



24th DAAAM International Symposium on Intelligent Manufacturing and Automation, 2013

Integration of Sustainable Development at Enterprise Level

Lilia Dvořáková, Jitka Zborková*

Faculty of Economics, University of West Bohemia, Univerzitni 8, Pilsen 306 14, Czech Republic

Abstract

The goal of this paper is to present the result of the research on the topic of “sustainable development issues at the enterprise level and its impact on non-financial reporting enterprise”. The research was conducted among the Czech companies throughout the current year (2013). The results illustrate the impact of sustainable development lead business to business processes and explain how sustainable business is understood by the businessmen themselves. In this paper the issue of sustainable development has been introduced, the text concentrates on the identification, characteristics and the comparison of „the sustainable enterprise“ concept and closely discuss the principles of the sustainable entrepreneurship – in other words entrepreneurship in accordance with the sustainable development principles. Results of conducted research entitled “Problems of sustainable development at the enterprise level and its impact on non-financial reporting of the enterprise” among Czech enterprises are presented and more closely discussed.

© 2014 The Authors. Published by Elsevier Ltd. Open access under [CC BY-NC-ND license](https://creativecommons.org/licenses/by-nc-nd/4.0/).
Selection and peer-review under responsibility of DAAAM International Vienna

Keywords: sustainable development; environment; business activities; financial management

1. Introduction

With the development of business, commerce and the increasing pressure of globalization tendencies, the following aspects are showed – the interdependence and the reflection of business activities on the environment and social aspects of ecosystems, including human populations. A number of studies and surveys have been made (United Nations - Promoting Sustainable Production and Consumption, 1999; EurActiv - Sustainable Consumption and Production in the EU, 2008; OECD - Promoting Sustainable Consumption, 2008; University of Cambridge - Sustainable Consumption and Production, 2010; World Bank - Environmental Crisis or Sustainable Development,

* Corresponding author. Tel.: +420-377-633-217; fax: +420-377-633-002
E-mail address: prochaz@kfu.zcu.cz

2010; UNEP - the future We Want, 2012, and many others) that note, in general, that from the point of view of the near future, the existing structure and scale of production and consumption is unsustainable.

There is a wide range of concepts, approaches and methods in the area of company's performance measurement and management – from the basic calculations of ratio indexes, through financial analysis or comparison of data in the time series to complex models of performance evaluations. Increasingly, the non-financial, often qualitative aspects which reflect the current trends in business in accordance with the principles of sustainable development are added to financial indicators. There is not only the creation of new concepts for measurement, evaluation and reporting of non-financial aspects related to sustainable business, but the issue is gradually influenced by classical models of performance measurement and management (e.g. Balanced Scorecard methodology adjusted for the sustainable performance and methodology of compilation of EVA, respectively EVAS, which takes the aspects of sustainability into account).

2. The issue of sustainable development and its importance in the 21st century

The concept of sustainability, sustainable development and a sustainable life is currently very frequent term and a key concept in the legislation fields. There is an increasing effort to understand the possible links between the economic, environmental, social and institutional dimensions of development and the ways in which these spheres are measured not only individually but also in connections. In general, the term is often understood as a vision of further development, which sees the mutual respect and seeks a balance between social, environmental and economic side.

2.1. The issue of sustainable development in the history of time

The issue of sustainable development as a school of thought – respectively the relationship among the man, the social organization of society and the nature can be found in the old history. Specialized academic and political circles – at the level of international relations and institutions – started to address this issue in the second half of the 20th century, at a time when the problems associated with the growth of the human population, economic growth and the increasing use of non-renewable resources (which are then reflected in the current global issues) arose.

Historically, one of the first mentions of the sustainable growth of the social product and concerns related to the topic were recorded in 1960 in the founding Charter of the Organization for Economic Cooperation and Development (OECD), which currently has 34 member states and whose principal objective is to coordinate economic and socio-political cooperation between the Member States.

Re mention of the issue can be found in a study by major scientists under the auspices of the Massachusetts Institute of Technology in 1972 known as The Study of Critical Environmental Problems, which concluded that "the infinite growth is not possible in an environment of limited resources," which was vitally important for the future of environmental concepts. Ivan Rynda emphasizes that as well, he reminds us: "The world we inhabit has paradigmatically fundamentally changed. The system of our planet has closed due to finite space and resources and the growth of no kind is possible." (Rynda, 2010).

