



THE IMPORTANCE OF EDUCATIONAL CASE STUDIES FOR MEDICAL DEVICES MANAGERS' EDUCATION

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Annotation

Case study is an important tool for teaching of economics and managerial disciplines in the education of medical devices managers. Application and use of case studies in teaching are widely discussed, praised or criticized, not only in the academic literature. Far less attention is paid to problems of the creation of case studies. The article presents the steps, limitations and approaches associated with creation of educational case studies for medical devices managers' education.

KEY WORDS: Medical devices managers; methodology; educational case studies; managers' education.

Introduction

Education of medical devices managers is methodically designed into a comprehensive profiling of executives in terms of increasing of managerial or technical skills (hard skills), strategic planning, improving of methods and techniques of leadership (soft skills), communication and presentation skills indispensable for the discharge and function of managerial functions in the context of social and personal development. Education of these managers is mostly based on the principles of company management, namely:

- planning,
- organizing,
- leadership and management of human resources,
- financing and control activities.

For commonly used methods of manager's education are obligate considered active problematic and participatory methods based on solving non-standard tasks by using modern didactic resources and information technologies, especially computer technology. In most cases in educational programs at MBA schools are beyond lectures used to study management games, simulation modelling, staging, but primarily popular and professional public required case study that support the development of expertise, executive managerial activities, including the authority of manager's personality in the summary context.

Case studies entered into the vocabulary of academia sphere primarily with activation and application-oriented forms of tertiary teaching, which is applicable in both executive and non-executive forms of managerial education. Their use in tertiary education dates back to 1870 when it started using after the First World War by Harvard Law School, thus it became part of the general

education in medicine, law, business and management (Lynn, 1999).

Case studies occupy among methods of qualitative research irreplaceable role as a tool for expanding scientific disciplines, especially on the theoretical site but also practical use as a tool of education of practical skills for students, as well as experienced practices of the study field. Educational case studies describe real or fictional situation of the business world in order to capture the complexity of organizational phenomena or demonstrate the application of a particular theoretical apparatus. Educational case study is typically written as a story in which perform specific individuals and / or which is seen from the position of the person speaker (Liang and Wang, 2004).

Generalized results serve as so-called instruction for use or otherwise analyze deviations with reference to the potential risk of their occurrence. According to Marcici and Pendergast (1993) is an instructional importance of case studies in the Czech environment accepted generally.

The contribution of the authors is focused on the clarification of requirements of educational case studies. The following lines are devoted to the professional audience, who are interesting in the production or publication side of case studies, not the side of the user, which is described in e.g. Wassermann (1994).

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Education of Managers

Education of medical devices managers can be considered as a specific area of business education, especially with regard to the demands placed on

managers of individual business department, their specificity and expertise, strict demands, but also placed requirements.

Education of managers (managerial education) is according to Paln (2002, p. 238) *"part of a continuing education for a specific group of workers that can decisively affect the level of competitiveness and development of the company. This is a group of workers who must master a wide range of expert disciplines and in addition to their abilities, knowledge and skills undergoing continual confrontation with the development of the company as well as varying situations around the system."*

Bbek (2009, online) highlights the fact that the concept of manager education must be based on the fact that each person is individuality; therefore, education must be an individual process. Concept of manager education and development consists of the following areas such as career planning, training courses, learning, self-education and business consulting. Bbek adds: *"for development of business management, it is essential that its leadership consider training an important business activity. Concept of programs and teaching methods must be based on the nature of manager's development and training must be viewed as a continuous process of blending of work experience and the use of learning opportunities. Education must also be systematically evaluated to make it clear that the spent money was not spend in vain and that all efforts should make some sense."*

Requirements for Medical Devices Managers' Education

Currently in the 21st century is talking about the transition from an industrial society to a post-industrial society, or knowledge, when there are numerous changes and increasing demands on each individual. For competitiveness of individual on labour market is necessary to constantly educate, manage requirements and demands, problem situations that occur in professional as well as personal or family life. Area of management enters into post-industrial time, which is characteristic of turbulent business environment through mature culminating globalization, substantial importance of science, technology and research, particularly in the area of knowledge management. 21st century requires from successful managers a wealth of experience, expertise, knowledge and information.

