

MODELING THE INTERDEPENDENCE OF MARKETING AND ACCOUNTING INFORMATION SYSTEMS

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ARTICLE INFO

Original Scientific Paper

Received: 09.12.2021

Revised: 08.03.2022

Accepted: 10.03.2022

doi [10.7251/ACE2236053M](https://doi.org/10.7251/ACE2236053M)

UDC

658.8:[005.346:338.46

Keywords: *marketing information system, accounting information system, the model of interdependence of marketing and accounting information systems*

JEL Classification: M41, M31

ABSTRACT

This paper presents a model of interdependence of marketing information system and accounting information system activities, with the aim of harmonizing them while identifying activities on the basis of which the goals of information support for the execution of managerial tasks are completed. The lack of effort to create such models in the past can be explained by the tendency to present individual information systems as integral and sufficient for management needs. However, the growing management informational dependence of a company implies the need for more efficient ways to create and deliver relevant information and reports. The proposed model is based on a general management concept according to which, under the contemporary business conditions, three general groups of activities are performed: research and monitoring of market requirements, creation of value for customers based on previously identified needs and customer relationship management, and customer lifecycle management. On the basis of such grouped management tasks, marketing and accounting activities and their mutual conditionality were identified and unified through the proposed model.

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1. INTRODUCTION

In contemporary business conditions the problem of meeting manager's information needs is the dominant issue. The analysis of the ways in which the management needs should be met indicates the number of information sources, significant differences in their contents and how they are supposed to be used. The complexity of such situation and the increasing efforts to present different information systems as comprehensive (integral) and sufficient for satisfying the

manager's information needs were the main motive for choosing the topic that is the subject of the analysis in this paper.

The primary focus in this paper is on identifying and analyzing the interdependence of marketing information system and accounting information system, since both support managing the company by objectives and, during their evolution, have shown a clear tendency to put the focus on external influences on business results. In that sense, there is an increasing need for harmonizing the content and character of the two most complex information systems within the company: marketing information system and accounting information system.

For that reason, an attempt was made to prove the assumption (hypothesis) that the model of interdependence of marketing and accounting information systems is the basis for linking activities within these systems while preparing an adequate information support for making management decisions.

In order to achieve the research goals, a review of relevant literature, related to the research on the relationship between marketing and accounting information systems, especially regarding their tasks and content, will be performed. After that, a model of mutual interrelationship of marketing and accounting information systems will be offered based on the analytical approach to their activities, grouping of the managerial-marketing functions of general activity and the influence of information systems on its work. At the end, within the discussion and concluding remarks, in anticipation of further development of mutual relations between the two key information systems in the company, the assumptions and perspectives will be presented.

2. LITERATURE REVIEW, MATERIALS AND METHODS

The importance of information systems is a question of the relevance of information as an output that such system provides. The relevance of the output of the information systems will be measured primarily by the appropriateness of the output content that the system offers and the time in which the output is offered to users. Also, it is certain that any type of future managerial decision-making will require some form of information system that supports a certain type of decision. In their general form, these systems will not differ, which is confirmed by similar approaches in explaining their layout and contents. Namely, there are three basic parts of any information system: data collection (input), their analysis and processing (process) and creating information (output) that will be used for decision making. In this sense, the marketing and accounting information systems are no exception.

Given the number of decision maker's information needs, the number and differentiation of data sources, methods of their analysis, reports and their users, it has been clear for a long time that only information systems can meet the information needs. However, in order for the information system to be created and to be adequately managed, it is necessary to have elements with clearly separated content, and to perform activities within such elements that will provide adequate contents, while it is assumed that providing relevant content is also economically justified, as should be implied by a preliminary cost-benefit analysis of the system.

Regardless of what businesses companies do, what type and volume of product and services they create and which markets they operate in, the information systems on which they base their own activities are part of their value expressed in the form of intellectual capital. The flows of information, which are the product of such systems, enable companies to function and also to meet the needs of all companies' stakeholders (Figure 1).

The subject of research in this paper is the interdependence of marketing and accounting information systems, given that modern management concepts and business philosophies depend on this connection. Also, the directions of their modern development point to the convergence of input sources that they use as systems. Thus, for a long time now, the coverage of relevant data used by the marketing information system has not been represented predominantly by external sources, created outside the company. In this sense, it is clear that "information in an internal database (as one of the elements of the marketing information system – authors' note) can come from many sources" (Kotler et al., 2017, p. 107). It is known that the accounting department has traditionally been used as one of these sources, and in order to identify "important opportunities and potential problems, marketing managers rely on internal reports on orders, sales, sales prices, costs, inventory levels, receivables and liabilities" (Kotler & Keller, 2012, p. 70).

On the other hand, promoting the need for the content of information offered by the accounting information system to be based on external sources of information about competition (Simmonds, 1981, according to: Drury, 2012, p. 580) and especially on the company's key success factors defined from the customers point of view (Gajić, 2010), also indicates the need and tendency to converge the contents of two information systems.

