

Social Accounting as an Alternative Approach for University Accounting Purposes

Peter Friedrich, Diana Eerma*

Abstract

Different forms of accounting systems exist in economics and business administration. They also have different objectives. For example, national economic accounting measures production and assets of an economy for sectors or the whole economy. In the commercial (financial) accounting a profit assessment takes place. Cameral accounting monitors public administration budget execution and tends to have a narrow approach to public enterprises. Social accounting has wider approach, measuring social success of private firms and public enterprises. Main difference between above mentioned approaches is the fact that social accounting considers that economic units (companies, educational institutions and NGOs etc) influence external environment through their actions and therefore should account for these effects as part of their standard accounting practices. The aim of the article is to explain why and how the social accounting may be considered as suitable alternative approach or supplement for the university accounting based on the faculty case.

Introduction

There are four basic systems of accounting available: 1) the economic accounting directed to identify production measured income of sectors and a country by national accounting, the national wealth accounting to determine the value of assets and liabilities of a country and the accounting of financial transactions of a country; 2) the commercial accounting concentrating on profit and loss identification and the change in wealth of an individual economic unit such as a firm; 3) the cameralistic accounting that is to check whether public plans formulated in financial and fiscal terms, e.g. a budget plan, are realized exactly and actually and how the realization proceeds. It refers to jurisdictions or single public economic units; 4) social accounting wants to identify the social success of an individual economic units.

The economic accounting system applied to a university would mainly show what income would be created and distributed by the university itself or by its effects throughout the whole economy. All income influencing activities would be considered. High incomes might be desired. Universities are embedded in national accounting, but they are not shown disaggregated as individual economic entity.

The cameralistic accounting system would show whether the university has kept to its financial plan, mainly budget plan, and what kinds of deviations in expenditures and revenues occur at what stages of realization. Whether the plan itself is to achieve desirable goals is not questioned. In some countries public universities use the cameralistic accounting. The commercial accounting system of a university shows whether the university has achieved profits or losses and whether the commercial value of its assets or debts has been changed during its activities.

The aim of the article is to explain why and how the social accounting may be considered as suitable alternative approach or supplement for the university accounting based on the faculty case. Therefore we start looking for interesting features of existing approaches in the first sub-

* Prof. Dr. Dr. h.c. Peter Friedrich, senior researcher, University of Tartu; E-mail: Peter@mtk.ut.ee, Diana Eerma, lecturer, University of Tartu, Estonia; E-mail: diana.eerma@ut.ee. This work has been supported by the Estonian Ministry of Science and Education foundation project No SF0180037s08 and by the European Social Fund through the Research and Innovation Policy Monitoring Programme (TIPS SV 3).

part. In total, the article consists of four sub-parts: in the first is explained theoretical background for social accounting approach, then social and commercial accounting in the University accounting are discussed and social accounting becomes developed, and finally, under the discussion are necessity and criticism of social accounting as an alternative approach for the university accounting on the bases of earlier project, what was based on the case of faculty (completed by authors of the article).

The method applied, refers to a conceptual development on a chart of accounts and book-keeping rules for a social accounting framework that takes social corporate accounting as a starting point. The developed accounting system gets verified on basis of empirical data identified for the Faculty of Economics and Business Administration of the University of Tartu in the year 2006.

1. Social accounting approach

In general social accounting is considered to be as social and environmental accounting, corporate social responsibility reporting, non-financial reporting or sustainability accounting. There is meant the process of communicating the social and environmental effects of organizations' economic actions to particular interest groups within society and to society at large. Social accounting seeks to broaden the scope of accounting overall and especially the financial accounting.

