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## Knowledge Representation and Management

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### SELECTION OF KNOWLEDGE MANAGEMENT MODELS AND USE OF THE INTRODUCTION OF TELE WORKING MODEL OF DISABLED

Tatjana Bilevičienė, Eglė Bilevičiūtė

**Abstract:** *The main aim of knowledge management is the knowledge of substantial developments relationships, adaptation, learning facilitation, development and innovation support. Knowledge management is concerned with innovation, peer relationships, ideas, competencies, structures. Knowledge management promotes and enhances the dissemination of experience and choice of optimal solutions. Most knowledge management processes in one way or another are concerned with information management major elements: information technology and information systems. Fundamentals of knowledge management could be used for organisation of telework of disabled persons, solving economical problems of state. Knowledge management could help to increase productiveness of employees, expanding sources of reachable for them knowledge. During the examination of the disabled telework opportunities in Lithuania, T. Bilevičienė found that the current disability vocational rehabilitation and employment system does not provide people with disabilities by telework. However, research has shown that this system can be modernized and adapted the disabled telework model, the experts mentioned changes. These changes show that the necessary human resources management and knowledge management models are for synthetic application. In their article authors examine knowledge management models and its structure of vocational rehabilitation opportunities for persons with disabilities, organization of telework.*

**Keywords:** *knowledge society, knowledge management model, disabled persons, telework.*

**ACM Classification Keywords:** *K.4.2. Social issues - Employment*

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#### Introduction

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Transformation of modern society into a knowledge society and the transition to a knowledge economy, a completely new global society and economy, which requires different management than the previous principles, skills, abilities, competencies. Competition has increased and deepening international economic cooperation, development, public priorities, values and attitudes change - that such a transformation, giving rise to a new phenomenon - a knowledge-based economy. The knowledge economy focuses on a man, his skills, knowledge and opportunities for their use.

Knowledge society and knowledge economy challenges change the management models for a scientifically based analysis of a country or organization merits and drawbacks of the strategic advantage in the development area. Elements of information and knowledge management are in each of the modern field of management: process management, time and space management, change management, crisis and conflict management, organizational learning in management, quality management, and others. Information and knowledge management of information science and communication system of complementary managerial disciplines of information science is going perfectly to the modern management concepts. It focuses on all aspects of knowledge-related activities and processes which improves the firm's ability to function effectively. The most knowledge management processes in one way or another are concerned with information management major

elements: information technology and information systems. Dissemination of information technology is changing the nature of the quality of the work specifics.

In knowledge society the public service management is becoming a common part of the market and begins to integrate with the private sector. Seeking to use the efficiency of public sector management techniques, which originate from the private sector, these methods differ only in the goals.

The EU is actively implementing the integration of disabled persons in the labor market projects to use ICTs and distance work. Telework in certain circumstances constitutes a useful option for disabled people. This is especially important for people who become disabled have already gained some practical skills and competencies. Employers often provide a telework plans as a cheap alternative workplaces. The telework provides possibility of expanding the potential labor and affordable workspace [Bailey, Kurland, 2002]. Knowledge management is a management discipline that seeks to increase aid effectiveness by adapting the business people, processes and technology synergies. Knowledge management principles can be used for people with disabilities telework, addressing the country's economic problems.

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### **The importance of knowledge management practices**

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Modern management, as well as the general public itself is a mixed and heterogeneous. There is a growing and changing management methods and methodological arsenal diversity. Information management approach integrates many elements of the holistic education space. In the information space the most diverse social and economic life principles and models are formed and exist [Augustinaitis, 2005].

The effective knowledge management organization depends on technology, techniques and human interaction [Bhatt, 2001]. The former only addition to the information and technology management, knowledge management has evolved into a distinct and autonomous region, the fundamental purpose of it is the organization's resources intangible as intellectual capital, knowledge workers, organizations and other images management. New information technologies have facilitated a number of global business operations and the types of learning, the emergence of roadside business to a new level, giving the growing importance of knowledge. Knowledge of the different parts into a strategic management of intellectual capital brings people to the new boundaries of knowledge management practices in the information age. Knowledge management is the optimal theoretical and practical knowledge into business processes - in order to achieve the most durable advantage over competitors and can be realized by the firm's stakeholders - investors, workers, managers of higher profits, and hence the overall public good. [McGinn, 2001].

