the ability of SMWTs to achieve better performance at lower costs depends on many factors such as work and interpersonal processes, the immediate environment, management support and qualification, the structure of the team and the characteristics of the members. If these are not planned and implemented in their close relationship, SMWT cannot reveal their potential.

The conclusion to be made is that the uniqueness of SMWTs compared to the studied organizational models (group and team) consists in the fact that SMWT members have the power

to make decisions and manage their internal processes associated with the production of a specific product, service or decision, while performing managerial and technical responsibilities.

The dynamic development of information and communication technologies (ICT) in recent years strongly promoted the globalization of companies. As a consequence, many organizations transform their business by initiating changes. New methods of working are entering on a large scale and it is experimented constantly. The once exotic requirement for employees to work in a virtual team now dominates everyday activities. The advantages of virtual work permit for certain activities to multiply productivity at minimum costs. Virtual communications have become standard for many organizations<sup>5</sup>. The barriers that are put by time and distance can be overcome with the development of technologies. Access to experts from around the world is expanding. Management of virtual teams and involvement of the management in the organization of their activities has become a major problem and task.

Virtual teams evolve naturally from traditional. The main barriers to working in a virtual team are caused by differences in cultures, lack of understanding of the role and importance of communication and information technologies for their effective functioning. The challenges are related to difficulties to managing the team from a distance and building trust and adequate interpersonal relationships.

The functioning of organizations in an environment of high uncertainty, the rapid development of ICT and globalization in business are prerequisites for the development of virtual teams in management.

## **II. THEORETICAL FRAMEWORK OF THE FUNCTIONING OF VIRTUAL TEAMS**

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<sup>5</sup> Bergiel, B.J., Bergiel, E.B. & Balsmeier, P.W., 2008. Nature of virtual teams: a summary of their advantages and disadvantages. *Management Research News*, 31(2), pp.99–110

Working from a distance and at different times is not new in organizational theory and practice. It emerged over past two decades. The development of virtual teams is also a direct result of the SMWT-concept. In the 80s and 90s of the 20<sup>th</sup> century a number of companies in the US (Motorola, General Electric, etc.) introduced self-regulated teams. In these new structures the traditional core functions of the management (planning, organization, management and control) are transferred to the team. The main purpose is to reduce bureaucracy and increase efficiency.

The evolutionary development of this organizational technology in the conditions of information society and knowledge economy is the work from a distance (telework) and the formation of virtual teams. Martins, in his literary review on the subject, concludes that ‘with few exceptions teams in all organizations are virtual to some extent’<sup>6</sup>.

Hertel et.al. analyze and distinguish the different forms of organization when working from a distance – virtual groups, virtual teams and virtual communities<sup>7</sup>. The different forms of ‘virtuality’ are defined according to the number of participants and the degree of interaction between them. Work from a distance is carried out partially or fully outside the organizational boundaries through information and telecommunications means. For ‘*virtual groups*’ it is typical that individuals work remotely, as each of them reports to a particular manager. In contrast, members of *virtual teams* interact with each other in the process of accomplishment of common goals.

*Virtual communities* are larger units in which members participate via the web. They have common goals, roles and norms. One of the main differences from the virtual groups and teams is that these communities are not included in the organizational structure and in most cases are formed as an initiative of some members. An example of this are open source projects.

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<sup>6</sup> Martins, L.L., Gilson, L.L. & Maynard, M.T., 2004. Virtual Teams: What Do We Know and Where Do We Go From Here? *Journal of Management*, 30(6), pp.805–835

<sup>7</sup> Hertel, G., Geister, S. & Konradt, U., 2005. Managing virtual teams: A review of current empirical research. *Human Resource Management Review*, 15(1), pp.69–95

In theory there is no single definition of the term ‘virtual team’. Some authors (Gassmann and von Zedtwitz; Leenders et.al.) put the focus on physical distribution and degree of virtuality<sup>8</sup>. But the fact is that members of virtual teams can work together at the same place, but be present at different times<sup>9</sup>. What unites them as definitive feature is the application of information and communication technologies in working and interpersonal processes.

In the context of this analysis and based on theoretical monitoring we can define virtual teams as small temporary groups of people with additional knowledge and skills, who work (communicate, interact and form relationships) outside the spatial, temporal and organizational boundaries through networks of communication technologies to achieve specific common goals and objectives. If you remove the phases ‘network of communication technologies’ and ‘spatial, temporal and organizational boundaries’, this definition can also apply to teams<sup>10</sup>.

Depending on the nature of the performed activities and specific challenges, Duarte and Snyder distinguish the following types of virtual teams<sup>11</sup>:

- Network teams. They consist of people who interact to achieve a common goal. These teams work together, but at different time, from a distance and outside the organizational boundaries. It is possible that in some situations the team members are not aware of all participants in the network.
- Parallel teams. They perform specific tasks or functions that traditional organization does not want or is not technically able to perform. The difference with network teams is in the separate membership. They are built to implement short-term projects related to the optimization of processes or the solution of specific business problems.