The Club of Rome was founded in the late 60's of the last century, which brings leading figures from various countries together and carries out research studies on the evolution of the world as a whole and tries to determine the limits of the growth. At the beginning of the 70's of the last century (1972), The Club of Rome published a report (the first Club of Rome report), which studied the evolution of the human population and the use of natural resources up to 2100. It was a document called The Limits to Growth [1], and it dealt with ways of how to create sustainable environmental conditions and economic stability.

„... the state of the global balance, at which the world population and the capital maintain more or less at a constant level, and the tendency to influence the growth or drop of these quantities must be under strict control....” (Meadows, and others, 2004)

The sequel of a publication called Beyond the Limits was published in 1992. This writing presents an overview of updated information and applies mathematical models according to individual variations of human behavior. In most

cases, the result is the lower living standards as a consequence of resource depletion and environmental pollution in the 2020 – 2060 horizon.

The sustainable development most commonly used definition comes from 1987 from the report named Our Common Future (also called The Brundtland Report) by the Norwegian physicist and politician Gro Harlem Brundtland, Chair of the World Commission on Environment and Development. Sustainability is: "*Development that meets the needs of the present without compromising the ability of future generations to meet their own needs.*"[2]. This definition contains two basic components:

- the component of the need, which is focused on the poor parts of the world whose needs should be a priority
- the component of sustainable production and consumption determined by the used technology and social organization of the society.

2.2. Business in accordance with the principles of sustainable development

The businesses contribute very substantially to the sustainable development of the society and in the last decade, the attempt to reach the sustainable development can be seen even on this level of the businesses. As recalled by Professor Kovanicova, businesses decided to honor the sustainability look further than to just immediate profits. They perform their business in such a way that even in the future of many years they will be able to ensure the recovery of resources in ways that take social and environmental aspects into account. Kovanicova mentions, that the increasing business performance is to be assessed not only in terms of services, manufactured products and of profits, but also in terms of effects on human and social aspects. It is therefore necessary to make changes in traditional approaches, thoughts and the hierarchy of the values [3].

In this case, according to Hyršlová, it is necessary to distinguish two categories. The first consists of sustainable enterprises and other businesses that accept the concept of sustainable development. Business in accordance with the principles of sustainable development means that the company is on the path toward sustainability. Sustainability is therefore the ultimate goal the firm seeks. The concept of sustainable development can be promoted in the company on the basis of social responsibility and the many voluntary instruments: quality management systems, environmental management system, management system of health and safety at work, cleaner production, ecolabelling, responsible care, etc. [4]. The corporate success and performance evaluation must therefore include - in addition to standard financial indicators - relevant non-financial aspects, which actually represents the ability to link economic, environmental and social profiles and express the performance in these areas.

The companies began to realize the importance of a balance between its economic, environmental and social priorities. In order to keep successful development, they implement the principles of sustainable development into their business processes (management; cooperation with stakeholders - suppliers, customers, local communities, planning and the course of production, marketing and sale of products, ...). Along with this, there is also a change in the requirements and expectations of different groups of stakeholders, among which we can include the following

- **Customer requirements** - at a higher rate than before, the customers take environmental and social aspects of the company and its product into account. Due to the large number of similar products, it is not complicated to flexibly change the decision while purchasing the product. Currently, customers consider "ethical consumption" in their purchase decisions more, but it is important to underline the fact that "ethical" is a broad, flexible and often highly personal term [5]
- **Supply chain** – the criteria for choosing the right supplier are changing, actually expanding. Enterprises may transfer the requirements further in the supply chain.
- **The stakeholders' and owners' requirements**– while maximizing business value the sustainability factor is not just a requirement from the outside anymore, it is actually understood as a potential tool to improve corporate performance which could subsequently reflect in the higher competitiveness.

2.3. Empirical research on the integration of sustainability into business processes

The primary research called “Business approach to sustainable development and its impact on financial management” was conducted in 2012. Companies regardless of their size and focus of their business took part in the questionnaire. 300 questionnaires were sent out and 193 responses were received. The conclusions showed that at the level of Czech subjects, there has been a significant shift in the field of measurement and performance management. However, companies still use the traditional performance indicators (mostly financial analysis indicators), which focus primarily on economic performance. Eventhough most of the surveyed companies stated that they understand the issue of sustainability as one of the competitive advantage; they do not include the sustainability effects into corporate management, regardless of the size of the subject[6].

