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Introduction

In recent times we have witnessed a growing number of events that make us realize the fragility and vulnerability of the global ecological, social and economic system. The global financial crisis, the oil spill in the Gulf of Mexico, political instability in the Middle East and North Africa, earthquakes, tsunami and nuclear disaster in Japan, floods in Australia, earthquakes in New Zealand and droughts in Russia, are just some of the recent examples of phenomena occurring in this range.

These signals, demonstrating the spread of the negative impact of man on the environment, are becoming clearer and louder. According to the neoclassical theory, clean air, water and labor are, because of their universality, resources almost free. Economic activity and development have no limits, and possible environmental losses and labor exploitation are treated as a necessary means to achieve the common objectives of setting up and running businesses – profit and gaining a competitive advantage. Unfortunately, even today a large number of companies operate in accordance with the above paradigm of development – at the expense of the natural environment and social capital. Their negative impact is manifested by polluting air, water and soil, production of hazardous materials, lack of waste management systems, overexploitation of natural resources, abuse of workers' rights, especially in developing countries, or conscious use of complex financial instruments and derivatives without the awareness of stakeholders. Such conduct has contributed recently to a series of environmental disasters, social upheaval and crisis in the global financial markets.

Global demand for natural resources for the first time surpassed the Earth's regenerative capacity more than 30 years ago when the excessive demand for natural resources in various countries and regions gained scale and with the rapid economic growth reached a global dimension. By 1999, this demand was greater than the regenerative capacity by 20%. Today, the global economy is operating our planet's resources at a rate which maintenance in the long term would require increasing the surface of the Earth by nearly 50%. Without appropriate changes in hackneyed schemes of enterprises management, achieving self-sustaining development on a global scale will not be possible. The system of management education is in this area of great importance. The purpose of this article is to indicate the solutions for the implementation of the concept of sustainable development in the implemented teaching process. The study begins with the presentation of the outline of the concept of sustainable development and the importance of the business sector for its effective implementation. Then, a review of the literature in the field of cognitive psychology and neuroscience on stimulating innovative behavior is presented. Later, the role of management staff as a carrier of changes in the implementation of the concept of sustainable development in the business strategy of companies is analysed. At the end, the basic techniques of incorporating the above concept in the process of management education are outlined.

1. The role of enterprises in the effective implementation of the concept of sustainable development

At the dawn of the twenty-first century, in the era of identifying a number of ecological risks associated with the rapid development of our civilization, environmental issues are not only becoming a permanent part of the world of politics, but also the business world. Social, environmental and financial data indicate a general trend that is becoming more and more difficult to challenge – the traditional business model and unlimited economic growth can be maintained over a long period of time. Undoubtedly, modern capitalism is at odds with the global ecological, social and financial system [Sułkowski 2004].

The idea of the socio-economic development, which is able to cope with contemporary problems is the concept of sustainable development. This idea, focusing initially on the sustainable exploitation of natural resources, quickly became a milestone of modern business. According to recent studies, 93% CEOs believe that sustainability is the key to future success of the company, 96% claim that the principles of this concept should be included in the strategy and operational activities of the company, and 73% are convinced that the implementation of this idea will help to strengthen the brand and improve the reputation and financial performance of the company.

Unfortunately, between the declarations of managers and business practice there are significant discrepancies all the time. Only 85 out of 500 companies listed

in the index of Standard and Poor's 500 fully included the principles of sustainable development in their strategy and operations [Przychodzeń, Przychodzeń 2012, p. 69–76].

The implementation of the principles of sustainability in the company's business strategy is becoming an increasingly urgent issue, as the economic and political power of the largest corporations in the world has increased significantly in recent years – already in 1999 among the 100 largest economies of the world, as many as 51 were companies, and only 49 were countries (based on the comparison of corporate profits and GDP of individual countries). Modern corporations have become the dominant institutions in our society – they provide products and services on which our existence depends, they shape our view of the world through advertising, public relations and media, they manage our finances, health, education and communication. Their enormous influence on the legislative process and the real economy weakens national governments. It is the corporations, and thus their managers, who shape the future of our civilization.

