# Quality Improvement in Accounting

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*SUMMARY*

*Over the last decade the expectations of quality have become involved in the product, service, production and business process. In the last few years, however, quality related expectations have been completed with sustainability (economic, social and ecological) considerations. Therefore the application of the appropriate management/business process and systems are needed to measure the fulfillment of the new quality expectations or company's performance. The aim of this paper is to introduce the new approaches for the appraisal of the company's performance, beginning with conventional accounting through environmental accounting to sustainability accounting. A case study demonstrates the successful implementation of the sustainability accounting system in a Hungarian company.*

*Keywords: quality; sustainability; sustainability accounting*
*Journal of Economic Literature (JEL) code: M41, Q56*

## INTRODUCTION

Sustainability: the new quality? Over the last decades the role and importance of quality was overestimated because quality is a device for obtaining a competitive advantage. According to its general (ISO) definition quality reflects the real and latent expectations of the customer with reference to the product, service and process. These quality-related expectations should not only be involved in the production processes but in the business process, too, more precisely in the course of the operation of an accounting system.

Although the notion of quality is related to the product, service (output) and process, it also could be connected with the customer. However, this does not mean that output can be only a tangible product or service, or the customer only could be interpreted as an external utilizer. The accounting information produced within the company also could be considered as a special output for which the principle of quality is valid as well. The internal organization units of the company too can be a receiver or utilizer of information, thus those expectations relating to quality cannot be less important than the expectations of an external customer. In the 21st century these expectations comprise the requirements – economic, social and ecological values – of sustainability, too as a new component of quality. All this can be provided by planning and operating a sustainability accounting information system.

From the changes of recent decades it is clear that traditional accounting does not offer sufficient relevant information for stakeholders about the creation of sustainability, and thus it must be reformulated and expanded. This had led to developments in accounting. In spite of the fact that there is now a relatively wide range of literature dealing with environmental accounting (Gray 1993, Debnath et al. 2012), and many have studied the subject from many perspectives, only a few articles have focused on sustainability accounting (Jasch & Lavicka 2006, Ngwakwe 2012).

The aim of this paper is to introduce the approaches for the appraisal of a company's performance. We shall begin with conventional accounting, discuss environmental accounting, and finally focus on sustainability accounting. A case study is discussed to demonstrate the contribution of sustainability accounting to obtaining a competitive advantage in a Hungarian company. The article brings new insights to the discussion on planning and operating sustainability accounting system; thus, it fills the gap between theory and practice.

## FROM SUSTAINABILITY TO CORPORATE SUSTAINABILITY

A very rich literature is available on sustainability, so it is an important task to properly define the content of this concept as a starting point of further examination. After clarifying its content, the incorporation of the conceptual elements of corporate sustainability becomes possible.

## *The Dimensions of Sustainability*

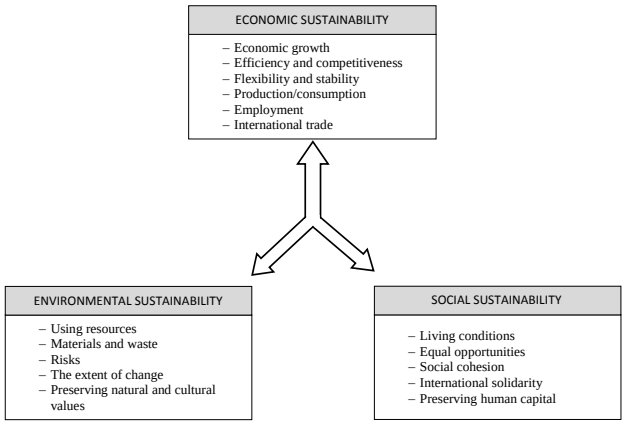
The philosophy of sustainability derives from the ideas laid down in the so-called Brundtland Report (1987). According to the report, 'sustainable development' is defined as follows:

"Humanity has the ability to make development sustainable to ensure that it meets the needs of the present without compromising the ability of future generations to meet their own needs (...) Sustainable development is not a fixed state of harmony, but rather a process of change in which

- the exploitation of resources,
- the direction of investments,
- the orientation of technological development, and
- institutional change

are made consistent with future as well as present needs." (Brundtland 1987, p. 16-17)

According to a wider interpretation of the above-mentioned definition, sustainable development means the harmonisation of economic, social and ecological values. The three "dimensions" of sustainability strongly interact with one another, including a variety of factors as shown in Figure 1.




