

Article

Evaluating the Effectiveness of Investment in Human Capital in E-Business Enterprise in the Context of Sustainability

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Abstract: The enterprises operating in the e-business area represent an example of a sustainable entrepreneurship. These enterprises belong to those for which the people are the most valuable assets. Human capital management (HCM) represents a modern concept of people management that is based on the business strategy. Via measurement and assessment of the effectiveness of the utilization of human capital and effectiveness of investment in its development, this concept leads to the increase of performance and competitiveness of the enterprise within the context of sustainability. As part of the questionnaire survey, we found that enterprises in Slovakia have little use of the HCM concept. Despite the fact that they consider investing in education or training as the main form of investment in human capital, they do not evaluate the effectiveness of this investment in practice. By analyzing foreign studies, we have found that e-business enterprises consider IT education to be very important for their performance, competitiveness, and sustainability. The aim of the article is to explain the nature of HCM and to propose an approach to assess the effectiveness of investment in education as a part of the HCM process. Implementation of the approach was implemented in a fast-growing medium-sized IT and e-business enterprise where education is mainly implemented in the IT field. We also used an internal enterprise data analysis. The proposed example of HCM implementation in the part of evaluating the effectiveness of investment in education and the article can serve as a theoretical and practical aid to human resources managers in implementing the HCM concept.

Keywords: sustainability; human capital management; effectiveness; investment; training; metrics; e-business; revenues; cost

1. Introduction

At present, business development generally occurs. Changes also apply to e-business, because the electronic world has unlimited opportunities for sales, logistics, marketing, control, and management [1]. Customers have high demands on the quality and complexity of the services they receive [2]. According to Strenitzerová and Gaňa, this is why service providers are trying to maintain the satisfaction and loyalty of their customers in the competitive market. The customers' satisfaction has a strong impact on customer-based sustainability and it is the basis for the long-term relationship between business and customers [3].

Entering a competitive global environment can further limit problems with the location of small businesses and their competitive power in the global market [4]. This also applies to e-business enterprises.

From the point of view of such an enterprise, the prompt feedback that is provided by their usage allows for the company to gain a number of ideas that can be applied in the innovation process.

The need to apply innovative communication tools is caused by the fact that common consumers are more demanding, comfortable and resourceful in searching new shopping possibilities. Business conditions are changing very fast. For this reason, enterprises need to respond quickly to changes in customers' requirements. It is necessary to innovate the marketing tools, to implement various other innovations, to collect and analyze the necessary data [1]. Advanced information systems allow enterprises to process these data [5,6]. The use of innovation, support for inventions, and technical improvements that are linked to the creation and transfer of new knowledge is necessary for the sustainability of not only e-business but also for the building and sustainability of the whole society [7]. If enterprises do not realize this, then it is a barrier in their business [8].

According to Ayres, sustainability is a concept of how people should behave towards nature, while preserving it for generations in the future [9], therefore, in terms of sustainability, we are being increasingly confronted with terms, such as green or organic businesses and products. These terms are also often used in communication with customers [10]. The same applies for e-business. Sustainability in the e-business field was dealt with, for example, by Choi [11] and Lee [12]. Most companies are currently applying sustainability principles as a part of the corporate responsible behavior in business while using them as a means of increasing competitiveness [13]. This area has been processed by many authors in their works [14–19].

To perform their activities, enterprises need to use the sources available. According to Lozano, sustainability is heading towards economic growth, which is also in the efficient use of natural resources [20]. According to Čorejová and Al Kassiri, the traditional approach to production function was focused on labor and capital, the knowledge and technology had only an intermediary effect on production itself. The changes in society and technology lead to the new position of knowledge as the most important factor for competitiveness and performance of economy, industries, and business entities [21].

From the perspective of the performance, competitiveness, and sustainability of enterprises, it is necessary to focus on the effectiveness of this utilization of the inputs and to take the appropriate measures that are related to it. One of the enterprises' inputs is also the human capital (HC). It represents the sum of abilities, skills, knowledge, experience, and talent that people have at their disposal and that they use to perform the job tasks leading to the fulfilment of an enterprise's objectives. HC is owned by any person, whether he/she is employed or not. Human resources are the bearers of the HC that is available for the enterprise. In the practice of enterprises, the concept of the human capital management (HCM) is becoming to be still more frequently applied. This concept emphasizes the current knowledge and other components of the person's human capital, their importance, and application, and it directs the attention to their systematic development and strengthening. It includes the processes and methods of the management of work with the HC and of the care for the increasing of its value and effectiveness in concord with the enterprise's strategy.

Human capital is a phenomenon that reconciles the current requirements for increasing performance, competitiveness, and sustainability with requirements for a high level of expertise in information technology area of employees who are working in e-business.

This concept is used by only a few companies. Our research has shown that only 6.5% of the Slovak enterprises have confirmed that they have a designed system of measuring and monitoring of human capital. These are mainly foreign-owned enterprises.

The aim of this paper is to explain the essence of the HCM concept, to identify the opinions on the importance of the HCM in the enterprises using e-business, and to point out the possibilities of the implementation of the HCM in the practice of an enterprise using e-business via a particular example. HCM implementation will focus on evaluation of the effectiveness of investment in human capital in the form of training.

2. Literature Review

2.1. Human Capital Management

Human capital is defined as the sum of the knowledge, skills, abilities, and experience of individuals that are inherent and acquired during life. In this way, human capital also defined: Bontis et al. [22], Davenport and Prusak [23], Armstrong [24], and other economists.

In order to maintain or increase the value of HC, it is necessary to invest in it. The forms of investment are different. Basic forms are spending on education or training, health improvement, improvement of working conditions, safety at work, and ergonomics. However, ideas about human capital and the importance of investing in human capital, particularly in the form of education or training, have emerged in the beginnings of economic theory, in the works of Petty and Smith. More importantly, however, the subject of human capital was investigated by representatives of the Chicago School, especially Schultz [25]. The Theory of Human Capital was developed by Becker [26], who developed the theoretical basis for deciding on investing in human capital.

Opinions on the role and position of HC in a company and society are different. Kucharčíková [27] made an analysis and created the structure of these approaches. Mankiw et al. [28], Barro [29], and Romer [30] consider HC to be the source of economic growth. Edvinsson and Malone [31], Davenport and Prusak [23], and Armstrong [24] understand HC as part of the intellectual capital, which together with the financial capital forms the market value of the enterprise. Svejby [32] refers to HC as an intangible asset that, together with tangible net book value, forms the market value of an enterprise. Some HC components are the basic construction element for the area of efficient corporate governance. These are, for example, knowledge management, talent management, competence management, management of generations, age management, human capital management, and so on.

The HCM represents a relatively new concept of the people's management in organizations. In the literature, various definitions for it can be found.

Kearns [33] understands the HCM as development of the HC and human potential expressed via the enterprise's value. According to him, the HCM is based on the generation of the enterprise's value via people. He considers the HCM to be a strategic concept, which is focused on the organization as a whole.

The HCM concept should necessarily follow the enterprise's strategy. This notion is supported by several authors and institutions. The European Public Policy Partnership [34] describes the area of human capital as a significant determinant of the future success of each enterprise regarding the fact that its value rises over time, therefore, it is necessary to understand the importance of human capital and to perceive the people as a resource, rather than just a cost item. For this reason, human capital should be understood as a strategic, thought-out and logic approach within the management of people in the enterprise who individually or collectively contribute to the achievement of its objectives.