As there exists a considerable literature on social accounting concerning the last 50 years the existing approaches differ widely. Moreover, there are different practical examples of use in public transportation, chemical industries, energy industry or to show management effects of measures in health, education and environment. A main influence on the social accounting approaches stems from the applied definitions of social success and how this success can be expressed and the management aims for which social accountings got development. Some firm wants to express how it influences internal and external stakeholders by effects not expressed in commercial accountings. This leads to social audits¹ mostly in the form of reports and a listing of advantageous and sometimes disadvantageous effects. If the focus on showing that the knowledge and stock of labor is of special value of a firm or the society the human accounting was evolved. Corporate social accounting considers the social effects of public and private firms and shows different forma according to the way the social value of effect is measured, e.g. by net benefit, cost effectiveness, and utility sometimes in form of indicators or functions of indicators. The citizen value approach measures effect on the jurisdiction city and its population by supplementing profits and losses by financial effects occurring to the city. Special social accountings exist for environmental, health and education issues, which sometimes deal with economic units or measures or special effects.

Many contributions speculate about the possibilities to measure social success, the usefulness of social accounting and the effects on management and decision making of its introduction. Before tackling these questions an appropriate kind of social accounting and its features as well as a bookkeeping system should be developed otherwise there is no basis for an accurate discussion.

There is a vast literature on social accounting and examples of applications (cf. surveys by Winkelmann (1980), Kaya, Yayla (2007)), which cannot surveyed completely here. The main approaches are listed in the table 1 (general approaches) and in the table 2 (special social accounting approaches) and some basic literature is cited. To develop the social accounting and bookkeeping system some features are introduced and marked in the columns of the table 1. They show, which basic kind of social success measurement is applied (net benefit or cost-

¹ In the broader sense we probably may find similarities between social accounting and the triple bottom line (people, planet, profit) reporting, which captures an expanded spectrum of values and criteria for measuring organizational success in economic, ecological and social spheres. The triple bottom line reporting has been become the dominant approach to public sector full cost accounting recently (see Sustainability: A guide to triple bottom line reporting).

effectiveness or utility analysis) whether social effects are considered, whether the accountings are measure and project oriented or refer to all activities of an economic subject and whether they got applied to private firms, public firms and public offices. Important is also whether they offer hints to evaluate some effects of faculty activities and a complete bookkeeping system and whether they come up to basic requirements of social bookkeeping (1):

A social accounting bookkeeping system should identify the social value stemming from the operations of the faculty. Some attempts mentioned in the first part show many weaknesses. Particularly, education and social value approaches do not consider sufficiently (Friedrich, Feng, Jahn, Valjak, Wonnemann, 2000):

- The social success of the faculty within one year
- A complete consideration of transactions
- A set of techniques for the choice and evaluation of transactions to be applied to all of them
- Conventions dealing with an equal application to all institutions involved
- Deferral of social successes and failures to individual institutions, e.g. enterprises
- Conventions, where transactions have to be verified
- A periodical specification of transactions
- A unilateral dimensioning of advantages and disadvantages
- A common and specified assignment and grouping system
- A periodically specified financial bookkeeping of changes in success and a stock, bookkeeping system, and
- Efficient links to other bookkeeping systems.

Finally there is a column that shows the usefulness of the approach for accounting and bookkeeping for the faculty.

All of the approaches point to social effects that may be relevant. Some approaches are helpful in evaluating effects due to faculty activities. This concerns especially the approaches concerning environment, health and education. However some approaches are dominantly developed to identify projects' and political measures. Those which refer to the bunch of activities of an economic unit deal many times with the evaluation of social effects of private enterprises or public enterprises less of public economic units. Complete bookkeeping systems are seldom involved. Most of the approaches come not up to the requirements of a bookkeeping system (1). Especially cost-effectiveness and utility based approaches run into difficulties to split and isolate the contribution of the faculty from contributions of other economic units to achieve a joint social effect.

Social accounting seeks to broaden the scope of accounting in the following ways:

- concerning with more than only economic events;
- not being exclusively expressed in financial terms;
- be accountable to a broader group of stakeholders;
- broadening its purpose beyond reporting financial success.

Social accounts give information to highlight the performance of the company or organization and the perception of society toward the company. Therefore social accounting approach is relevant for a University accounting because of social objectives and reasons. For the application of social accounting speaks the fact that most of the academic studies about social accounting have been in the context of developed countries such as Western Europe, the USA and Australia (Kaya, Yayla, 2007).