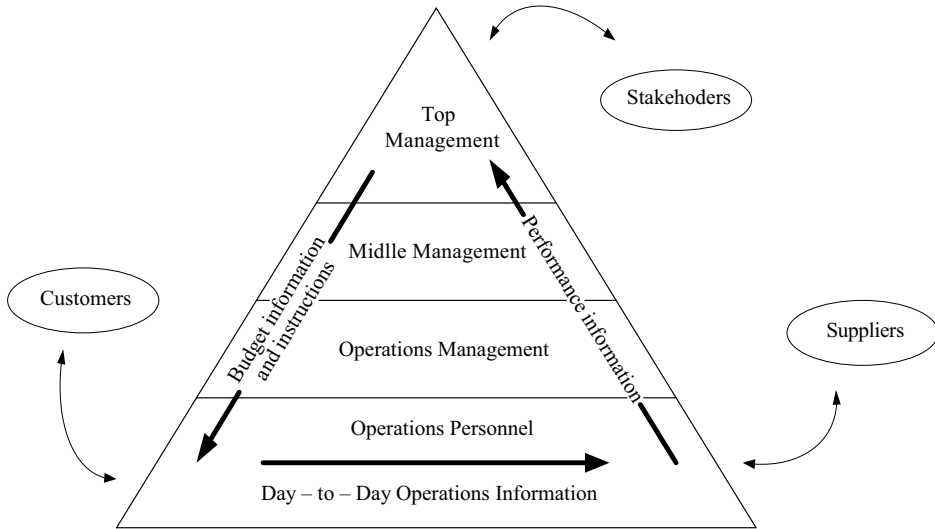


Figure 1: Internal and external flows of information

Source: Hall, 2011, p. 4.

The number of different approaches to the marketing information system is clearly visible in the literature (Macura, 2003). The dominant goal of the marketing information system is to provide relevant information while communicating with market participants on what is demanded, who the bearers of such demand are, to what extent the demand is expressed, what and who currently meets it and under what conditions the existing demand is met, and all in the context of the product or services that companies offer.

Unlike the approaches to the marketing information system, approaches to the accounting information system are fairly uniform in terms of the content they could offer. These contents are used in order to prepare an information base for their users to be able to make planning and control decisions. From the standpoint of general importance, these decisions are related to the effectiveness and efficiency of the use of available resources, and from the point of view of individual importance, especially from the point of view of their internal users (managers at different hierarchical levels), these decisions are related to countless daily activities. Due to the precise differentiation of terms, it should be emphasized that there is a possibility that the term “accounting information system” is treated from the point of view of applying information technology to the accounting system (Bagranoff et al., 2010, p. 4), which will not be the case in this research, because the emphasis will be on the content and usability of the system.

The fact is that information systems evolve with the evolution of management systems and with the activities within them. These activities represent the starting point for the content of the information support they provide and the flows of information between various information systems within the companies¹. Part of the evolution of information systems is also caused by the importance of functional areas which specific information systems belong to. The historical overview of changes in the status of the marketing function and its information system in relation to other information systems is particularly interesting:

- phase 1 – marketing function subordinated to other functions (primarily to production and financial function),
- phase 2 - marketing function in equal status with other functions,
- phase 3 - marketing function with a dominant status in relation to other functions that have a supporting character,
- phase 4 - marketing function with integrative significance in relation to other functions,
- phase 5 - marketing function as the main function within the company, while other functions have a subordinate character,
- phase 6 - marketing function as a control mechanism in relation to other functions, with the promoted management concept of “customer in focus”, which gave the customer the status of a true partner in carrying out the economic mission of the company.

The first three phases in the treatment of the marketing function are caused by the general, dominant status of supply in relation to demand, while the remaining three are the consequences of promoting the concept according to which demand has a dominant impact on business operations. Although one can find a general awareness of the mutual relationship of the two analyzed information systems in the literature, the statement that “without adequate accounting information one cannot imagine a rational information system, nor the efficient marketing management” (Macura, *Op. cit.*, p. 49) does not define the adequate model or concept of their interconnection. Also, it is a general view that the interdependence and relation between the marketing and accounting information systems is not sufficiently emphasized or operationally presented. For example, out of ten best-selling marketing books used in the form of student textbooks, identified through the “amazon.com”² platform, the term “accounting” is used mainly when mentioning the organizational unit that is an integral part of the organizational structure of the company. In two sources, it is only briefly stated that within

1 Information systems within: financial function, input procurement function, marketing function, accounting function, human resource management function, etc.

2 Information acquired on May 30th 2021, through: <https://www.amazon.com>.

the “internal data”, as an element of the marketing information system, data are taken from the accounting department. In only one source, a specific accounting tool is mentioned, namely Activity Based Costing as a suitable “accounting method used to measure integration to estimate costs within each supply chain activity” (Lamb et al., 2011, p. 451). Also, only one source (Perreault et al., 2011, p. 599) offers a clear view that “marketing students must be familiar with the basics of business language (meaning accounting – authors’ note)”, and uses a special heading in the book to present these relationships. However, the implied knowledge relates only to understanding accounting terminology from the perspective of using financial statements rather than relevant internal information for marketing decisions. The situation is similar with leading journals dealing with marketing theory and practice³.