According to the Chartered Institute of Personnel and Development (CIPD), the HCM:

- considers that people are more than the costs,
- understands the measurement as important, which must point to a clear link between HC and business performance,
- determines the mutual relationship between human resources management and business strategy,
- emphasizes the importance of measurement, which points to the fact that the policy of human resources management together with the practice bring excellent results and also serve to determine the direction of human resources, and
- underlines the role of a business partner within the framework of human resources practices, providing different types of advice: what to measure, how to measure it, and how to interpret the results [35].

Donkin [36] emphasizes the importance of HCM measurements. In addition, it is important within HCM to obtain and analyze the obtained results and to use them as a strategic and competitive benefit. Nalbantian [37] also emphasizes the importance of measurement within the HCM.

The requirement of measurement was entrenched in the concept of the HCM also by Armstrong [38], according to whom the HCM consists of the analyzing, measuring, and the subsequent assessing of how the selected strategy and the processes that were applied within the human resources management were successful in practice.

The Search Financial Applications [39] understand the HCM as an approach to employees that perceives them as an asset whose current value can be measured and its future value can be increased via the investment. The enterprise that uses the HCM provides clearly defined and thoroughly communicated performance expectations for its employees.

According to Fitz-enz [40], HCM should use HC information and identify the relationship of this HC information with an enterprise's performance. For this reason, it is necessary to monitor and analyze only relevant information.

Archibald [41] argues that, in an enterprise, there is the HCM in a narrower scale, which refers to the measurement and analysis of the metrics within the area of human resources, such as employees' turnover, costs per employee, and the efficiency of the training and education.

The Management Study Guide [42] states that the objective of the human capital management is to manage the employees of an enterprise in the way that they significantly contribute to its overall productivity. It is not only about the improvement of the employees' existing abilities, but also about utilization of the best of them.

Ahluwalia [43] sees the importance of the HCM in the fact that the planning within the HCM enables the organizations to form a stock of resources being prepared for the achievement of the strategic goals. This provides several advantages for the organizations, including e.g.:

- more efficient use of resources,
- the provision of realistic personnel projections for the purposes of budget making,
- provision of a clear justification of the expenditures on the training a retraining, development, career counselling and hiring efforts,
- the aid in the maintaining or strengthening of HC, and
- the aid in the preparation of the forming and development of HC.

At present, if enterprises strive for being successful, it is a high time for them to move the item of human capital to the right side—the side of assets. The perception of human capital as an asset that can provide the profit in the future is the focal idea for the maintaining of competitiveness. To be able to increase their performance and competitiveness in the market it is required for the organizations to invest in human capital and to measure its effectiveness in two aspects (the effectiveness of the utilization of HC and the effectiveness of investment in HC) within the implementation of HCM (Figure 1).

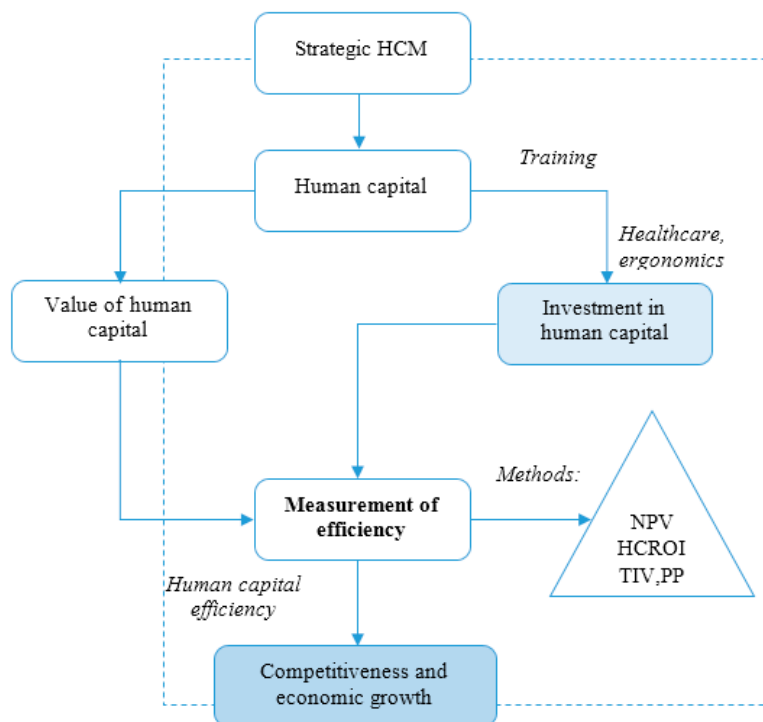


Figure 1. The framework of the human capital management (HCM) implementation in the business practice. Source: own elaboration.

The afore-mentioned statements imply that the HCM concept is a process of the people's management that follows the business strategy, while it considers the employees to be the assets (or the wealth). The main point is the efficient management of human capital via the measurement, analysis, evaluation and reporting of the data on the amount of HC, effectiveness of its utilization, and the effectiveness of investment in HC.

Experts have suggested different approaches to quantifying the value and effectiveness of using HC. For example, Wyat [44] proposed the Human Capital Index, Mayo [45] proposed a Human Capital Monitor, and Fitz-enz [40] published Human Capital Cost Factor, Human Economic Value Added, or Human Capital Market Value. Andriessen [46] suggested the Human Capital Effectiveness. Mathis and Jackson [47] proposed the Human Capital Value Added.

It is important to interconnect HCM with the key performance indicators of the enterprise and to identify the key HC components for them. After performing and evaluating the measurements that are needed and after the benchmarking, it is needed to identify the shortcomings in the area of HCM and to take corrective measures and evaluate them as well.

In this article, we will focus only on the area of evaluation of the effectiveness of HC investment. In the literature, there are several metrics for the calculation of the effectiveness of investment in human capital. Some of them are based on the common methods of the investment appraisal, for example, the Return of Investment (ROI), the Payback Period (PP), or the Net Present Value (NPV), which are more suitable for one-time or short-term investment in HC. The HC investment has three important forms. There are investment in training, healthcare, safety and health protection, and the improvement of the work environment and ergonomics. For example, the field of health care is studied by Chui et al. [48]. The most often, the HC investment refers to the investment in training. This was corroborated by the results of our survey, too. For these purposes, there is, for example, the HC Return of Investment (HC ROI) according to the approaches of various authors, for example for example Mankiw et al. [28], Fitz-enz [40], Manuti et al. [49], or the Training investment value (TIV) by Evans [50] (Table 1).

Table 1. The metrics of the effectiveness of investment in human capital (HC).

