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BUSINESS INTELLIGENCE AS A SUPPORT IN HUMAN RESOURCES STRATEGIES REALIZATION IN CONTEMPORARY ORGANIZATIONS

HR management is one of the key areas in any organizational strategy, which affects the achievement of its business objectives. That means that contemporary HR managers have to apply new IT tools and methods of data analysis which enable to find the relationships between people and organization's outcomes more effectively. The paper presents the concept of business intelligence (BI) use in realization of an HR strategy. The advantages of BI implementation in the human resources management are presented as well as the key performance indicators that allow measuring and assessing the HR strategy.

Keywords: business intelligence; human resources; key performance indicators.

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БІЗНЕС-АНАЛІТИКА ЯК ЗАСІБ ПІДТРИМКИ РЕАЛІЗАЦІЇ КАДРОВОЇ СТРАТЕГІЇ У СУЧАСНИХ ОРГАНІЗАЦІЯХ

У статті показано, що кадровий менеджмент є ключовим чинником будь-якої організаційної стратегії, оскільки він напряму впливає на досягнення цілей. Саме тому сучасні кадрові менеджери мають використовувати інформаційні технології аналізу даних для встановлення взаємозв'язку між кадрами та цілями організації. Представлено концепцію бізнес-аналітики у контексті реалізації кадрової стратегії. Описано переваги використання бізнес-аналітики у кадровому менеджменті, а також ключові показники ефективності, які дозволяють виміряти та оцінити ефективність кадрової стратегії.

Ключові слова: бізнес-аналітика; людські ресурси; ключові показники ефективності.

Табл. 2. Рис. 2. Літ. 17.

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БИЗНЕС-АНАЛИТИКА КАК СРЕДСТВО ПОДДЕРЖКИ РЕАЛИЗАЦИИ КАДРОВОЙ СТРАТЕГИИ В СОВРЕМЕННЫХ ОРГАНИЗАЦИЯХ

В статье показано, что кадровый менеджмент является ключевым фактором любой организационной стратегии, поскольку он напрямую влияет на достижение целей. Именно поэтому современные кадровые менеджеры должны использовать информационные технологии анализа данных для установления взаимосвязи между кадрами и целями организации. Представлена концепция бизнес-аналитики в контексте реализации кадровой стратегии. Описаны преимущества использования бизнес-аналитики в кадровом менеджменте, а также ключевые показатели эффективности, которые позволяют измерить и оценить эффективность кадровой стратегии.

Ключевые слова: бизнес-аналитика; человеческие ресурсы; ключевые показатели эффективности.

1. Introduction

In contemporary organizations one of the most important factors, influencing the achievement of competitive advantage is having a business strategy and its effective realization. Global strategy is supported by inner consistent substrategies defined for particular business areas like marketing, logistics, finance or human resources (HR).

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Especially important is the area of HR management (HRM), because business results obtained by an organization in other areas strongly depend on the competencies of its employees. Such an approach indicates the key role of HR managers, who should be able to transform the global strategy of organization into the objectives realized by particular employees. Moreover, these managers should measure the level of objectives' achievement.

If a company's strategy is focused on creating sustainable competitive advantage, then the HR strategy should be aimed in the same direction because its objectives have to be consistent with the company's goals. Creating value becomes the key issue.

In many organizations the HR function is traditionally seen as a cost centre rather than the value creating source. Nowadays it is necessary to shift this point of view and treat human resources as a valuable strategic partner that helps the company achieve its goals. The key to success is to identify and measure HR "deliverables" that support the corporate strategy – and the HR systems that create those deliverables (The HR Scorecard, 2001).

The main problem is that measures used by HR departments do not show how HR contributes to the company's success. In many cases HR managers believe, basing on their personal feelings, that e.g. having highly skilled staff and an effective training system assure the realization of company's strategy. The only things to be measured in this case are total compensation, employee turnover or cost per hire. However, these measures are not directly related to employees' engagement. The new approach to HR management, based on the strong share of human resources in strategy's realization, should create new business value. Becker, Huselid and Ulrich (2000) emphasize that HR managers have to develop an innovative assessment system that measures HR's contribution to what matters most to CEOs: firm profitability and shareholder value.

2. Measuring the efficiency of HR management in strategy realization

The ability to incorporate HRM into the system of strategy realization has an impact on company's economic outcomes. It is people as non-material assets that contribute to economic success of companies. The importance of these assets confirms the fact that they are included in the model of company evaluation by more and more finance analysts. One of the key variables analyzed in this model is the ability of employees to realize the company strategy (Ernst & Young, 2000).

