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METHODOLOGICAL ISSUES OF MANAGEMENT REPORTING SYSTEMS DESIGN

Summary: The article presents the methodological considerations of management reporting systems design. In the first part of the paper the nature and scope of management reporting were concisely explained, and moreover the role of this form of reporting information in the field of management accounting was elaborated. Then the rules of creating management dashboards and scorecards as well as the procedure of pre-implementation analysis that should be followed while designing a management reporting system were discussed. In the second part of the article the most important rules for the implementation of internal reporting with particular regard to contingent factors were described. Considerations conducted in the article are summarized with a discussion of the issues related to the design of key performance indicators starting from the identification of the business objectives and critical success factors and ending with the regular update of a set of metrics.

Keywords: management reporting, design, performance measurement.

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1. Introduction

Management reporting is a system of reporting of information to support decision-making processes at various levels in the organizational hierarchy. Managerial reporting aims to achieve organizational goals. The users of internal reports are always employees of the company, because some information may be confidential and strategic from the point of view of achieving a competitive advantage in the market. Management reporting takes various forms, but should be tailored to the needs of managers and the specific features of the company. This means that it is difficult to propose universal patterns of management reporting, but there is a need to design an internal system of managerial reporting adjusted to the needs of managers.

Thus the aim of the paper is to explore the process of designing an internal managerial reporting system taking into account contingent factors. The article tries to address the question: “what elements should a well-designed managerial reporting system consist of?”. Thus the framework for designing a management reporting system

with a particular emphasis on performance metrics was proposed. The argument conveyed in the paper states that the approach to reporting system design should take into consideration various contingent factors, as well as a structured approach to the design of performance measures.

2. The essence of management reporting

Internal management reporting cannot be seen as a set of distributed analyses, reports and papers produced independently in various organizational units of a company. The general approach to management reporting system design should be treated as a system for collecting, processing, analysing and communicating information necessary for managers to make decisions. Therefore the design of a management reporting system includes three essential elements which are presented in Figure 1.

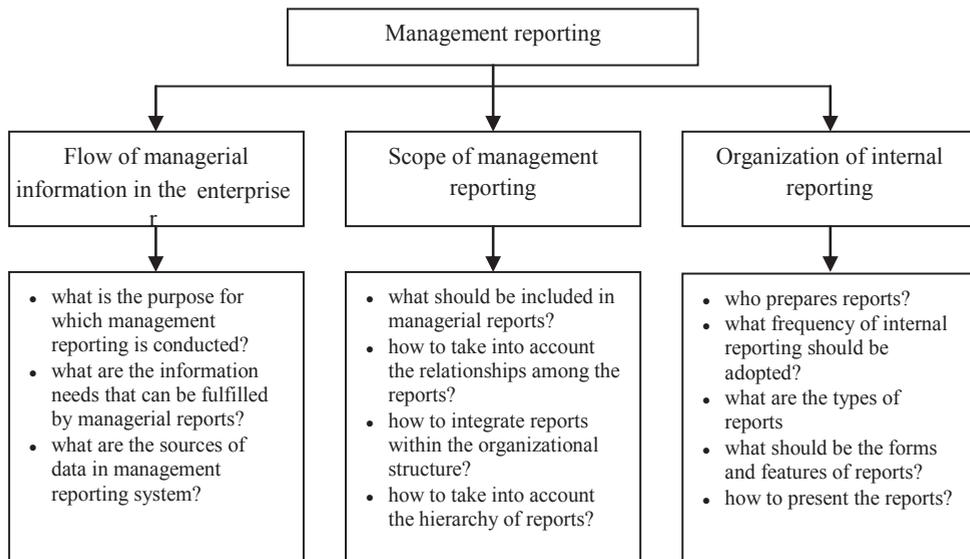


Fig. 1. Structure of Management Reporting

Source: [Nita 2014, p. 39].

For each of the three components specified in Figure 1 a few basic questions facilitating the development of management reporting system in practice were specified.