Source: own construction, 2013

*Figure 1. Three dimensions of sustainability*

There is no doubt that a complex, multifactorial system is needed for the management of the implementation of sustainability, making the measurement of the achieved results complicated. While improvement is experienced in one dimension, in some cases deterioration can be seen in another one. Usually, there is a debate over whether an overall improvement or deterioration has occurred. In addition, it also has to be taken into account that the results achieved at the global level do not necessarily mean efficiency at the level of each and every nation, region, company and individual. However, the established goal has to be the aim of improvement at every level, which, based on our current knowledge, is a major challenge to achieve (Szlávik 2007).

The issues of sustainability can be discussed at various levels, and therefore they require several different approaches. In this study the concept of sustainability is associated with companies and examined at the level of companies.

## *The Theoretical Foundations of Corporate Sustainability*

In the majority of cases, corporate sustainability is seen as an alternative to the traditional growth and profit maximization model by the corporate executives. In reality, it is a new, emerging paradigm. While acknowledging the need for profitability, it differs from the traditional growth and profit maximization models. It expects companies to keep social and environmental goals in mind, particularly the goals related to sustainable development, such as the environment, social justice and equity, and economic growth.

The concept of corporate sustainability borrows elements from the following four well-established concepts:

- sustainable development,
- corporate social responsibility,
- stakeholder theory,
- corporate accountability.

The contribution of sustainable development to corporate sustainability is twofold. First, it helps set out the areas that companies should focus on: environmental, social, and economic performance. Second, it provides a common societal goal for corporations, governments, and civil society to work toward: ecological, social, and economic sustainability.

In the most general terms, corporate social responsibility deals with the role of business in society. Its basic premise is that corporate managers have an ethical obligation to consider and address the needs of society, not just to act solely in the interests of the shareholders or their own self-interest (Kerekes & Wetzker 2007).

Stakeholder theory defines a stakeholder as "any group or individual who can affect or is affected by the achievement of the organization's objectives." The basic premise of stakeholder theory is that the stronger your relationships are with other external parties, the easier it will be to meet your corporate business objectives; the worse your relationships, the harder it will be (Freeman 1984).

The concept of corporate accountability refers to the legal or ethical responsibility to provide an account or reckoning of the actions for which one is held responsible. Accountability differs from responsibility in that the latter refers to one's duty to act in a certain way, whereas accountability refers to one's duty to explain, justify, or report on his or her actions (Fama & Jensen, 1983). Clarify the reporting requirements to help determine the nature of the relationship between the company's managers and the rest of society.

Based on the above concepts Schaltegger et al. (2006) define the concept of corporate sustainability as follows: the economic, social and environmental dimensions of sustainability are integrated into corporate strategies and activities. Therefore it is necessary to secure the sustainable operation of the company from each of the three sides.

- In economic terms, a company can be considered to be sustainable if – beyond the reimbursement of fixed costs – it fulfills the owners' profitability requirements, with the potential of making some more profit and in addition it brings. The economic turning point comes when all costs are paid back and the profitability requirements of the company are also met (Illés 2002).
- In social terms, companies operating in a sustainable way make their contribution to social value creation through increasing individual human capital and supporting social goals. They manage social capital in such a way that stakeholders can understand its motivations and can broadly agree with the company's value system (Dyllick & Hockerts 2002).
- According to the ecological approach, sustainable companies are characterized by the rational exploitation of natural resources and the aim to minimize the damaging environmental impact of their production activities. All this is done to preserve the quality of natural resources as well as the economic opportunities offered by them (Institute for Development and Methodology, State Audit Office of Hungary, 2005).

Currently, not all companies operate in line with the principles of sustainability. However, some companies are publicly committed to the application of the appropriate sustainability management methods and tools.

# COMPARISON OF TRADITIONAL, ENVIRONMENTAL AND SUSTAINABILITY ACCOUNTING SYSTEMS

Based on the above approach, companies need to build up and operate an accounting information system that meets the requirements of sustainability. The development stages of accounting towards this direction are described below.

## *Changes in Traditional Accounting*

Traditional accounting systems are information systems supporting the daily operation of economic organizations, with the purpose of observing, collecting, recording, measuring, and classifying the economic events that have an influence of the company's assets, financial and earnings position, together with their impact. Therefore, the aim of accounting for stakeholders (owners, managers, creditors, inspection bodies, etc.) is to provide accurate information for making future decisions.