Based on the results of the survey, the authors conducted a follow-up survey entitled “Problems of sustainable development at the enterprise level and its impact on non-financial reporting of the enterprise”. The integration of sustainability into company’s processes was evaluated in terms of the three pillars of sustainable development and their impact on non-financial reporting of the enterprise. Questionnaire focused on the area of financial management, economic performance evaluation, on issues of environmental and social aspects of the business, then the area of sustainable development and its reflection in business processes and finally to non-financial reporting of the company.

The survey addressed 300 companies and 100 of them actually took part. Lower participation is probably due to the fact that the respondents were asked to answer the questionnaire personally during the appointment. The demographic structure by size of enterprise (based on Commission Regulation No. 10/2001) and by their field of activity is evident from the figures below. Most of the subjects are represented by small and medium-sized enterprises, in 80% operating mainly in the sector of production and services.

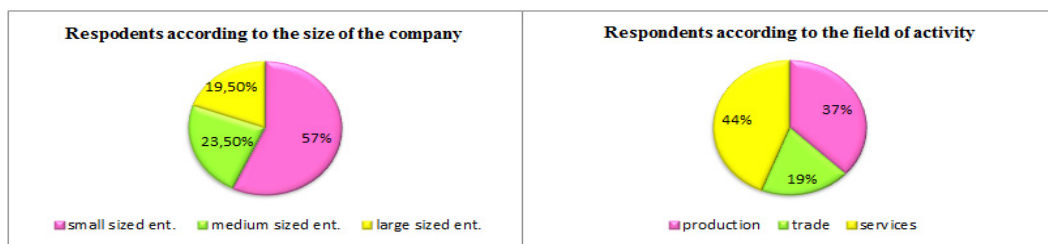


Fig. 1. Respondents' structure; source: own, 2013.

2.4. Integrating sustainability into business processes

The understanding of the main business goal and its application into measurement and management of the business performance gradually changes during the development of the company but always in relation to the relevant groups e.g. stakeholders. Corporate accountability has moved from the owners towards providers of capital (shareholders, investors, creditors) and even further to the often mentioned “interested parties” (stakeholders).

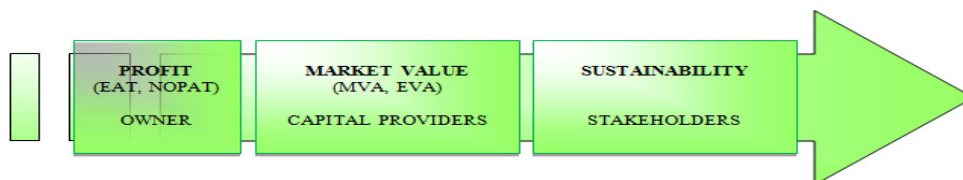


Fig. 2. The goal of enterprise in a time, source: own, 2013.

The survey firstly asked the question what is the main goal of business and then concentrated on the link between the businesses and sustainable development. Respondents could identify more business goals, however they were asked to choose one as a primary goal. The respondents from the category of small businesses identified the profit maximization and financial stability as the primary goals. The market share was given 50% of the importance and that can be understood in relation to their size and thus the ability to operate in the market. The least importance was given to maximizing the business value.

Medium and large enterprises selected financial stability as the primary business objective and the second goal (a distance of ten percentage points) was profit maximization. The third position is quite interesting as it was the market share and sustainable business. This fact can be explained by the increasing pressure of stakeholders on the business, which consequently reflects the business objectives. The last was the same objective as for small businesses and it was business value maximization. However in this case, it was a higher number of respondents. Other categories were mentioned optionally, such as improving quality of services and thus customer satisfaction and achieving the objectives set for the period in time. Detailed results are shown in the table below.

Table 1. Main business goals.

