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### **Impact of Accounting Information Systems on Decision Making Case of Bosnia and Herzegovina**

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#### **Abstract**

In the market economy, the way in which company is managed and developed is extremely important, because every wrong or misleading decision comes at a high price. Therefore each decision that management brings should be based on precise, qualitative, timely and unambiguous information. In order to serve its purpose, after information are collected they are processed, classified and stored within the company. For effective and efficient information processing it is necessary to have an integrated set of components, called an information system. Undoubtedly, significant role in information processing for effective decision making, belongs to accounting information system. Therefore, the purpose of the study is to analyze the situation in Bosnia and Herzegovina related to the use and adoption of accounting information system and it's impact on decision making process. Questionnaire distributed to the business organizations and interviews with the managers, as a data collection method, will be used. Statistical and graphical methods will be used to demonstrate findings.

**Keywords:** information systems, accounting information, accounting information systems, decision making, business organization, Bosnia and Herzegovina.

#### **Introduction**

Managing the company is the process of conducting business operations toward achieving short term and long term objectives, in line with the overall company's objective which is to ensure the company's existence in the constantly changing market environment.

In the market economy, the way in which company is managed and developed is extremely important, because every wrong or misleading decision comes at a high price. Therefore each decision that management brings should be based on precise, qualitative, timely and unambiguous

information. The term information can be defined in a number of ways. In this case, the most appropriate definition of information would be: powerful and indispensable resource without which the company is unable to accomplish growth and development objectives. The existence of successful and efficient management of the company is inconceivable without adequate information, having in mind that we live in a era of high information technology expansion and when the communication as a modern tool of information exchange is highly developed. For a company, on a daily basis different kinds of information are needed: information from the field of finance and accounting, quantitative and qualitative, technical and technological information, and many other business and non-business information. In order to serve its purpose, after information are collected they are processed, classified and stored within the company. For effective and efficient information processing it is necessary to have an integrated set of components, called an information system.

Business information system is composed of several subsystems: management information system, accounting information system, marketing information system, human resource information system and others. Undoubtedly, significant role in information processing for effective decision making, belongs to accounting information system. Accounting information system that collects and processes data from the area of accounting planning, business transactions recording, controlling and analyzing should generate valid, timely and qualitative information. Qualitative financial information should be: comprehensible, comparable, relevant and reliable. Information published in the form of financial statements should be understandable to the end users – various interest groups.

### **Accounting Information**

According to the Ovidia (2013), economic information sources are:

- Economic planning – provides information about business planning and business forecasting data, what makes 28% of total economic information
- Economic database – provides effective information data, what makes 70% of the total economic information, disseminated as follows:
  - 46-50% of accounting information provided by accounting department
  - 9-13% of economic-social statistics information
  - 11% of active database information
  - 2% of other information sources.

Every private or public organization, whether profit-making or non-profit making oriented, small or large scale, requires and uses accounting information to bring decisions, and needs for information vary depending on what each information user demands (Nicolas & Mchugh, 2009).

Accounting as a discipline is concerned with collection, analysis and communication of financial information. This information is valuable to those who make business decisions and plans and also to those who control the businesses. For example, business managers may need accounting information in the following cases: new product or service development, increase or decrease in price or quantity of existing product or service, borrowing money for the purpose of helping to finance the business, increase or decrease business operating capacity, make a changes in purchasing, production or distribution methods.

Also, there are others outside the business, who may require accounting information for the purpose of following: to make an investment in the particular business, to make lending decision (whether to lend money or not), to make an offer for credit facilities, to enter into contracts regarding purchase of products or services (McLaney & Atrill, 2010)

### **Characteristics of Accounting Information**

To satisfy the user's need, accounting information should possess certain key qualities. According to the McLaney and Atrill (2010), those qualities or characteristics of good information should be: relevance, reliability, comparability and understandability.

**Relevance** – Accounting information needs to possess capacity to influence decisions. Without this characteristic, there is no purpose of producing information. The accounting information may be relevant for forecasting of future events or it may be relevant for confirmation of past events. The role that accounting information has in past events confirmation is significant,

because users often want to analyze the accuracy of past forecasts that they have made, what may have impact on accuracy of current decisions.