On the other hand, based on the analysis of ten best-selling management accounting books also used as student textbooks, identified through the same sales platform, it was concluded that accounting literature with much larger and more specific content treats relationship with all elements of internal value chain function including the marketing function (see for example: Bhimani et al., 2019, p. 13), with the common use of case studies to present certain marketing phenomena as well (see for example, Garrison et al., 2012, p. 241, Datar & Rajan, 2018, p. 782, Zimmerman, 2017, p. 174). Although the literature in accounting contains a number of examples that promote accounting support for specific marketing decisions⁴ and explain in detail the treatment of marketing costs from the position of their allocation, the accounting literature (including the one that publishes research papers)⁵ also does not provide an appropriate model that emphasizes the interconnection of accounting and marketing information system, but only certain possibilities of joint work in specific cases are analyzed (for example, Philips & Halliday, 2008).

3 The following journals were analyzed: Journal of Marketing, Journal of Public Policy & Marketing, Journal of Marketing Research, Journal of International Marketing, Harvard Business Review.

4 For example, the decision on sales price, sales range, identification and measurement on customer profitability and distribution channels (Gajić, 2017; Pete & Réka 2010), customer satisfaction (Cugini et al., 2007), supporting planning activity (Phillips & Halliday, 2008) and the like.

5 The subject of the analysis were: Accounting Horizons, Accounting, Organizations and Society, Advances in Management Accounting, Contemporary Accounting Research, Cost Management (Journal of Cost Management), International Journal of Accounting Information Systems, Journal of Accounting Research, Journal of Applied Management, Accounting Research, Journal of Information Systems, Journal of International Accounting Research, Journal of Management Accounting Research, Management Accounting, Management Accounting Quarterly, Management Accounting Research, Strategic Finance.

2.1. Tasks and content of the marketing information system

There are three general patterns of marketing information systems. The first is authorial with different individual approaches. The second is institutional, created mainly by academic or research institutions, while the third one involves the so-called spontaneous way. Therefore, they were subsequently theoretically shaped. The essence of these models is in their content, which is the most important item for their connection with other information systems.

In the approach chosen for this paper, Kotler’s authorial presentation of the marketing information system was used (Figure 2).

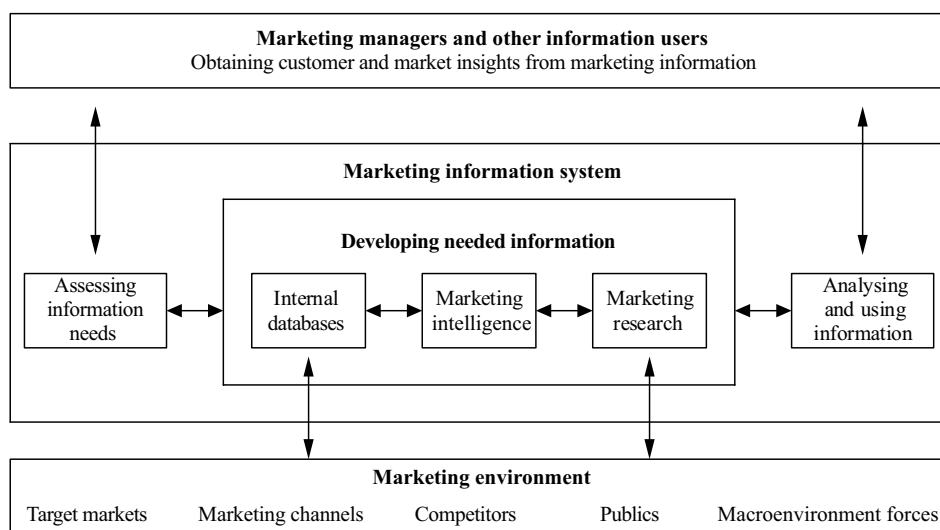


Figure 2: Marketing information system

Source: Kotler et al., 2017, p. 106.

Information needs assessment is the first task of a marketing information system. Based on the identified needs, the requested information is created, after which such information is used for business decision-making.

In the process of assessing information needs, the need to clearly present the requirements of users of marketing information is emphasized, but also the need for the system itself to generate a certain type of alerts about market developments, which will require appropriate management response.

In the process of creating the necessary information, three sources of information are used: internal databases, marketing intelligence (marketing data collection) and marketing research.

1. Internal databases are the basis on which the remaining elements of the marketing information system are financed and upgraded. Such databases contain information from various sources and have a historical character. Their content is especially based on information about customers and target markets, the terms under which certain groups of customers participate in transactions with the company, the level of their satisfaction, any complaints and suggestions they may have and the like. These internal databases usually contain information based on accounting records. Thus, within this part of the system there are accounting reports that contain data on orders, sales, inventory levels, marketing costs and cash flows from customers. Special emphasis is placed on the identification of different categories of costs incurred within the marketing function⁶, revenues and cash flows by different calculation categories - by products or services, sales territories and customers. The key sources of data are accounting documents, but also staff working in sales.

Unlike other two sources used to create the necessary marketing information, internal databases are available without special additional activities and resource consumption, which is why they should be used primarily. On the other hand, the previously performed assessment of information needs may require information that is not automatically ready for use, but needs to be prepared on the basis of available data.