2. Barriers to making changes in the behavior of managers – common patterns and ways of overcoming them

An important prerequisite for the practical implementation of the concept of sustainable development of enterprises is the mental ability of managers to recognize the consequent opportunities and convince all stakeholders to the necessity for change. Such an attitude is contrary to the market short-sightedness and set management habits. A large part of the managers' activities – way of selling products and services, conducting meetings, managing the business operations and communication with subordinates – is made highly routine. Habitual, constantly performed actions are desirable because they are not difficult and not affiliated with the challenges that could lead to a sense of psychological discomfort. They also require less energy. There is also a risk of making painful mistakes, characteristic of innovative, unconventional behavior.

Trying to change the managers' way of thinking using the classical method of threats and rewards (incentives negatively and positively affecting motivation) rarely results in a long period of time. People tend not to accept the solutions imposed by order from superior authority – they much more prefer to solve the problems on their own. Self-esteem, emotional needs or individual values may also positively contribute to changes in behavior [Rock, Schwartz 2006, pp. 72–81]. Such a strategy requires empathy and highly personalized approach – the conditions rarely occurring in the rapidly changing business world. This humanistic approach also assumes that if an individual receives adequate information about errors in their current proceedings and is subjected to the action of proper incentives, they automatically change their behavior. Such assumptions are far too mechanistic. According to the theory of cognitive psychology, the human brain is capable of

significant internal changes in response to changes in the environment or conscious attention of the individual [Schwartz, Stapp, Beauregard 2005, pp. 1–72]. There is strength in concentration and attention, which continuously change patterns recorded in the brain. Human attitudes, patterns of behavior, expectations also play an important role in the perception – individuals experience what they want to experience [Paller, Voss, Westerberg 2009, pp. 185–199].

Neurobiologists, leading interdisciplinary research on the nervous system, suggest that at the time of understanding of an issue – the proverbial epiphany – the brain creates a new network of neural connections [Subramaniam, Kounios, Parrish, Jung-Beeman 2009, pp. 415–432]. These connections carry the potential to improve the mental and psychic abilities and thus overcome the natural resistance of the brain to change. A necessary condition to achieve this effect is purposeful effort directed towards repeating attention. The cognitive discovery should be generated by the learners themselves rather than presented by order from the instructor in the form of conclusions.

3. The role of managers in building a sustainable global economy

Managers can become an important catalyst for the change of thinking about the way of economic growth and development. They play a particular role in determining the values held by the company and shaping its organizational culture, identifying key questions and creating a vision for the future development of the company. Managers should be able to establish such goals of the company, the implementation of which, in addition to commercial success, will also provide a secure, sustainable future for the next generations. To make this possible, the managers must challenge the neoclassical theory of development, based on the assumption of unlimited availability of natural resources.

Contemporary, unbalanced world needs a new generation of managers. One of their key attributes is the ability to change the short-term orientation to achieve maximum profits from operations for genuine integration of the changing social, financial and ecological conditions of the company's functioning into a business strategy, enabling its sustainable development. They must understand that the ecological system that defines and sustains the well-being of man has long exceeded its limits, and the human economy is over-extended in relation to the regenerative capacity of the planet. The leaders of the new generation are also characterized by perseverance in promoting their ideas for a sustainable future. This perseverance allows them to overcome criticism from opponents. They are able to implement changes that will ensure the success of the company in the context of "sustainable wave" flowing through the markets. The growing ecological and social awareness among consumers, eco-friendly and pro-social transformation of the international and domestic legal environment, the growing importance of corporate social responsibility, the development of environmentally friendly technologies, the

emergence of “green” and “socially responsible” sources of capital, the increasing transparency of enterprises’ behavior through the development of media and IT revolution, the growing tendency to lead a healthy lifestyle are the primary driving forces of sustainable wave.