Table 1. General approaches of social accounting

Approaches	Literature	Net-benefit analysis	Cost-effectiveness analysis	Utility analysis	Effects	Project oriented	Private firm	Public firm	Public office	Some effects evaluation	Complete book-keeping system	Requirements in p 3 (1)	Book-keeping approach	Usable for social accounting
General approaches														
Economic investment accounting														
Benefit-cost analysis	Inter-Agency Committee on Water Resources 1958; Friedrich 1969; Parta/Sen/Marglin 1972; Hanusch 1987; Stephan/ Ahlheim 1997; Marggraf/ Streb 1997; Flores 2003	yes	no	no	yes	yes	no	no	no	yes	no	no	no	partly
Cost-effectiveness analysis	Meyke 1973	no	yes	no	yes	yes	no	no	no	partly	no	no	no	no
Utility analysis	Zangemeister 1976	no	no	yes	yes	yes	no	no	no	no	no	no	no	no
Social accounting														
Social audits	Abt 1972; Schmitz 1980	no	no	no	yes	no	yes	yes	no	partly	no	no	no	no
Human resource accounting	Hermanson 1964; Brummert 1969; Flamholtz 1971; Neubauer 1974, Conrads 1976	no	no	no	yes	no	yes	no	no	yes	no	no	no	no

Approaches	Literature	Net-benefit analysis	Cost-effective-ness analysis	Utility analysis	Effects	Project oriented	Private firm	Public firm	Public office	Some effects evaluation	Complete book-keeping system	Requirements in p 3 (1)	Book-keeping approach	Usable for social accounting
Corporate social accounting	Linowes 1961; Abt 197; Monsen 1972; Elliot Jones 1973; Eichhorn 1974, Mühlenkamp 2007	partly	no	no	yes	no	yes	yes	no	yes	no	no	no	partly
Social indicator analysis	Dierkes 1974; Mintrop 1976, Fischer Winkelmann 1981, v. Wysocki 1981; Schmitz 1980; Friedrich 1991; Schauer 2007	no	partly	partly	yes	no	yes	yes	no	yes	no	no	no	no
Citizen value	Schwalbach, Schwerk 2008; Schwalbach, Schwerk 2009	no	no	no	yes	partly	yes	yes	partly	yes	no	no	no	no

Table 2. Approaches of special social accounting

Approaches	Literature	Net-benefit Analysis	Cost-effectiveness analysis	Utility analysis	Effects	Project oriented	Private firm	Public firm	Public office	Some effects evaluation	Complete bookkeeping system	Requirements in p 3 (1)	Bookkeeping approach	Usable for social accounting
Special social accountings														
Environmental accounting	Seidel, Zensus 1990; Asuma 2007	partly	yes	yes	yes	yes	yes	yes	yes	yes	no	no	no	partly
Health accounting, measure oriented	Müller Bohn Ulrich 2000; Schöffski, Graf von der Schulenburg	partly	yes	partly	yes	yes	yes	yes	yes	yes	no	no	no	partly
Health accounting, Net- benefit	Greiner, Uber, Graf von der Schulenburg; Wille1996; Greiner, Schöffski 1998, Brent,2004	yes	no	no	yes	partly	yes	yes	yes	yes	no	no	no	partly
Health accounting, cost-effectiveness-analysis	Tengs, Adams,Pilskin 1995; Weinstein 1996; Wille 1996; Schöffski, Uber 1998; Rychlik, Brent 2004	no	yes	no	yes	partly	yes	yes	yes	yes	no	no	no	partly
Health accounting, utility analysis	Schöffski 1990, Birch Grafsi 1994, Greiner, Schöffski 1998; Brent 2004; Graf von der Schulenburg 2007	no	no	yes	yes	partly	yes	yes	yes	yes	no	no	no	partly