Metrics	Author	Formula
HC ROI	Mankiw et al., 1992	$\text{HC ROI} = \frac{\text{net revenue from the investment}}{\text{costs of the investment}}$
HC ROI	Fitz-enz, 2009	$\text{HC ROI} = \frac{\text{revenues} - (\text{total costs} - \text{remuneration costs})}{\text{remuneration costs}}$
HC ROI	Manuti, 2014	$\text{HC ROI} = \frac{\text{profit before interest, taxes, and depreciation} - \text{costs of financial capital}}{\text{investment in HC}}$
TIV	Evans, 2007	$\text{TIV} = \frac{\text{investment in training}}{\text{total number of employees}}$
Payback Period		$\text{Payback} = \frac{\text{costs of the investment}}{\text{annual cash flow}}$
NPV		$\text{NPV} = \frac{\text{present value of the benefits}}{(1+r)^n} - \text{present value of the costs}$ $r - \text{interest rate}$ $n - \text{investment's lifetime}$

A disadvantage of the metrics listed is also that some of them in actual fact express the effectiveness of the HC utilization. The TIV expresses the costliness of the training activities per one employee, which again does not show how the training activities contributed to the enterprise's outputs.

For a successful implementation of HCM in enterprises, it is necessary for the managers of the human resources to create and assess the metrics reflecting the specific conditions and industry where a particular enterprise conducts business. The same applies for the enterprises while using e-business.

2.2. Investment in Human Capital in Enterprises within the Area of E-Business

In the literature, there are many studies and research results described, pointing out the great importance of HC and of the investment in the increase of its value (the increasing of individual HC components), especially via the training in the field of information technology (IT) for the enterprises within the area of e-business.

Ilin et al. [51] in their studying of e-business used the data gained from 276 enterprises from five developing countries of the Western Balkan. The authors used the definition of e-business as the "conducting transactions along a value chain". This means that it includes the purchasing from suppliers as well as the selling of products and services to customers. However, all these parts use the connection of an internet platform with the IT infrastructure.

The TOE (technology-organization-environment) framework was applied here, using three aspects influencing the implementation of a technological innovation (e-business) were identified. The technological context represented the technology currently being used in an enterprise and the relevant technical skills of employees available. The organization context was characterized via internal specifics of an enterprise, such as its size. The context of environment represented the outer environment where an enterprise operates, thus the industry, competitors and business partners. Within this distinguishing, human capital is firstly included in the element of the technical skills of the employees needed.

In connection with these technical skills, for instance, the results of the research conducted by Oliveira and Martins [52] strongly support the importance of training programs in the field of IT for the employees. On the other hand, the lack of knowledge pertaining to the information systems and information technology is often identified as the factor that slows down the development and implementation of new technology, such as the e-business [53,54].

Ilin et al. [51] further state the importance of understanding the advantages of the new technology by employees and support from the managers. The support of top management can be perceived as another building block of the HC in an organization because it helps to create the commitment of employees and it cultivates the enterprise's culture and climate. These components are the prerequisites for the success when implementing e-business. Valuable components of human capital, generating

value for the enterprise, are represented by the appropriate attitudes of employees and desirable behaviors, in this case, connected with e-business. The authors summarized the results of the previous studies as well. These revealed that the support of top management is a strong positive factor for the adoption of individual domains of e-business, including not only e-commerce but also e-procurement and e-markets.

Within the whole sample, the perceived impact of the top management's support was verified as a statistically significant factor influencing the implementation of electronic business in enterprises. The lack of knowledge in the field of IT and information systems (IS) perceived by enterprises' representatives was a statistically insignificant predictor of e-business adoption. However, the relationship that was revealed was in a negative direction, as it was expected. Enterprises in the Western Balkan thus do not consider the requirements of IT knowledge as significant for the use of internet in business. This finding can mean that these enterprises perceive the current level of the IT knowledge and skills needed as sufficient among their employees. Or, it can mean that the importance of such knowledge and skills is being underestimated, which prevents these enterprises from achieving higher performance and stronger competitive position through a full-fledged implementation of the e-business solutions available.

Choi [55] puts the e-business also into connection with the need to achieve ecologic (green) economic growth. According to him, to be able to overcome new and complex challenges of the environment and society, enterprises must harmonize their short-term objectives focused on profit with the long-term sustainable performance. The internet revolution could bring the green solutions that are needed for this. The author sees the e-business as an innovation supporting the sustainable development that is needed for the green growth. The author then emphasizes the need of multidimensionality and interdisciplinarity within the sustainable development. These characteristics emerge from the complexity of integrating economic growth and nature preservation. For the field of human capital, such description of the sustainable development and green economic growth focuses the attention to the fact that in practice it is needed to combine various and deep knowledge and experience from multiple fields. Therefore, the development of human capital in enterprises cannot be one-sided. It needs to encompass the part of acquiring new qualifications, new technical knowledge; but, it also needs the part of influencing the attitudes and values of employees so that they are in compliance with the effort and direction of the whole enterprise. In the specific case, these are the possibilities of using e-business in combination with the attitudes respecting the seriousness of the need to protect the environment.

The authors Bi et al. [56] were dealing with the research of e-business having a sample of 310 Australian fast growing small and middle-sized enterprises (SMEs) from various industries. They used the structural equation modelling method. According to them, e-business value is influenced, among other factors, by IT resources. When e-business supports the business process, enterprises are able to achieve a superb performance. The individual partial concepts in the study were expressed while using seven-point scales.

For the needs of their research, the authors defined the e-business capability in the form of the ability of an enterprise to utilize this technology to conduct activities related to elements above and below the enterprise's position in the value chain (thus including upstream as well as downstream).

The e-business capability was expressed via five dimensions. The first was the communication with customers, the second was orders receiving, the third was internal communication, the fourth was procurement, and the last one was the communication with partners.

According to authors, e-business brings advantages for SMEs at levels from the operational up to the strategic one. Among these advantages, they list broader and richer possibilities of accessing expertise, which then further develop the enterprises. From the human capital perspective, the implementation of e-business contributes to the increase of this capital's value and to creation of new opportunities for development of its components.

Knowledge and skills in the field of IT were specified in the research as knowledge of programming, system development and analysis, and the ability to apply newly-emerging technology. If an enterprise has the employees with the skills and knowledge from the field of IT and IS, it is able to integrate its IT strategy with the business one and gain an effective system for the support of its activities. This is also a way how to gain an advantage in comparison with the competitors. The authors accentuate the importance of employees with the needed combination of technical skills and knowledge of e-business (as components of the human capital) for enhancing the success of the implementation of this kind of conducting business.

One of the hypotheses in the research was directly connected to human capital, studying the influence of expertise on the capability of e-business. Another connection to the human capital was described as the market orientation of enterprises. This was defined as a type of corporate culture which the most efficiently supports the behavior needed for the generation of a unique value for customers. This contributes to a higher performance of the enterprise. Behavior as a part of corporate culture is an important component of the specific human capital brought into the enterprise by its employees. Market-oriented employees are focused on the needs of customers, but they also identify, analyze, and take measures in relation to the competitors. Enterprises that scan their environment like this and that are able to adapt are more likely to become leaders in the industry. One of the hypotheses in the research was therefore focused on the influence of market orientation on the e-business capability.

The results corroborated that expertise in the field of IT has a positive impact on the e-business capability. In addition, the impact of the market orientation on the strengthening of e-business capability was confirmed. Both of the components that represented two differentiated aspects of human capital proved to positively influence the level at which SMEs can implement the concept and technology of e-business and what results this could bring them. Not only the IT infrastructure needed but also the expertise in the field of IT makes the application of e-business more efficient in the whole value chain. Market orientation, as a valuable form of corporate culture, is a prerequisite for adoption of such IT innovation and it enables the enterprises to seize the opportunities on the market.