The business objective	The business size		
	Small	Middle	Large
Profit	34,6%	21,9%	25,0%
Business value (EVA, MVA)	5,8%	10,3%	8,3%
Market share	16,2%	17,4%	15,6%
Financial stability	31,8%	30,3%	34,4%
Sustainable business	11,6%	17,4%	15,5%
Others	0%	2,6%	3,13%

Source: own, 2013

The follow-up questions dealt with the link between business and sustainable development. These issues were evaluated in relation to the size of the company, based on the test of goodness of fit (χ^2) which establishes whether or not an observed frequency distribution differs from a theoretical distribution. It defines a null hypothesis H_0 , where the occurrence of the outcomes is statistically independent and the alternative hypothesis H_1 that corresponds to the variables having an association or relationship where the structure of this relationship is not specified. If H_0 is rejected, it is possible to see the relation between the variables.

The contingency table has been designed to process the data and the table enables to test the dependency of the two categorical variables and shows the recorded figures as well as the calculated expected numbers.

Table 2. Question: Do you think that your company contributes to sustainable development?

Answer	Small businesses	Middle-size businesses	Large business	Total
Yes	44	21	17	82
No	13	3	2	18

Source: own, 2013

It is possible to calculate the expected frequency as :

$$m_{i,j} = \frac{n_{i.} \times n_{.j}}{n} \quad (1)$$

Where:

$n_{i.}$, and $n_{.j}$ = marginal lines and columns totals

n = the number of elements on the n scope

Calculating the test-statistic:

$$\chi^2 = \sum \frac{(\text{an observed frequency} - \text{expected (theoretical) frequency})^2}{\text{expected (theoretical) frequency}} \quad (2)$$

The value of χ^2 (test statistic) approaches a χ distribution – distributed into the degrees of freedom $(r-1) \cdot (s-1)$ – in this case 2 – on the chosen significance level of a test (5 %). The calculated χ^2 (2,1032) is lower than the number in the table (7, 8147). The null hypothesis was not rejected and the independence between the two variables was proved.

Furthermore, it is possible to measure the intensity of the relation in the contingency table using the Phi coefficient (also referred to as the mean square coefficient):

$$C_{\text{kor}} = \frac{C}{C_{\text{max}}}, \quad (3)$$

where:

$$C = \sqrt{\frac{\chi^2}{\chi^2 + n}}, \quad (4)$$

$$C_{\text{max}} = \sqrt{\frac{(m-1)}{m}} \quad (5)$$

m is the higher number from the r a s . The closer the coefficient to the number 1 the tighter the dependency is.

The coefficient is 0,22, which proves the weaker dependency.

Most of the respondents (more than 80%) believe that their business contributes to the sustainable development no matter what the size of the business is. Eventhough there is a weaker dependency, the fact that the business generally agree with their share on the sustainable devopment is good news.

The follow-up question - whether the businesses work with the sustainability concept in their strategic management – was evaluated in the same way.

Table 3. Question: Do you work with the sustainability concept during the strategic management process?

Answer	Small businesses	Midle-size businesses	Large business	Total
Yes	26	14	11	51
No	31	10	8	49

Source: own, 2013

The calculated χ^2 is higher (67,71502) than the critical figure χ^2 on the chosen significance level of a test 5% (7,81533). **The null hypothesis is rejected and the relation between the two variables was proved.** The coefficient is 0,78, which proves strong dependency.

The results show that despite the fact that businesses recognize the contribution of their activities to sustainable development, small and medium sized subjects are either not able to do so or do not consider it essential to reflect this concept in their strategic management or to their strategic goals. This can be associated with ambiguous understanding of the sustainability benefits to the economic performace. In another words, the businesses see the expenses needed on the implementation of sustainability more clearly than the economic benefits of the sustainability.

2.5. Sustainable development at the enterprise level

A questionnaire survey did not address the issue of sustainability integration into business processes only, but also aimed to uncover what the sustainable business really is, that is, how is the sustainability understood in terms of business activities.

When analyzing the relationship between the sustainable development and entrepreneurship, the following three views are usually mentioned.

