

ENVIRONMENTAL ACCOUNTING - AN IMPORTANT PART OF AN INFORMATION SYSTEM IN THE CONDITIONS WHEN THE COMPANY APPROACH TO THE ENVIRONMENT INFLUENCES ITS PROSPERITY

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The company approach to the environment may be unambiguously regarded as a factor which, in the present conditions, influences prosperity of the company. The aim of the paper is to define the system of environmental accounting as an important source of information supporting decision-making processes in these conditions. Attention is paid to information needs of the individual users of the system of environmental accounting, resulting in further structuring of the system. In the conclusion, factors which significantly influence the system of environmental accounting are specified.

Key words: sustainable development, economic-environmental efficiency, environmental accounting, environmental information

Introduction

From the long-time perspective, business where transformation processes are not accompanied by processes of adding value, i.e. where these processes do not bring certain economic effect to the entrepreneur, is not sustainable. Similarly, business without knowing and respecting needs of the customers is not sustainable. Although business is, unambiguously, connected with economic factors, it is not possible to prefer solely economic aspects in the business. Also other aspects must be taken into consideration within the framework of strategic management, as well as in everyday activities and on all levels of management [1]. According to J. Veber, these aspects are as follows:

- qualitative aspects (relating both to the quality of the output of the business activity and accompanying services itself, as well as to the quality of all company processes);
- time aspects (relating to meeting the set terms and seeking to reduce the time in practically all business activities); as well as
- other aspects, which are usually regulated by laws and regulations, or are considered by the company voluntarily (i.e. exceed the scope of the regulations), for example **environmental aspects**, aspects of public health and safety etc.

The task of the company management is to aim at finding the factors that will result in success, perfection, and prosperity of the company. In the present situation, protection of the environment represents a highly relevant topic. This is true, especially, for the following reasons:

- Negative environmental impacts are connected with the activity of each entity - the company activities, products and services cause changes of the environment.
- In connection with the company activities, natural resources are consumed, and waste flows are released into the environment. At the same time, higher and higher accent is put on sustainable use of resources, waste management, and enforcing the „polluter-must-pay“ principle, within the framework of international activities, as well as within the framework of state environmental policy.
- In the latest years, attention to the environmental behaviour of the company is paid by many interested parties (not only by state institutions, but also by the public and business partners).

It means that adverse impacts of the company activities, products and services on the environment may significantly endanger its existence, prosperity, and may even result in its liquidation. Attention paid to technical, safety and environmental requirements is „rewarding“ for the company. Sound approach to the environment may represent a significant competitive advantage (for example, Veber et al. [1]).

Integrated management is considered to be an important tool of the company on its way to prosperity (for example, Veber et al. [1]). According to J. Veber, basic recommendations concerning prosperity of companies may be seen in two main factors:

- It is necessary to ensure proper operating practice of the company, in order to ensure parity of its operating basis with similar (comparative, competitive) entities. This should be done in all basic fields (i.e., in economic parameters, quality, as well as time availability in relation to supplied products or services).

- It is necessary to find out and utilise the factors which represent a competitive advantage for the company.

In a number of companies, it is purposeful to address also **environmental aspects** in both these factors.

Within the framework of the first item, it is necessary to set the operating basis in the way that the operation will be sufficiently economical, and, therefore, it will be possible to adapt to the price level of comparable products, and, at the same time, to guarantee the requested quality, as well as comparable time dimension concerning flexibility, response to requirements of the customers etc. This is a permanent process. Companies concentrate its efforts on cost reduction, and on increase of performance of the company. In a number of sectors, **costs spent in connection with environmental protection or as a consequence of damaging the environment** count among significant elements of cost. A highly important method of cost reduction and increase of efficiency of company processes is **management of material and energy flows, as well as waste flows of all physical states**. Attention should be paid also to the **utilization of materials and energy**. Operating changes often cause significant investments into new technologies. In connection with investment projects, it is always sensible to consider **impacts of the projects on the environment**¹.

Within the framework of the second item, it is necessary to find out and utilise the factors which represent a competitive advantage for the company. Therefore, strategic management activities must exist in the company, pro-innovation climate must be set, and principle of continual improvement must be an integral part of the company management. In view of growing importance of the environmental protection, also the company approach to the environment may become a source of a competitive advantage in the latest years. It means that issues of the environmental protection are becoming an integral part of the company strategy and management on the tactical and operational levels - companies implement so-called **environmental management systems**. Many companies invest considerable means into research and development activities whose priority aim is environmental protection (for example, development of environmentally sound processes and products).