Zhu et al. [57] within the e-business issues paid closer attention to procurement, channel management, and customer service processes. These authors applied the structural equation modelling, too. They had the data representing opinions of representatives from 196 manufacturing enterprises in China at their disposal. The key concepts in their study were quantified using five-point Likert scales.

The authors decomposed e-business to technical components, relational components, and business components. To study the use of e-business in value creation, they used a framework consisting of three layers—the layer of business assets, the layer of process capabilities, and the layer of outcomes.

The e-business in this research was characterized mainly as information flows that exceed the boundaries of an enterprise via internet. These flows connect individual partners in the supply chain and support processes of procurement, channel management, and customer service.

The attention paid to people in this research was broadened beyond the boundaries of individual enterprises. It was represented by the relational component in the structure studied. The authors identified the need of strengthening the bonds among partners in the whole supply chain, which supports the implementation of e-business processes. This relational component includes the stimulation of engagement of partners, combination of resources, and capabilities of partners, and also the discouraging from opportunistic behavior. The business relationships need to be built on a mutual trust and commitment to a long-term cooperation. This lowers the uncertainty of partners and supports them in increasing the investment in necessary tangible and intangible resources, and also in new technology and operations bringing revenues only later in time.

The study confirmed the importance of not only technical abilities but also of abilities to manage the relationships for the development and improving of capabilities of e-business. The management of relationships was, according to results, an important component in the field of management of online channels and online service capabilities. The fact that the effect of relationship management on online

procurement was not confirmed according to authors implies that this process is more routine, and its effective operation is sufficiently supported by the digital platform itself.

Bernal-Jurado et al. [58] also studied the e-business in relation to human capital aspects. They focused on the producers of organic olive oil in Spain. Specifically, they studied whether the characteristics of the manager of an enterprise and the number of administrative workers that are available can positively influence, or hinder, the application of information-communication technology in the form of e-business. The final sample in this study consisted of 89 enterprises and the authors applied the Qualitative Comparative Analysis method. The aim was to reveal the causes making enterprises in the sector of organic products to implement e-business. The characteristics of the manager were represented by the age, education, knowledge of information-communication technology (ICT), and the perception of benefits of ICT for enterprise and marketing of products.

The hypotheses in this study corroborated that enterprises whose managers had higher education and broader knowledge of ICT were more likely to conduct their business transactions online. The authors also emphasized the need to have a sufficient number of workers for performing administrative tasks that are related to e-business. Then, they also point out that these employees need to be trained and they need to have topical knowledge of the technology advancements so that they can contribute to renewal of enterprises.

Analysis of published research and professional work has confirmed the need for investment in training and human capital development of workers in e-business enterprises, especially in IT knowledge and skills.

3. Materials and Methods

The aim of the article is to explain the nature of HCM and to propose an approach to assess the effectiveness of investment in education as a part of the HCM process. Implementation of the approach was implemented in a fast-growing medium-sized IT and e-business enterprise where education is mainly implemented in the IT field. The proposed example of HCM implementation in the part of evaluating the effectiveness of investment in education and the article can serve as a theoretical and practical aid to human resources managers in implementing the HCM concept.

The procedure of gaining the data needed consisted of several steps, starting by gathering the necessary literature sources about the concept of HCM and about the methods for the effectiveness of HC investment. We have also analyzed the scientific work and the results of scientific research on the need to invest in the development of HC in e-business enterprises. Primary sources include the internal documents of the enterprise "ITEB" and the empirical knowledge about the operation of processes in this enterprise, thus the own experience and knowledge gained via observation in the enterprise. The analytical part is supplemented by personal structured interviews with the personnel manager and the division manager.

In the article, we proceeded from a survey that was conducted in 350 Slovak enterprises. The goal was to find out whether the companies know the concept of HCM or use this concept in practice, and what the attitude of companies to investing in HC is.

The approach of studying from the general to the specific was selected. A complex view of the human capital management provided the space for identifying partial problems in HCM. The knowledge gained while implementing HCM under conditions of a particular enterprise within the area of IT and e-business led to certain generally valid conclusions that are listed in the discussion and in the paper's conclusion. After a thorough analysis of the investment and the effectiveness of investment in human capital, the improvements can be designed for the problem areas of HCM in the enterprise. The non-structured data (provided by the ITEB enterprise) were processed and statistically adjusted so that they provided the outputs able to be assessed. An important part of the knowledge about the ITEB consists of the information from the structured interviews with the HR manager and with the division manager, and from the personal observation of the processes in the enterprise.

The effectiveness of investment in human capital was being compared based on the calculations of several selected methods. These methods included the investment's Payback Period, the Net Present Value, and HC ROI. We provided a design of estimating the benefits from the individual kinds of investment based on the factors identified as those with the potential impact on these future revenues, and a way of linking the results of measurements with the enterprise's results.

4. Results—An Example of Implementation of HCM for Effectiveness of Investment in HC

The meaning of the analysis of the HC effectiveness is the quantitative as well as qualitative expressing of the total effectiveness of the human capital management in the enterprise and the selection of such procedure and methods of measurement that will express this effectiveness in the most explicit way possible. In the management of the investment projects, there are several theoretical guidelines for the assessment of their risk, effectiveness, or their return. For example, Tobin's Q Ratio is known, which is calculated as the share of the total market value of the enterprise and the total value of the assets. However, human capital and the measurement of its value, effectiveness of human capital utilization, and effectiveness of the investment in HC still represent an unexplored area that does not offer specific guidelines and methods how to proceed while assessing the effectiveness.

We found out, on the basis of the research, that most Slovak businesses do not know the HCM concept. As investment in HC, they generally only invest in training, but they do not evaluate this investment. For this reason, in the article we design, the approaches with metrics that can be applied in the implementation of HCM in the fast-growing middle-size enterprise ITEB, which conducts business in Slovakia in the field of provision of business IT counselling services, development and supply of IT solutions, and e-business with IT products. We consider this enterprise to be a very suitable example for explaining a possible implementation of the principles of a relatively new HCM concept. In the paper, the attention was focused on the investment in HC in the form of training and on the evaluation of its effectiveness within HCM. Analysis of expert studies in Section 2.2. has shown that e-business enterprises see the importance of investing in HC, especially in the field of IT education or training. ITEB also finances the investment mainly in this area.

4.1. Human Capital as a Creator of the Enterprise's Value

The basis for the measurement of the effectiveness of investment in HC is the gathering of the quantitative data needed pertaining to the enterprise's economy, including the key performance indicators. For our selected enterprise ITEB, which operates in Slovakia in the field of IT and e-business, the data needed include the sales, profit, number of employees, costs of the training, and so on. The initial statistical data are listed in Table 2.

Table 2. The initial statistical data for the analysis.