**Reliability** – Accounting information should not be restricted neither by substantial error nor bias. It should demonstrate and represent what is supposed to demonstrate and represent. Accounting reliability refers to whether financial information can be tested and used constantly by investors and creditors with the same outcomes. Essentially, reliability refers to the financial statements trustworthiness.

**Comparability** – If accounting information possesses this characteristic, it will allow users to detect changes in business over time. Also, it will assist them in evaluation of business performance compared to the other similar businesses. Comparability is attained if the same items are treated in the same manner for certain accounting purposes. Comparability may be improved by clarifying the policies that have already been adopted in evaluating and communicating the information.

**Understandability** – Accounting information should be presented in a way that a reader can understand it. It is assumed that a reader has a reasonable knowledge of business, but does not require advanced business knowledge. For information to be understandable it should be represented in a complete, concise, clear and organized way.

Bassam (2006) states that accounting information should possess following characteristics: appropriateness, credibility, accuracy, timing, understanding and absorption, importance and fulfillment.

### Users of Accounting Information

Company necessarily operate in an environment where it interacts with number of interest parties and influential forces, which can be called by one name – *the stakeholders*. Internal and external stakeholders are individual or groups within and outside of the company that have an interest, claim or stake in the company and are very interested in the business performance and operating results of the company.

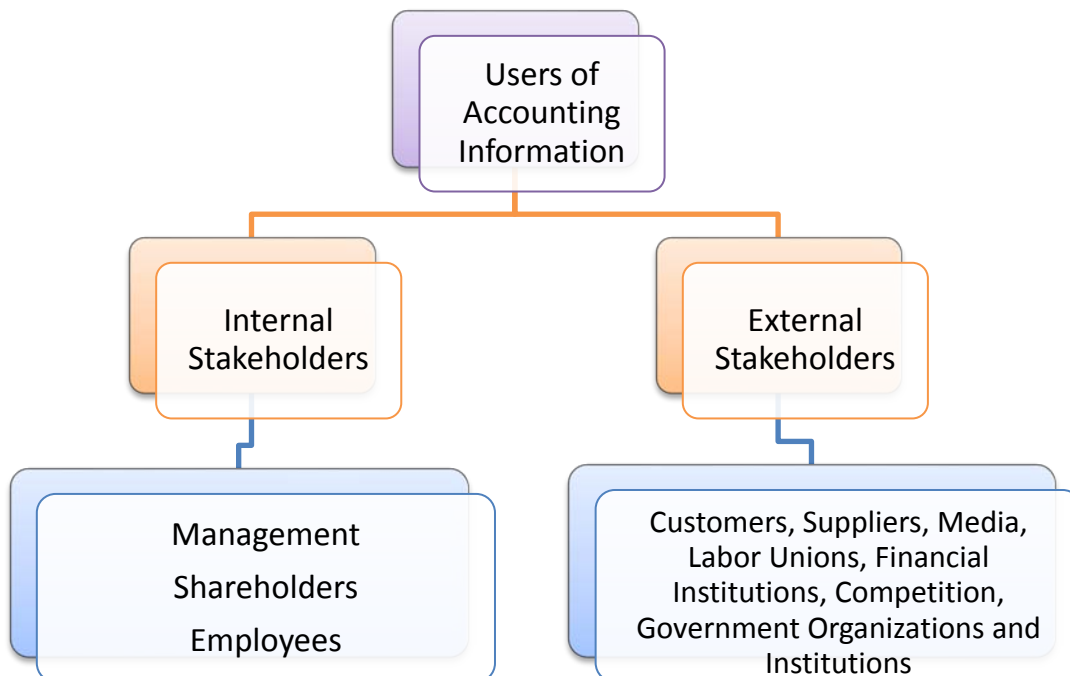


Figure 1: Users of Accounting Information  
Source: Created by author.