It is often said that if you can measure something, you can manage it. If you can manage something, you can achieve objectives. The necessity to determine employees' contribution into strategy realization prompts managers look for and apply the measures that show the true value of this.

The need of analytics in the HR area is today much stronger than in the past. For example, previously, HR recruiters while hiring personnel were involved in carrying out the activities like letters, resumes, and interviews. Nowadays HR analytics supplies much more guidance which can be used for recruitment and selection (TIBCO, 2013). New information technology (IT) tools and the methods of data analysis enable HR managers find the relationships between people and organization's outcomes more effectively. But they still do not use all the data that they have in organizations and their environment to improve HRM processes. In HR area conventional cost-control measures such as the number of training hours, time to fill vacancies,

staff turnover and employee satisfaction do not allow the prediction of trends. These metrics will be useful only in the case of possibility to show the relationship between them and key performance indicators (KPI) of a company. Therefore, HR analytics must extend beyond reporting what is (the present) or what was (the past) to predicting and analyzing what will be (the future).

Traditional cost approach to HR does not satisfy today's managers who are looking for new sources of creating a long-term value for organizations. The most important thing is to transform all people's activities into company's success. For example, if HR's efficient recruiting processes create a high-level R&D staff, which, in turn, enables the company to lead in innovations, HR has created value (The HR Scorecard, 2001).

The HR strategy oriented on cost reduction as well as value creation should be realized in different areas of personnel function. The key areas are as follow (Armstrong, 2006): HR planning, recruitment and selection, introduction to organization, formulating and implementing learning and development strategies, performance appraisal and performance management, talent management and career management, strategy of motivation and compensation, reward management, employee benefits, pensions and allowances, release from organization.

For contemporary organizations not only proper realization of HR strategies in specific areas is of great importance, but primarily the concentration on the added value and the ability to measure the strategy performance. This approach is closely related to the implementation of the concept of Human Capital Management (HCM).

3. Human Resources and Human Capital Management

The main problem in evaluation of HR activities is the difficulties to apply a monetary value on the contribution or capability of human assets. The use of traditional financial methods is not appropriate in assessment of some HR processes. Therefore, HCM utilizes additional data benchmarking and key indicators' comparisons that allow measuring compliance, compensation, benefits, safety, retention, and absenteeism. Today's human capital measurement mix contains those measures plus others, such as leadership, employee engagement, and learning (Phillips, Phillips, 2006).

According to Armstrong, the concept of HCM complements and strengthens the concept of HRM. It does not replace it. Both HCM and HRM can be regarded as vital components of people management (2006). The core function of HCM is increasing the added value by stronger engagement of people in strategy realization.

From the organizational perspective, HCM approach generates the following practical questions (Armstrong, 2006):

- What are the key performance drivers that create value?
- What skills have we got? What skills do we need now and in the future to meet our strategic aims?
- How are we going to attract, develop and retain these skills?
- How can we develop a culture and environment in which organizational and individual learning takes place that meets both our needs and the needs of our employees?
- How can we provide for both the explicit and tacit knowledge created in our organization to be captured, recorded and used effectively?

According to Gardner, McGranahan and Wolf, advances in technology are creating opportunities for senior business and HR leaders to start a new kind of dialogue about the link between people and performance (2011). That dialogue allows determining the impact of HR executives on the strategic objectives achievement and it will create value for an enterprise.

Human capital measurement has been defined as being "about finding links, correlations and, ideally, causation, between different sets of HR data, using statistical techniques" (IDS, 2004).

In summary, HCM is concerned with measurement, reporting measurements and drawing conclusions about the significance of the outcomes of measurement as a guide for future actions (Armstrong, 2006).

4. Measures and KPIs in HRM

Each business activity should be measured to know that the organization goes in the right and desired direction. Production, sales or CRM departments use very often an ongoing set of operational metrics. But in HR department the situation looks quite different. The lack of metrics which can help assess the efficiency and effectiveness of the activities related to strategy realization is very often observed. Fitz-enz proposes the use the performance matrix (Table 1) that allows HR managers create the system of monitoring, measuring the ratios and reporting taking into account 4 basic areas of personnel actions.