The design of management reporting systems in practice needs to explain how managerial reports can be prepared. In a modern enterprise, management reporting is closely associated with data processing information technologies. In small and medium-sized business entities, dominant role is played by simple applications and spreadsheets such as MS Excel. They allow to deal with multiple analyses and generate

reports as well as to visualize the processed data by means of tables and graphs. In large enterprises, advanced information systems such as business intelligence systems (BI) play an important role. The prerequisite for BI systems to function properly are data sets integrated within data warehouses. The data accumulated in data warehouses are derived from multiple sources, both internal and external. Business Intelligence systems allow for the proper identification of the key performance indicators and are very useful in generating a multi-dimensional managerial reports based on data mining techniques and many analytical processing tools such as OLAP (online analytical processing).

Regardless of the technology used for the purposes of management reporting, given the scope of the analysis and approach adopted to data visualization, it is possible to distinguish two basic types of managerial reports:

- 1) management dashboards,
- 2) scorecards.

According to W.W. Eckerson [2011, p. 12], dashboards are more like automobile dashboards, because they enable operational specialists and supervisors to monitor and act on events as they occur. Dashboards display detailed data on a timely basis as users need to analyse them, usually daily. Dashboards display performance in a visual way, using graphs, charts or tables. Employees who monitor operational processes prefer to view raw data as numbers or text, accompanied by a visual presentation. Scorecards are performance charts designed to help executives and managers monitor progress toward achieving goals and review performance with subordinates. Scorecards usually display weekly, monthly, quarterly, or annual data. Like dashboards, scorecards use charts and visual graphs but also include comments that interpret results, forecast the future, and include initiatives to be taken. A typical example of a scorecard is the balanced scorecard proposed by R.S. Kaplan and D.P. Norton. A comparison between dashboards and scorecards is shown in Table 1.

Table 1. Differences between dashboards and scorecards

Specification	Dashboard	Scorecard
Purpose	Measures performance	Charts progress
Users	Supervisors, specialists	Executives, managers
Focus	Act	Review
Updates	Intraday/daily	Weekly/monthly/quarterly
Data	Details	Summaries
Display	Charts/tables	Charts/comments

Source: [Eckerson 2011, p. 12].

3. Pre-implementation analysis and contingency analysis

Before a company comes to the design of its internal reporting system, managers should pay attention to the important aspects that are relevant for determining the framework for managerial reporting. This is why before designing the internal reporting system the appropriate pre-implementation analysis as well as a contingency analysis should be conducted.

In practice, pre-implementation analyses are focused on the evaluation of the proposed changes in the reporting system in the context of the current situation of the entity in the area of reporting and data processing. Therefore, regardless of the complexity of internal reporting (simple statements, comprehensive analyses, advanced dashboards and scorecards), it is worth analyzing managerial needs as well as the readiness of an enterprise to improve its management reporting system. In future this would help a company to avoid problems with the development and implementation of an approach to internal reporting so that it that meets the expectations of management information users. An analysis of the information needs demanded by managers as well as an analysis of corporate readiness can be carried out by answering the ten questions presented in Table 2.

Table 2. Pre-Implementation Analysis

No.	Question	Description
1	2	3
1	What are your needs?	Before starting any project, it is important to know what managers expect to get out of the system and how that will help the organization. Choosing an IT provider that is not only familiar with the particular industry but also focuses specifically on this industry will give managers more assurance that certain pitfalls are avoided as the project moves along.
2	What do you have in place already?	Many organizations have some reporting systems in place already. Often different departments will have had put together their own reports without much communication with others. This is needed to determine the relationship between the new solution and the old. One option is for the new product to exist alongside the other services, with each one generating their own reports. Another option is to integrate all of the packages so that they feed data into one central reporting platform. And the third option is for the new solution to replace all of the others.
3	What is involved in integration?	The new reporting solution will need to integrate with the organization's software applications and with any existing reporting applications. External suppliers of the reporting system generally provide out-of-the-box integration with many databases and some common applications. Critical applications in a company will generally be the least supported and the most difficult to connect to. Any applications developed in-house will also need custom integration.
4	How long does installation take?	It is very common that dashboard projects take a long time to be implemented and still do not display required information. Managers should make sure that the vendor's project plan shows not only how long the entire project will take but at what points along the way managers will see specific information reported.