The modern approach to traditional accounting can be divided into two areas: financial accounting and management accounting. Financial accounting provides external stakeholders with information by financial reports through "the changes in the tools and resources required for the management as well as the accounts of the economic performance" (Musinszki 2012, p 35), and its practical implementation is regulated by the Act on Accounting. Whereas management accounting is "the complex of decision support methods and procedures, satisfying the information needs of the various management levels and internal users", its task is to identify, estimate, analyze, and provide cost and other internal information for the management (Musinszki 2012, p 35).

In the light of sustainability, however, the generally accepted accounting principles, the range of those demanding accounting information and the content of accounting information all have to be reinterpreted.

1. A new approach to the going concern principle:

One of the most fundamental principles in accounting is the going concern principle, which states that "in the course of book-keeping and preparing the accounts, it must be assumed that the enterprise will maintain its operation in the foreseeable future, will be able to carry on its activities, and a significant decrease or closing down its activities is not expected for any reason" (Act C on Accounting §15 (1), 2000). This wording suggests that only a stable external environment allows the company's activities on an unchanged continuation, and assumes what is also emphasized in Aras and Crowther's (2008) work, namely, observing the going concern principle results in keeping the company's operations maintainable. However, a company's external environment should include the business (economic) environment in which it operates, the local and regional social environment in which it is located, and the natural environment, which, in turn, gives natural limitations to the company's operations (Hódi Hernádi, 2012).

2. Reconsidering the content and the range of those demanding accounting information:

Since the information provided by accounting systems is suitable for preparing and establishing decisions, it is important to make the demanded information available. However, it would be reasonable to give an extended interpretation on the range of stakeholders. Therefore, according to Hódi Hernádi (2012), the population, meaning society itself, the natural environment, especially at local and regional levels, as well as future owners, employees, the next generations, and the future state of the natural environment all have to be taken into

account. After all, the point of sustainability focuses on their needs in order to make all those decision-making opportunities accessible to them that are currently in place for present-day stakeholders.

The fundamental task of accounting is to provide reliable and real information on the operation of the company for market participants. However, different information is needed by different stakeholders. Therefore, an accounting information system should be established that is capable of collecting and organizing the social and environmental information necessary for making various decisions, and is capable of presenting and interpreting them to both internal and external users in a reliable and accurate way. In response to these changing requirements, traditional accounting systems have to change and improve accordingly. The next step of this improvement is the development and the implementation of environmental accounting systems.

## *The Characteristics of Environmental Accounting*

The concept of environmental accounting and reporting appeared in the literature nearly a decade ago. According to Schaltegger and Burritt's (2000, p. 30) definition, "environmental accounting is a branch of accounting that deals with activities, methods and systems; recording, analysis and reporting; and environmentally induced financial impacts and ecological impacts of a defined economic system". Environmental accounting systems basically consist of two parts, one of which deals with the environment-induced financial impacts, i.e. environment-related expenditures and savings, while the other part is concerned with the environmental impacts of the company's business, that is, how the natural environment changes as a result of the company's operations (Almássy 2006). Environmental accounting systems present the above-mentioned effects both by measuring in natural units and expressing in terms of money, as – opposed to traditional accounting – non-monetary and qualitative factors are also strongly emphasized here.

Thus, basically there are four areas of environmental accounting (Csutora & Kerekes 2004): internal ecological accounting, environmental management accounting, external ecological accounting, and environmental financial accounting. "So environmental accounting facilitates establishing a connection between environmental and economic performance together with the presentation of the interaction between these two types of performances" (Pál 2011, p. 128).

By focusing on the company's financial and environmental dimensions, environmental accounting systems ignore the impact of corporate activities on society. However, there are approaches (Yakhou & Dorweiler, 2004) that interpret society as part of the natural environment and consider the sustainability of the natural environment to be the basis of man's well-being, therefore they should not be treated separately. However, according to the conclusion of the present paper, all three dimensions must be taken into account in the development of accounting systems, giving way to sustainability accounting systems.

## *The Theoretical Framework of Sustainability Accounting*

Borrowing the notion made by Burritt and Schaltegger (2010) sustainability accounting is the peak of accounting. Sustainability accounting, reaching far beyond environmental accounting, examines business operations by putting all three – economic, social and environmental – dimensions into its focus, and most importantly, it emphasizes the interaction of these dimensions in accordance with corporate sustainability.