N. Thom and A. Ritz [Thom, Ritz, 2004] indicates that the response to past age of the last decade took place in the structures and processes of change highlights the need for public sector human resource management. Public sector organizations, human resources are a key element to any deliberate human performance, the main changes should be made to public sector performance, the most important and sensitive resource areas. Knowledge economy and knowledge society in terms of human resource development and effective human resource management theory of mobility models for the coordination and efficiency of their practical application depends on the ability of organizations to integrate human resource management and knowledge management models.

The main aim of knowledge management is knowledge of substantial developments relationships, adaptation, learning facilitation, development and innovation support. Knowledge management is concerned with innovation, peer relationships, ideas, competencies, structures. Liudmila Lobanova [Lobanova, 2008] argues that it is appropriate to talk not only about the human resource management models for the transformation of knowledge management models, as far as their means of rapprochement or synthesis. In knowledge economy and

knowledge-based societies the human resource development and effective human resource management theory of mobility models for the coordination and efficiency of their practical application will depend on the ability of organizations to integrate human resource management and knowledge management models.

### Disabled telework model

In Lithuania number of patients with various diseases and socio-economic problems is increasing, so the number of people with disabilities is increasing too. These circumstances require assumptions correctly and efficiently to provide social protection for disabled people and bring them to work, restoration of independence and integration into society. In Lithuania, like in other EU countries, the transition from the protective and declaratory assistance to those disabled people empowerment techniques is establishing themselves in the social integration model for people with disabilities [Dromantienė 2005]. Disabled persons in order to restore or enhance their employability, professional competence and ability to participate in the labor market are providing by vocational rehabilitation services.