Table 1. Human capital performance matrix according to Saratoga Institute (examples of metrics)

	Acquiring	Supporting	Developing	Retaining
Cost	Cost per hire	Cost per paycheck	Cost per trainee	Cost of turnover
Time	Time to fill jobs	Time to fulfill request	Cost per trainee hour	Turnover by length of service
Quantity	Number of hired	Number of claims processed	Number of trained employees	Voluntary turnover rate
Error	New hire rating	Process error rate	Skills attained	Readiness level
Reaction	Manager satisfaction	Employee satisfaction	Trainee responses	Turnover reasons

Source: (Fitz-enz, 2010).

In the literature on this subject it is possible to find a wide set of other measures that are applied to evaluate HR processes (Table 2).

All the measures presented in both tables let assess the activities that have been in the past. However, from the strategic point of view decision makers need to use the tool that better describe how HRM strategy is performed and how particular HR activities influence the objectives' achievement. Therefore, executive managers use the balanced scorecard that identifies the most important parameters needed to lead the company to success (Kaplan, Norton, 2005).

The balanced scorecard contains a set of key performance indicators (KPIs). According to Parmenter, KPIs represent a set of measures focusing on those aspects of organizational performance that are the most critical for current and future success of an organization (2010). There is no need to use a big number of KPIs to have a true view of strategy performance. Kaplan and Norton recommend no more than 20 KPIs (1996 by Parmenter, 2010). HR managers may implement the following KPIs:

- return on investment of training;

- company training expenditure as % of salaries and wages;
- average profit per FTE;
- percentage of employees who participate in career coaching program;
- employee stability index;
- key employee retention index.

Table 2. The examples of measures in selected HR areas

HR area	Measures
Recruitment	<ul style="list-style-type: none"> – Percentage of vacancies filled internally – Average time or cost of recruitment per employee – Percentage of job positions filled with the help of external agency
Selection	<ul style="list-style-type: none"> – Average number of interviews from submitted CVs – Average interviewing costs per interview – Number of CVs forwarded to the number interviewed to the number hired
Training	<ul style="list-style-type: none"> – Average number of training hours or training costs per employee – Percentage of HR budget spent on training – Ratio of internal vs. external training
Reward	<ul style="list-style-type: none"> – Average management salary – Average gap between management and staff pay – Ratio of female to male salaries
Other	<ul style="list-style-type: none"> – Average absenteeism per employee – Average sickness days per FTE – Percentage of workforce with disabilities

Source: www.kpi.library.com, The HR Scorecard, 2001

However, each HR manager may additionally define own KPIs that allow the evaluation of a unique strategy performance.

5. Business intelligence and organization's strategy realization

The knowledge of KPI is the first step to monitor the level of achieving the strategic objectives in HRM. But determining the values of these indicators is a very complex task. Huge volumes of data and their dispersion in an organization make their integration and processing difficult for future decision-making. The literature on the subject (Wawer, Muryjas, 2011) emphasizes that the ability of human mind is now insufficient to make optimal business decisions in the era of the growing amount of information and the complexity of analytical requirements. Therefore, the need to support decision processes is today as strong as never before. The essential role in this area plays business intelligence (BI), which combines the business and information technology (IT) issues.

The business aspects of BI are expressed by:

- delivery of valuable information to decision-makers;
- building corporate knowledge that allows monitoring of strategy realization;
- simulation and optimization of organization development;
- forecasting business results and customer behaviours.

The relationship between BI and HRM strategy has been mentioned by Laursen and Thorlund. They indicate 4 scenarios of BI use in organizations on the strategic level (2010):

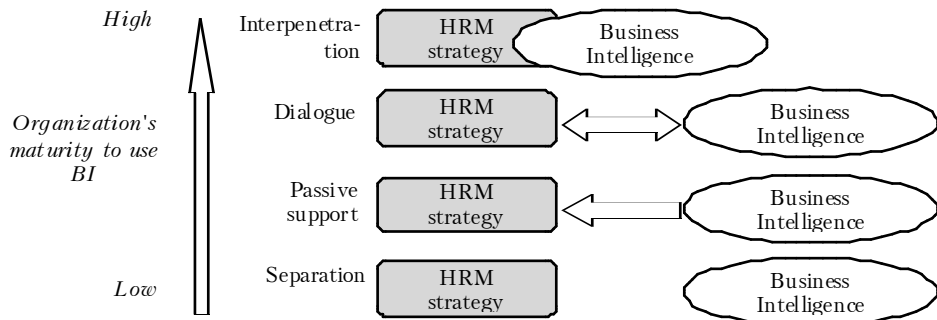
- BI and HR strategy separation – BI does not deliver data to the strategic level, it is only used to answer some questions on the operational level;

- Passive support for the strategy by BI – the only role of BI is to produce reports to support strategy performance;
- Dialogue between BI and HR strategy – the results of BI analyses may modify the strategy;
- Interpenetration of BI and HR strategies – the results of BI analytics are treated as a strategic resource of an organization, which determines the HRM strategy.