The most widely accepted definition was presented by Schaltegger and Burritt (2010, p. 377):

- "Sustainability accounting describes a subset of accounting that deals with activities, methods and systems to record, analyse and report:
- First, environmentally and socially induced financial impacts,
- Second, ecological and social impacts of a defined economic system, and
- Third, and perhaps most important, the interactions and linkages between social, environmental and economic issues constituting the three dimensions of sustainability."

It can be legitimately asked whether sustainability accounting systems should be treated as completely self-contained, new accounting systems or as simply part of or an extension of traditional accounting systems. According to Schaltegger et al. (2006), the former alternative would be desirable, as it gives opportunities for the actual mapping of the economic, social and environmental risks and benefits, and to the integration of these dimensions into the company's accounting system. Most authors, however, believe that the latter approach is closer to the actual practice, since the gradual modification and expansion of the existing accounting system causes a minor change in the company's strategic management process.

The development of a sustainability accounting system includes the following five elements: the aim of operating a sustainability accounting system; the principles and requirements of operating the system; methods and devices for data collection, data recording, measurement and analysis; sustainability accounts and reports; and the qualitative characteristics of the resulting information (Lamberton 2005). The components of a logical model of sustainability accounting systems as well as the relationships between them are shown in Figure 2.

1. The aim of sustainability accounting systems:

Sustainability accounting information systems are primarily designed to evaluate the performance of the

economic organization in terms of sustainability, i.e. paying special attention to its economic, social and environmental aspects.

Similarly to traditional accounting, sustainability accounting can also be divided into two areas according to whether it provides external or internal users with the necessary information. The external stakeholders' need for information focuses on the accountability of the organization's operations both in social and environmental terms. In addition to this, sustainability accounting information systems provide internal stakeholders – the management – with information relevant to decision making, thus playing an important role in strengthening the internal management of the organization. As it is possible to determine the effects and consequences of the measures taken to achieve sustainability objectives in the course of performance evaluation, it gives a good basis for the preparation of a possible intervention, that is, for feedback.

2. The principles and requirements of operating a sustainability accounting system:

During the development of a sustainability accounting system, some important principles and requirements should be taken into consideration that specify the methods and devices applied in the course of data collection, measurement, and evaluation, as well as the content and the process of reporting.

The sustainability accounting system is elaborated at a corporate level, and because of this, it applies to economic organizations obliged to prepare reports and it is not relevant at the macro-level.

As already mentioned, with the reinterpretation of the going concern principle, existing accounting principles also gain new meanings both in social and environmental terms. Lamberton (2005) highlights one of those principles, namely the principles of sufficiency. According to his approach, it is not possible to record and analyze all impacts on society and the natural environment, thus, those impacts should be put forward that pose potential threats to mankind and the natural environment or that are essential for the company's decisions.

The following principle is the interpretation of sustainability at a corporate level. It is an important issue because it determines the framework of the whole system. The company's sustainability goals, the compound realization of economic, social and environmental sustainability raise the issue of their integrated measurement and performance evaluation. Due to the complexity of the company's sustainability performance evaluation, the boundaries of the sustainability accounting system have to be clearly marked in a way that the system can still be managed by the company. It has three levels. First, the essential inputs and resources that influence or incidentally limit the operation of the company have to be taken into consideration, then the direct effects of the company's activities on the society and the natural environment, that is the outputs. The supply of inputs, in other words, the environmental and social performance of suppliers, also has to be taken into account (Lamberton, 2005).

The following essential requirement is the selection of the proper period for accounting, evaluation and analysis, that is, the determination of the period in which the company is evaluated in terms of sustainability. It is advisable to choose a monthly, quarterly or annual period in accordance with the traditional accounting standard. However, the sustainability accounting system needs to be applied in a longer time frame since it has to take into account the social and environmental impacts of the company's products and services through their entire life-cycle.

The evaluation of the social and environmental impacts caused by corporate activities or the entire life cycle of a product requires the application of non-monetary, qualitative indicators beside the usual monetary indicators for measuring economic or financial performance.

3. Methods and devices for data collection, data record, measurement and analysis:

The sources used for collecting and recording data are wide-ranging and abundant, however, in the selection process some cost-benefit aspects should be enforced.