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<sup>8</sup> Gassmann, O. & Zedtwitz, M., 2003. Trends and determinants of managing virtual R&D teams. *R and D Management*, 33(3), pp.243–262

<sup>9</sup> Leenders, R.T.A., van Engelen, J.M. & Kratzer, J., 2003. Virtuality, communication, and new product team creativity: a social network perspective. *Journal of Engineering and Technology Management*, 20(1-2), pp.69–92

<sup>10</sup> Hadjiev, K. 2005 *Management Process and Team Work in Management*, NBU, Sofia, p. 154

<sup>11</sup> Duarte, D. & Snyder, N., 2006. *Mastering virtual teams: Strategies, tools, and techniques that succeed* 3rd ed., Jossey-Bass



- Project teams. They are created to achieve a specific result and disintegrate upon completion of the project activities. Unlike **parallel teams**, project teams exist and operate for a longer period of time. The common between project and network teams is that the participants may join or leave the team when their expertise is needed. The key difference is that the members of project teams **belong permanently** to other teams in the organization, but are integrated within the project team for a particular time, thus becoming part of two structures. Project teams are a current business model when developing new products and services, building internal systems in the organization, introducing changes or achieving results with defined parameters and time period for implementation.
- Work teams. They perform a regular and continuous activity. They exist within one function of the organization, such as for example finance, marketing, training, etc. They have distinct boundaries and expressed membership, which distinguishes them from other structures in the organization. Many work teams function virtually, separated in time and space.
- Management teams. They perform regular and continuous **management** functions. They exist outside the national, but within the organizational boundaries. They are a typical business model for transnational and international corporations. The team members are part of one organizational structure, but in order to optimize processes they are geographically separated.
- Action teams. They are used in critical situations. They function virtually, separated in time and space.

Unlike traditional management models, virtual teams have a number of indisputable advantages. The main positive aspects can be reduced to the following several aspects:

- Unprecedented level of flexibility. Attracting human capital in the organization is carried out without initiating changes in the administrative structure, workspace and other complications typical of traditional teams;
- Reducing time and cost through information and communication technologies;
- Ensuring equal opportunities in the workplace by reducing age and racial discrimination. Virtual teams are evaluated primarily on the basis of results and the physical appearance of the members remains anonymous. In addition, they ensure even participation in heterogeneous groups. Non-verbal signs and status differences are eliminated through technologies;
- High levels of productivity associated with shortening the time for release on the market - for example through the parallel work of several teams on the product design. Virtual teams apply the principle of 'follow-the-sun' – i.e. members are activated at different points of the globe, depending on the moving line of the day, in order to ensure 24/7 availability of the service or process;
- Transfer of knowledge and access to talents regardless of the organizational and national boundaries – international virtual teams are a source of direct access to information, practices and ideas;
- Low cost of training.

The business is looking for opportunities to take advantage of these benefits, but the remote method is a new management philosophy that poses challenges to the management of virtual teams. Generally, the main disadvantages are:

- Use of sophisticated technology applications, the learning of which increases the costs and time for training;

- Lack of physical interactions, leading to contamination of the communication and not understanding the messages communicated through indirect media (Skype, e-mail, etc.). Regardless of the dynamic development of remote means of transmitting information, the though patterns are set up to direct level of communication. Working together (face to face) is more effective in creating a concept for solving problems;
- Lack of trust due to interruptions in communication and the reduced influence of the manager. Prerequisites are created for conflicts and struggle for power;
- Challenges in determining the appropriate technology. The reason is that the activities for the implementation of a specific project can be coordinated both asynchronously and synchronously. In each of these two categories, there are a number of IT solutions for teamwork;
- Challenges in managing conflicts. The lack of social contact creates an environment, in which virtual team members team inadequately interpret the facts and make wrong assumptions. Interpersonal relationships are distorted and prerequisites are created for conflicts that negatively affect the productivity of the virtual team;
- Cultural and functional diversity in the virtual team causes differences in the thought process of its members. As a result, building trust is a challenge for the management of the team;
- The need for specialized training and technical expertise is an essential prerequisite for the effective functioning of the virtual team.

Despite the above disadvantages, virtual teams are becoming a standard in business organizations. The effects of cost minimization, unprecedented levels of flexibility and overcoming time and geographic barriers significantly exceed the problems related to the inclusion of IT solutions and the lack of physical interaction. The conclusion to be made is that, when designing virtual teams, the advantages of the design and management of work from a distance should be maximized and

the disadvantages associated with technology applications, coordination mechanisms, conflict resolution, leadership and motivation should be neutralized.

Teamwork is the basis of every great achievement. There is hardly a significant event in the history of mankind, which is a result of the efforts of a single person. The models addressed in this article categorically justify the thesis that virtual teams are a new paradigm in the theory and practice of modern management. Based on the innovative technologies, they are an integral part and a basic building block of the organizations of the future. The strength and synergistic effects of virtual teams are a direct consequence of the following unique features:

- Virtual teams involve individuals with additional skills (technical, functional, interpersonal, cognitive and social), develop unique cultural attitudes and commitment to specific common goals, approaches and methods; therefore, they have more resources, ideas and energy;
- Virtual teams maximize the potential and minimize the individual weaknesses. Leadership balances the work and interpersonal processes, providing focus on immediate results;
- Virtual teams generate alternative solutions, as they offer more prospects for the implementation of defined goals;
- Virtual teams share the triumph of success and severity of loss. Their jointly shared responsibility promotes sincere sympathy and strengthens the feeling of empathy;
- Virtual teams are individually and jointly responsible for achieving the goal;
- Virtual teams multiply effects for the implementation of strategic corporate goals and objectives.

## CONCLUSION

In particular, based on the theoretical and methodological characteristics analyzed in this article the following main conclusions can be drawn:

- Virtual teams are complex socio-technical systems, which in the process of design and operation are influenced by different categories of factors – both external to the team (organizational environment and culture, available IT technologies) and internal such as coordination, communication, collaboration, ability to work with IT applications, etc.;
- Virtual teams are dynamic systems, in which the degree of influence of a factor changes over time. For example, IT skills are critical, but over time the team members acquire them and their impact on the team effectiveness decreases;
- Still, none of the analyzed models explores the impact of the working processes of a team member, if he or she is involved in other virtual teams in parallel;
- The analyzed models are conceptual, but are not validated by empirical evidence.