1	2	3
5	How easy is the system to use?	Managers should look for solutions that provide a graphical interface that is both flexible and requires minimal training to use. A web interface is easy to access from the different operating systems, which will support users in different departments. Managers should make sure that it is easy to find their way around the application since people will probably be using it frequently, and managers want to minimize training and support calls. Also it is needed to check how long it takes to get the requested information from the system. Most requests should be fulfilled in just seconds with very few taking over a minute.
6	Who will use the system?	It is needed to take into account the expansion of the scope of the reporting project. Managers should plan ahead on what it will take to scale the system inside an organization. It is worth estimating how many people might be using the new dashboard at the same time, and checking that the proposed solution will support that number. Working with the different departments it must be determined in what order and at what point in the project their information will be added to the dashboard.
7	Can you get customizations?	Every industry is different, and within each industry, every organization is unique. Managers should discuss the uniqueness of their environment and the specific customizations they are interested in with the supplier of the reporting solution.
8	What is involved in operations and maintenance?	There is no standard architecture for reporting systems so it is worth analysing what is involved in a specific reporting system. The first thing to look at is the hardware. After checking the main system, managers should look to see what else is required, from database servers to auxiliary reporting servers or a front end web server for the user interface. Next is software, which includes the reporting software, operating systems, any database, and other third-party software. And last on the list is supporting the user community through training, support calls, and configuring new charts and reports.
9	What does the system cost?	The cost of the system includes the cost of the installation as well as the cost of running and maintaining it. The cost of installation includes the hardware and software, as well as any vendor services for the installation, including integration and customization. The cost of running and maintaining includes the vendor's support and maintenance contract, the support and maintenance on any new hardware and software for the installation, and finally the human resources.
10	How long will it last?	It is necessary to consider what the needs will be in the future, how well the product will grow with a company, and how easy it is to work with the supplier of the IT solution.

Source: Based on: [Kerzner, 2011, p. 206-209].

The second important analysis to be conducted before designing an internal reporting system is contingency analysis. J.D. Wisner and S.E. Fawcett [1991, p. 9] were some of the first authors who appreciated the significance of the organizational context for the design of performance measures. They argued the necessity of a periodical evaluation of the appropriateness of the established performance measures in view of the current competitive environment.

One of the most important requirements for modern performance management systems is to stimulate continuous improvement and organizational learning. This postulate needs the contingency theory to be taken into account, so alongside the changes in external environment established measures should be modified. M.W. Meyer and V. Gupta [1994, pp. 330-342] notice that measures tend to lose their relevance and the ability to discriminate between good and poor performance over time. They argue that failure to manage this change causes the introduction of new measures which are weakly correlated with those currently used so that a company will have a diverse set of measures that do not measure the same thing. They call this effect a performance paradox.

A major role in the assessment of the context in which the organization operates is played by the stakeholder analysis. This analysis is followed by the recognition of the measurement object and the entities involved in measurement. From the financial point of view the shareholders' wealth is of great importance. Obviously it is very hard to satisfy all the stakeholders simultaneously if the management is focused only on value creation. However, in spite of goal incongruence, different groups of stakeholders may have congruent information needs. For example, the owners, banks, employees and even local communities can be interested in corporate financial liquidity.