2. The tasks of the marketing intelligence system, within which data collection is performed, are related to monitoring the environment in which the company operates, including data on effects of the competitor's activities. The content adequacy of the reports of this part of the system is based on the information about changes in the environment being up-to-date, so that they can be responded to in a timely manner. The subject of treatment within internal databases is the marketing system and the company relations with the environment, and the subject of study within the framework of marketing intelligence system is only the environment. The primary data that are sought to be collected relate to the actions of the competition, and the requirements and wishes of customers.
3. The marketing research system deals with finding ways to prepare actions on specific issues that need to be decided on. The process involves a logical sequence of activities presented in Figure 3.

⁶ Although, in most cases, treated as a revenue responsibility center, it should not be overlooked that significant costs occur within this function, to which special attention must be paid.

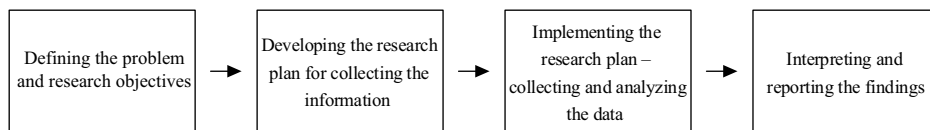


Figure 3: The marketing research process

Source: Kotler et al., 2017, p. 109.

Within the first phase of marketing research, it is necessary to define the problem and goals of the research, which is crucial from the point of view of developing a research plan for data collection. The plan should identify the sources and method of data collection, the time aspects of the research, in terms of the duration of the research and the range of time to observe a particular phenomenon, as well as the data sources that will be used. In order to collect data, the following is performed:

- a) market research, with the aim of collecting data on number of consumers, their requirements, location, market share of competitors, etc.,
- b) analysis of marketing mix instruments, in the segment of supply content, sales prices, cost eligibility, characteristics of the products and services (own and competitor's), life cycle of products or services, distribution network performance, promotional activities, etc., and
- c) analysis of sales from the point of view of sales size, in terms of sales volume by individual segments, efficiency of sales operations, consumer behavior and the like.

After data collection, the instruments of the so-called analytical marketing system are used. They consist of a bank (database) of experiential data, statistical methods and various models for the analysis of marketing data and problems. The bank of statistical methods includes statistical and mathematical programs for data processing. The calculation of averages, various types of indices and trends, regression and correlation analysis, dispersion and cross-tabulation of data are commonly used. In the case of the analysis of several variables, usually multiple regression analysis, discriminant analysis, and factor and group analysis are used. The content of the bank of models is focused on supporting the decision-making on the elements or instruments of the marketing mix (products, prices, distribution and promotion). Observing the market reality by creating a specific model in the modern approach to marketing management is quite common. For example, models for forecasting sales, choosing a location for retail facilities, promotions in the media, and even for financing the content of the marketing mix or marketing activities in general.

Finally, interpretation on research findings and reporting should be done, in order to use most efficiently information during the business decision-making process.

2.2. Tasks and content of the accounting information system

The accounting information system offers information to external and internal users who make planning and control decisions on the basis of accounting reports. This system also identifies and assesses information needs from decision makers, namely: external, such as owners, customers, suppliers, tax authorities (for which routine, standardized and publicly available reports are prepared, on the basis of legal and professional regulations and the same time intervals) and internal users, which are managers at different hierarchical levels (for which non-routine and non-standardized reports are prepared and presented in accordance with individual needs). Within this system (see Figure 4), the identification and assessment of information needs, the creation of information and finally its analysis and use, are also performed.

The elements of the system within which the accounting report and information are created, are: financial, management and cost accounting. There are three groups of tasks that are subject of execution of an accounting system with an aim to provide information to different users:

- 1) recording the results of business transactions, in terms of their identification, bookkeeping, summarizing and reporting on their financial and non-financial effects;
- 2) attention directing, in terms of interpretation of business achievements, especially in the part related to the comparison of actual and planned achievements, while providing various information on the basis of which the attention of management is focused on strengths and weaknesses within the organization;
- 3) support to business decision-making, in terms of identifying the best option for the use of limited resources, after key information on attainable options have been provided.

By performing the first group of tasks, reports on financial position and success of companies are enabled, as a periodic external accounting reporting in a way determined by regulations and accounting principles and standards.