On the basis of the information stated above, **the company approach to the environment may be unambiguously regarded as a factor which, in the present conditions, influences prosperity of the company**. The aim of the paper is to define the system of environmental accounting as an important source of information supporting decision-making processes in these conditions. Attention is paid to information needs of the individual users of the system of environmental accounting, resulting in further structuring of the system. In the conclusion, factors which significantly influence the system of environmental accounting are specified. The paper is based on available sources of scientific literature, and analyses the individual approaches to the system.

1. Conception of eco-efficiency on the level of the company

Incorporation of the sustainable development principle into the company practice may significantly promote the improvement in the field of economic-environmental efficiency (eco-efficiency). The concept of eco-efficiency was, for the first time, discussed in scientific literature in the beginning of 1990s [2]. Awareness of this concept spread thanks to the organisation Business Council for Sustainable Development (BCSD)², and a scientific publication presented on the summit in Rio in 1992 [3; 4]. Eco-efficiency may be analysed on global, regional, as well as company levels.

The basic idea of eco-efficiency was defined by BCSD [3]:

Eco-efficiency may be achieved by supplying such products, goods and services which will be competitive, satisfy human needs and increase quality of life, with gradual reduce (mitigation) of environmental impacts and with consumption of resources within the framework of the whole life cycle which will be at least on the level of the estimated carrying capacity of the Earth.

Organisation for Economic Co-operation and Development (OECD) states that eco-efficiency reflects the efficiency of utilisation of natural resources to filling human needs. It may be defined as a relation between outputs and inputs: the outputs represent the value of products or services produced by the company,

¹ In the Czech Republic, Act No. 244/1992 Coll. on environmental impact assessment (in the wording of subsequent legal regulations) regulates assessment of impacts of projected buildings (or, optionally, their changes and changes in their use), activities, technologies, development policies and programmes, and products on the environment, and defines state administration bodies competent to assess these impacts.

On January 1, 2003, Act No. 76/2002 Coll. on integrated pollution prevention and control, on integrated pollution register, and on change of certain acts, entered into force in the Czech Republic. Within the framework of this Act, there is defined scope of facilities in the case of which their operators must obtain an integrated permit for their operation. These are facilities from the sectors of energy production, metallurgy, use of mineral resources, chemical productions, waste treatment, pig and chicken factory farms, food industry and other industries.

² Since 1995, the name of this organisation is World Business Council for Sustainable Development (WBCSD).

sector, or the whole industry; the inputs represent the sum of environmental pressures generated by the company, sector, or the whole industry [5].

From the above-mentioned approaches, it is obvious that eco-efficiency evaluates relations between outputs of a given process and its inputs. A higher eco-efficiency (of a process, product or company) may be achieved either by increasing outputs (effects) from the inputs (resources) allocated to realisation, or by obtaining the requested outputs (effects) with a minimum consumption of inputs (resources). Considering the fact that the aim of economic behaviour is to manage „scarcity“ (problems), so that the process proceeded in the best possible way, it is necessary to fill information needs of the management so that its efforts could concentrate on achieving the required results.

If the company aims at significant improvement of eco-efficiency (i.e., at implementation of measures for environmental protection), then it will be possible to achieve considerable benefits both in the field of economic performance of the company, and in the field of improving its environmental performance. Slower improvement of eco-efficiency may bring either improvement of economic situation of the company at the expense of worsening its environmental performance, or improvement of its environmental performance achieved at the expense of worsening economic performance.

Company strategy concentrating on significant improvement of eco-efficiency is designated as a **win-win strategy** - it means considerable improvement both of economic situation of the company, and of its environmental performance [6]. At present, the process of integration of environmental aspects into business approaches is still in progress, and new strategies are developed which can contribute to improvement of eco-efficiency [7].

The conception of eco-efficiency does not involve the third pillar of sustainable development - the social field. However, it must be said that concentration on eco-efficiency does not mean refusal of principles of sustainable development. Improvements in the field of eco-efficiency may significantly help in implementation of the conception of sustainable development in the business practice. At present, the efforts, especially of international organisations, concentrate on development of approaches to measurement of social performance in a quantitative way [8; 9] and on interconnection of the social field with the conception of eco-efficiency. This will interconnect all three pillars of sustainable development.