Internal stakeholders consist of: management, shareholders and employees. This group of stakeholders by investing their resources in the company (capital, skills, knowledge, time) expect

the fulfillment of their personal expectations. Owners of the capital – *shareholders* expect an adequate return on their invested funds. They are interested in information that provide an insight into company's operations and investment secureness. Also, shareholders are interested in profit amount, earning per share or the dividend amount, manager's capability to successfully run a company, etc. On the basis of those information, shareholders decide to maintain, increase or decrease their capital in particular company. *Management* by contributing to the company by their knowledge, skills and time expects to achieve excellent retruns on company's investment, demonstrated through high profit, high retrun on equity ratio, high return on assests ratio, etc. *Employees* contribute to the company by providing necessary human resources and skills, and expect from the company satisfactory compensation, good working conditions and job security so they are interested in the information regarding their compensation and job security (Đogić, 2009).

External stakeholders are: customers, suppliers, media, labor unions, financial institutions, competition, government institutions and organizations. External stakeholders influence company's activities in several ways, depending on their role, place and degree of significance that they have in the process of input, transformation, and output. *Customers* buying the company's product or service expect that it will satisfy their needs and wants. They are interested in the quality of the product or service and supply continuity. *Suppliers* provide raw materials necessary for the process of production. Raw materials availability and conditions for their procurement are very important, and very often are critical point for accomplishing company's overall objective. Apart from consideration bargaining power of suppliers, the other ways of providing resoruces should be analyzed. For example, appropriate analysis of alternatives: buy versus produce, buy versus rent, orientation to the external market, entering into strategic business alliances, etc. When deciding whether to cooperate with the particular company, suppliers are interested in liquidity and overall solvency of the company. *Competitors* – as the company operates in the environment characterized by constant threat of current and future competitors, it is logical that the strenghts and weaknesses of the company must be frequently analyzed and compared to that of competitors. Also, the company must not overlook the emergence of new competitors. *Government and government organizations* are one of the most important external stakeholders which through laws, decrees and regulations influence businesses and restrict free actions. State most directly can intervene with the companies or organizations that perform activities that are of public interest (post, telephone, railway, electricity, water, forestry, transportation, etc.). In some cases, above mentioned companies or organizations are nationalized by the government or regulated by law, government possesses majority voting right in decision-making. *Financial institutions* – since businesses depends on the capital markets, it is necessary to examine the network of commercial and investment banks, insurance companies and other institutions that provide funds for financing economic activities. From the other side, those financial institutions, in order to approve funds need to have information regarding company's solvency and liquidity.

Due to different interest groups or stakeholders, the management of the company has the obligation to interpret accounting information, and if necessary complete it with various non-financial indicators (Đogić, 2009).

Information necessary for management decision-making can be obtained from various sources, and in this context, usually there is classification on internal sources of information (accounting records) and external data soruces (statistical offices or agencies, trade associations, etc.). Regardless form which source is obtained, data is processed in management information system of the company. Well-organized management information system of the company should be capable, at any moment, to answer on the following questions: what information is needed, when the information is needed, who needs it, where is needed, why is needed, and how much it costs (5W and 1H) (Mittra, 1986).

The most important part of the management information system is the one that is concerned with financial data processing – accounting information system. Accounting information system usually includes four basic subsystems:

- Subsystem concerned with daily business transactions recording with focus on routine decision making.
- Subsystem related to the general ledger and financial reporting that produces traditional financial statements, such as balance sheet, income statement, cash flow statement, and other reports prescribed by the law.
- Subsystem for fixed assets and capital investments that processes transactions related to fixed assets.
- Subsystem concerned with preparing reports for different levels of management.

According to the above mentioned, it can be concluded that accounting information system provides support for different management levels in their decision making process and daily performance (Đogić, 2009). In contemporary conditions, accounting information system is a part of computer based information system and usually consist of four applications: data collection, data processing, data base management, and information generation (Hali, 1995).

### **Characteristics of Accounting Information System**

The basic characteristics of AIS, on the basis of business transactions recording, are: to provide stakeholders with adequate and timely information for decision making and for the purpose of business planning, and to provide as much information as necessary to analyze past events, since analysis of past events is essential for future company's decisions and operations. Till this point in time, in Bosnia there is no adopted legislation that would lay down basic characteristics or essential features that producers of AIS should comply with. In Serbia, Association of Accountants and Auditors passed and adopted the Standard ASS 33 (accounting software standard) that regulates the area of accounting software, or AIS area. According to the Standard ASS 33, the main characteristics of AIS are: functionality, reliability, usability, efficiency, maintainability and portability.