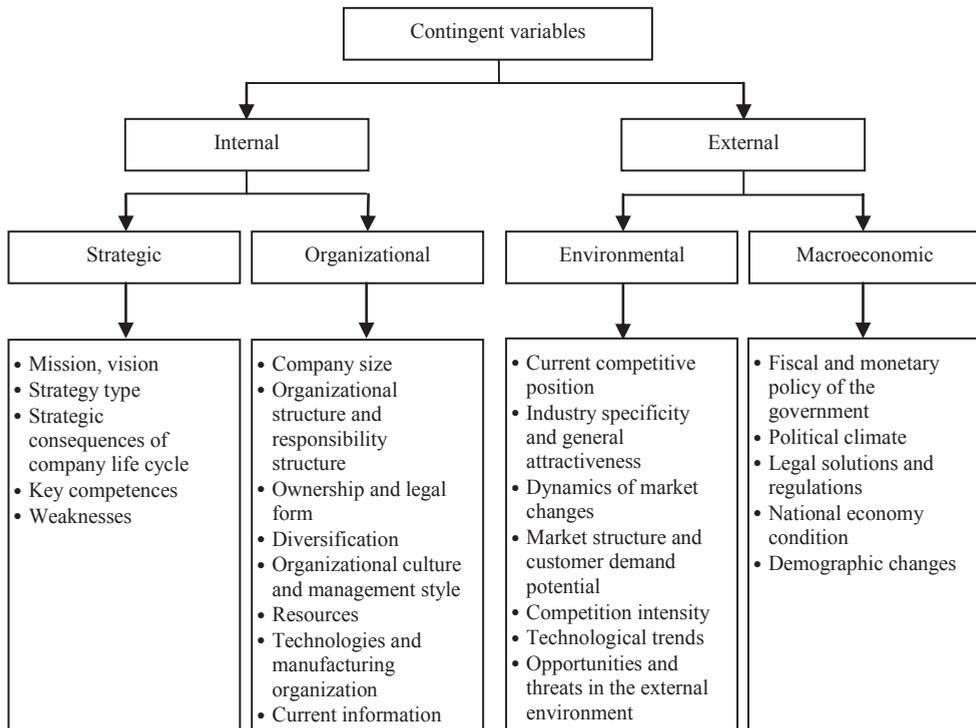


Fig. 2. Contingent factors influencing internal performance measures design

Source: [Nita 2008].

The specification of other contingency factors is a hard task because there is a variety of different opinions on the variables that affect the design of management control and performance management systems. J. Fisher [1995, p. 30] proposes five groups of contingent factors:

- 1) external environment,
- 2) competitive strategy and mission,
- 3) technology,
- 4) unit, firm and industry variables,
- 5) knowledge and observability factors.

K.A. Merchant [1998, p. 729] distinguishes three sets of situational factors: organization and people factors, mission and strategy factors, and environmental and technology factors. A similar approach to contingency theory is preferred by R.J. Mockler [2002, p. 7], though he puts the accents in a different way. In his opinion the major groups of contingency variables include: general external factors, competitive market factors, and company factors.

The author's own typology of contingency factors that should be taken into account while designing performance measures is presented in Figure 2. The typology is based on the author's experience and on previous studies. All the factors are divided into two major categories, internal and external.

4. Performance measures design in a management reporting system

Performance measures design is an essential component of a comprehensive internal management reporting system. There are a lot of suggestions proposed by various authors with regard to the design of performance metrics and indicators [see eg. Rasmussen, Chen, Bansal 2009, pp. 24-25]. Based on different opinions it is possible to propose a procedure consisting of six stages:

- 1) the identification of corporate objectives and critical success factors,
- 2) the determination of managerial reporting scope in responsibility accounting,
- 3) the creation of the initial list of measures,
- 4) agreement on the final list of measures,
- 5) incorporating the chosen metric into the managerial reporting system,
- 6) the on-going validation of the set of measures.

According to CIMA Official Terminology [2005, p. 47], the critical success factor is an element of organizational activity which is central to its future success. Critical success factors may change over time, and may include items such as product quality, employee attitudes, manufacturing flexibility and brand awareness¹.

¹ Some authors distinguish between result and effort critical success factors. Result critical success factors are important for monitoring the results of an objective or a key process and can be determined by answering the question: "what is the result when we achieve the objective successfully?" On the other hand, effort critical success factors are important for monitoring the efforts that are critical for

According to the Institute of Management Accountants [IMA 1998, p. 15] typical enterprise-wide critical success factors include:

- 1) producing products that customers perceive to be of the highest quality,
- 2) designing new products quickly,
- 3) keeping the cost of the product or service low,
- 4) responding quickly and fully to customer requests.