Approaches	Literature	Net-benefit analysis	Cost-effective-ness analysis	Utility analysis	Effects	Project oriented	Private firm	Public firm	Public office	Some effects evaluation	Complete book-keeping system	Requirements in p 3 (1)	Bookkeeping approach	Usable for social accounting
Bookkeeping oriented approaches														
Elderly homes	Schmitz 1980	yes	no	no	yes	no	yes	yes	yes	yes	yes	yes	yes	yes
Energy provision	Tsimopoulos 1989	yes	no	no	yes	partly	no	yes	no	yes	yes	yes	yes	yes
Convention halls	Friedrich, Jahn, Valjak, Wonnemann 1993	yes	no	no	yes	no	no	yes	partly	yes	yes	yes	yes	yes
Touristic facilities	Feng, Friedrich, Jahn, Valjak, Wonnemann 2000	yes	no	no	yes	partly	yes	yes	partly	yes	yes	yes	yes	yes
Ecological banks	Friedrich, Kosinski, Türk 2003	yes	no	no	yes	no	yes	no	no	yes	yes	partly	partly	partly

Since described approaches are not as specific as required for the University social accounting it is necessary to develop a system of social accounting for the University accounting purposes. Next, a development of social accounting for the University is presented in case of one faculty.

2. Social accounting for the University accounting purposes

We have looked at social accounting approach on Faculty level applying this approach in the case of the Faculty of Economics and Business Administration, University of Tartu (Friedrich, Eerma, 2010). Firstly, we started from the activities, tasks and funding sources for the Faculty.

The activities of the Faculty are mainly financed by student fees, grants from central government, donations from the university budget, contributions in the framework of projects from ministries, European Union funds, firms, foundations, consultancies. Therefore, the faculty itself acts like a public enterprise. It uses its financial, procurement, production and sales (marketing) instruments and treats closely related institutions such as structure units of university, the related colleges, students as clients, etc. Considerable executive competence lies with the faculty, however, part of such competences are also due to the colleges (see figure 1).

The main tasks concern the creation of knowledge, which is state funded and/or non-funded. This is testified by bachelor and master degree of the Faculty and colleges. Colleges offer also vocational training. Knowledge should be obtained by courses of distance learning as well. Especially the core faculty is aimed to increase knowledge of doctoral candidates. One of its main tasks is research and preparations to support academic careers of researchers. In line is also the improvement of knowledge of teaching staff, scientists and researchers. Another important task is to produce publications and long lasting research results. In general, the capacities for international co-operation, of the library, of staff, of equipment and buildings are to be increased.

Other tasks concern the information of the public about research results, advices to firms and government, municipalities, promotion of business, contributions to research centers, e.g. a centre of entrepreneurship, support to colleges, and the achievement of European funds. The University should offer its capacities to political and public decision making and should create income and economic support to South Estonia, and through the colleges also to other parts of Estonia (Figure 1).

The fulfillment of these tasks is mostly linked to a social success whereas failures like bachelor, master and doctoral education without success, research failures, non-finished international projects, accidents, emissions, the leaving of staff, unsuccessful consultancy, the closing down of work positions, the loss of resources through personal consultancy, the blocking of resources for other users, political activities, and incidences for the location region represent social disadvantages.

Therefore, the operations of the Faculty have many social implications. As an economic unit, the Faculty uses stocks of production factors. These assets such as location, buildings, installations, parking lots, etc. but also current assets and factor inputs are not available for other social or economic purposes. On the other hand, capacities are built up to increase knowledge and improve social conditions. Social effects dominantly deal with social stocks, but also with current flows. Current operations deal with the tasks mentioned above. Social effects occur to the students, and to other economic units involved such as firms, counties, and the Central state of Estonia as well as to research institutes. Sometimes, social effects add to social stocks, but oftentimes they only last one period and influence social welfare only within this period. These can be treated as flows.

To create favorable or unfavorable effects, economic units are working together. This causes difficulties when trying to identify the degree to which they are responsible for creating such effects. Therefore, management tools, e.g. accounting systems, must be available to

identify the social effects and to find out advantages and disadvantages of faculty's activities (Bräuning, Eichhorn, 2002).