**Functionality** is the ability of each component of AIS to complete its task as quickly and simply as possible, so that the entire AIS meets the users's requirements, and at the same time interacts with the other business software packages. The use of AIS that possesses this characteristic increases efficiency and profitability of the company.

**Reliability** is the ability of AIS to meet the demands of the users at any time and to provide reliable information on the user's request.

**Usability** is AIS's ability to be adapted to the user, so that he can use it in a daily's business activities without major difficulties.

**Efficiency** is the AIS's ability to respond on the requests under certain conditions and in accordance with the available resources at a given moment.

**Maintainability** is the AIS's ability to be adaptable to new situations, such as legislative changes or the request for change and adaption by the user.

**Portability** is the AIS's ability to be transmitted from one business environment to the another. Also, portability implies ability to easily replace computer equipment with new or contemporary one, and ease of software maintenance (Glogić, 2014).

### **Decision Making on the Basis of Accounting Information System**

Business information system, as a very complex system can be divided into three subsystems: executive subsystem, information subsystem and management subsystem. Information subsystem acts as a liaison between executive and management subsystem, and it's task is to provide timely information to executive and management subsystem for the purpose of decision-making. Information subsystem, according to the accounting role and task, are divided into accounting and non-accounting information subsystems. It is important to note that these subsystems do not exist as a separate units, but often are integrated in the overlapping responsibility areas.

Strategic management often needs diverse and concise information in the process of decision making. The decisions brought by strategic management are often future-oriented and therefore those decisions carry high level of risk in relation to the final outcomes. Tactical level of management requires more detailed information than strategical management, and for shorter period of time.

Operational level of management usually requires analytical data for information that are made on a daily basis.

For the purpose of conducting business operations, company's management is dependent on the accounting information systems. A number of financial reports containing different information are necessary to the managers on all levels. These financial reports can be presented in different time periods, in different ways and for different management and decision-making phases.

In order to adequately respond on management's requests, AIS must be organized as an active and creative system. With its pro-active solutions, the accounting manager should need to review, direct and improve the information requests of management. In that way, the strength of AIS will be improved and the adoption of business and financial decision will be easily facilitated.

The specific relation between supply function, as a business function of executive subsystem, with the AIS is demonstrated through its communication necessity. For example, the supply function receives information from financial, analytical and management accounting, and in the same time gives information to the AIS, which the system processes and makes available to the interested parties. If there is a high degree of communication and connection, the company will be able to adequately face challenges and accomplish desired objectives (Knežević, Stanković, & Tepavac, 2012).

### **The Role of Financial Statements in Decision Making Process**

The role of financial statements is to provide information to the wide range of users/stakeholders related to the performance, financial position and changes in financial position of the company, which they need for decision making. Financial statements also provide valuable information related to the management's capability to operate with the resources that owners entrusted to them. To inform stakeholders means to present accounting information in recognizable form with an understandable content to those for which financial statements are intended for. The most important financial statements that are taken in consideration when evaluating company's performance and that serves as a basis for decision making are: balance sheet, income statement, cash flow statement and statement of retained earnings.

**Balance Sheet** – a systematic overview of the company's assets, liabilities, and capital on a particular date. It shows the financial position of the company and is used to assess the safety of business operations. Determinants of the financial position of the company are:

- Efficient use of the resources and its adoption to the company's interests. Based on this, it can be concluded whether the company in the next period will be able to efficiently use the resources and will it be able to generate cash and cash equivalents.

- Financial structure of the company based on which sources of the financing in the future can be predicted and possibility of liabilities settlement to the capital owners, creditors, suppliers and others.

- Liquidity and solvency of the company – ability of settling obligations in accordance with maturity date, where liquidity is related to the short-term, and solvency to the long-term.

- Ability to adapt to the changes in the environment – whether the company is able to use resources in the optimal and efficient way and its adoption to the company's interests in changed conditions.