To the manager stand in competition with other, they must continually educate. Possible areas of specialization and focus in are of manager's education is a wide variety of managers in general can appoint:

- the development of professional knowledge and skills,
- development of personal and social skills, sometimes also called as managerial skills,
- as well as procedural knowledge of corporate management.

For education of medical devices managers we can find a wide range of methods and techniques that are in currently period of the 21st century implemented. These are classic methods, such as seminars, conferences or

lectures but also interactive methods e.g. solving of model situations, workshops, managerial games, case studies, outdoor programs, playing role supports development of social skills, but also very popular, and by society reference coaching technique.

In the field of management education, we can meet with topics such as personal development and the development of social skills, often in business practice referred as soft skills development, i.e. the development of soft skills. Personal development of managers can be seen as the development of personal potential in relation to the cultivation and self-fulfilment, self-realization of every individual in the labour market and job opportunities. In managerial practice, we are often encountered the view that managers have lack of development of soft skills, absence lies in the limitations of social skills.

Medzihorsk (2008, online) in his article describes current trends in manager's education. *"Current trends reflect subsequent shifts that do not concern only the content and methods, but also the forms as well as the whole paradigm of education. Today it is obvious that business results are from a crucial part in direct proportion with the quality of management, and so the big attention is focused on how to optimize the education and training of managers, especially top managers."*

Magazine for HR managers (Chief Learning Officer Magazine) states on its website the results of international study which is occupied with the trends in manager's education. At the beginning of the study is mentioned that today's organizations changing their approach to the development of TOP managers. This process, however, according to them is not easy. On the one hand, there is a significant need to improve managers to they can promote changes and new strategies, on the other hand, there is present the fact that education budgets are in comparison to previous years considerably lower.

In the study of an international organization Institute of Executive Development titled Cost Effective Executive Development are described the trends that are now in the area of manager's education developing. The authors of that study state that the problem of many entrepreneurial subjects is inadequate distribution of investment into education, hence the cost of education with regard to career growth and development of managers they also do not see a possible compromises, and feel obligation to stick to existing programs and approaches to the development and education of managers.

The above requirements for education of medical devices managers undoubtedly fulfils the use of case studies as the method simulate or describe the situation, the that has arisen problem with regard to various areas of research such as area of management and marketing, human resource management etc., which the hearers are preoccupied and actively solved. The main claim is given to the analytical analysis of case studies, the diagnosis of the problem and ways of solving, teamwork, listening, empathy and sharing of information and values.

The choice of method is one of the most important things which affecting the effectiveness of the entire manager's education. Inappropriate selection method can result among others manager's reluctance to participate in

any other courses. Urban (2009, p. 61) in his article points out the fact that *"the effectiveness of development methods is the higher the closer they are to the real nature of labour tasks. Development of managers is necessary seen as a tool of output counselling, aimed at removing specific barriers which defend of improvement of performance or achievement of their goals. Prerequisite for effective manager training is always an opportunity to try new methods, procedures and techniques."* The above author adds that unless education is not coupled with the possibility of practical experience, e.g. even in a model situation, cannot bring full effect, appropriate with resources to it expended. Urban (2009) in his paper also presents methods of manager education of which correspond to the above mentioned. This is especially about:

- solution of the case studies,
- role-playing used to develop social skills,
- writing tasks,
- manager's games,
- as well as coaching.

Another view to splitting of methods and techniques of manager education offers Prokopenko and Kubr (1996). It concerns about following overview:

- self-learning techniques,
- learning from experience and learning activities,
- group work and discussion methods,
- simulation methods,
- case studies,
- lectures and recitation methods.

Specifics of Educational Case Studies

A case study is used primarily for us to understand the complex social phenomenon. Let's look at four different definitions, as the following case study authors define:

According to Eisenhardt (1991, p. 534) is a case study „research strategy that focuses on understanding of the dynamics which is presented on a single file“.

Stake (1995, p. 67) defines case study as „an exploration of the specificity and integrity of the case that allows to understand its functioning within important circumstances“.

A Yin (2003a) case study defines as a method specified by three dimensions:

1. It is empirical research that examines the current phenomenon in the context of real life,
2. to case study is necessary to proceed when the boundaries between phenomenon and context are not very clear,
3. it is a method that uses a lot of resources to support its conclusions.