Indicator	2012	2013	2014	2015	2016
Number of employees	5	25	45	90	140
Number of employees (full time)	5	23	41	78	125
% employees: Top management	20	8	6.7	3.3	2.1
% employees: Managers	20	36	26.7	22.2	22.9
% employees: Specialists	40	40	53.3	63.3	67.9
% employees: Administration	20	8	13.3	8.9	7.1
Staff costs (EUR)	31,500	349,310	632,210	1,552,590	2,534,400
Number of trained employees	0	0	11	24	34
Sales (EUR)	1,522,520	3,961,459	8,649,730	13,502,999	17,778,700
Net profit after taxes (EUR)	889,467	14,298,311	2,976,720	2,589,800	2,065,200
Operating costs (EUR)	462,075	1,705,161	4,091,172	8,192,960	11,528,946

Source: profit and loss statements of the enterprise between 2012 and 2016, own processing.

The first step for studying human capital in connection to the financial results of the enterprise is to revise the sales per 1 employee in the studied years. Besides the revenues criterion that represents the approach based on the revenues (sales), there is also the costs criterion. This approach measures the effectiveness based on the operating and staff costs per one employee. However, this approach is based on an indirect measurement because it is difficult to set the boundary between the investment and the consumption from the perspective of costs. The course of revenues, operating, and staff costs per one employee is depicted in Figure 2.

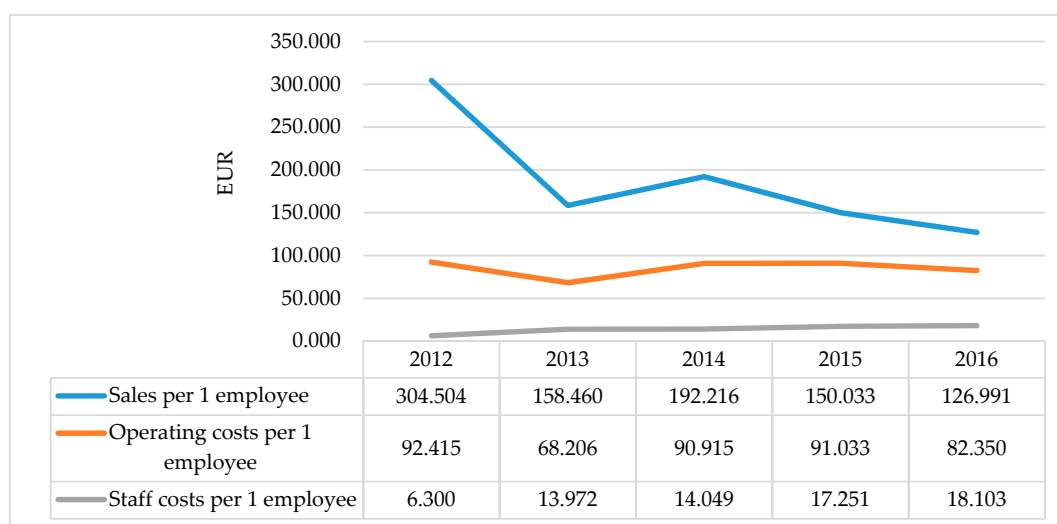


Figure 2. The sales, operating and staff costs per 1 employee (EUR). Source: profit and loss statements of the enterprise between 2012 and 2016, own processing.

The enterprise had the highest sales per 1 employee in 2012 (EUR 304,504). Right after its establishing, the ITEB enterprise achieved a high level of revenues from the sales of its products and services even with a low number of employees. After the successful start of its business, the enterprise was able to hire 20 new employees and even though the sales per 1 employee dropped in 2013, this decrease does not need to be considered as a negative factor. On the contrary, the decreases (in 2013, 2014, and 2016) demonstrate that a part of the revenues was invested in new employees and the enterprise started to increase the value of its human capital this way (hiring new people), and it managed to achieve the growth of revenues in individual years (in 2015 it was by up to 56%).

The way how the human capital creates the value in the enterprise is a starting point for the assessment of the human capital effectiveness. The fundamental metric is how much the enterprise invested in its employees as a percentage of the revenues and total operating expenditures.

This component of the assessment of human capital as a creator of value includes the measurements that interpret how high, e.g., the staff costs were as a percentage of revenues, or how high the costs of the training were as the percentage of staff costs. These partial indicators show what part of the costs the enterprise spent on the wages of its employees, and what amount it spent on the training and increasing of the human capital's value. The ratios that were mentioned are listed in Table 3.

Table 3. Indicators of human capital as the creator of value.

Indicator	2012	2013	2014	2015	2016
Investment in human capital as % of sales	0.02	0.03	0.2	0.6	0.6
Investment in human capital as % of the operating costs	0.08	0.06	0.4	1.0	0.9
Staff costs as % of revenues	2.1	8.8	7.3	11.5	14.3
Training costs as % of staff costs	0	0	1.6	3	2.3

Source: profit and loss statements of the enterprise between 2012 and 2016, own processing.

The results of calculations imply that human capital represented only very low percentages of the sales and operating costs of the enterprise during the studied years. Even though there were some minor improvements in individual years in favor of the investment in human capital, less than 1% of the investment directed to the increasing of the human capital's value as a share in the total operating costs is a low value for the enterprise striving for the increase of the value of its human capital. Low values of these indicators can be explained, e.g., by the short time of being on the market and by the enterprise being cautious in the decision-making on investment projects. However, in the current competing environment of IT and e-business, low investment in human capital can weaken the enterprise's future competitiveness.

The staff costs as a percentage of the revenues put the ITEB enterprise into the position of an enterprise caring for its human capital. The answers of employees from the structured interview also indicate that the amount of remuneration for the job done is relatively high (in comparison with the remuneration of specialists in the same field within the Slovak market). In 2016, the indicator of staff costs as a percentage of revenues reached 14%, and, when compared with the year 2012, it rose by more than 10%. However, these values also reflect the fact that the growth of revenues and the growth of the number of employees in the particular years are negatively correlated (-0.75), which means that the growth of the number of employees negatively affected the growth of revenues.

4.2. The Effectiveness of Investment in Human Capital

During the analysis of the investment in HC, the basis is created by the calculations while using the selected static methods. However, these serve only as auxiliary indicators in the assessment of the investment effectiveness, since the static methods are suitable rather for the short-term assessment and they do not consider the time value of money (inflation, uncertainty of future revenues, alternative costs, the risk factor, and so on). The fact that an enterprise pays for the training course of its employee can positively influence its profit even several years later. Among the methods for the appraisal of investment projects, there is, e.g., the Net Present Value, the Payback Period of the investment, or the Return of Investment (ROI).

4.2.1. Payback Period of the Investment

The Payback Period was calculated as the ratio of the costs of the investment in training and the net cash flow (CF) for the given year. After analysis of revenues of the ITEB enterprise between the years 2014 and 2016, it can be stated that the investment costs of the training and healthcare for employees are paid back within one year. The method of calculating the payback period does not respect the time factor, but it is suitable for the assessment of the investment projects with a lifetime shorter than one year, therefore it was added to the overall analysis of the investment effectiveness as a partial indicator (Table 4).

Table 4. Payback Period of the investment in training.

Year	Training Cost (EUR)	Cash Flow (EUR)	Cumulative Cash Flow (EUR)	Payback Period (Years)
2014	10,125	3,017,658	3,017,658	0.003
2015	46,815	2,204,651	5,222,309	0.021
2016	57,699	2,018,173	7,240,481	0.029

Source: internal documents of the enterprise, own processing.

