

Environmental impact identified from company accounts in the Czech Republic

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Abstract

The contribution aims to examine the readiness of enterprises' accounting systems in the Czech Republic to display environmental activities. The need to monitor the environmental profile of a company requires, *inter alia*, the need for modifications of existing accounting systems of enterprises by the addition of an environmental factor to the standard economic information provided so as to capture the interaction between the activities of individual companies and the environment. Financial accounting of Czech companies is ruled by legislation. There is no requirement for the separate evidence of the environmental impact. Some of the environmental information is included in the annual reports of large companies only. In the context of the requirements of sustainable development, however, it would be desirable that all companies follow the information generated by the system of environmental accounting. Managers can continue to work with the data provided by this system and, they can evaluate the feedback to influence company behaviour. Precisely quantified actual costs (or revenues) associated with the environment allow a specific company to define its environmental profile, or to reveal its strengths and weaknesses in this area and positively influence its relationship to the environment with the help of partial analysis such as tracking the current trend in time, to compare its own environmental profile to the competition, to differentiate effective products not only in economic but also in environmental terms. Then, this generated information is externally useful to investors, banks and other stakeholders. Last but not least, in the context of a defined risk of environmental pollution level, enterprise value and its market position can also be affected.

Keywords: corporate management, environmental profile of enterprise, environmental accounting, financial analysis, financial statements, business performance indicators, environmental indicators, environmental added value.



1 Introduction

At the turn of the millennium, given the alarming state of the environment, there was defined sustainable development as the only possible framework of the influences of human civilization on Earth. The primary idea of sustainability is to achieve a harmonious state of the environment, social environment and economic development. In accordance with these principles, it is necessary to positively influence the interaction between the activities of economic entities and the state of the environment. Enterprises with their industrial activity always more or less damage the environment. The resulting negative externalities, however, are only partially internalized in the costs of businesses using various instruments of environmental protection. For this reason, it is necessary to support considerate conduct of enterprises to the environment by legislation and a complex of environmental instruments (such as taxes, fees, etc.). Contemporary socially responsible companies approach this problem with initiative and seek their own opportunities and directions of thrifty approach to the environment. The purpose of these activities is to use the information gathered to view, analyze and also positively influence the relationship of individual businesses to the environment [1]. The basic source of information on the economic processes taking place in an enterprise is an enterprise accounting system. To view the environmental activities of companies, it is important to analyze existing accounting subsystems, examine their interactions and opportunities to reflect environmental issues. Corporate executives can work, analyze data and make decisions with the acquired information, thus leading to improve the environmental profile of a particular enterprise.

2 Accounting subsystems of enterprises

For successful financial management, an accounting agenda implemented by accounting modules of an enterprise is an important information tool. The accounting agenda is a structured system of information that usually displays an entrepreneurial process in financial terms. Accounting information enables to measure the performance of the company and its financial position and other factors relevant to the enterprise comprehensively. Thus, a sufficient and reliable information platform is created for both external users such as investors, shareholders, suppliers, employees, customers, state authorities that implement some financial, fiscal and environmental policy of the state, as well as for internal users - enterprise managers [2]. Different needs of various users of accounting information, different criteria for evaluating individual company activities and variously specified requirements of the legislative framework of business lead to the creation of a user different accounting modules. Two basic accounting modules, financial and managerial accounting, are complemented by a tax point of view in which the accounting phenomena and processes are transformed according to the requirements of tax legislation. Environmental accounting is a relatively new module which uses information from the corporate financial accounting, data and methods of management accounting processes and



information required from the perspective of environmental concerns of a society and an enterprise. Individual accounting modules do not work in isolation; their functions are intertwined and complementary (see Figure 1).