Conversely Simons (2009, p. 21) defines case study as „an in-depth exploration of the diverse perspectives the intricacy and complexity of a particular project, policy, institution or system in the context of reality. It is based on research, covers various methods and it is based on facts. Its primary purpose is bringing a deep understanding to the subject, program, policy, institution or system to generate knowledge and / or shaped the development of policies, technical procedures and civic or social activity“

Note on what these definitions coincide. All point out that this is a research approach, which aims for a detailed examination of one or a few cases, which achieves different methods and ultimately leads to a deep understanding. A case study is not thus defined by the object to which it focuses, but the fact that it is a comprehensive research strategy, for which is characteristic a specific data collection and analytical approaches to explore the phenomenon in the context of real life.

Criticism, misunderstanding, unsuitable use or refuse of case studies on the level of education (e.g. Shugan, 2006) appears to be a persisting problem. Very strict criticism of manager's education at Harvard Business School through case studies published in her book Cain (2012).

Educational case studies are now a normal part of most teaching texts in its brief and more extensive form. Comprehensive educational case studies are then offered to education in the collection of case studies or to purchase in databases (i.e. case clearing houses). Educational case studies illustrate the significant situation or offer an opportunity for problem solving (Jennings, 1996).

Educational case studies are also part of the broader efforts of economic-management schools by intensifying the use of experiential methods of instruction (McCarthy and McCarthy, 2006, Prince and Felder, 2006) or the more modern methods of examination (Rees and Porter, 2002b, O'Conneide, 2006). Case studies also increase students' motivation for further study, support the development of discussion skills and teamwork (Rees and Porter, 2002a).

Case studies aimed at solving problems include material to the application of specific techniques or theories and to application of capabilities to solve problems (Jennings, 1997).

Educational case studies are written for students in order to draw them into stated decision-making problems and answer the questions "what would you do in a given situation." Some case studies, given especially for advanced courses in economics-management subjects, leave it to the students to define the problem situation and aspects that need managerial attention. Although the reality is subject to a large amount of educational case studies, complexity of practical examples is often limited for didactic purposes. However, it is empirically proven that teaching with the help of case studies lead to the improvement of students' abilities to solve problems (Smith, 1987).

The procedure for compiling of educational case studies is in the literature variously described (e.g. Jennings, 1996; Cockburn, 2000). Also, the variability and the type diversity of educational case study can be considered high (Lundberg et al., 2001). Important requirements for quality educational case studies, however, comprise its authenticity, i.e. the credibility and believability. For this reason it is necessary the compilation of educational case studies considered a time and resource-demanding process which must respect certain specifications and general rules described in Jennings (1997) and specified in Hrazdilová Bočková and Vaníčková (2015).

Initially is necessary to answer to the question: "What will solve the case study and who will be determined." Educational case study is compiled to solution of the decision-making situation related to the demands, the type of training course and specific topic of focus. Educational case study purposeful encourage pupils and students to assess of the nature of the task and the behaviour of the participants of model situation, suggest solutions according to theoretic apparatus, determination of the factors and resources required for the proposed solution or repeated effort to produce bigger amount of alternative solutions of the situation (Nelson, 1996). Case studies for a higher level of education and advanced training courses usually involve more peripheral material, and provide more comprehensive information about economic reality. Their preparation is usually more complicated and time-consuming.

Many of educational case studies are based on real life situations, whose components were the authors themselves, or that were mediated them through direct contact with participants in model situations. the source of the subject and information about research of educational case studies can be e.g. the information provided by participants of executive education appearing during corporate training or coming from a advisory work of authors of the paper. In some cases, the information as well comes from anecdotal evidence, e.g. an analysis published publicly available information in professional journals or on social networks. The purpose of collecting data for the case study is necessary to obtain an objective and comprehensive picture about examine situation with regard to the target group. For study educational purposes or with regard to preserving of participants anonymity of case studies some data can be modified while maintaining the requirement of authenticity.

Evaluating of obtain information often cause necessity to re-contact participants given situation or combine different sources to get a more accurate picture of a model situation. Contact with the participants often takes place by informally way. Making detailed notes from contacts or personal visits are necessary, but the structure and nature of the making record is usually in the competence of the author of the case study. Case studies so called Harvard type mostly usually more presents a model situation from the perspective of participants in order to increase of the involvement of pupils and students to solve a given problem. In other cases are the educational cases and model situation described particularly for the general. In the conclusion of educational case studies we often find questions that help increase the concentration of pupils and students on the problem area in relation to the interconnection of the final part with the opening. Conversely, a study of Harvard type is ultimately the final part does not focus on additional questions to solving case studies; it is not limited to the use of specific theoretical tool. According to McKenna (1999) is more suitable for advanced students.