The new generation of managers must have the ability to use the “sustainable wave” in the building of competitive advantage of their corporation. They should know how to create a sustainable enterprise – an organization that sees the right combination of managing all major aspects of its operations (financial, social and environmental) as conditioning its survival and profitability in the long term. The financial perspective means that the growth rate of assets and revenues is balanced with the operating and financial policies. Social perspective can be described as achieving business objectives in a manner consistent with the ethical standards and with a view to create value for stakeholders. Environmental perspective means that the individual actively involves ecological aspects into all core competencies. Those managers who actually overcome the conflict of the objectives between financial, social and environmental areas of activity of the company will find opportunities to reduce operational risk, reduce costs and increase revenue [Przychodzeń, Przychodzeń 2011, pp. 64–73]. This, in turn, should be reflected in a more stable financial situation and the higher valuation of sustainable enterprises by the capital market in the long term. The leaders of the new generation understand that all operations of the organization in the field of sustainable development, associated with incurring costs in the short term, are not inconsistent with the primary purpose of its business, which is to increase profits and value for shareholders in the long term. The new model of leadership is a breakthrough in the construction of a sustainable future of our civilization.

The current model of leadership does not fulfill its role. Directing towards maximizing the financial results in the short term, focusing only on economic success, not seeing negative social and environmental effects of the activities or transferring operations to countries with lower enforceability of the rules are just a few examples of set patterns of management. In order to change this situation, it is necessary to amend the modern system of management education and the incorporation of the concept of sustainable development in all programs of study in the field of management. This concept should be included in the basic modules and adapted to the specific objectives and context of particular subjects.

4. The role of education in creating a new generation of leaders

Education is the key factor influencing the behavior change at managers. Today, there is a strong need for reorientation of business education towards building understanding and acceptance of the multidimensional context of business activities. Educated leaders must have the ability to integrate the concept of sustainable development into the strategies led by their respective companies

[Kagan, Kirchberg, 2008; United Nations Educational Scientific and Cultural Organization, *Reinventing Higher Education: Towards Participatory and Sustainable Development*, 2008].

Teaching about sustainable development is now becoming increasingly popular. A lot of different ideas, formats and approaches can be observed. They are used by various business schools, consulting agencies, NGOs and business networks. This trend should be considered very positive. Unfortunately, environmental, social and financial aspects of sustainable development are still not an essential part of higher education programs. Moreover, the concept of sustainable development is also not entered in postgraduate education, including MBA programs [Willard 2002]. In particular, it concerns the developing countries – the place of residence of more than 5.5 billion people – where it is only a niche specialization, remaining outside the mainstream of education. This is all the more worrying that the behavior of local managers will be crucial for the success of our efforts to build a sustainable future for the world [Jucker 2002, pp. 8–18].

5. Techniques of incorporating the concept of sustainable development in the process of management education

Management education is one of the key instruments for success in the practical implementation of the concept of sustainable enterprise. In order to do so it is necessary to educate managers to be more flexible, innovative, capable of effective cooperation with government institutions and society, and results-oriented in the long term. This requires instructors and business schools to use comprehensive and precise techniques and instruments, such as:

- The incorporation of the concept of sustainable development in the curriculum as one of the fundamental objectives and extending it to all the majors. This will send a clear signal that this concept is important from the point of view of each student and instructor. In addition, this will motivate university teachers to devote sufficient time to analyze literature and proper preparation of material for conducted classes. The incorporation of the concept of sustainable development in all major fields of study should allow to provide students of business majors with interdisciplinary knowledge in this area [Huckle, Sterling 1996].
- Active participation of business practitioners in the teaching process. Learning from business practitioners will enable students to better understand the social, environmental and economic impact of business decisions and will show a number of practical reactions of enterprises to the problems of sustainable development.

Invited practitioners should clearly emphasize that in order to turn sustainability into above-average profitability, the concept of the above must become an integral part of the management and business strategy. Learning from the experts will

also be an excellent opportunity for students to confront academic theoretical knowledge with business practice.