Adopting a particular scenario depends on the maturity of the organization to use BI in defining and realization of an HRM strategy (Figure 1).

The technical aspect of BI concept concerns the use of data warehouse as the analytical database, different techniques of multidimensional analysis, data mining and interactive data visualization. The crucial element of BI architecture is data warehouse, which delivers high-quality data that create one consistent view of the organization.

The creation of such a database for the purpose of determining the value of KPIs in HRM area requires obtaining data from different IT systems. Typically, organizations use multiple transaction systems that support ongoing operations in HRM. The data collected in this form are not useful for decision-making. They only describe the activity of people, not the business value of these activities. Monitoring the achievement of strategic HRM objectives have to be based on the data with higher level of aggregation, which better shows the nature of business phenomena.



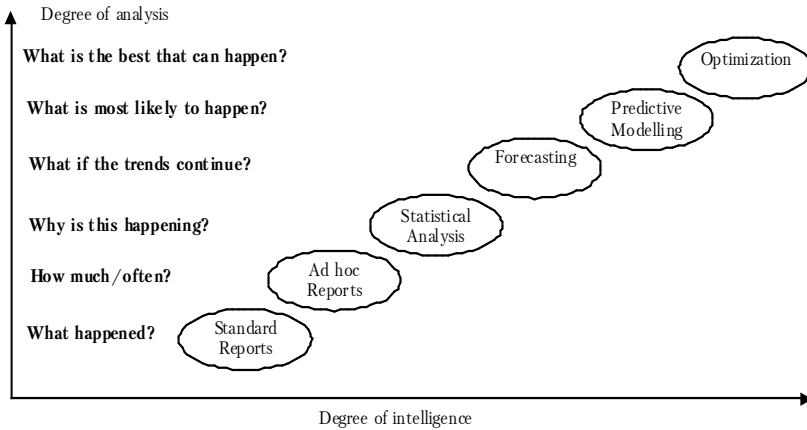
Source: Authors' construction.

Figure 1. **Scenarios of BI and strategy relationships under various levels of organizations' maturity**

Having properly integrated data in a data warehouse allows the implementation of the most important functions of BI, which are converting data into meaningful information, turning information into intelligence related to a business issue and sharing that intelligence with others (Fitz-enz, 2009). Delivering value to business users must be the main and nonnegotiable objective of the BI system (Kimball, 2010). Using BI decisions makers can look beyond standard monthly reports about the past. They receive the ready-to-use information to interpret the past, forecast and predict what is most likely to happen in the future (Foster, 2010). Employee and performance data can be organized, integrated, and reported in meaningful formats, thus providing HR managers with IT tools to measure the impact of HR function and major HR

initiatives (Phillips & Phillips, 2006). The importance of BI in HRM has been emphasized by Fitz-enz, who says that " human capital analysis and predictive measurement can provide this information and are, therefore, critical for business success in this global marketplace" (Fitz-enz, 2010).

BI offers not only simply reporting but also advanced analytics which allow organizations find answers to many business questions more quickly and efficiently (Figure 2). Some of these questions are about the past. However, the highest business value is delivered by the answers to the questions about future.



Source: Fitz-enz, 2010.

Figure 2. Dependency between the degree of intelligence and the degree of analysis

The analysis presented in Figure 2 may be conducted in each of HRM areas. BI allows also the discovery and determination of the character of these dependencies between KPIs in particular areas and how they influence each other. In this way HR managers will know not only what HR resources do, but also what is their today impact on operations and strategic KPIs and how they will affect the future of strategy implementation.

6. Conclusions

Highly competitive markets require the definition of the HR strategy and monitoring of its performance. These processes may be supported by the use of business intelligence that is a contemporary concept in management allowing organizations have better insight into their HRM strategy realization. BI gives the possibility to measure business, acquire information previously unavailable, discover the behavior patterns and simulate and optimize employees' activities for the future.

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Стаття надійшла до редакції 19.07.2013.