2. Information support of management of eco-efficiency

Two basic groups of information are relevant for measurement and management of eco-efficiency:

- information on financial impacts caused by environmental aspects (it means, in fact, economic consequences of the impact of the company on the environment); and
- information on environmental aspects and impacts of the company.

If the company intends to develop a quality information system supporting improvement of eco-efficiency of the company, then it must take the following factors into consideration during collection, analysis and reporting of data:

- Causes of development of environmental impacts - in this phase, it is necessary to concentrate on the main problems discussed in connection with damaging the environment; it is necessary to analyse effects of solid wastes, emissions and waste waters, produced by the company activities, on the environment, and to identify the aspects and impacts which cause the biggest environmental problems.
- The individual company activities - the economic performance of the company is influenced by the company activities, and also environmental impacts are caused by the company activities; it is necessary to identify the main activities which significantly influence eco-efficiency of the company. Attention should be paid to production activities, as well as to supporting and service activities, sale activities, activities connected with obtaining inputs as well as with waste management, to research and development activities etc.
- Responsibilities - environmental data must be always connected with responsibilities - it means with responsible staff members who may influence the activities in question. It is always necessary to define unambiguously competencies and responsibilities.
- Interests of recipients of the information - an information system must always be in accordance with information needs of its users. It means that collection, recording, analysis, as well as reporting of information must, in the best possible way, fill the information needs of the most important interested parties. The company management represents a very important group of users

of the environmental information. The information system must be able to provide information to the relevant responsible staff members (managers) in the form enabling them to make decision. The management must:

- have quick access to necessary information (without time delay);
- have possibility to examine company data in integrated form, as well as in detailed form - it means on different levels of aggregation (the top management is usually interested in data concerning the company as a whole, the management on lower levels usually works with detailed data);
- have possibility to analyse the established data;
- easily detect trends of planned or managed processes; and
- have possibility to continuously communicate and discuss the established facts.

The most important aim of the information system is to optimise the company performance.

Development of an information system fulfilling the above-mentioned requirements is connected with costs. In order that the environmental information be relevant for the company, the costs spent on development (or, optionally, adaptations) of the information system must be lower than benefits which the company obtains from use of this information. It seems suitable to incorporate monitoring of environmental information into the existing company information system [10; 11; 12]. In the company practice, it is necessary to make use of the principle of system interconnection during development of information systems, and to develop comprehensive company information systems which should:

- support intentions, aims, and priorities of the company as a whole;
- provide complete and relevant information on the company, its development, but also on the surroundings of the company;
- support all significant company processes, both internal (purchasing, production, sale, financial management, environmental management etc.), and external (links to suppliers, customers, banks, state bodies etc.);
- have a simple and transparent architecture;
- be integrated from the point of view of data, function, software, hardware, as well as from the methodical point of view.

It means that the mission of the company information system should be development of a **consistent system**, because only such system is a significant precondition for formulation and implementation of effective strategic intentions. It is necessary to mention still another feature of the company information system: **openness of the system**. This is the ability:

- to express reflection of both external and internal environment in the information;
- to receive and store information from external environment;
- to adapt itself to the surrounding environment by using the collected information;
- to reproduce its organism as a system, and, through that, to enable survival of the system in changing conditions.

If a sound approach to the environment and improvements of economic performance belong among the aims of the company, then it is obvious that the management, as well as other interested parties, must have at their disposal information concerning the environmental aspects and impacts of the company activities, products and services on the environment, as well as their economic consequences. The above-mentioned information is provided by a **system of environmental accounting**. The environmental accounting does not concentrate solely on the field of eco-efficiency. Efficiency is only one of the aims sought for by the management. It is not possible to neglect another of the aims - effectiveness. The effectiveness belongs among important criterions of a reasonable course of the business process.

3. Environmental accounting - a system filling information needs of both external and internal users

In the latest years, various approaches to the conception of environmental accounting were gradually developed (for example [10; 13; 14; 15; 16; 26]). Environmental accounting is considered to be a system which provides (collects, records, analyses and reports) information on **environmentally induced financial impacts** and on **environmental aspects/impacts** of a defined economic system (for example, company, plant etc.) [16]. According to this definition, the environmental accounting concerns:

- environmentally induced financial impacts; and
- environmental aspects and impacts.