- Active participation of guest lecturers from other science disciplines in the teaching process. Sustainable development is a concept of an interdisciplinary nature. Thus, it requires an open, differentiated approach. Experts from fields such as earth and the environment sciences or the social sciences, can significantly enrich the learning process and expand the scope of discussions held during the course. This, in turn, will help to improve the capacity of managers being educated to make business decisions, especially in the context of increasingly complex and rapidly changing conditions of conducting business.
- Extensive use of examples of business practice in group projects. Problem-oriented education is essential for the development of pro-social attitudes and pro-environment abilities. Business schools instructors should encourage students to participate actively in projects in larger groups. This will make them realize as complicated formation the organization is and how many different characteristics, opinions, points of view and areas of influence co-exist at a time. It will also show that the implementation of the concept of sustainable development in the company's strategy and decision-making process will require extensive skills to promote their own ideas and the ability to compromise. Instead of using the classic formula of the lecture, associated with providing students with ready-made problem solutions, successful coaches permanently pose questions and assist students in working out solutions on their own.
- Teaching with the use of a wide range of case studies. Case studies used should include corporations from both developed and developing countries. There are many examples of business practice showing that focusing only on the commercial success induces resistance from the public and governments. This resistance is also characteristic of underdeveloped countries. These case studies should show that the commercial profit and attention to the principles of sustainable development are the two blades of the same scissors, and appropriate leadership is like the expert tailor's hand handling them. It must contain the right combination of all the necessary elements – financial, social and environmental so that it becomes possible to cut all the nodes blocking sustainable development. The use of case studies in the teaching process also develops analytical skills and students' abilities to formulate arguments. The lecturer should devote sufficient time to the discussion of the proposed solutions and give every student the opportunity to deliver their opinions.
- Study visits in firms. The necessary condition for their implementation is a well-functioning cooperation between academic universities and the business world. Study visits will allow students to get to know daily operations of the company and to identify discrepancies between the statements of managers regarding the significance of sustainable development and practice. Thus,

future graduates will be characterized by better preparation to eliminate the root causes of socially, economically and financially irresponsible practices and behaviors of the business world. Visits in firms during the course will also help them in more accurate assessment of the risks and benefits associated with the practical implementation of the concept of sustainable development in the company's operations.

- Using interactive business simulations and social networks in the learning process. They can be seen as relatively new teaching tools. Compared with traditional textbooks and case studies they add dynamism and temporal dimension to the didactic process. Interactive simulations make students more open to cooperation, effective in solving real problems and sensitive to the ever increasing complexity of business environment. Properly designed games and the use of social network sites can help teachers to meet the expectations of students in relation to the activities, to improve contact with students and to increase the dynamics of the teaching process. Modern information technologies must now go hand in hand with conventional teaching methods. The biggest challenge in the effective use of the above instruments is to provide a large number of business subjects instructors with appropriate competencies necessary for building the concept of sustainable development in the programs of conducted courses. Some of them had never met it at any stage of their education and do not have adequate knowledge about its possible use in the class with students. There is, therefore, an urgent need for professional training of business instructors through seminars, workshops, courses and academies, during which they will be equipped with the knowledge of the concept of sustainability and effective implementation of the tool in various contexts of the teaching process. Low business competences of teachers in the field of sustainable development are also partly the result of lack of appropriate training organizations. There are only a few institutions running programs devoted to teaching about sustainable development at university level. The newly created training units should develop the necessary competences of teaching assignments, such as:
 - pedagogical and interpersonal skills. Business teachers should go through the same process of education on the concept of sustainable development, which will then be subjected to their students. This will allow instructors to understand their important role in the process of its practical implementation and make them realize how many instruments they have in this field. They should promote learning by experience and individual experimentation. A student cannot be afraid to take risks and making "positive" mistakes, especially in so innovative a field as incorporating ideas for sustainable development in the company's strategy and decision-making. The lecturer must promote creative approaches to solving problems and to play an active role as a guide

and observer, not a supplier of ready-made formulas. There is no one correct answer to the social, environmental and financial problems faced by today's global society. Therefore, teachers can learn new approaches in parallel with students and generate positive synergy.