Based on the collected economic, social and environmental data, it becomes possible to measure the company's sustainability performance, and this requires a variety of benchmarks and evaluation methods. Some of these are the cost estimation of decision alternatives regarding sustainability (Bebbington & Gray, 2001), input-output analyses, life cycle analyses, and the mapping of social and environmental impacts. One of the most complete methods available for the management is the Sustainability Balanced Scorecard (SBSC), an integrated indicator system aimed at evaluating the company's performance (Fülöp and Hódi Hernádi, 2012), which is the basis for decision-making and monitoring the realization of objectives.

Considerable attention should be paid to the evaluation of environmental protection measures and the costs of social and environmental liabilities in order to make the company accountable in terms of sustainability.

4. Sustainability accounts and reports:

The fourth part of sustainability accounting focuses on distributing both quantitative and qualitative information to users. Here, there are two key questions to be answered. What is the appropriate form and content of a sustainability account? How often should these reports be prepared and published?

Sustainability accounting information are presented by the SBSC including a wide variety of performance indicators, and other sustainability reports based on the guidance of the Global Reporting Initiative (GRI).

Such reports should be made regularly through the entire lifetime of a product. It is reasonable to present and publish the company's accounting information related to sustainability on its website. The sustainability of the

company's accounting information should be presented and published on the website, thus this continuously updated information on sustainability is made available promptly to the stakeholders.

5. The qualitative characteristics of information on sustainability:

The information provided by sustainability accounting systems has to meet a number of important requirements. These are based on the characteristics of traditional accounting information, as well as on the guidelines of GRI sustainability reports. The two highlighted features are transparency and controllability. Transparency demands the complete publication of processes, procedures and assumptions (GRI, 2002). Controllability requires that the recording, organizing, analysis and publication of the presented data and information should be done in a way that enables auditors to certify data reliability (GRI, 2002).

The further requirements concerning sustainability information are: completeness, credibility, neutrality, clarity, materiality, timeliness, comparability and readiness for interpretation in the context of sustainability.

It is reasonable for companies wishing to comply with the requirements of sustainability to design and operate sustainability accounting systems since it is a kind of financial language for decision-makers. According to SIGMA (2003), sustainability accounting is a bridge which leads the company to the bank of a sustainable operation and behavior. The main characteristics of the different accounting systems are summarized in Table 1.

Since traditional, environmental and sustainability accounting systems examine the company's sustainability performance through different dimensions, the content of the obtained information varies,, giving different tasks to the particular accounting systems. The modified range of tasks is noticeable in the areas and the applied methods of the accounting systems. Despite the fact that there are so far no compulsory standards for the operation of sustainability accounting systems, these requirements will certainly appear in the long term.

*Table 1*

*Comparison of the characteristics of traditional, environmental and sustainability accounting systems*

| Aspects for comparison | Traditional accounting system | Environmental accounting system | Sustainability accounting system |
|---|---|---|---|
| Dimension | – Economic (financial) situation | – Relationship between economy (company) and environment | – Integrating economy (company), society and environment |
| Target | – Presenting general economic situation<br>– Cost management | – Presenting environmental performance<br>– Presenting environmental liabilities and costs | – Presenting sustainability performance (including economic, social and environmental performances) |
| Field of application | – Financial accounting<br>– Management accounting | – Environmental financial accounting<br>– External ecological accounting<br>– Environmental management accounting<br>– Internal ecological accounting | – Sustainability financial accounting<br>– Sustainability management accounting |
| Method | – Evaluation processes<br>– Cost accounting | – Evaluating environmental performance<br>– Life-cycle analysis<br>– Analyses on environmental costs and savings | – Evaluating sustainability performance by applying the methods of other disciplines (biology, sociology)<br>– Sustainability Balanced Scorecard |
| Unit of measurement | – Money (inventories excluded) | – Money and natural units | – Money and natural units |
| Forms of accounts | – Financial and accounting reports<br>– Internal reports | – Environmental reports and accounts | – Sustainability reports and accounts<br>– Global Reporting Initiative |
| Regulation strictness | – Compulsory due to legal regulations (financial accounting)<br>– Voluntary (management accounting) | – As part of the Act on Accounting, some reporting requirements on environmental performance | – Not regulated, voluntary |

Source: Hódi Hernádi, 2012

# THE ILLUSTRATION OF THE OPERATION OF A SUSTAINABILITY ACCOUNTING SYSTEM

The following case study illustrates how a sustainability accounting system can be operated in one of Hungary's largest chemical companies.