The faculty uses a period oriented double-entry commercial bookkeeping system that does not consider public goals explicitly. Flows expressing receipts (received payments) and expenditures (payments to others) are booked in double-sided accounts. They show the fiscal consequences of operations. Current accounts relate to a profit assessment. Asset accounts refer to a balance of assets and liabilities. The accounts reflect mostly realized operations. Information on assets, their changes as well as variations of reserves and debts, are gathered in asset accounts.

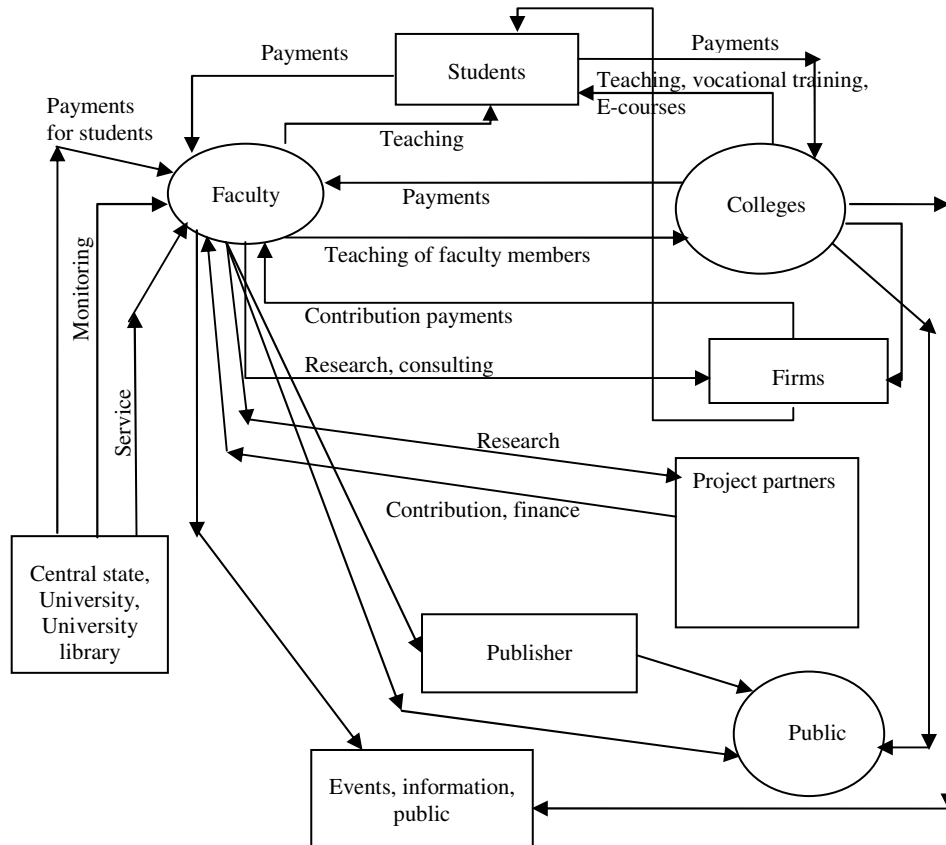


Fig 1: Network of the Faculty
Source: Friedrich, Eerma, 2010.

Profit signals the difference between the revenue payments in operation and the expenditure payments in operation. The accounting is done centrally by the accounting department of the University. However, the payments etc., profits and balances are also identified for the University institutions such as the Faculty of Economics and Business Administration. The flows and assets, etc. are booked and shown for the institutions that are part of the faculty cluster. The accounting of the Faculty is to assess profits; it concentrates on the internal effects of an economic unit or on the internal success of the bookkeeping unit.

Therefore, a bookkeeping system is needed to account for the values of the social effects.