4.2.2. Human Capital Return of Investment

The investment projects can be appraised based on several criteria. The most known are the cost criterion, the profit criterion, and the net revenue from the investment. The combination of the human capital return of investment and cost criterion will not bring an optimal decision. It is because the cost effectiveness is suitable for cases when the benefits from the investment are known beforehand. Future revenues that are incurred by the investment in human capital are very difficult to estimate,

mainly because of the intangible nature of human capital (knowledge, skills, experience). The Net Present Value method is limiting and distorting due to the necessity to determine or estimate the lifetime of the investment. This is very complicated for the case of human capital. The profit criterion represents a more complex perspective than the costs criterion. However, the enterprise could affect the final profit after taxes by applying various accounting methods or the depreciation policy, therefore, the most suitable method for the appraisal of investment effectiveness seems to be the method of return of investment in human capital using net cash flows (enterprise's net CF).

The ITEB enterprise financed the costs of the investment in human capital from its own funds. The enterprise did not cover the investment expenditures by the credits, thus the leverage effect is not present. This effect could multiply the profit from the investment, but the enterprise did not use the outside sources to fund the investment in human capital.

Determining the Future Benefits from the Investment

The analysis of the return of investment the human capital requires the determination of capital (investment) costs and expected future revenues that are provided by the investment. The quantification of future benefits is the pivotal point in the whole analysis because it significantly influences the results of the overall measurements of the investment effectiveness. The financial revenues that are transferred into the enterprise's profit during the following years are important for the calculation of the return of investment.

The results of the human capital measurements capture the current benefits, but the investment needs to be seen as the costs incurred that will come to fruition in the form of revenues probably after some time in future. The expected revenues are being affected by multiple factors. During the appraisal, the time factor, but also the risk, matters because it can cause a deviation from the estimated course of future revenues. This is negatively manifested in the appraisal of the return of the capital invested. Modern information and knowledge society advance very fast, hence the profitability of the capital invested is reflected in the sales of the next year, but it can partly be reflected also in the economic results of the following years.

The starting point for determination of future revenues from the investment in human capital is to identify the key factors in the external as well as the internal environment of the enterprise and to analyze the extent to which they can affect future revenues (significance of the factor and the degree of importance). The analogy of the calculation of the benefits of the investment is based on the net CF, which is adjusted for the needs of determining the future revenues. The analysis of the benefits is narrowed to years 2014–2016, because in 2012 and 2013 the enterprise did not invest in the training of employees and the costs of the healthcare represented only a little portion of the overall costs in the given years. They were spent rather on an obligatory basis than to be an investment with the perspective of future revenues. The profitability of investment in the healthcare of employees is analyzed in a complex way.

The HC return of investment can be affected by various external and internal factors. Here belong, for example:

- individual psychological and character attributes of the employees—the ability to utilize the knowledge gained,
- the emergence of new technology—the speed of technological changes, the creation of new versions of software,
- higher satisfaction level of customers—references, new projects, and
- random impacts—occurrence of unexpected situations and events that the enterprise cannot affect.

The procedure of determining the benefits from the investment consists of the following steps: modifying the enterprise's net CF, determining the investment's lifetime, determining the significance of the investment's outcome, and estimating the revenues from the investment in the following years.

(1) Modifying the enterprise's net CF

The calculation of net sales of the enterprise is based on the net profit adjusted by the value of depreciation. This CF is then adjusted (lowered) by the revenues from the selling of fixed assets. Then, the portion appertaining to the revenues from individual items of the investment is being determined from the value for the given year. The adjusted CF is listed in Table 5.

Table 5. The adjusted cash flow (CF) for the determination of revenues from the investment.

Category	2012	2013	2014
Net CF (EUR)	2,704,651	2,218,173	2,100,500
Sales from the selling of fixed assets (EUR)	13,550	102,720	118,000
Adjusted CF (EUR)	2,691,101	2,115,453	1,982,500

Source: internal documents of the enterprise, own processing.

(2) Determining the investment's lifetime

The lifetime represents the period during which it is the most probable that the enterprise will gain the revenue from the investment. This step represents the estimation in years, based on the mapping of the current situation within the specific area. This estimation affects the way in which the future benefits from the investment will be transformed into the net revenues of the enterprise in the following years. The estimated revenues from the investment were determined only until 2017. If the investment's lifetime is longer, then the revenues are not being determined due to the probable high inaccuracy (fast changes within the market, unexpected market effects).

(3) Determining the significance of the investment's outcome

The significance of the investment's outcome, on a scale from 1 to 5 (5 being the highest importance of the investment's outcome), evaluates the degree of rarity of the knowledge gained. The significance of the investment's outcomes is being evaluated because not all the knowledge gained have the same value for the enterprise. Taking these investment's outcomes into account provides an individual basis for the determining of investment's benefits.

(4) Estimating the revenues from the investment in the following years

Based on the determination of the lifetime and the significance of the investment's outcome, the revenues from the investment are being estimated for individual years.

Calculation of the Human Capital Return of Investment in the Training Activities

The revenues that were estimated for individual cases of investment in the training courses are recorded individually during the following years and then together based on the investment's lifetime, the significance of the outcome from the investment and the estimation of the percentage in which they contributed to the adjusted net CF of the enterprise in individual years. The categories that are mentioned are listed in Table 6.

Table 6. Costs and the estimation of the revenues from the investment in training (EUR).

Year	Area of the Investment	Investment's Costs	Lifetime	Significance of the Investment's Outcome	Revenues from the Investment in 2012	Revenues from the Investment in 2013	Revenues from the Investment in 2014
2014	IBM certification	7710	3	5	58,868	55,454	14,869
	IT trends	2415	4	3	35,321	33,273	8921
	Together	10,125	-	8	94,189	88,727	23,790
2015	Oracle	10,915	4	5	-	26,722	26,444
	Java certification	5400	3	5	-	26,722	26,446
	SAP	6,780	5	5	-	26,724	26,440
	Web applications	3,720	2	2	-	10,688	10,577
	Language courses	20,000	-	1	-	5344	5288
	Together	26,815	-	18	-	96,200	95,195
2016	ITIL Foundation certification	1598	4	5	-	-	33,042
	PRINCE2 Foundation certification	3960	5	5	-	-	33,043
	Web applications	15,700	3	2	-	-	13,216
	IT trends	3572	2	2	-	-	13,216
	Language courses	24,000	-	1	-	-	6608
Together	24,830	-	15	-	-	99,125	

Source: internal documents of the enterprise, own processing.

The revenues from the investment in training in 2014 (investment in the IBM certifications and courses within the IT field) represented the total sum of EUR 206,706 between 2012 and 2017. In 2014, the enterprise invested in the training of its employees and managers only in the form of courses focused on the improvement of the professional skills. The total amount of the investment in 2014 was EUR 10,125. Within this amount, 75% represented the investment costs of the IBM certifications and courses.

In 2015, the adjusted CF was EUR 2,691,101. Based on the analyses that were performed, the percentage of contribution to the value of the adjusted CF in 2015 for the training courses in 2014 was estimated at 3.5%. The final benefit in 2015 (from all the investment in 2014) represents the sum of EUR 94,189, which was divided between the revenues from the investment in the IBM certification (EUR 58,868) and the courses within the IT field (EUR 35,321) with the 5:3 ratio (based on the evaluation of the significance of the investment's outcome).