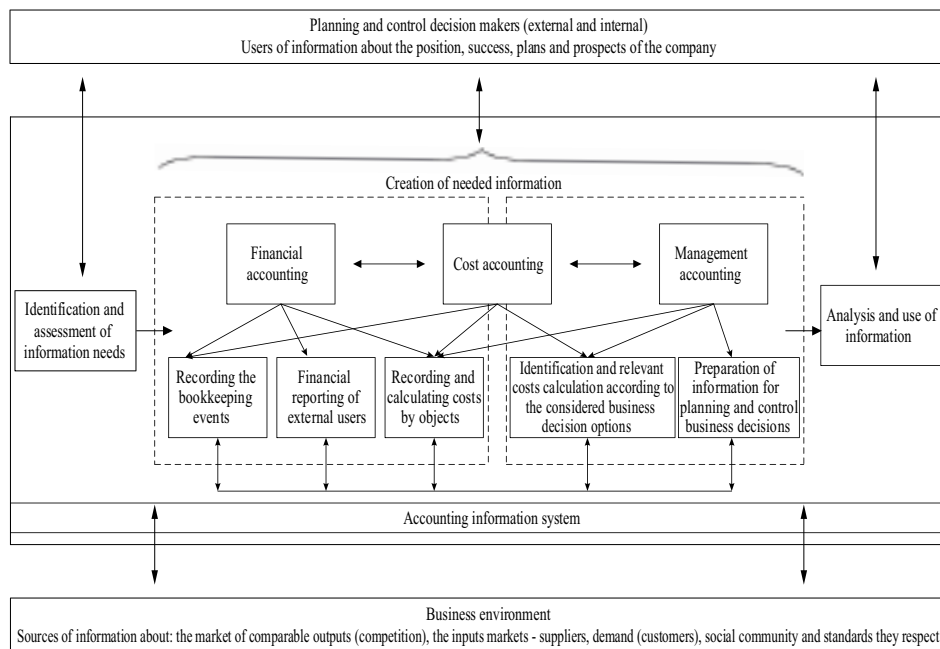


Figure 4: Content and tasks of the accounting information system

Source: Authors' creation

By performing the second and third group of tasks, accounting supports planning (establishing goals and strategies to achieve these goals), business decision-making (using financial and non-financial information to make decision-making consistent with goals and strategies), and performance control (using financial information to keep the business results as close as possible to the planned ones, or to modify the plan itself, if necessary). Basically, in this way, management activities are supported.

The contents of the elements of accounting information system, although clearly defined, are not mutually independent. Thus, within the content of financial accounting, tasks related to the recording of accounting events and the preparation of financial statements used by external stakeholders to the company are performed. Every business event will have certain consequences on spending company resources, which is the subject of planning, recording, controlling and reporting, so that the activities of financial and management accounting are quite intertwined. Considerations regarding cost accounting are similar. This segment of the accounting system has a minimum degree of autonomy compared to other two parts of the accounting information system, which is highlighted in Figure 4 by sharing the objectives of its activities and linking its tasks to supporting

activities located within the financial-accounting segment and the management-accounting segment. Namely, on the basis of the primary activity concerning recording accounting events, various types of cost calculations are performed for the needs of financial reporting on the one hand, and for the needs of preparation of alternative options of resource usage on the other hand.

3. RESULTS - IDENTIFICATION OF A MODEL OF INTERDEPENDENCE OF MARKETING INFORMATION SYSTEM AND ACCOUNTING INFORMATION SYSTEM

It was previously stated that the relations of individual functions have changed over time. In order to present a potentially usable model of the interdependence of marketing and accounting information systems, it should be assumed that the analyzed functions and their significance are equal. This concept is prevalent in practice, primarily due to the dominant market structures (fragmented competition and underdeveloped offers), in which the buyer still does not have the status of a controller in management activities (not yet “in focus”). Also, the fact is that a large number of companies do businesses in which, due to the technological characteristics of the process, it is not possible to make a step towards the dominant influence of marketing activities and a large number of companies are small in terms of investment and production potential which would enable them to have greater strength in market performance (for example with supply diversification).

In order to develop a certain system to the form of a model, it must have the appropriate internal cohesion, but also the appropriate openness to connect with other systems. In operational terms, this is done through activities within the content it offers. Some situations or problems that need to be solved imply emphasizing and favoring a certain type of content, which causes different levels of connection with other systems in order to reach specific information content.

3.1. Grouping of general activities of the management-marketing function and the influence of information systems on its work

Returning to the content of the demand for information that should initiate and prepare the basis for managing the marketing activities, these activities should be presented. In this sense, it is possible to use Figure 5.

Researching and monitoring market demands is the primary business activity that should enable cognition of the demand - in content, scope and time frame. Based on such knowledge, the combination of available resources is performed

and content of the offer is created, represented by the traditionally accepted concept of the marketing mix, i.e. the product or a service, its selling price, the method of promotion and distribution.

This mix, or combination of marketing instruments on the basis of which the needs of product or service users are to be met, implies the appropriate characteristics to meet the previously identified demand. In contemporary business conditions, customers are offered a package of attributes (characteristics) of products or services whose value, from the point of view of customers, should be equivalent to or greater than the amount of money they should give up for this type of products or services. Due to increased market competition, the process of deciding on sales prices takes place simultaneously or even before decisions about the content of the offer and the characteristics of the products or services offered are made. Increased competition causes an increase in market risk to an extent that it can be annulled only by applying the concept of so-called target sales prices. This selling price is the basis for defining the target business result that will be calculated on the pre-defined (target) selling price. The key management challenge comes down to reaching the target costs (as the difference between the target sales price and the target business result). Available supply and opportunities to meet demand must be efficiently communicated to potential customers, therefore different instruments are used in promotional activities. The remaining element of the marketing mix requires deciding on the method and channels of products or services distribution, while looking for options that will provide the lowest costs, with minimal time consumption, from the moment the product or service is created to the moment when it is delivered to the customer and put into use.

Within the third general group of managing marketing tasks, the customer relationship management and product or service lifecycle management activities are carried out. Once the needs have been identified and met, it is important that in order to achieve the desired customer loyalty, all knowledge regarding their behavior is carefully managed, including available information on their future development prospects and strategies that are most effective in terms of gaining their confidence. On the other hand, customer lifetime value management implies understanding the implications of customer relationships over the entire lifetime cooperation with the customer. In essence, this is done through the analysis of customer profitability and striving to make the data base of customers with whom relationships have been established as large as possible, but also more meaningful in terms of contributing to business results.