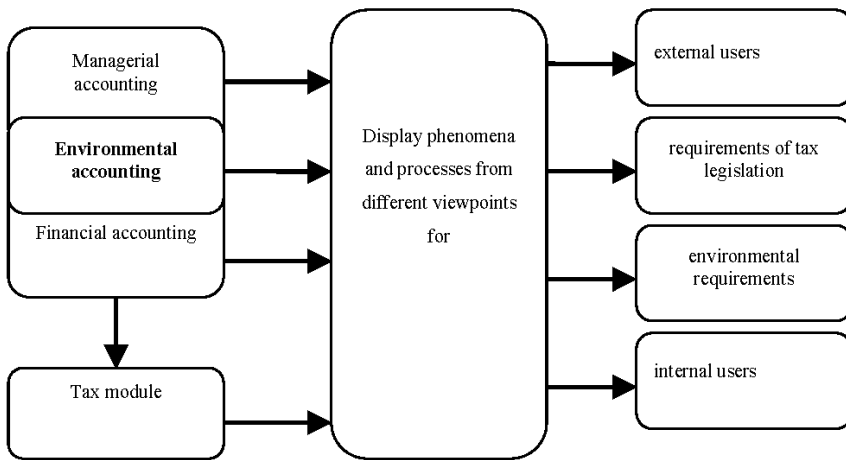


Figure 1: Accounting subsystems of enterprises.

The figure clearly shows that two basic modules of financial and managerial accounting can be transformed into environmental accounting. Income tax legislation requires the creation of a tax module that obtains necessary documents from financial accounting. Information provided by all accounting subsystems are processed from different viewpoints according to the specific needs and requirements of interest group of users. Individual accounting modules are then distinguished by particular content, form and time orientation of information.

3 Environmental elements in financial accounting

In accordance with generally accepted accounting principles, financial accounting displays an economic activity of the enterprise. At the end of the accounting period, primarily external users are presented with summary information in the form of financial statements, which are balance sheet, income statement, or statement of cash flows and statement of changes in equity [3]. Making a final form of a system of accounts and accounting rules is subject to rules that are established as legislation norms at the national level.

Environmental aspects are not fully integrated in the current legislation of accounting in the Czech Republic. Environmental activities of an enterprise can be closely monitored by sub-ledgers (so-called analytical evidence) of balance sheet ledgers (so-called real accounts), but mainly by nominal accounts. Traditional concepts of financial accounting can then be extended by the environmental aspects. This provides the management of an enterprise with necessary information for successful internal control in accordance with

the requirements of sustainable development. Our basic proposals for recording environmental activities of enterprises within the analytical evidence that is kept to synthetic accounts include:

- To monitor the investment in cleaner technologies and long-term assets burdening the environment in the fixed asset accounting class within an analytical records. Within the intangible assets to account for emission allowances [4] and preferential limits.
- In the inventory accounting class in analytical evidence, monitor e.g. storage of hazardous substances that can cause pollution and damage the environment, or are dangerous chemical substances and formulations or hazardous waste. It is beneficial to monitor the volume of material waste that is not effective or desirable from the environmental point of view.
- On the analytical accounts of receivables and payables, the information about customers and suppliers who have implemented an environmental management system and prefer green products and services can be tracked. It is also possible to analytically register subsidies granted in connection with environmental activities and, where applicable, relations to tax administration and fees connected with the protection of the environment.
- At the level of resources (capital accounts), companies can monitor their chart of reserves for environmental damage that depreciates assets (such as environmental burdens) or create reserves for possible identified environmental risks. On the decision of general meeting or the Board of Directors, enterprises can also create funds used in connection with environmental issues from net profit.
- In the area of business records of costs, there is an ample scope for a rigorous analytical records focused on environmental issues. Here, enterprises can separately register e.g. new material consumption, recycled material consumption, identify material consumption arising in connection with the operation of environmental equipment, consumption of protective aids, promotional material consumption, consumption of technical publications related to environmental issues, consumption of spare parts for repair and maintenance, initial cost of material which was wasted as excess waste, etc. In addition, there is a possibility of separate records of payroll costs of employees who work in the field of environmental protection. Analytical evidence also allows establishing a detailed summary of the fees paid in connection with environmental pollution and environmental taxes payments within the records of costs. It is also possible to have a separate record depreciation of environmental equipment. Monitoring the extra costs incurred in connection with accidents and natural damage with environmental impact is also significant (damage to the environmental property, costs associated with the removal of pollution).
- In the area of revenues it is possible to identify all business operations related to environmental issues.