As there is no social welfare function for the faculty available, such an accounting system must be based on a benefit-cost-analysis, a cost-effectiveness-analysis, or a utility-analysis where utilities are measured by social indicators. The dimension of advantages and disadvantages may be reflected in money, time or other dimensions such as numbers of students and the amount of events. As most of the information in the commercial bookkeeping is available in terms of payments we developed a social bookkeeping system and accounts in monetary

terms. In order to assess faculty's activities of social value we applied the willingness to pay approach to identify social values in money. Direct social benefits are measured directly by consumer surplus and turnover related to faculty operations. Some social benefits are measured indirectly. Income increases, money value of time savings, decrease of costs, e.g. of self instruction, less compensation from insurance companies, reductions in contributions of other institutions, or higher values of shadow prices, higher values based on hypothetical demand functions (Parta, Sen, Marglin, 1972; Flores, 2003), increases in property values and higher leases express higher ability to pay for external effects of faculty operations because of improved faculty services. Social costs incurred by the faculty are determined by costs and input oriented producer surpluses. Methods used to identify social benefits serve to measure external social costs as well.

To include long lasting effects and corresponding social advantages and disadvantages we have defined stocks of advantages (social benefits, social assets) and stocks of disadvantages (social costs, social liabilities).

To evaluate stocks of social benefits and costs the auditor has to decide in favor of which generation the analysis should be made. The chart considers the time horizon of generations involved - normally all of those are affected by Faculty's activities. However, the evaluation has to be done by the present generation.

The delineation of the group of persons, whose willingness to pay must be determined, is rather complicated (Friedrich, Jutila, 2001). As faculty operations concentrate on Estonia, the welfare of Estonians should be maximized, and not EU-wide or global welfare. The willingness to pay approach uses prices, and some of the services also refer to other states, which are partly determined on a national or EU-wide basis, and as European capital markets are more and more integrated, we referred to persons affected by the existing prices when applying the willingness to pay system.

Moreover, all those are included where changes in operations of the Faculty lead to changes in social value according to the willingness to pay methods applied. This is unsatisfactory as some nations or regional authorities are only interested in the welfare of their own inhabitants, not taking into account the disadvantages or advantages occurring in other regions. This is partly due to regional competition (Friedrich, Jutila, 2001). Appropriate methods for regional benefit-cost analysis are lagging. The region, where changes in welfare occur, is mainly the one in which the Faculty is embedded by its performance operations, delivery and procurement activities and where Faculty's service consequences are noticed. They are in Narva, Pärnu, Tartu, Tallinn and other parts of Estonia. Therefore, Estonia is the adequate region.

Due to information problems the sequences of transactions and effects to be included are those that are more directly linked to the Faculty. This automatically restricts the number of people and the size of the considered region in the social accounting, too.

Social benefits, social costs, social assets and social liabilities can be grouped according to social effects of various faculty operations. Social assets and social liabilities were grouped according to long lasting effects. Our grouping was primarily based on the operations of the faculty, e.g. research, teaching, conference meetings, scientific co-operation, Open University, vocational training, consulting services. Although our social chart is the faculty specific, it can be integrated with social charts of institutions in other sectors (for example, in case of other faculties).

To avoid double accounting we allocated social benefits and social costs as well as stocks to institutions, which, through co-operation and joint actions, were involved to cause social effects. We developed deferral criteria to spin off social benefits and social costs not caused by the faculty. To simplify the assessment, we mainly assumed that social benefits and social costs reflected within the commercial success assessment of the Faculty are assumed to stem from the Faculty activities. We should get social charts comprising all economic units involved in the operations or affected by them. To avoid various legal, social, political and economic difficulties the chart focuses on the Faculty and the selected colleges. It considers the other economic units as far as they contribute to social benefits or costs. No entire social accounting becomes necessary for them.

An alternative situation or development is important to measure welfare. It is rather critical because in a commercial bookkeeping system the alternative situation is that of non-existing of the firm mostly with profit of zero. However, in the case of faculty, there could be another institution that takes over the duties of the Faculty. The deferred social benefits and costs may still exist. The true contribution would consist of the difference of net-benefit to the next less advantageous organizational solution. As an approximation it is assumed that the Faculty's social net-benefit vanishes, if it does not exist.

There are several principles to shape accounting charts. Some like to offer insights in production processes, e.g. to show how and where social burdens are caused and stem from, other principles are oriented towards the closing procedures of the accounting. They especially demonstrate the relations to other economic units. As we like to identify the social net benefit due to the faculty, we applied the closing principle.