- Ability to use a wide range of practical teaching tools. The central part of teaching sustainable development is to encourage students to group work on projects using interactive teaching methods and case studies. Therefore, it is essential for the lecturer to use them effectively during the teaching process which should be enhanced by the ability of the instructor to respond to the emerging needs of students on regular basis. The use of social network sites can be a useful tool in this regard.
- Ability to establish close contacts and cooperation with the business world and the wider academic environment. Interdisciplinary approach and frequent visits of practitioners in the classroom will allow students to understand the complexity of the concept of sustainable development. It is, therefore, important that teachers possess the ability to establish contacts with both the business world and representatives of other science disciplines. Thanks to it, conducted classes will be open to the outside world, whether by visits of guest lecturers or study visits to selected companies. To make this possible, it becomes imperative for the lecturer to be able to obtain both internal and external sources of funding of the expenses arising in connection with this approach.

Conclusions

Increasing pressure from stakeholders for incorporation of the concept of sustainable development in corporate strategies and decision-making requires significant changes in the process of management education. In order to meet the expectations as to create mutual value, modern business leaders must have the ability to move away from purely short-term orientation to achieve maximum profits from operating activities to the benefit of the implementation of organizational changes aimed towards long-term operations associated with the construction of sustainable enterprises. The above change requires business schools and their teachers the ability to use complex techniques and instruments. The most important are: incorporation of the concept of sustainability in the curriculum, active participation of business practitioners – guest lecturers from other disciplines in the teaching process, extensive use of examples of business practice in group projects carried out by students during the courses, study visits to companies, the use of interactive business simulations and social networks in the teaching process.

The increasing degree of specialization of management education has an impact on the instructors themselves. Their training must develop the necessary competencies such as: pedagogical and interpersonal skills, the ability to use a

wide range of practical teaching tools, the ability to establish close contacts and cooperation with the business world and wider academic environment.

Abstract: Perceptions of management education have evolved with the changes in the nature of conducting business. New approaches recognize the legitimacy of the company's investment in sustainable development associated with incurring costs in the short term as long as they contribute to increase profits and shareholder value in the long term. The modern system of management education can and should support a change in behavior and mentality of management team associated with this approach. The task of the lecturer becomes such focus on the teaching process so that students learnt to implement the concept of sustainable development in business operations without imposing solutions in this field issued by superior authority. The above transformation requires both from instructors and universities the use of complex and precise techniques and instruments. The aim of this paper is to provide guidance and solutions in this field.

Key-words: sustainability, management education, environmental education, sustainable enterprise, teaching methods, curricula.

Streszczenie: Sposoby postrzegania edukacji menedżerskiej ewoluowały w miarę zmian natury prowadzenia działalności gospodarczej. Nowe podejścia uznają zasadność inwestycji przedsiębiorstwa w zrównoważony rozwój, związanych z ponoszeniem kosztów w krótkim okresie czasu, o ile przyczyniają się one do zwiększanie zysku i wartości dla akcjonariuszy w długim okresie. Współczesny system edukacji menedżerskiej może i powinien wspierać związaną z tym podejściem zmianę w zachowaniu i mentalności kadry zarządzającej. Zadaniem wykładowcy staje się takie ukierunkowanie procesu nauczania, aby słuchacze przekonali się do implementacji koncepcji zrównoważonego rozwoju w działalność biznesową bez odgórnego narzucania rozwiązań w tym zakresie. Transformacja powyższa, wymaga, zarówno od instruktorów, jak i szkół wyższych użycia kompleksowych i precyzyjnych technik oraz instrumentów. Celem opracowania jest dostarczenie wskazówek i rozwiązań w tym zakresie.

Słowa kluczowe: zrównoważony rozwój, edukacja zarządzania, edukacja ekologiczna, zrównoważony rozwój przedsiębiorstw, metody nauczania, programy nauczania

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