Four major dimensions that would be used for performance measures design were specified, as shown in Table 3. The suggested four dimensions are quality, time, flexibility, and finance and costs. For each dimension, examples of critical success factors were given.

Table 3. Performance measurement dimensions and critical success factors

Quality	Time	Flexibility	Finance and costs
<ul style="list-style-type: none"> • features • reliability • durability • serviceability • esthetics • defectiveness 	<ul style="list-style-type: none"> • lead time • manufacturing time • process time • delivery time • resource usage • return processing time • new product introduction time • frequency of delivery 	<ul style="list-style-type: none"> • product mix • product innovations and modifications • production volume flexibility • resource mix control 	<ul style="list-style-type: none"> • manufacturing costs • logistics costs • sales and after-sales costs • selling prices • revenues from sales • cash flows • profitability • value added

Source: [Nita 2009, p. 274].

A second aspect which is important while designing performance measures is allowing for the organizational structure. Established measures, on the one hand, should reflect the information needs of various management levels, and on the other hand should take into account the specificity of functional areas within the organization. This notion is presented in Figure 3 which indicates the need for the transmission among various functions and hierarchical order of management levels. In order to design performance measures, it is necessary to consider the specificity of different functional areas such as production and marketing with respect to the possibility of describing their performance by means of the measures that are further cascaded down. Critical success factors, identified at the highest level (the organization as a whole), should be disaggregated into more detailed performance determinants and quantified by means of various indicators at all the management levels. At each

achieving an objective or process and can be identified by answering the question: “what do I absolutely need to do to achieve the objective successfully?” After identifying the critical success factors, the company needs to identify the key performance indicator for each CSF [de Waal 2007, p. 117].

level, from top-management level to particular processes, it is needed to propose the measures that can be the bases of performance evaluation at these levels.

The creation of initial list of measures may be supported with various techniques. According to the Institute of Management Accountants [1998, p. 18], three specific techniques are perceived to be most useful when defining the critical success factors and their corresponding key performance indicators. These are:

- 1) the Ishikawa cause-and-effect diagram,
- 2) Pareto analysis,
- 3) targeted reviews of existing performance measures.

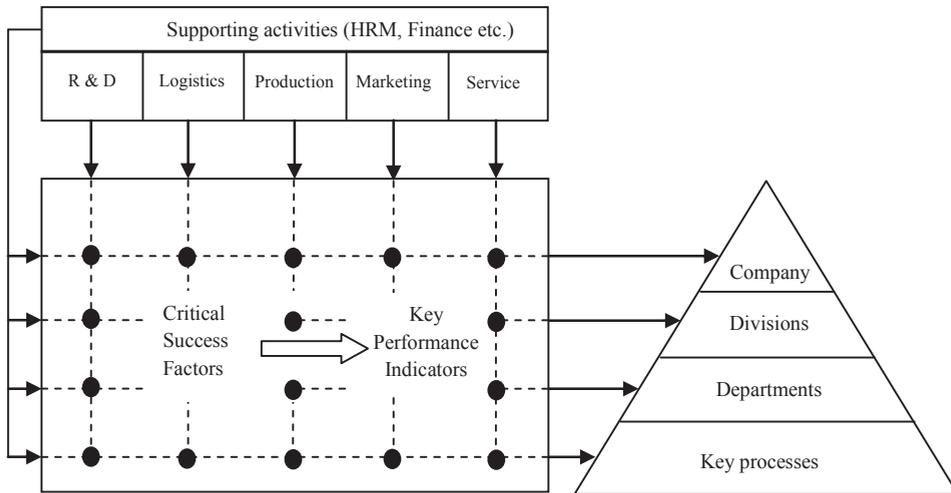


Fig. 3. Hierarchical and inter-functional performance measures design

Source: [Nita 2009, p. 279].