The chart and accounting system is fundamentally influenced by the style of accounting which is for the Faculty - a commercial one. However, the commercial bookkeeping system applied is not totally complete. Some changes of assets and stocks of assets and liabilities had to be completed. We did these corrections within our additional social bookkeeping. We used the principle of bookkeeping of double entry, which is already used in commercial bookkeeping oriented to the above-mentioned principle of closing.

In developing a social bookkeeping system² we have to consider the following connections:

- (1) Social accounting = an additional social accounting + commercial bookkeeping
- (2) Current social net-benefit = additional social success operating statement + commercial profit and loss account
- (3) Total social balance = additive social balance + commercial balance

As the commercial bookkeeping system is known to managers, economists, business administrators and institutions of private or public law, we concentrated on additive social accounting (in (1)) and to total social balance (3) integrating social and commercial success. As in commercial bookkeeping, additive social accounting transactions are considered relating to flows on the one hand and stocks on the other, and booked by double entry. Both bookkeeping systems lead to the total social balance signaling total social net-benefit.

3. The Chart of Social Accounting and Bookkeeping Rules

Firstly, the commercial bookkeeping system of the faculty has to be introduced. The bookkeeping system as well as the budget-structure is organized according to the accounting laws relevant for public administrations and public firms in Estonia.

A commercial bookkeeping exists for the faculty and the colleges related to the faculty such as the Euro-College, the Pärnu College and the Narva College. There are stocks asset accounts and liability accounts. The bookkeeping system shows revenues accounts and expenses accounts and a profit assessment account and balances. Partly we had to arrange the items booked according to these accounts. To some extent we were forced to find out stocks ourselves because the balances of the total university are not split according to our institutional scheme such as the faculties and colleges. Some real estates what the colleges are using are provided by other jurisdictions such as in Pärnu. We partly end up with a commercial balance where some assets are lagging. Due to the evaluation techniques used in commercial bookkeeping the commercial profit, reserves, and equity capital are influenced by re-evaluations of real estates. On the liability side a net-asset of the faculty is not shown, but was derived by our corrections.

² Social net benefit = Consumer surplus +turnover +monetary value of positive external effects – producer surplus (distortion of factor market) – costs - monetary value of external negative effects. The difference between turnover and costs is identified by commercial accounting. Other items are considered in an additional social accounting.

Secondly, we turn to the additive social accounting and the additive social success operating statement. Flows are accounted in additive current social benefits accounts and also in additive current social cost accounts (c.f. figure 2). Cross entries are to be made in an additive social cash account. Special deferral accounts help to spin off social benefits and social costs, which are not due to the operation of the faculty.

Stocks are included as social assets and social liabilities. Social assets comprise social benefits, which last longer than one period. Social liabilities are defined as social costs that also prevail longer than one period. Therefore, stock accounts include longer lasting additional social benefits and longer lasting additional costs. There are also deferral accounts for social assets and liabilities not caused by the faculty (c.f. tables 3 and 5).

Table 3. Accounting Groups

Assets	}	Classification	0: material social assets, human social assets
		“	1: social cash
		“	2: social claims
liabilities	}	“	3: social equity, adjustments
		“	4: social liabilities and social net benefit
social benefits	}	“	5: social benefits
social costs	}	“	6: social material and staff costs
technical accounts	}	“	7: opening social balance, final social balance social success operating statement
		“	8: deferral stocks
		“	9: deferral successes

The system of accounts is shown in tables 3, 4 and 6, where a plan of additive social accounts is demonstrated. It is structured according to effects of the faculty operations and social characteristics of the transactions. The digit II of an account in the chart of additional social accounts refers to additional social accounting. The letter F symbolizes the faculty. The classification numbers 0 to 2 refer to additive social assets, whereas those expressing social liabilities have the number 3 to 4. Current additive social benefits and costs are booked in accounts numbered 5 to 6. The technical accounts for additional opening balances and additional social final balances and additional social operating successes as well as total social balance are mentioned in number 7. Deferrals of stocks are referred to accounts number 8 and deferrals of current successes are fixed in accounts numbered by 9.