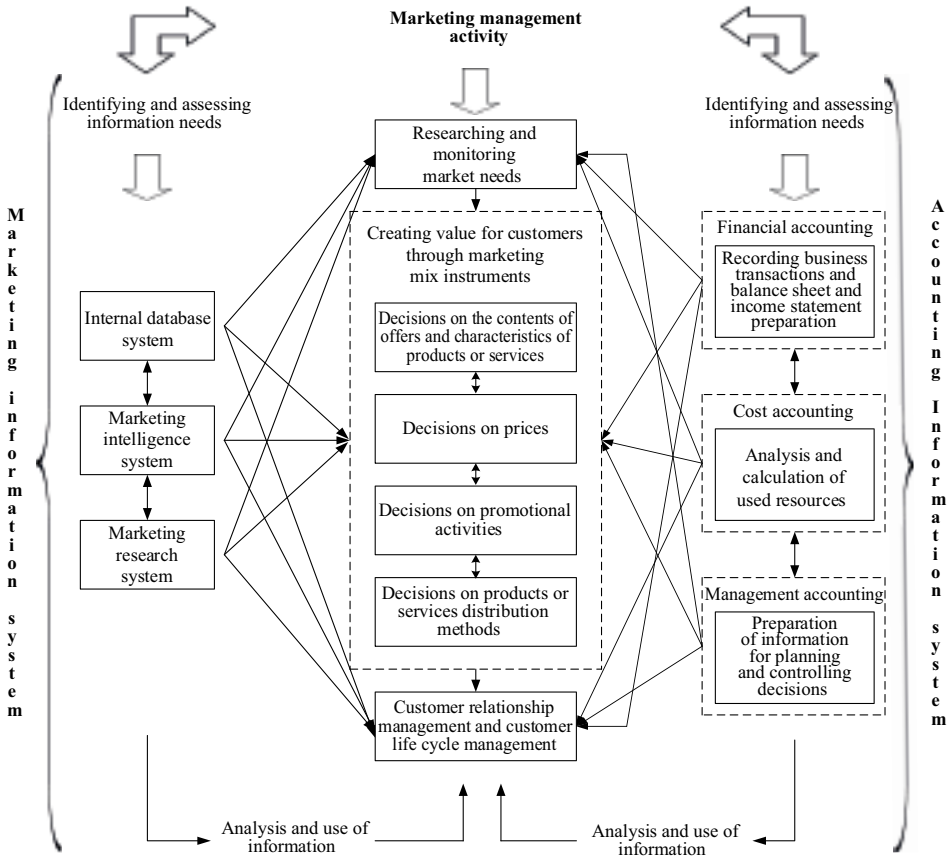


Figure 5: Model of management - marketing activities dependence on the support of marketing and accounting information systems

Source: Authors' creation

3.2. Mutual dependence of marketing and accounting information systems

If the common characteristic of the analyzed or any information system is that in the first phase the data are collected, in the second phase their processing and analysis is done, and in the third phase the decision is made and their effects are monitored, the mutual dependence of the two analyzed information systems can be represented by their basic characteristics. In the data collection phase, the common characteristics of both systems are identified from the position of their relevance, credibility and authenticity of their sources, as well as in terms of their classification. In the phase of data processing and analysis, it is important to identify the usability of the instruments used to prepare information, while in

the third phase, the effects of applied decisions are selected and measured, from the point of view of resource efficiency.

In the segment related to research and monitoring of market demands, in terms of marketing it is crucial to obtain reliable and accurate data on the volume and types of demand, and how this demand is segmented, all related to products or services that the company offers or can offer to the market. Obtaining such data implies the occurrence of costs, which, in accordance with the usual accounting tasks, will have to be identified, measured and about which the appropriate planning and control decisions will have to be made. Examples of such decisions are decisions about which markets the research on demand will be conducted on, what is specifically researched, what is the scope of that research (sample size), how the research will be conducted and how long it will last, which also assumes accounting support. A particular challenge for accounting activities is reflected in the need to allocate such costs and the ways in which they will be contrasted with revenues. As for the accounting instruments to be used for these purposes, they are mainly related to the activity based costing and the need to adjust analytical records in order to apply this calculation concept.

In the segment of creating value for customers through the marketing mix instruments, the marketing information system should provide an answer to identified consumer attitudes, in terms of answering the question of which package of characteristics a product or a service should contain, at what price it should be offered, which promotional instruments should be presented to customers, and through which channels of distribution they should be delivered. In this segment, the need for cooperation with the accounting function is most strongly expressed.

The accounting function can offer an analysis of required and available resources, budgeted calculations regarding the expected financial and non-financial consequences of decisions on the content of individual options for all elements of the marketing mix, measuring the effects of selected and applied decisions, and recommendations for certain corrective actions after their implementation. Regarding the calculation needs, the accounting function can offer advanced instruments that are adapted to changed market assumptions and the effort to meet customer needs according to their desires in terms of quality, time and innovative content and all at reasonable costs i.e. selling price. Among these instruments, the following are already commonly used: Feature costing, Target costing, Life-Cycle costing and others. In addition to these general instruments that will enable efficient cost management and cost calculation, the accounting

function is expected to identify relevant cost and revenues by available options of resource usage.