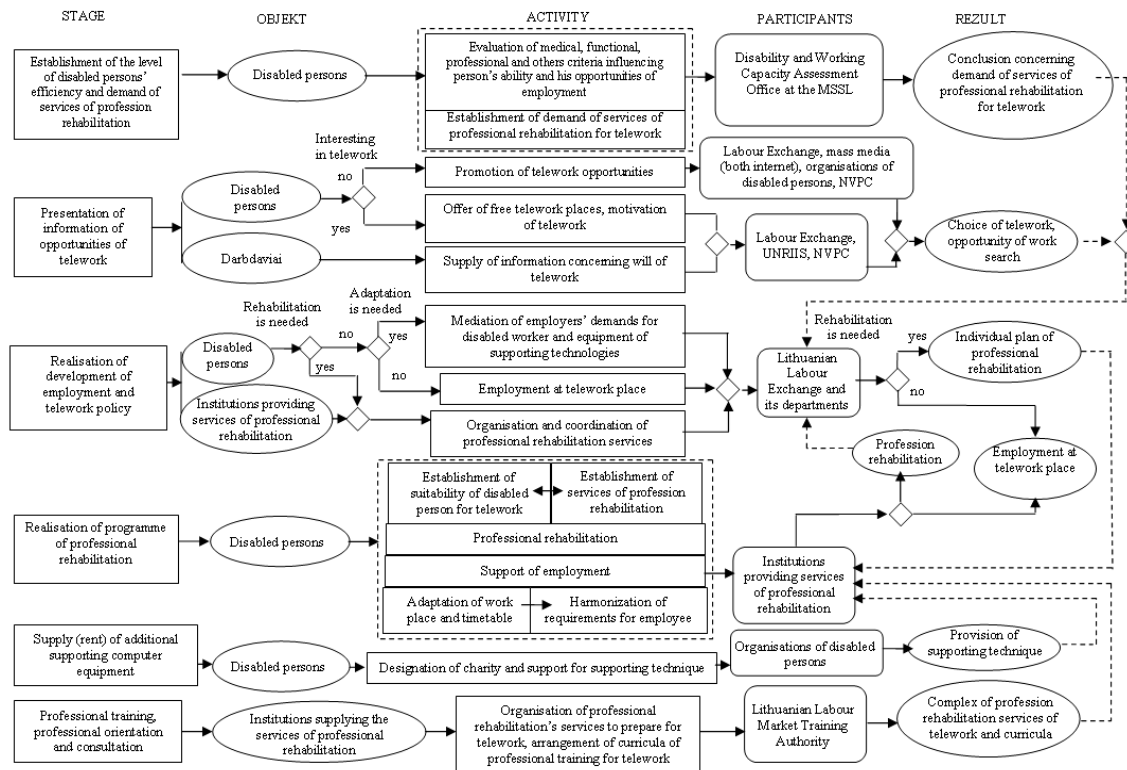


Figure 1. Organizational model of disabled persons' telework

Telework and the recruitment of tele workstations in the current Lithuanian vocational rehabilitation system are foreseen. However, this system can be used as the basis for the development of remote working model for people with disabilities. To sum up the theoretical and empirical studies, we can identify six major disability distance jobs stages: the level of work disability and vocational rehabilitation services, the need for identification, the promotion of teleworking, remote working motivation, and fitness for a remote job evaluation, job requirements and job opportunities for disabled laws, training, recruitment and maintenance work. In view of the Lithuanian people with disabilities the vocational rehabilitation and employment opportunities system was developed with disabilities telework model [Bilevičienė, 2009]. The model scheme is presented in Figure 1. Design of it was discussed with disability rehabilitation and professional integration, employment practitioners.

During 2009 January-February authors carried out the analysis of Lithuanian disabled vocational rehabilitation and employment opportunities system and the Lithuanian people with disabilities vocational rehabilitation and employment applications by persons with disabilities the working model of telework [Bilevičienė, 2009]. The experts interviewed persons with disabilities in special organizations; who are responsible for vocational rehabilitation of disabled persons, social work professionals - academics, business representatives. Expert analysis of the survey results helped to determine what they believe change is needed in each disability vocational rehabilitation and employment system stage for the successful application of a single disability organization working distance model (see Table 1).

*Table 1. Lithuanian disabled vocational rehabilitation and employment system changes needed for application of disabled persons' telework model*

Stage	Demand	
	New programs	Additional skilled workers
1. Establishment of the level of disabled persons' efficiency and demand of services of profession rehabilitation	Needed	Needless
2. Presentation of information of opportunities of telework	Needed	Partly needed
3. Realisation of development of employment and telework policy	Needed	Partly needed
4. Realisation of programme of professional rehabilitation	Needed	Partly needed
5. Professional training, professional orientation and consultation	Needed	Partly needed

The analysis of these changes shows that there is the necessity for new programs, procedures, staff training, acquisition of new competencies, so there is the necessary of human resources management and knowledge management models for synthetic application. Lithuanian vocational rehabilitation system for people with disabilities could use the telework for purpose to organize the work using only the basic principles of knowledge management: knowledge creation, knowledge dissemination, knowledge utilization. Analysing the disabled telework model we can notice that a knowledge management model is to be made for continuous updating of knowledge and feedback.

### **Selection of knowledge management model**

Giorgos Papavassiliou [Papavassiliou et al., 2002] argues that business process management can be distinguished in business management tasks and knowledge management tasks. Similarly, in public management process we can identify the organization's management and knowledge management tasks. Knowledge management describes the tasks of knowledge creation, storage, application and distribution business (management) during the process. Knowledge management in organization is understood as knowledge-building, coupled with new products, new methods and new organizational behavior. This requires a radical organizational change. Knowledge management should to ensure continuous flow of information interaction. Knowledge management is the activity that aim is the improvement of the current model of an organization's knowledge processes and its outcomes [Goldman, 2009].