An **environmentally induced financial impact** means an influence of environmental behaviour of the company on its economic results and on its financial position. It means that it concerns also impacts on costs and revenues, assets and liabilities of the company, which are caused by the influence of the company on the environment. According to this approach, those environmentally induced financial impacts which are internalised, it means charged to the account (or, optionally, in favour) of the company, are incorporated into the subject of environmental accounting. However, it should be appreciated that not all impacts of the company on the environment are internalised. One example of so-called negative externalities is pollution of the environment. The companies pollute individual components of the environment - air, water and soil - and these polluted components then cause harm to other economic entities and citizens. The costs which the company saves on equipment and measures that would prevent formation of pollutants, or, optionally, their release into the environment, are thus transferred to other entities without consent of these entities, and often even without their knowledge.

An **environmental aspect** represents a component of the company activities, products or services which can have influence on the environment [17].

An **environmental impact** can be defined also on the basis of ISO 14 001 and the Environmental Dictionary [17; 18]: An environmental impact is any change in the environment, either favourable or unfavourable, which is fully or partly caused by the activity, products or services of the organisation.

Developments in the field of environmental accounting were significantly influenced especially by information needs of the interested parties. The system of environmental accounting was gradually designed so that it provides **environmental information connected with the company** and, through that, it fills **information needs of the interested parties**.

3. 1 Environmental Information and their Users

Environmental information connected with the company, which is object of attention of the interested parties, may be divided into two basic groups³:

- environmentally induced impacts on the economic system of the company; and
- environmental aspects of the company activities, products and services, and impacts on the environment caused by the company.

Environmentally induced impacts on the economic system of the company are expressed in monetary units (according to the approach of Horngren et al. [19], these are, therefore, financial information). This concerns all impacts on past, current or future cash flows of the company, on its financial position and on economic results, which are caused by the influence of the company on the environment. It means that this concerns environmentally induced financial impacts - a part of this information is, for example, information on capital costs spent in connection with cleaner production, on fines for violating laws on the protection of the environment, on environmental liabilities etc. Representation of the value aspect of the business process is a very important aim of the conventional conception of the accounting system. However, the accounting system also comprises information expressed in physical units (for example, within the framework of systems of production planning, in the field of supply, sales, etc.). For evaluation of the environmental behaviour of a company, it is necessary to have information on environmental aspects and impacts of the company activities, products and services on the environment. Environmental aspects and impacts on the environment caused by the company are expressed in physical units (according to the approach of Horngren et al. [19], these are non-financial information). On the level of a company, these are, therefore, all past, current, as well as future material and energy flows which influence the ecosystem (the environment). It means that this concerns information on the amounts of consumed energies and materials, on amounts and types of produced wastes etc.

There follows from the conception of environmental accounting, defined above, that its main aim is **to fill information needs** of interested parties (i.e., external, as well as internal, users).

The conventional accounting system does not provide sufficient information serving to the users in filling their information needs for evaluating environmental behaviour of the company and its economic consequences. The conventional accounting system is concentrated mainly on filling information needs of the interested parties concerning **economic performance of the company**. Due to growing importance of environmental information to all interested parties, attention has been paid, in the latest years, to environmentally induced impacts on the economic system of the company, environmental aspects and

³ The same division of environmental information is used by R. Burritt, T. Hahn and S. Schaltegger [20].

environmental impacts caused by the company. Therefore, a subsystem has been detached from **the accounting system of the company**, which provides information on economic consequences of influence of the company on the environment. In view of the fact that also information on environmental aspects and impacts of the company activities, products and services on the environment must be available for assessment of the environmental performance of the company, a need has developed to produce an information subsystem **identifying, collecting, recording, analysing and reporting environmental information, designated as environmental accounting**.