In 2016, it was supposed that the utilization of the knowledge from the courses in 2014 still lasted and the skills acquired contributed to the net revenues of the enterprise by 4% (higher rate than in the previous year), which represented the amount of around EUR 88,727. After dividing this sum (with the 5:3 ratio), the IBM certifications had the appertaining revenue of EUR 55,454 and the courses within the IT trends had the revenue of EUR 33,273.

In 2017, it is assumed that the technology for which the employees and managers were trained in 2014 needs to be changed, adjusted, up-dated, and so on. Therefore, it is assumed that also the revenues from this investment will decrease, and it is estimated that they represent 1.2% of the adjusted CF, because the employees still can utilize the knowledge acquired, and they can transform it into the profit in a certain way. The overall revenue in 2017 is estimated to be EUR 23,790, in which the IBM certifications have EUR 14,869 appertaining, and the IT trends related courses have EUR 8,921.

The revenues from the training investment in 2015 and 2016 are estimated the same way as it was described for the case of the year 2014. During the determination of the benefits in 2015, new customers, newly emerged requirements for the technology and development, and other facts possibly affecting the benefits from the investment are taken into account. It is estimated that the revenues from the investment will be gained in 2016 and also in 2017.

Besides the professional skills, the employees also had the chance to improve their language skills in 2015 and in 2016. The benefits can manifest, e.g., in the communication with foreign clients. So far, the enterprise has spent EUR 44,000 on the English language courses. The estimated accumulated sum of the revenues from this investment in 2017 is EUR 17,240.

Human capital return of investment (HC ROI) was calculated based on the Mankiw's formula in the Table 1. Table 7 shows the calculated values of HC ROI for the individual types of the investment in training activities in the consecutive years.

Table 7. Human capital return of investment (HC ROI) values.

Area of the Investment	2015/2014	2016/2015	2017/2016
IBM certification	6.6	6.2	0.92
IT trends	13.63	12.78	2.7
Oracle	–	1.4	1.42
Java certification	–	3.9	3.9
SAP	–	2.9	2.9
Web applications	–	1.9	1.8
Language courses	–	–0.7	–0.74
ITIL Foundation certification	–	-	19.7
PRINCE2 Foundation certification	–	-	7.3
Web applications	–	-	–0.2
IT trends	–	-	2.7
Language courses	–	-	–0.7

Source: internal documents of the enterprise, own processing.

The return on individual forms of investment in training is positive in all cases except for the courses that were related to web applications in 2016 and language courses where the estimated revenues were not equal to the costs in two following years. However, this does not mean that the enterprise should stop investing in English language courses and perceive this investment as unprofitable. At present, it is important for the employees to improve their communication skills in a foreign language for strategic reasons. In the future, these skills can be useful in the enterprise's expansion (acquisition of foreign customers).

In 2015, 1 Euro invested in the IBM certification produced 6.6 Euros in the form of revenues. Or, there is 6.6 Euros of revenues for each 1 Euro of the investment costs. The return of investment in training within the area of IT trends and certifications has 13.63 Euros of revenues per 1 Euro of costs. During the interpretation, it needs to be taken into account that the return is calculated while using the costs spent on all the participating employees. Therefore, the return can seem to be high. The most significant form of investment in training in 2015 is considered to be the SAP training where the return in 2016 and 2017 is estimated as 1 Euro of investment costs per 2.9 Euros of revenues. The investment in certification in 2016 would bring 7.3 Euros and 19.7 Euros of profit per 1 Euro of investment costs based on the estimated revenues for the year 2017.

4.2.3. The Net Present Value

The method of the net present value (NPV) is used to evaluate the effectiveness of investment projects. It represents the difference between the present value of future cash receipts from investment and capital expenditures. If NPV is positive, i.e., the discounted cash incomes are higher than the expenditures to HC; investment is acceptable and investment project can be implemented. If the NPV is negative, it is not appropriate to carry out the project because it would lead to a reduction in the market value of the enterprise. The net present value method is appropriate to use, mainly due to the fact that it follows the golden rule of investing, i.e., the expected benefit of the implementation of the project is higher than the volume of invested funds.

To appraise the investment effectiveness while using the NPV method, the investment in training courses with the output in the form of PRINCE2 Foundation certificate was selected. These courses are very attractive, and, at present, they represent some kind of a requirement of the customers from the public sector. While determining the NPV, the investment's lifetime needs to be defined. The enterprise invested in this purposefully. It wanted to become an attractive candidate for gaining the projects related to the informatization of society in the Slovak Republic. It is assumed that the revenues from this

investment will be gained during the following five years. Based on this fact, the investment's lifetime was defined, being closely related to the informatization of society. This process was estimated to last minimally for five years because its duration was extended, and it was slowed down. The investment costs in 2015 were EUR 3960.

The present value of revenues from the investment in PRINCE2 Foundation courses is the sum of the discounted cash flows during the years of the investment's lifetime. The required rate of profitability is set at 7%. The present value is calculated as the sum of discounted revenues from the investment in individual years and it takes into account the profitability rate of $r = 0.07$. The revenues and discounted revenues from the investment are listed in Table 8.

Table 8. The present value of revenues (EUR) from the investment in PRINCE2 Foundation certification.

Year of Lifetime	Revenues	Discounting Rate	Discounted Revenues
1.	33,043	0.93	30,730
2.	33,043	0.87	28,747
3.	33,043	0.82	27,095
4.	33,043	0.76	25,113
5.	33,043	0.71	23,461
Together	165,215	–	135,146

Source: own processing.

The present value of revenues over five years is EUR 135,146. The net present value is calculated as the difference between the present value of revenues and investment costs (135,146–3960), therefore the NPV = EUR 131,186. Since the NPV is a positive number, the revenues should exceed the investment costs in the future. The investment in PRINCE2 certification should be favorable for the enterprise, and the NPV depends mostly on the determination of the future revenues during the following years. They were estimated while considering the following factors:

1. the prestige of the certificates for the customers from the public sector,
2. informatization of society in the Slovak and Czech Republic, and
3. the importance of the efficient project management (fulfilment of the plans, allocation of human resources, people's management, and so on).

Elimination of Negative Impacts on the Investment in Human Capital

The investment in HC assumes a positive effect on HCM. However, the total value of HC is being lowered by the employees' turnover. It is an employee's own decision to leave, which needs to be taken into account in the overall assessment of the HC effectiveness. Table 9 shows the number of employees voluntarily leaving the enterprise between 2012 and 2016.

Table 9. Employees' turnover.

Negative Impacts	2012	2013	2014	2015	2016
Turnover	0	0	1	0	2

Source: structured interview with the personnel manager.

The interview with the personnel manager revealed that the employees' turnover between 2012 and 2016 was considerably low, which eliminated the negative impact on the investment in human capital to its minimum.

5. Discussion

During the assessment of the efficiency of the investment in HC, the investment in training was primarily analyzed. This process abided the concept of an efficient HCM's structure. Besides the investment in HC, the contribution of HC to the creation of the enterprise's value was taken into

account, with eliminating the negative impacts that could be caused by the investment in human capital—the employees' turnover.