Potential risk of linking environmental and standard financial accounting is the fact that companies monitor their environmental activities on a voluntary basis only in analytical records which is a part of synthetic accounts. However, their environmental content may not always be obvious. The scope and method of preparation of the financial statement is legally treated in Czech conditions by the Accounting Act and its implementing decree [5]. In the structure of financial statements, i.e. balance sheet and profit and loss account, the information relating to the environment is not immediately included. Any information relating to environmental assets, liabilities, expenses and revenues appear only implicitly, are included in the synthetic accounts and are not a standard part of the financial statements. This could distort the requirement of a fair presentation of the financial position and business performance of an enterprise in terms of meeting environmental profile and subsequently it could also lead to misrepresentation of possible financial analysis from an environmental point of view. Information on environmental activities of the enterprise can be usually included only in the annex of a financial statement.

Enterprises in the Czech Republic should prepare its financial statements with regard to the recommendations of the European institutions (European Commission) [6]. Since 2004, accounting units in the Czech Republic, which are required to verify its financial statements by an auditor, have been preparing an annual report to the relevant extent, and shall, *inter alia*, also include financial and non-financial information about activities in the area of environmental protection into this report. Enterprises which are not legally obliged to prepare audited financial statements, often and on a voluntary basis provide information about their environmental performance in their financial statements. These are mainly companies from sectors that have a significant impact on the environment. It is not explicitly specified how the information should be structured, however, if the basic principle of financial accounting is to give a true and fair view of the company management, environmental aspect is an integral part of this requirement.

4 Environmental managerial accounting

Financial accounting (with the implementation of environmental elements) does not provide the most comprehensive view of the business relationship to the environment. In the basic module of management accounting, the costs associated with environmental protection (reduction of pollution, waste management, legal fees, insurance, fines, etc.) are usually hidden in overhead categories (manufacturing or administrative). Managers of the company have a difficulty to identify them and thus, there is no feedback that would motivate responsible staff to manage and optimize these costs. The problem may also lie in an inaccurate allocation of environmental costs, which leads to wrong decisions of the management in promoting more environmentally friendly products (thanks to a base of overheads distribution, environmental costs are incorrectly allocated on products that are not associated with damaging the environment). Some environmental costs are also not shown sufficiently,



although they are significant (opportunity costs that should be taken into account especially in decision-making processes of business investment plans - such as poor environmental image of the company, expected future environmental expenditures or costs, potential claims of liability) [7]. An important tool called Environmental Management Accounting (EMA) can help to resolve these problems [8].

In its current form, EMA focuses primarily on examining actual costs resulting from business activities which are primarily of interest to the company and are part of the accounting system. EMA develops the traditional management accounting approaches on two levels. For decision-making of corporate management EMA not only provides information about significant environmental costs, but also significant impacts on the environment. For such decision tasks, it is necessary to identify and properly allocate environmental costs in the enterprise according to business needs (i.e. internal activity, center or, liability aspects) [9]. While financial accounting only works with monetary expression of individual variables, EMA creates a gear bridge to express these quantities also in physical units (see Table 1).

Table 1: The combination of value and natural side of the business process within EMA [9].

Measurement in monetary units		Measurement in natural units
Financial accounting	Management accounting	
	Environmental management accounting (EMA)	
	EMA (value data)	EMA (physical data)

Financial and non-financial expression of phenomena and processes in the enterprise enables more comprehensive view of the situation in the company, better data for decision-making processes, including the framing of investment strategies. If managerial accounting is expanded by the environmental dimension, it is capable to satisfy the needs of internal users, i.e. managers of enterprises relatively well. Analysis of information from modules of environmental managerial and financial accounting creates a platform for exploring indicators of sustainable development, i.e. economic growth of the enterprise while respecting environmental factors [10].