**Income Statement** – it shows revenues, expenses and financial result of the company for certain time period. Financial result is an indicator of business success which is usually defined as the ability to achieve certain objectives. The most common objective is profitability.

**Cash Flow Statement** – it shows cash sources and expenditures; all cash inflows and outflows and net changes in the cash, as a consequence of operational, financial, and investment activities. This statement, in interaction with other financial statement, gives the real picture of the financial health of the company.

**Statement of Retained Earnings** – it shows equity structure and any changes that have occurred in equity during the accounting period. Retained earnings or profit makes a part of company's capital. The amount of retained earnings is increased with the increases in net-profit, and is decreased for the amount of net-loss and paid dividends.

All of the aforementioned financial statements are mutually related because they reflect different aspects of the same transactions. Complete picture of the financial position and business success of the company can be obtained only by comparative reading and analyzing of data and information from all financial statements. And for this kind of information we can say that are complete and reliable (Đogić, 2009).

### **Methodology**

The main objective of the study was to analyze the situation in Bosnia and Herzegovina related to the use of accounting information systems and its impact on decision making process.

For the purpose of this article, two methods of data collection are used: questionnaires and interviews. Questionnaire is distributed to the 70 companies located in Bosnia and Herzegovina, mainly located in Sarajevo Canton and Zenica-Doboj Canton. Interview is done with the leading software producer „Datalab“ in Bosnia and Herzegovina, as well as in the region.

Descriptive statistics will be used to demonstrate findings, which are result of the conducted research.

### **Empirical Findings**

The interview is done with the Direct Solutions Sales Manager in Datalab company. Datalab company is headquartered in Slovenia, and it has seven branches located in: Bosnia and Herzegovina, Serbia, Croatia, Montenegro, Macedonia, Albania and Bulgaria. Datalab company is one of the leading ERP system providers as in Bosnia and Herzegovina, as well in the region. Its business operating system „PANTHEON“ is designed for small and medium enterprises that have a need for comprehensive business information system. In Bosnia and Herzegovina there is around 4000 Pantheon users and 42000 in the region.

Pantheon's user interface allows the user quick access to the relevant data, making the work faster and more efficient, while the manual data entry is reduced to the minimum extent, what reduces the possibility of errors.

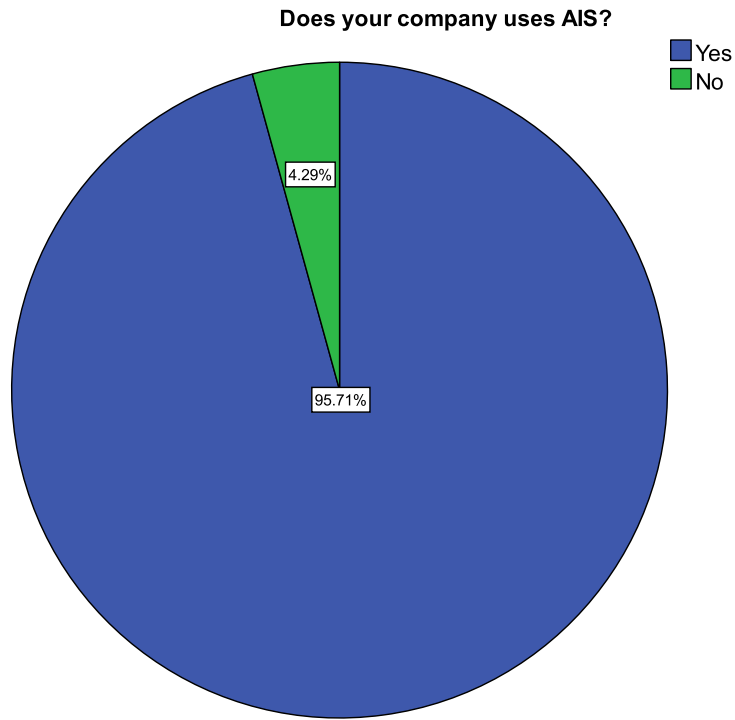
Pantheon supports all business processes, from merchandise management, accounting and finance to human resources, salaries, and has additional options for international businesses, and it provides business analytics for leading personnel.