Various interested parties are interested in environmental information. In the case of certain users, main attention is paid to economic consequences of influence of the company on the environment; other users are interested primarily in environmental aspects and impacts. Environmental aspects of the company may significantly influence economic results of the company (not only concerning costs, but also concerning revenues) and its financial position. Attention to economic consequences of the company approach to the environment is paid not only by the company management, but also by other interested parties. Investors and creditors are primarily interested, on the one hand, in impacts of environmental behaviour of the company on its financial health, and, on the other hand, in environmental risks and extent of liabilities arising from these risks. Naturally, also owners are interested in environmental behaviour of the company. Their attention is paid to economic consequences of environmental behaviour of the company and their impacts on return on investment. Other interested parties, for example, customers, suppliers, competing companies, state bodies, the public, mass media, movements and initiatives concerned with environmental protection etc., also pay attention to the company approach to the environment. Some interested parties (for example, the public, movements and initiatives concerned with environmental protection) are primarily interested in impacts of the company activities, products and services on the environment. Therefore, it is obvious that needs in the field of environmental information are very diverse. **The task of environmental accounting is to fill information needs of all important interested parties.**

There is obvious from the previous text that environmental accounting must be designed so that it provides **information enabling to assess environmental behaviour of the company and its economic consequences** - therefore, parts of the system are both information in monetary units (financial information) and information in physical units (non-financial information). Furthermore, it is necessary to ensure that different **information needs of various interested parties** are filled. It means that also the conception of environmental accounting is based on the basic recognition influencing development of accounting systems in the 20th century: **method of reflecting the business process should be differentiated according to the users of the accounting information and according to decision-making tasks for support of which the accounting information is used**. Consequently, the conventional accounting system of the company is divided into three basic subsystems [21]:

- management accounting - its main aim is to reflect the business process from the point of view of information needs of the management, namely of all staff members on various levels of the company management - the provided information serves to support management of the business process;
- financial accounting - its main aim is to fill information needs of external users (primarily, owners, creditors, business partners, employees, entities participating in financial and capital market), which, although stay out of the assessed entity, are connected with it and its development by both future benefits and future risks;
- tax accounting - the aim of this accounting subsystem is to reflect the same business process with the purpose to correctly determine the income basis, as well as other tax lien and liabilities of the company.

In the case of the financial and tax accounting, the users press on unification of terms and processes so that the information submitted in individual cases are comparable. To the contrary, the management accounting is characterised by the fact that practically no regulation from outside of the company exists. This accounting subsystem is not uniformly defined even concerning its aim, contents or structure, and even a unified term is not used for this subsystem [21]. Therefore, the above-mentioned requirements are a criterion for further **structuring of environmental accounting**.

3.2 Components of Environmental Accounting

Within the framework of environmental accounting (see Figure 1), **environmental information - both financial and non-financial** - is collected, recorded, analysed and reported [22; 23; 24; 25]. Economic consequences of influence of the company on the environment (i.e., financial information) are recorded in the accounting system of the company. In connection with new information requirements, more detailed monitoring and analysing of this information takes place when using methods of conventional accounting. This part of environmental accounting can be regarded as broadening of scope and further elaboration (specification) within the framework of the conventional accounting system, which reacts on the present information needs. Another part of environmental accounting is formed by information on environmental aspects and impacts of the company activities, products and services on the environment expressed in physical units (non-financial information). This part of the system serves to filling information needs in the field of the environmental performance of the company. From the point of view of the users, environmental accounting must fill the needs of **internal users, as well as external interested parties**.