## *Background Information on TVK*

The Tiszai Vegyi Kombinát Public Limited Company (TVK) has 1,097 employees today and its annual sales revenue is about 374,584 million HUF. It is a production company which makes ethylene and propylene by processing naphtha and gasoline as raw materials that are further processed into small-, medium- and high-density

polyethylene and polypropylene by applying state-of-the-art technologies. It supplies raw materials not only to the domestic market but also to plastic manufacturing companies throughout Central, Eastern and Western Europe. The plastic products made from the raw materials supplied by TVK are essential for both industrial users and the broader public.

Along with Slovnaft Petrochemicals, s.r.o., located in Bratislava, TVK composes the Petrochemical Division within the MOL Group, which holds a leading position in petrochemical sector in Central-Eastern Europe and – in terms of its production capacities – is one of the ten largest polymer producers in Europe.

## *The structure of TVK's Sustainability Accounting System*

The company is aware that nowadays the benchmarks of long-term success and social acceptance cannot be observed only in economic indicators. Its activity is increasingly evaluated in the light of the company's ability to reduce negative effects on both the environment and society. This goal is served by the development and operation of a sustainability accounting system.

1. The aim of TVK's sustainability accounting system:

TVK's sustainability accounting system contributes to the long-term realization of sustainability by providing a well-established and applicable planning, decision-making and operating process. On this basis, the operation of the system is annually reviewed by using such benchmark documents as the Dow Jones Sustainability Index and the expectations of the international conventions for the purpose of complying with industry best practices; furthermore, existing and missing elements are continuously identified in order to see "what progress the company has made".

Its sustainability accounting system evaluates the efficient implementation of the sustainability objectives; furthermore, it encourages continuous improvement efforts, and helps to increase the level of awareness and transparency.

2. The principles and requirements of operating TVK's sustainability accounting system:

Every industrial sector and every corporation have different objectives and, therefore TVK is not exceptional in individually identifying and defining its objectives and tasks in terms of sustainability, which reads as follows: Sustainable development is a corporate commitment for us that is aimed at equally integrating economic, environmental and social factors into our daily business operations, maximizing long-term value and keeping the license we received from society to carry on our operations (TVK 2013). As a chemical company, it has a significant impact on the environment and society; the negative consequences of its operations are reduced by applying the principles of precaution and responsible care.

The company marks the boundaries of its sustainability accounting system following the guidelines made by is the UN's Global Compact and the GRI. In practice, it means that the company defines its objectives within the three dimensions of sustainability, and evaluates its sustainability performance. The economic aspects primarily mean value creation, but the increase of customer satisfaction, the development of the local economy and infrastructure as well as reducing the possibility of corruption are also included. The social dimension is filled with the involvement of stakeholders, the organization of social investment programs, the improvement of employability, the development of human capital, ensuring the society's health and safety conditions and raising customers' environmental consciousness. The environmental aspects extend to energy use, water consumption, reduced pollution, waste management, the moderate use of hazardous materials, the use of recycled materials, the protection and rehabilitation of the land and the conservation of biodiversity.

The evaluation period of the company's sustainability performance is basically determined on a yearly basis. During product development, however, the "cradle to grave" concept also appears, that is, the health and environmental effects of these products are taken into account through the whole life cycle of the product.

The currency unit employed by TVK, according to its size and international influence, is expressed in million HUF or in thousand Euros. In addition, metric tons are commonly used as a natural unit of measure, partly for measuring the weight of the produced goods and partly for measuring environmental impacts.

3. Methods and devices for data collection, data record, measurement and analysis:

The nature of information its sustainability accounting system is required to collect is derived from TVK's sustainability objectives. In most cases, the indicators are based on measurement and calculations but sometimes it also happens that they are based on estimations, depending on the subject or on the premises. The operational environment and the company's performance are constantly analyzed and evaluated in order to fully meet the shareholders' expectations.

Economic performance is evaluated by the quantification of environmental and social costs and revenues, the application of risk matrices, life-cycle analyses and benchmarks. The impact on society is examined with the help of stakeholder analyses and social efficiency indicators. The company's environmental performance is monitored by applying condition test methods, eco-efficiency indicators, and input-output analyses. Since TVK pays special attention to developments contributing to sustainability, it measures the percentage of the realization of such investments together with their average level of preparedness.

For the integrated evaluation of corporate sustainability performance the Sustainability Balanced

Scorecard is used. Apart from this, the company examines its compliance with the requirements of the GRI, its position in the ranking of sustainability and corporate social responsibility, and it also appears in the definition of the Dow Jones Sustainability Index and the Oekom Research index.