In the segment related to customer relationship management and customer lifecycle management, it is crucial that the marketing information system identifies the length of cooperation with a particular customer, and that the accounting system identifies profitability by customers and distribution channels within that time period.

In order to present the interdependence of two analyzed information systems, it is possible to use the model presented in Figure 6, and enable the identification of the intertwining tasks of these systems, an approach based on which their general tasks are presented by some common activities.

4. DISCUSSIONS AND CONCLUSIONS

The analysis is presented and solutions are offered in terms of identifying the model which would formalize the abilities and importance of connecting two key information systems within the company, aimed to indicate the need for “cooperation” of analyzed functional areas. In that sense, the expectations and understanding of the mutual relations perspectives of two key information systems in a company are especially interesting. Namely, the contemporary business conditions, regarding information systems, are defined by the following characteristics:

(1) Changeable environment, in a sense of:

- demand, especially from the perspective of continuous pressure on having innovative content,
- supply, especially from the perspective of continuous progress of production technologies and resources used, and
- shortening the lifespan of a product or a service, as a consequence of both previous characteristics,

which will cause the need for the management process to continuously adapt to the changing environment and consequently to changes in the products or services offered. Such characteristic of a management process will mean that the information grounds which decision-making is based on will also change. About all, it is said that “the major responsibility for identifying significant marketplace changes falls to the company’s marketers. More than any other group in the company, they must be the trend trackers and opportunity seekers” (Kotler & Keller, 2012, p. 67).

(2) The need to provide information more quickly, by:

- reducing the time for obtaining relevant information - information systems that support the previously described form of management should be based on the concept that will enable reduction of time for preparing the information for business decisions;
- integrating the phase of preparing the information for business decision-making and the phase of decision-making. Even earlier, some authors questioned the classic system of preparing accounting information for business decision-making, stating that “a conventional assumption in management accounting systems design thinking is that managers think and consider information prior to making decisions and taking action” and that, in contemporary business conditions, “action is subsumed within assessments of information” (Bhimani & Bromwich, 2010, p. 105). Although the above statement refers to the management part of the accounting information system, the same principle can be applied to the marketing information system. There are well-known examples of “rush” in the business decision-making, especially in the electronics and automotive businesses. The thesis promoted in the cited work is that in a highly changeable environment, the goals of business activity change during the implementation of planned activities so fast that previously used decision-making concept can only be replaced by simultaneous preparation of information and its use during the business decision-making process;
- using databases - in the future, information systems will be based on data sets, which will be integral in nature and will not be owned by the individual organizational unit that will collect data on request, after the need for decision has occurred. Simply put, the instability of the business environment causes a lack of time to prepare detailed analyzes in advance, so it is expected that business decision-making in the future will be more based on instant and current information created from existing databases. In this way, a proactive approach of the accounting function to the needs of decision makers could be provided as well as the advisory role of accountants to different users of financial statements promoted (IFAC Information Paper, 2010, p. 13);
- automation of data collection and processing (digitalization) - automation of data collection and processing is inevitable in the future, so in addition to operational knowledge on conducting the business, the ability to efficiently use digitally created databases will certainly become of key importance.