- *The entrepreneurship is based on consumption and therefore on the use of non-renewable resources in the form of raw materials and energy so it is understood negatively and there are efforts to limit it or at least adequately legislatively regulate.*
- *The sustainable development is understood as a synonym for “green growth” when the economic growth and development of enterprises should be based on the basis of eco-efficiency. This idea is indeed practical, but does not express its own contribution to business for sustainable development. It also often leads to the abuse of the concept – so called green washing, which means that certain organizations deliberately spread the misinformation to present themselves as environmentally responsible business.*
- *The sustainable development is approached from the perspective of the conditions to preserve life, which depends on the development of human knowledge, and this in itself is infinite. Limits to growth therefore are not based on the “final” reserves of raw materials and energy, but on the level of education. The aim of any business is quite obviously “reproduction” of the owners’ properties. If not, the business would not only lose its meaning but it would have created a perpetual motion machine. The other side of the issue is consumption, without which there would be no incentive for business.*
- *“Sustainable development is such a dynamics of human knowledge, which in the long run allows the survival of humanity.” [7], [8]*

To evaluate the integration of sustainability into business process management is therefore important to first define the concept of sustainable business and only then it is possible to deal with its objectives and benefits for the enterprise. In the case where the businesses will not be aware of their contribution to sustainable development activities, the practical implementation of this concept in business process management can not be carried out. At this point it would either be only promotional steps in order to gain publicity or just an attempt to avoid economic sanctions for non-compliance with legislative requirements.

In this context, four basic definitions of sustainable development were presented to the respondents and they were supposed to further comment them.

A: "Sustainable development is the development that meets the needs of the present without compromising the ability of future generations to meet their own needs."

It is the oldest and one of the most often cited definitions, which is very vague. Although it illustrates the essence of sustainable development it might be considered as impossible to compare the value of the needs of present and future generations. Also, the question is whether it is realistic to consider the fulfilment of needs in a world of limited resources. Respondents who chose this definition as the closest to the essence of sustainable development were asked to describe the relationship of business and sustainability.

- A1) Enterprise meets the needs of present and future.
- A2) Enterprise meets the needs of the present at the expense of the future.

B: "Sustainable development is the development that strikes a balance between three fundamental pillars: economic, environmental and social."

This definition is also often cited as it emphasizes the balance of the three pillars of sustainable development, but does not offer a solution to achieve this balance. Respondents who chose this option as the most concise definition were asked to indicate whether the business positively fulfills all three pillars of sustainable development.

- B1) Business positively fulfills economic, environmental and social objectives.

- B2) Business positively fulfills economic and social objectives, but is in conflict with environmental objectives.

C: "Sustainability is the ability of humanity to ensure the development of the knowledge and ethical potential in order to help to overcome global challenges."

The third definition is no longer based on purely environmental interpretation of the concept of sustainable development, but understands it as a concept that can help solve global problems. Sustainable development is understood as the knowledge and ethical potential. The development of such potential is achieved through innovation and the usual suppliers of innovation are businesses. According to empirical research the relationship between research and development intensity and financial sustainability has been proved. [9] There are researches investigation of the process of educational change for sustainability (environmentally and socially responsible professionals). [10] Respondents who chose this option as the most precise were asked to indicate the relationship between business and sustainability in this sense.

- C1) Entrepreneurship is a product and a source of knowledge potential.
- C2) Entrepreneurship is not based on the knowledge potential and does not generate it.

D: "Sustainable development at the level of an organization is fulfilled thanks to commercial success and profit achievement."

The last definition is based on the concept of commercial enterprises whose main goal should be to make a profit for their owners, hence investors. This definition does not correspond with the idea of sustainable development neither from the environmental, nor from the global perspective. It is a selfish concept that focuses on its own survival without reflection of the company link to its stakeholders.

The respondents were asked to indicate the definitions they know and further to choose the one that meets their opinion best. When the respondents chose A, B or C, they were asked to indicate the relationship between business and sustainability as they understand it.