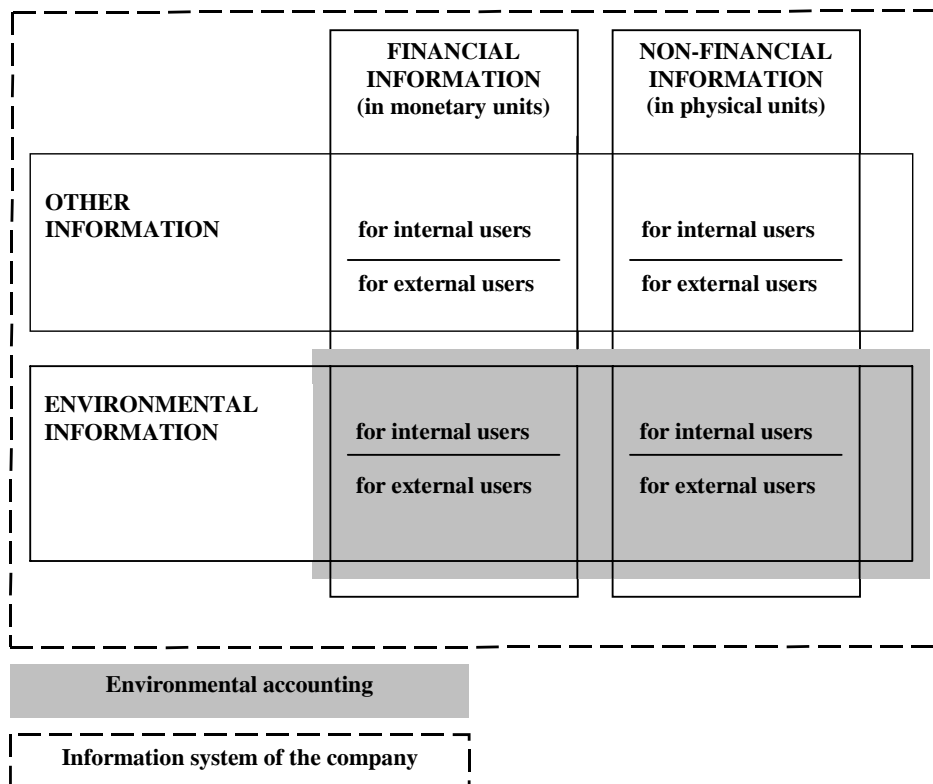


Fig. 1. Environmental accounting as a part of information system of the company

When taking into consideration **various types of users** and their **information needs**, the system of environmental accounting can be divided into the following parts:

a) **Environmental accounting in monetary units**, which is formed by the following subsystems:

- Environmental management accounting (in monetary units) - it concentrates on financial information for internal users. It represents the main information tool and the basis for the most part of management decisions. It should provide, for example, responses to the following questions: What are the costs spent for protection of the environment (so-called environmental costs), and how should they be identified and monitored? How should the environmentally induced costs be treated, i.e., whether they should be allocated to the products, or managed as overhead costs? etc.
- Environmental financial accounting (in monetary units) - it is destined for filling needs of, primarily, external users in the field of financial information. Object of its attention are environmentally induced impacts on the financial position of the company and its economic results.

- Environmental accounting (in monetary units) satisfying requirements in the field of information arising from tax laws, or, optionally, other laws, which have relation to the environment. This concerns specific information, which are, in certain states, requested by state bodies, banks, insurance companies, etc. For example, in some states, the tax system takes into account activities for decreasing pollution, deductions from the income basis are possible in the case of investments for elimination or mitigation of certain selected environmental problems, accelerated method of depreciation is allowed in the case of cleaner technologies, etc.

b) Environmental accounting in physical units, which comprises the following subsystems:

- Environmental management accounting (in physical units) - it is destined for filling needs of internal users in the field of non-financial information. It concentrates on collecting, recording, analysing and reporting information requisite for decision-making inside the company.
- External environmental accounting (in physical units) - it concentrates on needs of external users in the field of non-financial information. It provides (collects, records, analysis and reports) information for external users, who are interested in environmental aspects and impacts of the company on the environment (for example, state and local bodies, the public, mass media, shareholders, various groups and movements concerned with environmental protection, etc.). It is the main source of information for external environmental reporting. In fact, by giving reports on impacts on the environment, the company makes a public inventory of its environmental aspects and impacts (for example, of released pollution, etc.).
- Environmental accounting (in physical units), satisfying requirements in the field of non-financial information arising from laws and other regulations which have relation to the environment. The information is destined especially for state bodies (regulators), for checking observance of set and obligatory limits and standards. In the states where environmental taxes are collected, these systems are necessary for their exact determination. In the latest years, specific information on environmental aspects and impacts are requested also by the present and future creditors, insurance companies, etc.

Environmental accounting must be designed in the way to provides information to important users, and to help the company to improve its economic performance, as well as its environmental performance, and, through that, to go ahead on the way to sustainable development.

Conclusions

The development of the systems of environmental accounting was influenced by many factors (see, for example [13; 16; 26]. **As the most important factors, especially the following ones can be considered:**

1. Philosophy and tools used within the framework of environmental accounting may significantly help in the development of the society, designated as sustainable development. The system enables to assess approach to the environment, and the environmental performance, and facilitates (mediates) communication in the field of the environmental protection between managers and other interested parties.
2. Conceptual division of accounting for internal and external users is based on the fact that the need of information, the level of its details, as well as the level of its confidentiality, are different for various interested parties (i.e., for various users of the system). It can be proved that concentration of the system on information needs of the management (i.e., internal users) may bring significant effects concerning decision-making processes in the company. If the company information system is designed, primarily, according to information needs of external interested parties, then this can result in deformations in collection and use of information for decision-making [27; 28].
3. The company management uses various information to support its decision-making processes. Certain managers rely especially on financial information, others prefer non-financial information. A number of managers work, within the framework of their decision-making, with both financial and non-financial information. The need of information relates very closely to the level of management. For example, the environmental management on the level of the company must fulfil, especially, the following aims:
 - identify possibilities of improvements of the environmental performance of the company;
 - set priorities of the individual environmental activities and measures;