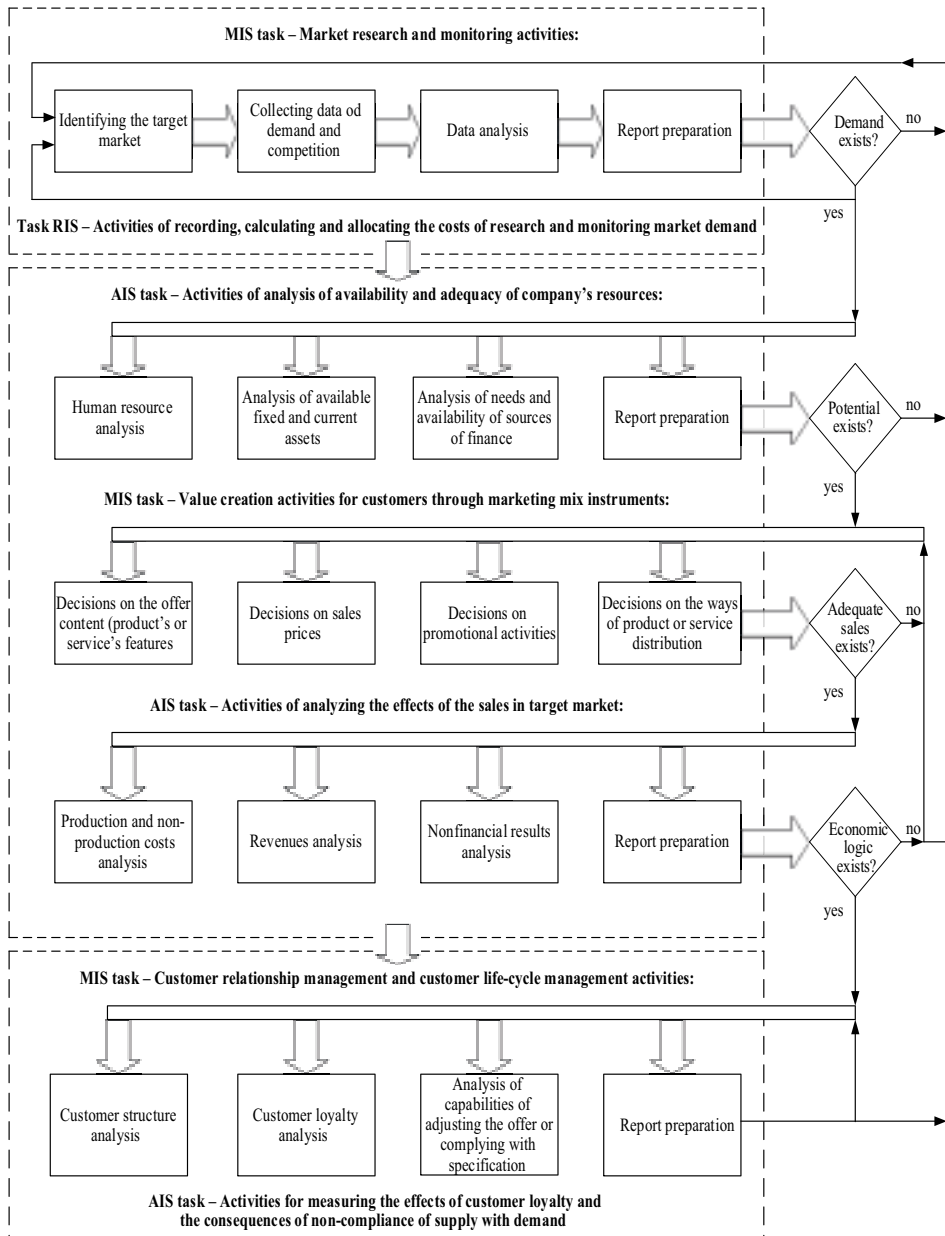


Figure 6: Model of interdependence of marketing information system and accounting information system

Source: Authors' creation

- (3) shifting the cost structure towards overhead costs - in addition to the fact that relevant information will gain in importance, their acquisition will also affect the amount of costs necessary for such information databases to be formed and maintained. Given that these are costs that have an indirect character in relation to cost objects (overhead costs), the issue of their allocation will become more important.
- (4) changing the importance of performance indicators - since customer satisfaction is defined as the primary performance indicator, marketing metrics and accounting performance measurement will be adapted to such concept of business performance (for example, measuring profitability by customers and distribution channels will be dominant over the profitability of products or services).
- (5) finally, the importance of real evaluation of information obtained from these sources should be emphasized, considering that this knowledge is not common, neither in theory nor in practice.

Expectations in terms of creating an integrated model of information support to management are a natural aspiration of people who deal with information systems and make decisions based on the results of such systems. Great expectations, in this regard, are based on the growing role of information technology that will certainly enable automation of data collection, classification and processing, and their easy retrieval and distribution. Nevertheless, the creative role of those involved in identifying relevant information for specific needs will gain importance, with the inevitable growth of competition within the growing market globalization.

Accordingly, the change of tasks and content will be especially visible within the company's information systems, especially in the marketing and accounting information system. Therefore, it is important to identify opportunities to learn about common interests through their adequate connection and avoid certain overlaps in the activities performed, which was done in the paper, with the proposed model of their mutual interdependence.

If the logic of the proposed model is accepted in a sense that the predetermined hypothesis is validated, then the future research could examine several interesting questions, such as: to what extent managerial decisions are based on systematically combined information system, to what extent marketing and accounting activities are correlated nowadays, if this correlation is significantly influenced by availability of financial means, etc.

Conflict of interests

The authors declare there is no conflict of interest.

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МОДЕЛИРАЊЕ МЕЋУСОБНЕ УСЛОВЉЕНОСТИ МАРКЕТИНШКОГ И РАЧУНОВОДСТВЕНОГ ИНФОРМАЦИОНОГ СИСТЕМА

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САЖЕТАК

Овим истраживањем представљен је модел међусобне зависности активности маркетиншког и рачуноводственог информационог система, с циљем њиховог усаглашавања приликом идентификовања активности на бази којих се остварују циљеви информационе подршке извршавању менаџерских задатака. Недостатак настојања да се овакви модели креирају у прошлости може бити образложен тежњом да се појединачни информациони системи представе као интегрални и довољни за управљачке потребе. Ипак, нарастајућа информациона зависност менаџерске структуре у оквиру предузећа подразумијеваће и ефикасније начине да им се релевантна информација и извјештаји доставе. Предложени модел је заснован на општем концепту управљања према којем се, у савременим условима пословања, обављају три опште групе активности: истраживање и праћење захтјева тржишта, креирање вриједности за купце на основу које се задовољавају претходно идентификоване потребе и управљање односима са купцима и животним циклусом купца. На бази овако груписаних управљачких задатака идентификоване су маркетиншке и рачуноводствене активности и њихова међусобна условљеност, која је унифицирана кроз предложени модел.

Кључне ријечи: *маркетиншки информациони систем, рачуноводствени информациони систем, модел међусобне условљености маркетиншког и рачуноводственог информационог система*