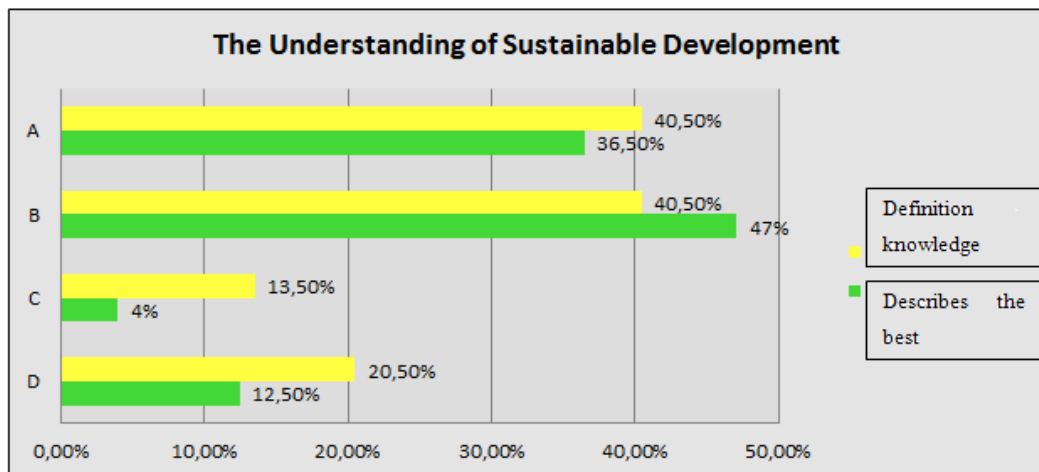


Fig. 3. Sustainable development at the enterprise level, source: own, 2013.

In business practice, the commonly cited definitions are the best known, definitions A and B were chosen by more than 40% of the respondents. In definition A, the distribution of responses in relation to the size of the business is relatively uniform, whereas the definition B – based on the balance of 3 pillars, the percentage of respondents increases with the company size. 37% of the respondents considers definition A as the best one while it's almost half of them for the definition B.

13% of the respondents only said that they are acquainted with the definition C ie. the understanding of sustainable development in relation to the knowledge and ethical potential of humanity. This definition is known mainly from representatives of large and medium-sized enterprises. As the best definition, however, is consider by 4% of respondents only mostly the large companies and one medium-sized company.

The definition D is quite interesting as more than 1/5 of the companies are familiar with the definition – mostly from micro, small and medium-sized companies. 90% of the respondents were from such companies. However, only 12% considered it the best definition, mostly micro and small business, two respondents were from a medium-sized company.

Table 4. The relationship of sustainability and businesses.

Definition	Know	The best description	Option 1	Option 2
A	40,5%	36,5%	88,5%	11,5%
B	40,5%	47%	80%	20%
C	13,5%	4%	100%	0%
D	20,5%	12,5%	-----	-----

Source: own, 2013

Definition B was marked as the best characterizing definition by almost half of the subjects. This definition is ased on a balance of the three pillars. In the opinion of 80% of respondents who identify with this definition, the business on itself meets positively all the three pillars – economic, environmental and social. The definition A was chosen as the second most concise definition that puts particular strong emphasis on a friendly approach to the environment. More than 88% of those who chose definition A stated that in their opinion the business fulfill not only needs of the presence, but of the future as well. Definition C was voted that it articulates the essence of sustainability the least. However, the respondents that voted it as the best one, clearly inclined to the view that entrepreneurship is a product and a source of the knowledge potential.

We can conclude, that the business practice sees sustainable development particularly in the context of balancing the three elementary pillars (definition B). A smaller part of the companies understand the sustainable development as the need for careful management of the environment (definition A). Sustainable development is seen by most of the respondents as a much broader issue than just the issues related to environemantel protection. Almost 90% of respondents believe that the existing business is conduced in accordance with the principles of sustainable development (as individually understood).

3. Conclusion

The issue of sustainable development and sustainable growth of the social product began to be discussed in international professional circles in the second half of the 20th century. However, if we understand sustainable development in its broadest meaning as a process of thought, the elements of it can be found much earlierUp to now, many local, national and international institutions were founded to provide cooperation in various fields of sustainable development, create concepts, metrics and indicators for reporting and measurement.

One of the main problems is probably in the area of insufficiently accepted definition of the sustainable development that is constantly evolving and often based on environmental concept without reflection of the social component. It is primarily focused on non-renewable resources, but does not answer the topical global issues to which should sustainable development contribute.

Recently, there has been a development and a whole range of indicators, metrics and indices dealing with the reporting of sustainable development were created. But this is rather complicated matter, because these indicators,

although they separately inform about various fields and pillars of sustainable development, their state and development, the question here is the correct understanding of the interactions, relationships and connections between different areas. At present, the possibility of using overall indicators and indexes that try to offer a whole view, must be simplified accordingly.