- take into account environmental aspects within the framework of decision-making concerning the present company outputs (products and services), as well as within the framework of research and development of new products and services;
- ensure transparency of the company activities relating to the environment;
- identify information needs of important interested parties, obtain the requested information and enable access of the users to this information (i.e., ensure the process of environmental communication);
- set the system of environmental management in the company (on lower levels of organisation), and standards of the environmental protection.

The management needs various types of information in order to fulfil the above-mentioned aims, for example:

- information on material and energy flows and on inventories, information relating to the individual company processes and outputs, and information on their environmental aspects and impacts on the environment;
- information on economic impacts of the company measures for protection of the environment, as well as information on economic consequences of damaging the environment;
- qualitative information on requirements (demands) of various interested parties, which ensue from influence of the company on the environment.

Therefore, the diversity of information needs requires, on the one hand, that needs of both internal and external users are filled within the framework of the system of environmental accounting (see above), and, on the other hand, that the system provides information both in monetary units and in physical units (i.e., both financial and non-financial information) so that this information serves to support decision-making processes.

4. The significance of environmental accounting resides in interconnecting the economic field with the field of approach of the company to the environment. Its main interest is to increase awareness of the management on potential influence of environmental aspects of the company activities, products and services on economic performance of the company (these influences being either positive or negative). The environmental performance of the company (usually expressed in physical units) may, very significantly, influence its economic performance (expressed in financial indicators). The mutual relations may be depicted (recorded) for example by measuring the eco-efficiency [29; 30].
5. The fact that the system of environmental **accounting** works with non-financial information (i.e., with information expressed in physical units), is not a privilege of **environmental** accounting only. For example, according to C. Horngren and G. Foster, the conventional accounting system provides **both financial and non-financial information**, which helps to fulfil the company's aims [31]. It means that this conception of the accounting system existed before the development of the system of environmental accounting, and independently on it. The company management has always concentrated on improvement of material and energy efficiency with the aim to improve economic results of the company. For example:
 - the efficiency of the production process is deduced from the indicator: input materials for a unit of the product;
 - knowledge of material and energy flows (information is in physical units) is a necessary precondition for determination of their money expression (in monetary units).

Within the framework of the system of environmental accounting, information comprised in the conventional accounting is broadly used.

6. Environmental accounting is a very important source of information for the environmental management of the company also within the framework of environmental management systems. It provides information which forms a basis for finding places and activities which burden the environment and cause economic losses to the company, and for proposals of the measures resulting not only in improvement of the environmental performance of the company, but also in improvement of its economic results. It is a source of information supporting decision-making, for example, in the field of a strategy for compliance with rules, regulations and standard in the environmental field, in the field of designing and projecting products and processes, investment decision-making, location of equipment, waste management, decision-making concerning products,

risk management, evaluation of products, management of purchase activities, cost management, cost allocation etc.