Based on the analysis performed within the efficiency of investment using the selected HC ROI, NPV and PP methods, it can be stated that the investment in human capital between 2012 and 2016 was not unprofitable. The Payback Period (as a partial indicator) is very low, the Net Present Value (taking the time factor into account) was a positive number. The indicator of profitability of the investment is only an indicative metric because it has certain limitations. It is calculated while following the estimations of benefits from the investment, it can be affected by the accounting methods that were used in the ITEB enterprise (the source is the profit and loss statement), and finally, it does not take the inflation and exchange rate changes into account.

To make the quantification of expected benefits less demanding, we recommend using the NPV method, especially when implementing one-off or short-term education programs.

Finally, it can be stated that the ITEB enterprise invested in its human capital very cautiously, even frugally, during the studied years. Even though the results of measurements are positive, it cannot be clearly stated that the enterprise's investment was efficient. The investment was directed only towards the areas that in most cases represent a necessity for the enterprise. They are affected by the sector for which the enterprise primarily provides its services and by the circumstances that elicit such investment (e.g., the changes in laws). In addition, the structure of investment in individual skills of managers and employees is not very effective for the enterprise if it wants to maintain the economic growth and a competitive position.

This is an example of how this approach can be used to assess the effectiveness of investment in education as part of the entire complex HCM process. Applying these methods in human capital requires estimating the expected benefits from the investment, which is quite demanding. Providing that the quantification of the benefits is less demanding, it is recommended to rather use these methods in business practice than in the implementation of one-off or short-term educational programs. For the same reasons, we recommend to use also an indicator of the average period of return in enterprises.

The measurement is an important approach to HCM. However, the authors are gradually coming to the conclusion that not only the measurement is significant. A further step is needed to successfully implement the entire HCM process. It is possible to use different models. EFQM model [59] is familiar and very practical. Sesil [60] proposed the Human Capital Development Framework. Bontis and Fitz-enz [61] suggested a Conceptual model. Various consulting firms have designed their own models, such as Accenture model [62] and Model McBassi & Company [63].

For the successful implementation of HCM, models are implemented while using specific methods, such as statistics, predictions, benchmarking, and so on. For the increasing of the competitiveness, it is beneficial to compare the results gained with the competitors, using benchmarking. Within the HCM measurements, the benchmarking is being used to identify the required level of performance, and its task is to find potential improvements in comparison to competitors. Successful enterprises strive for interconnecting the measures, such as causal models that identify the causal relationships, which puts emphasis on sustainability. They interconnect the parts that generate the enterprise's success with the business results via HCM. This is how the enterprises can get the leading position among the competitors in the global market.

The Balanced Scorecard by Kaplan and Norton [64] is another very useful method that combines four perspectives: financial, customer, internal processes and learning and growth. Using this method, the high efficiency of HC investments is achieved. By using this method, investments are directed to specific problem areas and processes, thereby achieving the goals of an enterprise that is focused on its strategy.

6. Conclusions

The classification of economic entities funding the investments in HC is based on the principle of the future benefits of investment. According to who benefits from the investment in the future, entities that are funding this investment can include:

- individuals who expect to increase salaries and social status,
- enterprises, which expect a labor productivity growth, improvement in the quality of production and services, increase in the competitiveness, etc., and
- government or the society expecting an increase in life standards and cultural level.

Enterprises are aware that education and training (as one of the forms of investment in HC) of their employees is important for business success. For this reason, they focus on the labor market for people with a higher level of education. On the other hand, there are the expectations of a young generation. However, young people should be motivated appropriately [65]. Enterprises also carry out educational activities for its current employees. They can use “social learning” [66].

Competitive struggle forces companies to innovate their services, products, and processes [67]. It is also important to respond flexibly to customers’ requirements [68]. Innovative methods should be used by enterprises to work with people [69]. It is essential to know the financial situation of the enterprise, too [70]. This is also a prerequisite for HCM implementation in practice.

HCM represents a modern concept of the people management in enterprises. It is a process within which the key processes in an enterprise are being identified, and the key components of the human capital are being determined for these processes. Subsequently, the value and efficiency of the utilization of these HC components and the efficiency of investment in HC are calculated and assessed. The results that were gained are being compared with the competitors, shortcomings are being identified, and the corrective measures are taken. This whole process follows the enterprise’s strategy and leads to the increase of the enterprise’s performance and competitiveness in concord with sustainability. For this reason, the HCM concept can be mutually complementary to the CSR concept. It is advisable for the HCM concept to become a part of corporate culture in an enterprise [71] because it will facilitate its implementation in practice.

The survey that we conducted among Slovak companies pointed out two basic problems. The first problem is that managers do not apply the HCM concept because they do not have enough information about it. Therefore, in the article, we pointed out the essence, position of HC, and more closely characterize the essence of HCM. This is the theoretical benefit of our article.

Managers in Slovak enterprises consider investing in training as the most important way of developing of human capital of their employees. Only one-third of enterprises also realize the importance of other forms of investment in HC, such as investment in safety, health protection, ergonomics, and health care for employees. Enterprises are aware of the impact of investment in the HC on the overall performance, mainly on the profit. On the other hand, they consider HC to be a significant cost item, which makes them try to minimize the costs that are related to it. The majority of enterprises identify the training as a sole form of the investment in HC, but, paradoxically, they do not evaluate the effectiveness of this investment.

This is the second identified problem. For this reason, we have provided an example of the implementation of the HCM process in the article, specifically in terms of the effectiveness of investment in training for e-business enterprises. Here, we see the practical benefits of our article.

At present, there is no unified methodology that would offer guidelines for the efficient management and measurement of human capital and its efficiency. Enterprises consider such guidelines to be their own know-how. Therefore, the process of implementation of the HCM concept requires the erudition and creativity of personnel managers so that they are able to design and adapt the specific metrics of HCM for a particular field of business.

Based on our analysis, we have found that many published e-business studies indicate that e-business enterprises consider investment in training to be essential and crucial to ensuring performance, competitiveness, and sustainability in the market.

For this reason, in the paper, we designed and implemented an approach to the assessment of the efficiency of investment in HC as a part of the HCM process within conditions of a particular enterprise operating in the field of IT and e-business. The enterprise is young and fast growing, which we can see as a pattern in rapidly changing market e-business conditions. Therefore, we propose that this proposed approach is both theoretical and practical guidance and inspiration for IT or e-business enterprises as to how they might approach the assessment of the effectiveness of investment in training in the HCM implementation process.

During the process of financial budgeting, the top managers are interested in the near future. In contrast, the personnel manager is more interested in the long-term perspective within the development of employees' human capital. This is caused by the fact that some investment measures for the employees' development bring the results in a middle or a long term. The aim of the assessment of the efficiency of investment in HC is to determine what the direction of further investment measures of the enterprise should be, based on the analyses that were performed in the previous years. By creating a plan, e.g., for the next year, the enterprise would be able to use quantitative arguments to plan the budget for investment expenditures in the following years, to identify various alternatives of activities to invest in, and it would be able to make the right decision based on the correct methods chosen for the assessment of efficiency. Due to the efficiency of investment, the enterprise can save its limited resources within the context of the sustainability requirement.

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