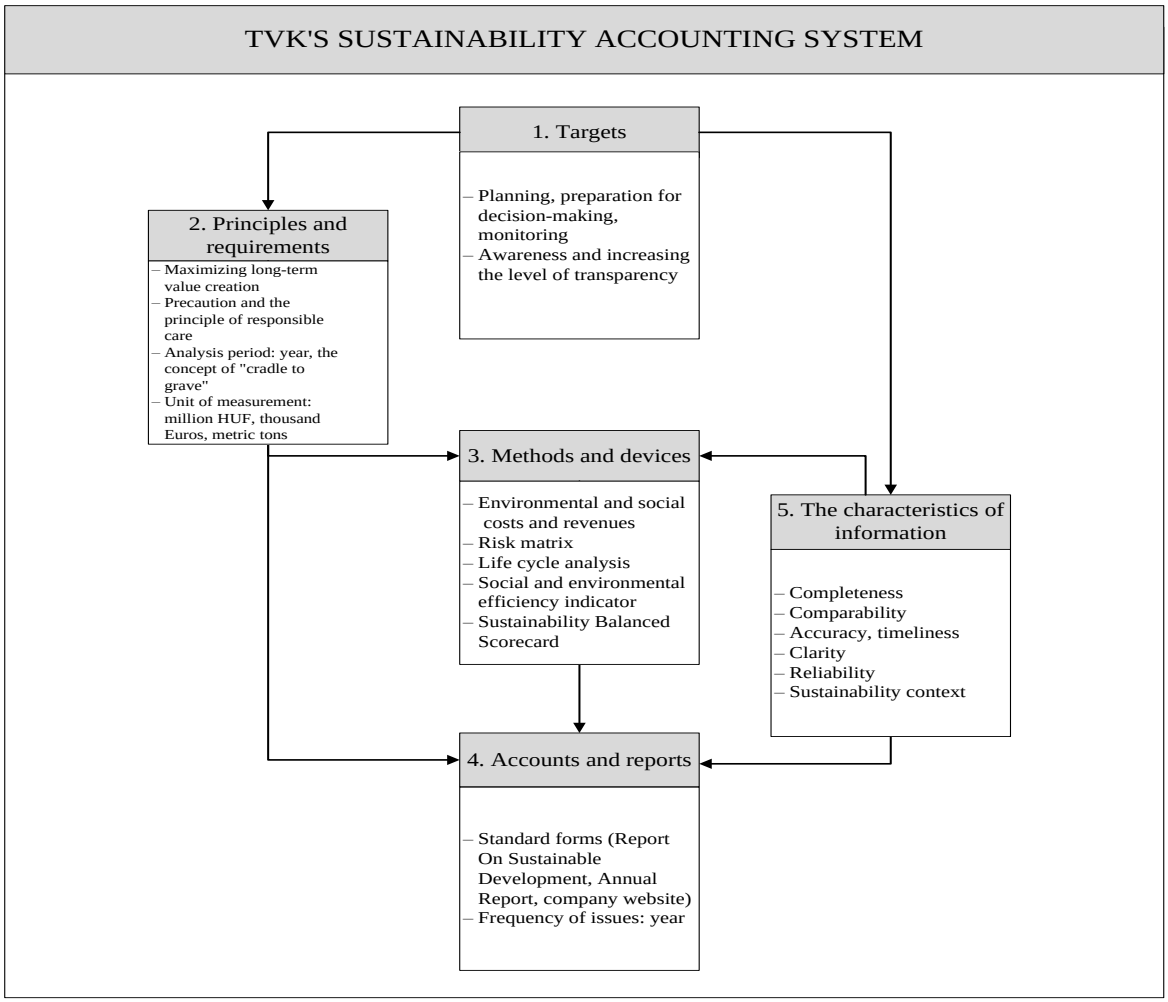
4. TVK's sustainability accounts and reports:

From the above, it is obvious that TVK is committed to sustainability and communicates its achievements to the stakeholders. An annual report is issued on the company's sustainability performance. Although monthly and quarterly reports are issued for to the board of directors, they usually focus on the financial situation of the company, lacking any social and environmental information. The evaluation of sustainability investments and projects is an exception, provided that they report whether their realization is carried out in due time, in the required quality and below the originally approved budget.