In the fourth step, a final list of measures should be determined taking into consideration the desired attributes of metrics. These attributes are the characteristics and conditions that need to be fulfilled in order for the measures to become the basis of an effective performance measurement system. Each attribute can be classified into one of the eight major groups of requirements. Thus each measure should:

- 1) have a clear purpose,
- 2) be linked to the organizational strategy,
- 3) have an easy and understandable formula,
- 4) be based on explicitly defined sources of data,
- 5) serve as a control tool and provide continuous improvement,
- 6) be cascaded across the functions and management levels,
- 7) have the frequency of measurement specified,
- 8) have to be associated to the person responsible for its calculation.

The fifth stage is about the incorporation of the chosen set of performance measures into the management reporting system based on information technology. This

incorporation requires designing the graphical layout used to communicate information for particular measures including colors, icons, graphs etc. Generally in this step the most appropriate interface must be designed to satisfy the needs of managers.

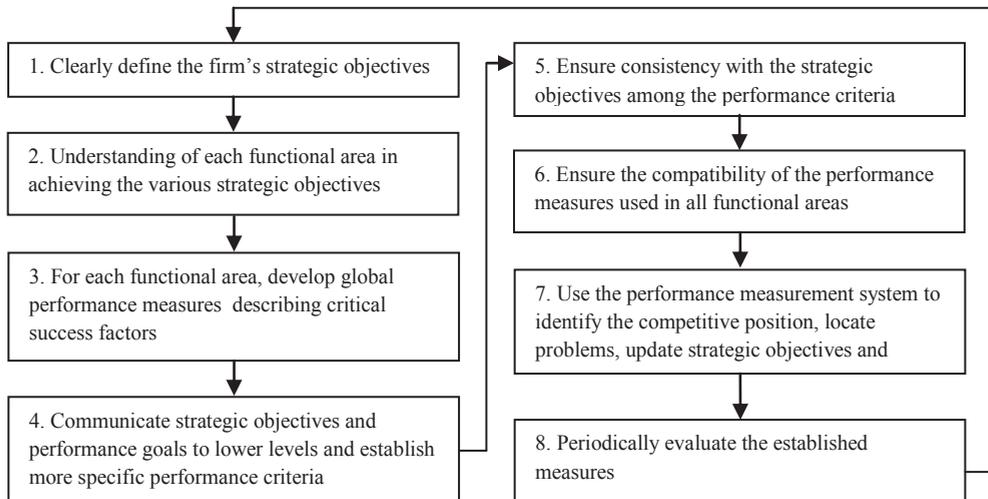


Fig. 4. Performance measures design as an ongoing process

Source: based on [Wisner Fawcett, 1991, p. 9].

The final stage concentrates on the on-going validation of the set of selected measures, because the comprehensive system of performance management should be dynamic, stimulate organizational learning and drive feedback. Thus, while designing performance measures, it is necessary to take into account not only the organizational structure, but also the periodic evaluation of the established performance measurement system and the adjustment to the changing market conditions as shown in Figure 4. This presents the steps necessary for developing and maintaining an effective performance measurement system. After establishing the performance measures across functions and management levels, one should take advantage of this system to evaluate the current competitive position of the company, identify the problems that may occur, update the strategic objectives, and finally take actions oriented towards the achievement of those goals. In this context it is possible to supply the feedback that is to guarantee the adjustment of performance measures to new contingency factors.

5. Summary

The article has presented the methodological issues of management reporting systems design. This framework was derived from the literature studies and recommendations of various proponents as well as from the author's own experience. The most

important conclusions refer to the structure of a management reporting system. In order to design this internal information system, three components should be taken into consideration: the flow of managerial information in the enterprise, the scope of management reporting, and the organization of internal reporting. In practice there are various approaches to managerial reporting, including very advanced scorecards and dashboards. Regardless of the approach adopted in order to design the most effective system of reporting, two types of analysis must be conducted. The first type of analysis is the pre-implementation analysis that needs close cooperation with the vendor of the IT solution used to process and display managerial information. The second type of analysis is purely methodological and requires the proper recognition of the contingency factors affecting performance measurement and managerial reporting. Finally, the paper discusses the components of performance measures design. In particular the following issues were elaborated: the identification of corporate objectives and critical success factors, the determination of managerial reporting scope in responsibility accounting, the creation of an initial list of measures, agreement on the final list of measures, incorporating the chosen metric in the managerial reporting system and the on-going validation of the set of measures.