Evaluation obtained evidence can be made with regard to the expected set of final questions or to the ability of capturing a sufficient number of factors operating in a given situation. In developing the case study, it is necessary to not change periodic replacement

and improvement of the text. Preliminary testing and evaluation can be performed through a peer review or (and perhaps more often) trial using of case studies in teaching. Author of case study should ask himself whether the questions asked at the conclusion of the study are not suitable or even confusing and do not limit students in the possibilities of finding alternative solutions. The testing process often leads to review and adjustment of the case study. From the perspective of the periodic adjustment of the study Rees and Porter (2002b) suggest that educational case study do not include data determination of the situation, as many concrete examples remain valid for many years and the solving problems do not quickly become obsolete.

The component of collections of case studies, supplements to textbooks or case studies mediated through the clearing house is often called teaching note - a guide for teachers, as didactic approach to teaching and what the model answers from the attender of training course expect. Manual for teacher should familiarize with the topic of educational case studies, briefly discuss the key aspects, to emphasize the educational learning goals, offer methods of organizing lessons applicable in the particular study, e.g. discussion, personal presentations or home preparation with specifying the appropriate theory solving of case studies and provide answers to questions expressed in the final part of text of the case study.

In some cases, to teachers are provided links to the websites describing the model situation, entrepreneurial entity or state of solution of the problem (Lundberg and Winn, 2001). Some authors suggest that the production of educational case studies began drafting a detailed teaching note, because teaching note can serves as a detailed outline of case study.

Conclusions

Czech but also foreign medical devices place high demands on the qualification requirements of managers in terms of regular and continuous improvement and replenishment, when during determining of the requirements for the job that the manager takes, plays a vital role specialization and its management method. If we were to summarize the list of required managerial skills, in particular are the following:

- Specialization (expertise) in direct relation to knowledge of business processes of medical device.
- The capabilities and their development, particularly social (behaviour), interpersonal relationships and communication skills, mental toughness.
- Flexibility, innovation and responsiveness to change.
- Personal characteristic of the manager, the authority towards subordinates.
- Ability of strategic planning, critical and creative thinking, creating a crisis scenario.

In the general context we can say that the medical device manager should be completely focused on hard area but also soft skills.

The purpose of the case study is to highlight the themes of studies of company practices, elimination of

static situations and increase of situational dynamics methods, particularly the method of resolving incidents. Based on practical experience of contribution authors highlight to the following procedure:

- familiarization with the case,
- finding information,
- problem definition,
- individual solutions,
- dividing into groups,
- analysis (breakdown) and possibility of solution,
- general conclusions.

During teaching of medical devices managers is necessary emphasize on the experience of the teacher (trainer) applied in the case studies and educational methods, active listening of hearer (managers) and their mutual participation. The priority are undoubtedly the focus to case studies in relation to employment and use in practice, to model situations and problems that listeners of case study practice or realistically according to the facts of solution in their medical device. Case methods have a indisputable advantage in that they develop analytical and critical thinking, creative imagination, collective correlation of individual solutions or comparison of proposed solutions with business practice. The disadvantage of this method is time-consuming for the preparation as well as the implementation phase particularly input costs for education.

Criticism of educational case studies is often associated with resistance to pupils (students) who are used to traditional methods of education such as training for case studies (Rees and Porter, 2002a) or manager shadowing (McCarthy and McCarthy, 2006). It can meet with the opinion that case studies divert the attention of pupils and students from learning of the necessary theoretical principles towards the concept of practice without theory (Shugan, 2006).

In summary it can be concluded that the educational case study normally presents a particular situation that has occurred in an environment of business practice and for which, on the basis of theoretical knowledge and information gained from the study of the subject of discipline can find an appropriate solution. Educational case study has primarily didactic aim for the purpose of development and promotion of knowledge-based activities for pupils and students in the fields of study in terms of expansion opportunities and ability to solve the problems and situations through case studies on illustrative examples from corporate practice. That's the reason, why it is suitable method for medical devices managers' education.

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