



Dashboard – a System of Measures Supporting the Enterprise in Achieving its Goals

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Abstract

The access to information is becoming a key issue for efficient management and building of competitive advantage of enterprises. The managerial staff is looking for tools supporting the decision-making process. The dashboard is a specific type of a report outlining the most important information and indicators related to the goals of the company. It is a method for imaging and presenting data, including business data. Therefore, such tools are included in the Business Intelligence information systems. The purpose of the article was to collect information on the use of dashboard in mining companies by the managerial staff. For this purpose, a questionnaire was used by the authors.

Keywords: goals, measures, dashboard, report, decision support tools

Introduction

When implementing the management processes, the ability to make quick and correct decisions is of key importance. In light of the ongoing restructuring processes in the Polish energy sector, the management in the mining industry keeps searching for newer and newer tools supporting business processes and implementation of the strategy.

The tool, which the company chooses to accomplish its goals, is the management dashboard. It supports the managers in the decision-making processes as well as in management and flow of the information between different management ranks and levels. A lot of information is flowing to the company from the environment, thus, the management has to deal with the so-called information overload. Good managers should select the information so that only the most important data are included in the dashboard. The information keeps flowing, therefore, for the purpose of its verification, it is crucial to provide appropriate technology for the development of business analysis.

The managers in currently operating companies have a tough task ahead of them. Their willingness to make efficient decisions is mainly hindered by the information overload, which results from potential access to excessive amounts of information, i.e. economic, financial and technical [Woźniak, 2011]. Tools used by companies should have specific features of Knowledge Management (KM) and Business Intelligence (BI) in viewing the big picture of their decision-making processes when implementing organizational performance measurement structures [Al Jayakrishnan, Mailasan; Bin Mohamad, Abdul Karim; Yusof, Mokhtar Bin Mohd. 2018].

The more in the energy sector, in the mining industry, which constantly undergoes restructuring processes and has strategic importance for the country, decision made by managers must run smoothly. Decisions must be correct and supported by appropriate data. However managers do not always focus on the most important matters, because of they do not always have access to the information they need at the moment. This causes problems with the effective implementation of mining companies' strategies [Kowal, 2017].

Tools supporting implementation of the strategy and accomplishment of goals

When modern companies want to implement their strategies and stay competitive on the market, they often apply various systems for measuring their achievements, also bearing in mind the aforementioned problems. The purpose of such systems, which measure the effects of their activities, is to support the management process and implementation of the strategy.

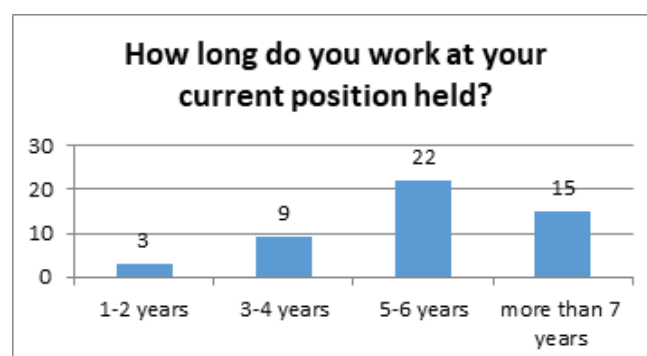
The specialist literature has recently shown that the aforesaid systems and tools are becoming more and more popular [Bąk, Sukiennik and Kowal, 2016; Łobos, Puciato, 2013; Nowak, 2016; Parmenter, 2015]. They are in the form of multi-faceted scorecards, covering main areas of activities of a given entity. They provide for a possibility of a broader outlook on the organization, while considering all aspects at the same time. This includes not only financial aspects, but also other issues related to social business responsibility, sustainable development, goodwill management, economic and technical matters or employee relationships.