The company developed a standard form for its reports, ensuring the comparability of its accounts. In terms of economic and financial issues, detailed information can be found in the Annual Report, while more can be read about the company's sustainability performance in its Report on Sustainable Development. It has to be emphasized that the company's Annual Report also includes data reflecting its sustainable performance in an integrated way.

5. The qualitative characteristics of information on sustainability:

By providing as much detailed and accurate industry-specific information as possible, TVK aspires to the greatest level of transparency in order to minimize the risks related to the anticipated economic, social and environmental changes and developments, and to ensure the comparability of the results. Therefore, the accounting information on its sustainability performance has to be relevant, complete, comparable, accurate, timely, clear and reliable and they equally have to be concerned with both the positive and negative effects (a balance should be sought after), they have to be in line with the stakeholders' expectations, and they have to present sustainability connections as well. As a summary of the above, a logical model of TVK's sustainability accounting system is shown in Figure 2.




Source: own construction based on Lamberton (2005)

*Figure 2. The logical framework of* TVK's sustainability accounting system

### *The Benefits of Operating Sustainability Accounting Systems*

Sustainability accounting systems must primarily meet the needs of those demanding the information. Accordingly, the function of a sustainability accounting system is to identify, collect, analyze, and communicate feedback on the company's economic, social and environmental performance. TVK's sustainability accounting systems provide appropriate, reliable and real information on the sustainability results of the company. Apart from supporting managerial decision-making, the information provided by sustainability accounting systems can also be utilized in other areas that give a basis for reports on sustainability. The major corporate as well as micro- and macro-environmental benefits resulting from operating the sustainability accounting system of the investigated company are summarized in Table 2.

*Table 2*
*The benefits of operating sustainability accounting systems*

| Corporate benefits | Micro- and macro-environmental benefits |
|---|---|
| – Presents the impact of sustainability performance on balance sheet earnings<br>– Maps cost-saving opportunities, revenues and financial advantages originating from sustainability -oriented operation<br>– Evaluates, handles and reduces social and environmental risks, liabilities, cost and expenses<br>– Creates more favourable conditions in the course of economic or investment negotiations, widens the range of potential investors<br>– Helps to determine the cost of production as well as set the price of a product more accurately<br>– Supports establishing cleaner production projects, the evaluation of investments (by mapping the social and environmental effects of investment decisions)<br>– Facilitates appearance on the list of 'eco' suppliers<br>– Facilitates tracing energy and material flows more accurately, contributing to increased resource efficiency<br>– Helps the management to make responsible decisions<br>– Fosters the social and environmental awareness of employees while performing their tasks and strengthens their commitment and motivation | – Satisfies the information needs of external users<br>– Makes better relationships with the stakeholders<br>– Ensures and improves the legitimacy, credibility and the reputation of the company<br>– The public recognizes corporate accountability, transparency and trustworthiness in social and environmental issues, thus improving the company's general acceptance<br>– Facilitates the comparability of the company's sustainability performance to other companies or industrial sectors<br>– Promotes the application and improvement of sustainability accounting by acquiring knowledge on the best practices<br>– Contributes to sustainable development on a corporate, national and global level |

Source: Fülöp and Hódi Hernádi, 2013

## RESULTS AND SUGGESTIONS FOR FURTHER RESEARCH

The novelty of the paper could be summarized as follows:

- The comprehensive overview of the developing phases of the accounting in the last two decades from the aspect of to what extent the system integrates the principles of the sustainability into itself: traditional accounting (economic factors), environmental accounting (economic and environmental factors), and sustainability accounting (economic, environmental and social factors).
- The comparison of the characteristics of the different accounting information systems (dimensions, target, field of application, method, unit of measurement, forms of accounts, regulation strictness) in order to support the selection of the measures and tools.
- The specification and introduction of a logical model of sustainability accounting system (targets, principles and requirements, methods and devices, form and content features of the information).
- The classification of the company, micro- and macro-environmental benefits of the system.

Obviously, all of this can contribute to complying with the different kinds of quality expectations the companies are facing.

These results, of course, can be regarded as the initial steps of a fresh research project that needs further specification on both theoretical and practical perspective in the future. The following research tasks are needed to achieve these goals:

- Practical application of the conceptual model of a sustainability accounting system.
- The clarification of the impact of the sustainability accounting information supply to the decision makers on the sustainability performance of the company.
- Carrying out further domestic and international case studies for the more explicit illustration of the interactions between quality and sustainability with the application of a sustainability accounting system.

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