Through this information system, it is possible to provide huge support to supply function. It combines receiving and issuing of invoices, warehouse transfers, material accounting, and inventory tracking. The system is designed in a way that it can provide support to complex and demanding merchandising or manufacturing company. It is an ideal tool for engineering companies and for companies that use ABC (activity-based costing) system. The system makes possible to periodically bill the clients and also it follows VAT records.

Pantheon accounting provides support to general ledger and enables automatic and manual transactions recording. Mainly bookkeeping is done according to the pre-defined templates. Subsidiary accounting ledgers are completely integrated into general ledger, without duplicate data entry. This program also includes basic chart of accounts, that can be supplemented and changed. In addition to the pre-prepared reports/financial statements, the new statements can be prepared for different departments, periods, cost objects, and comparisons of the periods can be done in domestic and foreign currency.

### **Questionnaire Results**

Out of 70 companies, 67 of them answered that they use accounting information system for the conduction of business operations.



Two out of three companies that do not use AIS in their business operations said that main reason why they do not use AIS is there is no need for AIS in the company, and one company answered that the reason for AIS non-use is high cost of purchasing and implementation of AIS.

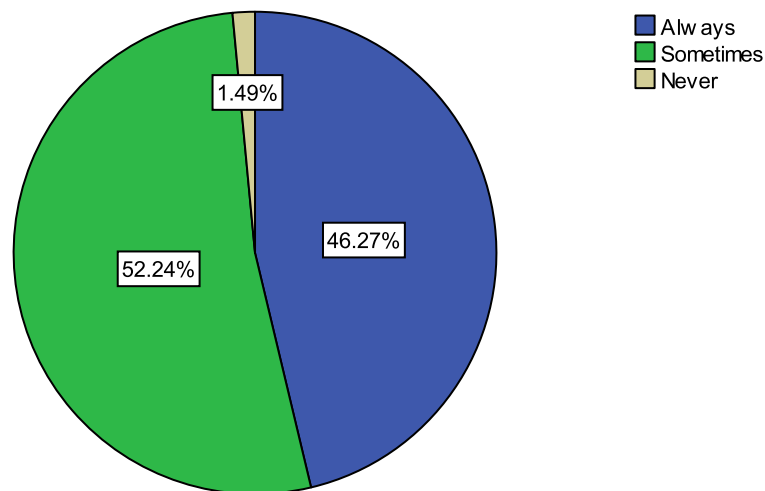
Related to the accounting information system's impact on decision making, the companies had three provided answers: always, sometimes and never.

Table 1: Does the company brings decisions based on AIS?

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Always	31	46.3	46.3	46.3
Sometimes	35	52.2	52.2	98.5
Never	1	1.5	1.5	100.0
Total	67	100.0	100.0	



### Your company brings decisions based on AIS?



Out of 67 companies that confirmed that they use accounting information system, 31 always use AIS as a basis for decision making. 35 companies sometimes use AIS for decision making. However, during collection of surveys, the surveyed persons usually said that the answer that would be more suitable here is *often*, instead of *sometimes*. Just one company, according to the survey does not use AIS in decision making process.

#### Discussion and Conclusion

The purpose of this study was, through literature review, to demonstrate the role of accounting information systems in decision making process of the business organizations. And to present the current situation in Bosnia and Herzegovina related to the use and adoption of accounting information systems.

On the basis of reviewed literature and findings of the study, it can be concluded that accounting information systems play a very significant role in the process of decision making. Especially today, when technology is constantly developing and offering new solutions with the purpose to ease and improve people's lives.

Concretely, when it comes to the Bosnia and Herzegovina and use of AIS, the findings showed that companies are recognizing more and more the need for implementation of appropriate business software that will improve its business operations and in that way increase company's profitability. The responded questionnaires demonstrated that business decision making is not possible without taking into account information provided by AIS.

However, there are many things to be done in this area. Firstly, companies should invest more in the education of its staff, starting from the employees engaged in the process of production to the top managers, related to the all benefits that implementation of business software, or information system, brings with itself. Adequate trainings should be provided to the staff of the company.

In addition, government has a responsibility to support businesses, through adoption of laws, policies and guidelines that will facilitate implementation of business softwers (information systems).

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