The examples of such tools may be the following: Balanced Scorecard, Scandia Navigator, Tableau de



Tab. 1. Respondent's level of management they work at. Source: authors' own study

Tab 2. Poziom kadry menedżerskiej



Tab. 2. Respondent's years of practical experience. Source: authors' own study

Tab. 2. Doświadczenie zawodowe respondentów

Bord, Business Management Window and Performance Pyramid [Kaplan, Norton, 2001; Kowal, Karkula and Kowal, D. 2016]. One of their advantages is the fact that they constitute the system for measuring progress in achieving the goals of the organization, i.e. Key Performance Indicators (KPIs). The number of such KPIs in the multi-faceted scorecards is quite significant (approx. 30), but, of course, it depends on the type of business and needs of a given entity. Such tools facilitate the analysis of the most important KPIs, providing the most comprehensive image of the company and a possibility of “managing the integrated profile of the results simultaneously” [Litwa, 2011]. To assess business activities of the modern economic entity it is required to answer the question whether the goals are attainable or not and if so, to what extent - which is made possible thanks to permanent control of the selected KPIs.

Management dashboard and its types

The data analysis and interpretation are the key elements of the decision-making process in every company. The companies use Business Intelligence (BI) tools, which allow to compare, interpret and visually represent the data.

The management dashboards are one of the tools in such systems. They represent the most important business data and information, in particular in the form of a list of indicators related to the purposes of the organi-

zation from the manager's point of view [Guzek, 2010], shown as different graphic elements.

The applied multi-faceted scorecards include a large number of KPIs. The needs of the managerial staff increased mainly due to rapid changes in the environment, thus, the managers require only such information and knowledge that may help to make key decisions. Due to the fact that the management dashboards include a limited number of data and indicators, they may be considered a special pattern of assumptions, which the company should use and control. The areas of activities presented in dashboards will obviously refer to the most important elements of the implemented strategy. However, their choice is individual and may depend on the following:

- needs of an entity,
- user of the dashboard,
- level of management that the dashboard will concern.

The presented business data may include, for example, such general areas as: finance, sales, marketing, production management, HR management. Due to the nature of the conducted business activity and necessity to measure specific goals and indicators related thereto, the business data may be more detailed, for example, they may refer to the structure of assets and liabilities or sources of asset financing, debt ratio, financial independence or financial liquidity, etc.

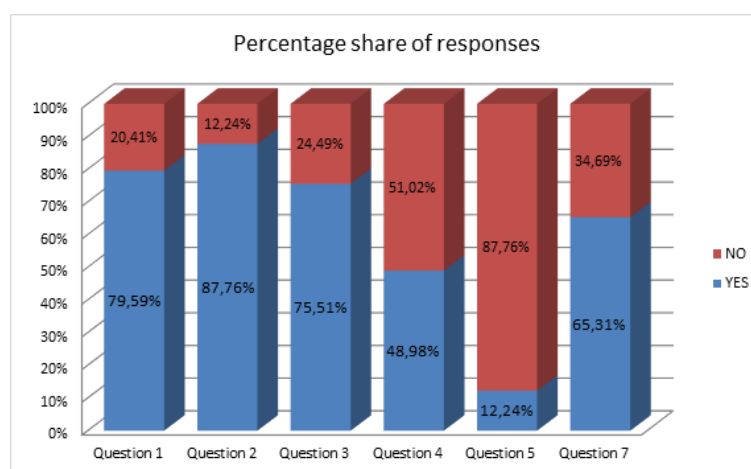


Fig. 1. Percentage share of responses. Source: authors' own study
Rys. 1. Procentowy udział odpowiedzi

Another division, depending on the needs and purpose of dashboards, is the distinction of the analytical and manager's dashboard. The first of them enables searching for the causes of the economic phenomena arising. It is prepared ad-hoc. Its users can be managers or analysts. On the other hand, the manager's dashboard is intended mainly for the managerial staff, it shows the current results of the company. It is created cyclically to support the decision-making process and to improve management processes [Czapniewski, 2018].