References

- CIMA, 2005, *CIMA Official Terminology*, CIMA Publishing, Oxford.
- Eckerson W.W., 2011, *Performance Dashboards, Measuring, Monitoring, and Managing Your Business*, John Wiley & Sons, Hoboken.
- Fisher J., 1995, *Contingency-based research on management control systems: Categorization by level of complexity*, *Journal of Accounting Literature*, vol. 14.
- IMA, 1998, *Statement on Management Accounting: Tools and Techniques for Implementing Integrated Performance Management Systems*, Institute of Management Accountants, Montvale, NJ 1998.
- Kerzner H., 2011, *Project Management Metrics, KPIs, and Dashboards*, John Wiley & Sons, Hoboken.
- Merchant K.A., 1998, *Modern Management Control Systems. Text and Cases*, Prentice Hall, Upper Saddle River.
- Meyer M.W., Gupta V., 1994, *The Performance Paradox*, *Research in Organisational Behavior*, vol. 16, no. 1.
- Mockler R.J., 2002, *Multinational Strategic Management: An Integrative Entrepreneurial Context-Specific Process*, International Business Press, New York.
- Nita B., 2008, *Methodology of Performance Measures Design: A Conceptual Framework*, [w:] M. Łada, A. Kozarkiewicz (red.), *Rachunkowość w otoczeniu nowych technologii*, C.H.Beck, Warszawa.
- Nita B., 2009, *Rola rachunkowości zarządczej we wspomaganii zarządzania dokonaniem przedsięwzięcia*, Wydawnictwo Uniwersytetu Ekonomicznego, Wrocław.
- Nita B., 2014, *Sprawozdawczość zarządcza. Analizy i raporty wewnętrzne w controllingu*, PWN, Warszawa.
- Rasmussen N., Chen C.Y., Bansal M., 2009, *Business Dashboards. A Visual Catalog for Design and Deployment*, John Wiley & Sons, Hoboken.
- Waal de A.A., 2007, *Strategic Performance Management. A Managerial and Behavioural Approach*, Palgrave Macmillan, Houndmills.
- Wisner J.D., Fawcett S.E., 1991, *Linking firm strategy to operating decisions through performance measurement*, *Production and Inventory Management Journal*, vol. 32, no. 3.

METODYCZNE ZAGADNIENIA PROJEKTOWANIA SYSTEMÓW SPRAWOZDAWCZOŚCI ZARZĄDCZEJ

Streszczenie: W artykule przedstawiono podstawowe uwarunkowania projektowania systemów sprawozdawczości zarządczej. W pierwszej części opracowania syntetycznie wyjaśniono istotę i zakres sprawozdawczości zarządczej oraz rolę tej formy raportowania w obszarze rachunkowości zarządczej. Następnie wyjaśniono zasady tworzenia kokpitów i raportów menedżerskich oraz procedurę analizy przedwdrożeniowej, która powinna być przeprowadzona na potrzeby zaprojektowania systemu sprawozdawczości zarządczej. W drugiej części artykułu omówiono najważniejsze zasady wdrażania raportowania wewnętrznego ze szczególnym uwzględnieniem uwarunkowań sytuacyjnych. Rozważania prowadzone w artykule są podsumowane omówieniem problemów związanych z projektowaniem kluczowych mierników dokonań, poczynając od identyfikacji celów przedsiębiorstwa i krytycznych czynników sukcesu, a kończąc na okresowej aktualizacji zbioru mierników.

Słowa kluczowe: sprawozdawczość zarządcza, projektowanie, pomiar dokonań.