One of the main problems is not individual indicators, metrics and indices, but rather how they are used, interpreted and compared internationally. In many cases, their misinterpretation, either intentional or involuntary, is very easy.

According to the author's opinion, the sustainable development is a concept that enterprises can't ignore as it reflects both – the current threads affecting them as well as potential opportunities. Nevertheless, it is necessary to respect the main objective of enterprises, which in general brings benefits to its owners. Regardless of whether the company wants (and is able to do so economically) donate charity, philanthropy or other voluntary activities which in the eyes of the general public may cause a positive impression, it is essential that the company is able to satisfy the interests of their owners primarily. Clearly, a profit is needed – at least in the long term view.

This research shows inconsistency in the perception of the concept of sustainable development and the related role of business entities. According to the author, the issue of sustainable development at the enterprise level is broader than just the environmental aspects associated with business activities. The main problem, however, is the incorporation of social aspects in the assessment of corporate performance in relation to financial criteria, particularly in terms of economic benefits.

In the future research, the authors intend to focus on the issue of the three pillars of sustainable development – the management and evaluation of the economic, environmental and social aspects on the enterprise level. Each of these areas will be examined individually and then the mutual links between these areas will be examined. The operational objective is the analysis of non-financial reporting of selected companies with regard to the individual pillars of sustainable development. This information should then help to create the general structure of the accounting model of the sustainable development applicable to the enterprise level, including the methodology of its implementation and verification in specific business subjects.

Acknowledgements

This paper was created within the project SGS-2013-40 Paradigm of Development in the 21st Century and its Impact on the Behavior of Economic Entities.

References

- [1] D. Meadows, J. Randers, *Limits to Growth – the 30 years update*, Chelsea Green Publishing, Vermont, 2004. ISBN 97-8193-1498-586.
- [2] G. H. Brundtland, *Our Common Future*, Oxford University Press, Oxford, 1987. ISBN 978-0-19-282080-8.
- [3] D. Kovanicova, *Účetnictví napomocou držitelněmurozvoji*, in: *Účetnictví 4* (2010). Bilance.Praha, 2010. ISSN 0139-5661.
- [4] J. Hyřšlová, *Účetnictví udržitelného rozvoje podniku*, VŠEM, Praha, 2009. ISBN 1-4020-4079-2.
- [5] A. Joita, S. Costache, M. Darzan, E. R. Cristian, *Ensuring Fair Wages and Ethical Consumption through the Determination of Minimum Acceptable Payment and Cost of Sustainable Production*, *Annals of DAAAM for 2012 & Proceedings of the 23rd International DAAAM Symposium*, ISBN 978-3-901509-91-9, ISSN 2304-1382, pp 0631 - 0636, Editor B[ranko] Katalinic, Published by DAAAM International, Vienna, Austria, 2012.
- [6] M. Krechovská, *Impact of Sustainable Development on the Financial Management of Czech Enterprises*, in: *Advances in Accounting, Auditing and Risk Management. Proceedings of the 2nd International Conference on Finance, Accounting and Auditing*, Brasov, 2013, pp. 101-107.
- [7] J. Student, *Udržitelný rozvoj a podnikání*, in *Environmentální aspekty podnikání*, MZP CR, Praha, 2004, ISSN 1801-6898, pp 13-17.
- [8] R. Kralikova, D. Prochadzka, M. Rusko, E. Wessely, *Proposal of Character of Future Europe Union Security Research*, *Annals of DAAAM for 2012 & Proceedings of the 23rd International DAAAM Symposium*, ISBN 978-3-901509-91-9, ISSN 2304-1382, pp 0019 - 0024, Editor B[ranko] Katalinic, Published by DAAAM International, Vienna, Austria, 2012.
- [9] D. Priyanka, W. Varun, S. Aggarwal, A. Seetharaman, *The Impact of Research and Development of IT Companies Listed on the S&P 500 Index*, in *Journal of Sustainable Development*, Canadian Center of Science and Education, Canada, 2013. ISSN 1913-9063.
- [10] W. Qian, *Embracing the Paradox in Educational Change for Sustainable Development: A Case of Accounting*, in *Journal of Education for Sustainable Development*, SAGE Publications, 2013. ISSN 0973-4082.