REFERENCES

1. Veber J et al. (2000) Management – basics, prosperity, globalization Prague, Management Press (available only in Czech)
2. Schaltegger S und Sturm A (1990) Ökologische Rationalität: Ansatzpunkte zur Ausgestaltung von ökologieorientierten Managementinstrumenten Die Unternehmung 4, 273-290
3. BCSD (Business Council for Sustainable Development) (1993) Getting Eco-Efficient: How Can Business Contribute to Sustainable Development? in Proceedings of The First Antwerp Eco-Efficiency Workshop Antwerp, Organized in Association with the Industry and Environment Office of the United Nations Environment Programme and the Commission of the European Communities, Directorate-General XI
4. Schmidheiny S (1992) Changing Course: A Global Business Perspective on Development and the Environment Cambridge, MIT Press, with the Business Council for Sustainable Development
5. OECD (Organization for Economic Co-operation and Development) (1998) Eco-efficiency Paris, OECD
6. Walley N and Whitehead B (1994) It's not Easy Being Green Harvard Business Review May/June 1994, 46-52
7. Reinhardt F L (1999) Bringing the Environment Down to Earth Harvard Business Review July/August 1999, 149-157
8. GRI (Global Reporting Initiative) (2004) Sustainability Reporting Guidelines 2002 [online] [cited 15 November 2004] Available from internet URL <http://www.globalreporting.org>
9. McPhail K and Davy A (1998) Integrating Social Concerns into Private Sector Decision making: A Review of Corporate Practices in the Mining, Oil and Gas Sectors Washington, World Bank
10. Gray R (1993) Accounting for the Environment New York, Markus Weiner Publishing
11. Hřebíček J (1999) Information Society and Privilege on Environmental Information in Matyska L (ed.) Proceedings from Conference RUFIS 99 Brno, 45-52 (available only in Czech)
12. Hřebíček J (2003) Globale Umwelt-informationssysteme in Internationalen Masstab in Internationales Umweltmanagement, Band II: Umweltmanagementinstrumente und – systeme Wiesbaden, Gabler Verlag, 53-75
13. EPA (United States Environmental Protection Agency) (1995) An Introduction to Environmental Accounting As A Business Management Tool: Key Concepts And Terms (EPA 742-R-95-001) Washington, United States Environmental Protection Agency, Office of Pollution Prevention And Toxics (MC 7409)
14. Schaltegger S and Stinson C (1994) Issues and Research Opportunities in Environmental Accounting (discussion paper 9124) Basel, Wirtschafts-wissenschaftliches Zentrum WWZ
15. Gray R et al. (1996) Accounting and Accountability: Changes and Challenges in Corporate Social and Environmental Reporting London, Prentice Hall Europe
16. Schaltegger S and Burritt R (2000) Contemporary Environmental Accounting Sheffield, Greenleaf Publishing
17. ISO 14001 (1996) Environmental Management Systems – Specification with Guidance for Use, International Standard Organization
18. Environmental Dictionary (1998) Prague, Planet and Fountain (available only in Czech)
19. Horngren C et al. (2000) Cost Accounting: A Managerial Emphasis Englewood Cliffs, Prentice – Hall
20. EMAN – EU (2004) Burritt R, Hahn T and Schaltegger S (2001) Current Developments in Environmental Management Accounting – Towards a Comprehensive Framework for Environmental Management Accounting [online] [cited 20 June 2004] Available from internet URL <http://www.eman-eu.net>
21. Král B et al. (2002) Management Accounting Prague, Management Press (available only in Czech)
22. Bennett M and James P (1998) The Green Bottom Line in Bennett M and James P (eds.) The Green Bottom Line. Environmental Accounting for Management: Current Practice and Future Trends Sheffield, Greenleaf Publishing 30-60
23. ECOMAC (1996) EIM Small Business Research and Consultancy Synreport: Eco-Management Accounting as a Tool of Environmental Management (The ECOMAC Project) [online] [cited 20 June 2002] Available from internet URL <<http://www.eim.nl/uk/nl/ecomac.html>>
24. IFAC (International Federation of Accountants) (1998) Environmental Management in Organizations. The Role of Management Accounting New York, Financial and Management Committee, International Federation of Accountants, Study 6, March 1998
25. Schaltegger S, Hahn T and Burritt R (2001) Environmental Management Accounting – Overview and Main Approaches in Seifert E and Kreeb M (eds.) Environmental Management Accounting and the Role of Information Systems Sheffield, Greenleaf Publishing
26. Schaltegger S et al. (1996) Corporate Environmental Accounting Chichester, Wiley and Sons
27. Kaplan R (1984) The Evolution of Management Accounting The Accounting Review LIX, 3, 390-418
28. Bennett M and James P (1999) Key Themes in Environmental, Social and Sustainability Performance Evaluation and Reporting in Bennett M and James P (eds.) Sustainable Measures. Evaluation and Reporting of Environmental and Social Performance Sheffield, Greenleaf 29-74
29. Schaltegger S und Sturm A (1992) Ökologieorientierte Entscheidungen in Unternehmen. Ökologisches Rechnungswesen Statt Ökobilanzierung. Notwendigkeit, Kriterien, Konzepte Bern, Haupt
30. Schaltegger S and Sturm A (1998) Eco-Efficiency by Eco-Controlling Zürich, Vdf.
31. Horngren C and Foster G (1987) Cost Accounting: A Managerial Emphasis (6th ed.) Englewood Cliffs, Prentice – Hall