Knowledge management is a complex process. Sandra Rodney McAdam and McCreedy argue that there are many definitions of knowledge management models. The examination of an existing system definitions and classifications of KM show a wide spectrum of Viewpoint. They examined the different knowledge management models from I. Nonaka, K. Takeuchi and M. Demeresto adaptive, P. Clark, N. Stauntono model. These ranges from the more mechanistic to more socially orientated. The mechanistic type of definitions and classifications assume an intellectual capital approach (knowledge viewed as an asset) while the social type assumes a social

constructionist approach where knowledge is constructed in the social relationships within organisations [McAdam, McCreedy, 1999]. On Figure 2. (A) you can see the proposed modified M. Demeresto knowledge management model that uses a holistic approach to the scientific and social knowledge management paradigms. This model takes a balanced approach between scientific and socially constructed knowledge. Also the uses of KM are viewed as both emancipatory and as business oriented. Knowledge streams in this model are not only coherent, but feedback is forecasted in such knowledge system. The black arrows show the main knowledge streams. According opinion of article's authors, such model could be properly applied for processes of knowledge management in disabled persons telework organisation system.

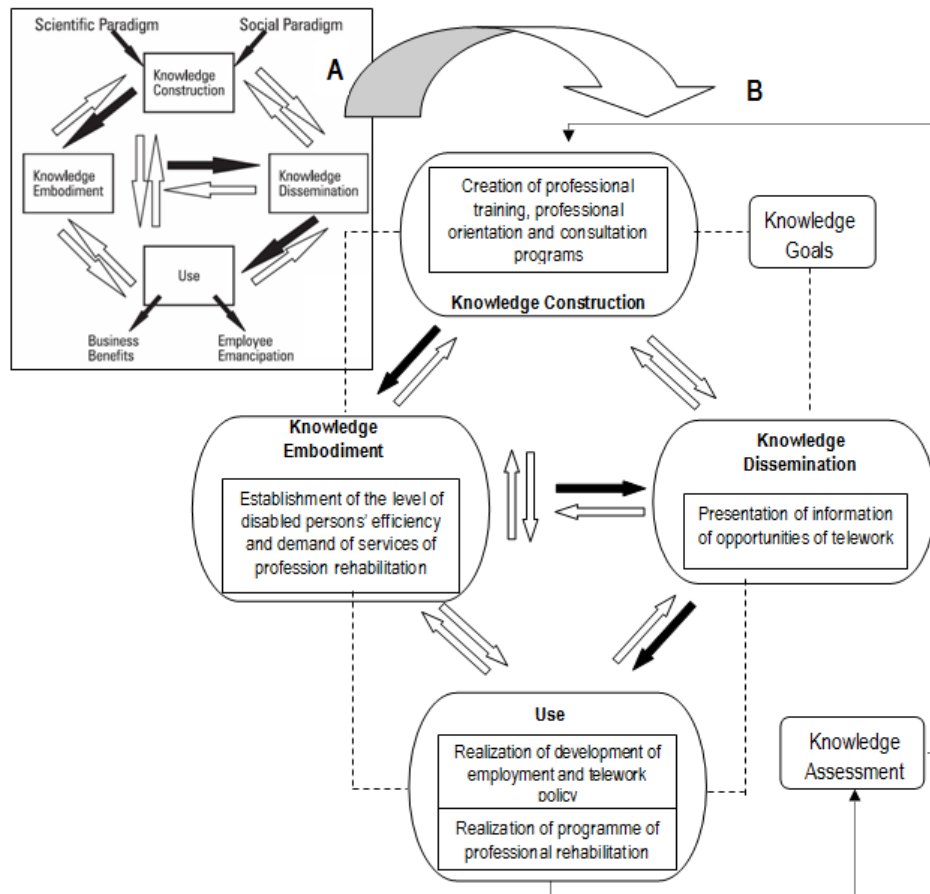


Figure 2. Modified version of Demerest's knowledge management model [McAdam, McCreedy, 1999] (A) and its application to persons with disabilities telework (B)