5 Evaluation of obtained environmental information

Enterprises in the Czech Republic are currently able to identify environmental information related to their activities with the help of modified accounting



modules. Corporate executives should further work with this information and create a system for evaluating the environmental activities of enterprises. Environmental Performance Evaluation is described in the ISO 14031 standard [11] as a continuous internal management process and tool that uses indicators to provide information comparing current and past environmental performance of the enterprise with the given criteria. In the Czech Republic, this standard is classified as a voluntary instrument for environmental protection.

Environmental Performance Indicators are divided into three areas (Operational Performance Indicators, Performance Management Indicators and the Environment Condition Indicators) that measure individual environmental performance of the enterprise and each of them has a number of associated environmental indicators [12].

The above mentioned norm is just a basic tool for the work of managers with information about environmental activities of the enterprise. The managers create their own scoring systems of these activities with regard to the information received from the accounting modules. The following Table 2 shows possible variants of indicators development based on information from these modules.

Table 2: Possible variants of development of environmental indicators.

Examined elements	Absolute indicators		Possible relative indicators
	Managerial Accounting Module	Financial Accounting Module	
Material entry according to a kind	pcs, kg, l	Material consumption in €	ks,(resp. kg, Crowns)/ V
Entry of energies	kWh	Consumption in €	kWh, Crowns/V
Use of water	m ³	Consumption of services in €	m ³ , Crowns/V
Waste	kg	Wasted material in €	kg, Crowns/V
Emissions	mg/m ³	Consumed emission allowances in €	mg/m ³ /V
Waste water	m ³	Sewerage in €	m ³ /V
Output Products (V)	pcs, kg, l,	Earnings in €	

The table indicates the possibility of the design of indicators pursuing basic environmental activities on the level of input and output. As a suitable denominator for creating relative indicators, there was selected output in the form of products defined in physical units (or in the financial evaluation). Indicators evaluating material usage are based on the information gathered

within the accounting modules expressed in physical and monetary units and can be detected as absolute and relative. Energy intensity can be measured as energy consumption in kWh/unit of output in physical units, the same findings is also possible in €. Water consumption is determined in proportion to the amount of production and in the same way you can follow the development of the volume of waste water, waste and emissions. The specific architecture of indicators depends on the method of recording of environmental phenomena in accounting modules and, in particular, on the selected objectives and strategies of business management in the field of environmental protection [13].

6 Conclusion

In the context of the requirements of sustainable development and the requirements of the European institutions, enterprises should follow and present their environmental profile. Enterprises, which have financial statements audited, should include information about activities in the area of environmental protection in an annex of their annual reports. Above the legislative framework, enterprises can provide environmental information voluntarily. Environmental information requirements arising from the nature of the legislative provisions and from voluntary activities of an enterprise can be implemented using business accounting modules.

Enterprises have the option to create a series of synthetic and analytical accounts primarily for recording environmental issues in their financial accounts. They can also incorporate it in the annex of prepared financial statements. The adjustment of module of managerial accounting for optimum monitoring of a company attitude to the environment is also significant. This substantially eliminates the acceptance of bad management solutions in relation to the environment.

Environmental information related to the activities of enterprises are not only registered through accounting modules, but also analyzed and further processed. With the created system of environmental indicators, enterprises can define their own goals in environmental protection, monitor their achievement and overall development of the company's performance and its comparison in various time periods.

In recent years, the idea of sustainable development for businesses has implied an obligation to accept a wide range of national and European legislative provisions. Voluntary activities of enterprises in this field not only help to fulfill this idea, but also create a new social platform for responsible and sustainable enterprise.

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