Another two indicators, which determine the manner of preparing the dashboard, are interrelated. In practice, it is possible to find different types of dashboards addressed to different users. The knowledge of the user and their information needs determines the construction and shape of the dashboard. The users shall be deemed to mean all groups of interested parties in the company, i.e.: management board, employees (teams), society, chief superior (president). The most frequent types of dashboards include [Wright, 2017]:

- Dashboard for Boards – a dashboard for members of the management board, which visually represents general, yet exhaustive information and achievements that are the most important from the point of view of such members of the management board in terms of implementing the strategy; the members of the management board are mainly interested in key factors of success of the company and general development of the strategy, i.e. medium- and long-term objectives.

- Dashboard for Your Team – the dashboard used during regular meetings of the whole teams, e.g. weekly or monthly meetings. The purpose of the dashboard is to involve all members in the strategy and to show the extent to which the goals implemented by the team contribute to the execution of the strategy of the whole company. The dashboard helps the team to focus on the work results and shows correlations and links between various KPIs.

- Dashboard for the Public – the dashboard designed to ensure transparency of the implemented strategy. Made available to society outside the organization; non-profit organizations or organizations directed at social responsibility of the companies (their number is consistently growing). Public opinion is becoming the key success factor. On one hand, the entities want to share information on their business mainly to show what kind of activities they run, how they implement the policy of sustainable development, what they do to protect the environment, which projects they execute and whether such projects affect the life of a given community or not and, if so, to what extent. The dashboards mainly include good news, but recently the organizations have become more open about their problems, what they could not achieve and what steps they are planning to take to improve the situation. Therefore, their issues become closer to the problems of interested parties. The presented information does not have to include details, but rather generally outline the progress in achieving specific goals.

- Dashboard for the Division – the dashboard designed for other teams and departments of the company. Due to the fact that it is a type of an internal navigational dashboard, it may show a lot of detailed information. The main purpose of the dashboard is to show the activities and tasks of a given team and to involve other teams in its work. Therefore, it is possible to establish good cooperation with other employees by ensuring transparency and reliability of the transferred data or by proposing methods for engaging in the work of a given team.

- Dashboard for your Boss – the dashboard is on one hand user-friendly, but on the other difficult to create. The content of such dashboard to a large extent depends on the expectations of the superior and his/her personality. The superior expects mainly transparent, complete, general, but also specific and, above all, up

to date data and information on what to do to help the entity obtain the best results.

Previously, it was mainly the management that used the dashboard (strategic level). Currently, the dashboards are also designed for the lower management. It is due to the fact that all employees need access to certain knowledge so that they can make the right decisions. Depending on the organizational level, the dashboard users are the following [Ziuziański, Furmankiewicz, 2015]:

- at the strategic level – managers,
- at the operational level – specialists and superiors,
- at the tactical level – lower rank managers and analysts.

The literature of the subject indicates that this type of tools are increasingly used in entities with a different business profile, eg in libraries - to facilitate the management of libraries [Mitchell, 2018], in manufacturing companies to support performance measurement system [Vallurupalli, Bose, 2018], military [Garner, 1968] or in a restaurant - to judge the quality of it [Harvey, Sotardi, 2018].

Preliminary study in the energy sector

The pilot phase was aimed at obtaining information on whether the managerial staff is familiar with the management dashboard, uses the tool at their company. An anonymous survey questionnaire was used in the study. The study was conducted on a sample of 49 respondents, i.e. former higher and lower rank managers from Polish mining companies (table 1). 76% of respondents (37 persons) are holding their position at a lower level of management and 24% at a higher level (12 persons). There were 3 female respondents (6%) and 46 male (94%).

An important issue for the authors was the question of the seniority of respondents at their current position (table 2). The majority of respondents is with longer seniority: 45% there are managers with 5–6 years of holding current position (22 persons) and 31% with seniority more than 7 years (15 persons). 9 respondents were with 3–4 years seniority (18%). The smallest group consisted only of 3 young seniority managers and they constitute 6%. The longer manager works on a given position, the more he is familiar with the given problem, management problems and implementation of the strategy.