Adriana Maria Ortiz Laverda [Ortiz Laverda et al., 2003] also examines the set of knowledge management models. Among them can distinguish the Probst model, called *The building blocks of knowledge management*, involves eight components that form two cycles, one inner cycle and other outer cycle. The inner cycle is composed by the building blocks of Identification, Acquisition, Development, Distribution, Utilization and Preservation of knowledge. These blocks not a lot differ from model of Rodney McAdam and Sandra McCreedy. There are two other processes in the outer cycle, Knowledge Goals and Knowledge Assessment, which provide the direction to the whole Knowledge Management cycle. Knowledge Goals determine which capabilities should be built on which level, Knowledge Assessment completes the cycle, providing the essential data for strategic control of Knowledge Management [Probst, 2002].

Knowledge management principles are still rarely used in the development of disabled persons's rehabilitation process. Disabled telework model implementation needs to start new programs for all persons with disabilities telework stages. Bearing in mind that the programs can be successfully applied only to qualified personnel, their training should be organized in parallel. Each stage of software development and professional training must be linked with other similar-step process. New management program must be subject to professional rehabilitation facilities and a vocational rehabilitation process. It must be programs to provide continuous updating of professional skills development, not only in connection with developments in ICT and management development, but also with the work.

On the basis of knowledge management models examined in this article the authors has developed a knowledge management model, which can be applied in disabled telework process (see Figure 2. (B)). In this model, organisation stages of people with disabilities telework are associated with Rodney and Sandra McCreedy McAdamas model processes. This model is added by Probst model external processes: Knowledge Goals and Knowledge Assessment. The model provides continuous feedback for all stages. This is because the telework organization of people with disability is associated with the application of ICT. These technologies and the development of continuous improvement require a permanent disability telework, improvement of programs and methodologies.

Knowledge Goals determine which capabilities should be built on which stage. These capabilities must be established for the examination of persons with disabilities telework areas in the section ACTIVITY and PARTICIPANTS (see Figure 1). For example, the *Establishment of the level of disabled persons' efficiency and demand of services of profession rehabilitation* stage in basic skills - to people with disabilities in particular the remote computerized fitness for work, because teleworking can be recommended for people with a disability level of not more than 25 percent. This is often the only way available to them working. At the same time, the *Disability and Working Capacity Assessment Office at the MSSL* staff must be able to determine whether a person with a disability such work will have any harmful effects. Knowledge Assessment is applied in the assessment process, as the result of action against the entire update cycle. This process is of paramount importance for people with disabilities working knowledge of organization management model because it allows not only the feedback system, but after each cycle to assess the performance and result in a higher increase, an improved level of knowledge creation.

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## Conclusion

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Knowledge management is concerned with innovation, peer relationships, ideas, competencies, structures. This supports the management of individual or group learning, promotes and enhances the spread of experience, failures and best practices sharing, selection of optimal solutions. Knowledge management principles are still rarely used in the development of disabled persons' rehabilitation process. However, the authors of studies show that the current system of vocational rehabilitation of persons with disabilities can adjust the telework organization only through knowledge management principles.

T. Bilevičienė has created the telework model of disabled that is suitable for Lithuanian people with disabilities and improvement of vocational rehabilitation system. Total disability telework scheme is applied for the determination of disability for work on all vocational rehabilitation and employment stages. This model should be applied as a single system, which provides a constant feedback. According to experts, the model can be successfully implemented to improve the current system of rehabilitation of disabled persons. To this end, there is necessary for the new program and new skilled workers managing the knowledge management techniques.

For disabled telework knowledge management can be applied the McAdamas Rodney and Sandra McCreedy modified version of Demerest's knowledge management model. This approach needs to be supplemented by

Probst model external processes: Knowledge Goals and Knowledge Assessment. It is collected not only support of the feedback system, but after each cycle to assess the performance and result in a higher increase, an improved level of knowledge creation.