The respondents were asked to give information on the situation in the company as regards application of the indicators of the achievement of the objectives, establishment of KPIs and possession of the management dashboard. The questions asked in the questionnaire were as follows:

1. Do you use Business Intelligence tools in your company?
2. Do you use indicators of the achievement of the objectives of KPIs in your company?
3. Are you familiar with these indicators?
4. Do you know what is the management dashboard?
5. Do you have the management dashboard in your company?
6. At which level of management is the dashboard used? (for persons who answers Yes in question 5)
7. Would you find such tool useful in your company?

The pilot phase was aimed at obtaining the information on whether the managerial staff is familiar with the tool called management dashboard.

39 out of 49 respondents stated that the BI tools were used in their companies, which constitutes nearly 80% of the analysed sample. Over 87% (43 persons) of respondents answered yes to the question if they use the indicators of the achievement of the objectives. However, when analysing the answers, it is evident that not all employees who are aware of the fact that the indicators are present in the company are familiar therewith. Only 37 out of 43 respondents, who answered “yes” to the question whether the indicators are used in their company, confirmed the knowledge of such indicators. They constitute 86% of the respondents who are familiar with KPIs and 75.5% of the entire analysed group. The percentage share of all responses is shown in Figure 1.

It would seem that the knowledge of such indicators of the achievement of the objectives is equivalent to the knowledge of the dashboard, but it is clearly not the case. A half of the respondents knew what the dashboard was, the other one did not know anything about the tool.

Despite some knowledge of KPIs and application of the BI tools, only 6 persons answered that their company owned the management dashboard, which constitutes merely 12% of the respondents. In case of a positive answer to the fifth question, the respondents were asked to say at which management level the dashboard was used. 5 persons replied that the dashboard was used at the strategic level, and 1 person – on the operational level.

The vast majority answered affirmatively to the question whether the tool would be useful in their company. 32 persons stated that the application of the dashboard in the mining companies would be necessary, whereas the remaining 17 (less than 35%) did not see any need therefore.

Discussion and conclusions

To efficiently manage the company and avoid the information overload, the managers should be familiar

with the key indicators for a given entity and know how to monitor them to make quick decisions and check whether the company operates properly. It is important for each entity to create their own set of indicators according to their own needs. First of all, a well-defined system of measures allows to monitor the level of the set KPIs, second of all – analyse their level, and third of all – manage the indicators to ensure efficient flow of the decision-making process in the company. Appropriately designed management dashboard with business data as well as its correct application allow to enhance the efficiency of the company's operations.

The results of the pilot study clearly show that the managerial staff has been provided with the indicators of the achievement of the objectives, whose level is clearly measured and monitored. However, it can be concluded that the staff have problems with looking at the company in a comprehensive way, in the same area

at the same time. Since they know the goals, because of the fact that a half of the respondents also know the dashboard tool, where is the problem? Maybe there is a lack of communication or other barriers like learning or measure barriers. In light of the above, it would be necessary to educate the staff in terms of the construction of the dashboard so that it could be applied not only on the strategic and operational level, but also on the tactical level. The answers to the last question indicate that the respondents were interested in such tools, open and willing to apply them. Conducted research has indicated the path of further broader research on the identification of KPI's in mining enterprises.

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Dashboard – system miar wspomagających przedsiębiorstwo w osiąganiu jego celów

Dostęp do informacji staje się obecnie kluczową kwestią dla sprawnego zarządzania i budowania przewagi konkurencyjnej przedsiębiorstw. Kadra menedżerska poszukuje wsparcia narzędzi wspomagających podejmowanie decyzji. W tym celu wykorzystywane są dashboards. Dashboard jest specyficznym rodzajem raportu przedstawiającym najważniejsze informacje i wskaźniki powiązane z celami organizacji. Jest sposobem obrazowania i prezentacji danych, w tym danych biznesowych, dlatego też narzędzia te wchodzi w skład systemów informatycznych klasy Business Intelligence.

Słowa kluczowe: cele, miary, dashboard, raporty, narzędzia wspomagania decyzji