## Bibliography

- [Augustinaitis, 2005] A. Augustinaitis. New Criteria of Rationality in Knowledge Society. In: Information Sciences. 2005 Vol. 35, p. 32-46. Vilnius University Publishing House, 2005.
- [Bailey, Kurland, 2002] D.E. Bailey, N. B. Kurland. A review of telework research: Findings, new directions, and lessons for the study of modern work. Journal of Organizational Behavior, No. 23, 2002, p. 383-400.
- [Bhatt, 2002] D.G. Bhatt. Management strategies for individual knowledge and organizational knowledge. In: Journal of Knowledge Management, vol. 6, no. 2, p. 31-39.
- [Bilevičienė, 2009] T. Bilevičienė. Naujos neįgalųjų profesinės reabilitacijos ir integracijos galimybės: nuotolinio darbo organizavimo modelis. Daktaro disertacija. Socialiniai mokslai, vadyba ir administravimas (03 S). Vilnius: Mykolas Romeris universitetas, 2009, 232 p.
- [Dromantienė, 2005] L. Dromantienė. Europos Sąjungos socialinė neįgalųjų politika: žmogiškųjų išteklių diskursas. Jurisprudencija, t. 67(59), 2005, p. 140-150.
- [Goldman, 2009] F.L. Goldman. A Structured Model of Relationship Dynamics Between Organizational Knowledge Management and Organizational Learning. [http://www.providersedge.com/docs/km\\_articles/Knowledge\\_Processes-An\\_Overview%20\\_of\\_Principal\\_Models.pdf](http://www.providersedge.com/docs/km_articles/Knowledge_Processes-An_Overview%20_of_Principal_Models.pdf) [visited 2010 04 05].
- [Lobanova, 2008] L. Lobanova. Žmogiškųjų išteklių vadybos modeliai kuriantis žinių ekonomikai. Verslo ir teisės aktualijos = Current issues of business and law, t.1, 2008, p. 37-45.
- [McAdam, McCreedy, 1999] R. McAdam, S. McCreedy. A critical review of knowledge management models. The Learning Organization, Vol 6, Issue 3, 1999, p. 91-101.
- [McGinn, 2001] N.F. McGinn. Knowledge Management in the Corporate Sector: Implications for Education. 2001. [http://www.norrag.org/db\\_read\\_article.php?id=734](http://www.norrag.org/db_read_article.php?id=734) [visited 2010 04 05].
- [Ortiz Laverde et al., 2003] A.M. Ortiz Laverde et al. Knowledge Processes: On Overview of the Principal Models. 3rd European Knowledge Management Summer School 7-12 Sept, 2003, San Sebastian, Spain. [http://www.providersedge.com/docs/km\\_articles/Knowledge\\_Processes-An\\_Overview%20\\_of\\_Principal\\_Models.pdf](http://www.providersedge.com/docs/km_articles/Knowledge_Processes-An_Overview%20_of_Principal_Models.pdf) [visited 2010 04 05].
- [Papavassiliou et al., 2002] G. Papavassiliou et al. Integrating Knowledge Modelling in Business Process Management. ECIS 2002 June 6-8, Gdańsk, Poland.
- Probst, G. Managing Knowledge, Building Blocks for Success. ISBN 0-471-99768-4. Wiley. West Sussex, England, 2002.
- [Thom, Ritz, 2004] N.N. Thom, A. Ritz. Viešoji vadyba. Inovaciniai viešojo sektoriaus valdymo metmenys. Vilnius: Lietuvos teisės universiteto Leidybos centras, 2004.

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Major Fields of Scientific Research: The e-inclusion problems of disabled persons is the main scientific research field of Tatjana Bilevičienė. In 2008 Tatjana Bilevičienė readied the equivalency doctoral dissertation that firstly in Lithuania presents the organisational model of telework of disabled persons and evaluation methodises of disabled persons' employment's quality.



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