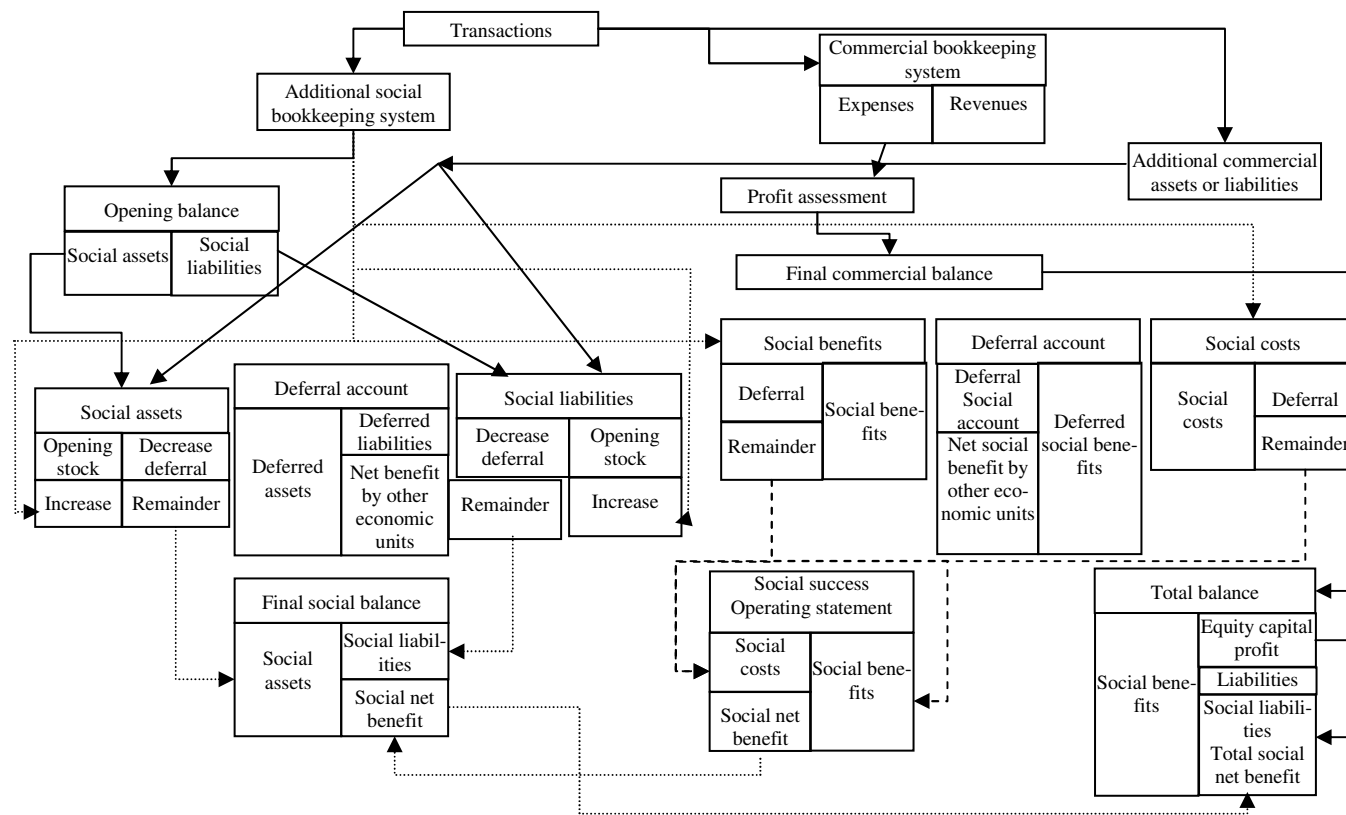


Fig. 2. Social Bookkeeping System.

The plan of accounts reflects the aspects of the faculty mentioned in section 2. An example of such a plan for the faculty is shown in the tables 3 to 6. Social additive assets primarily result from: the value of the faculty buildings, improvement in knowledge and skills, and infrastructure and public revenues, improved employment chances, research results and capacities and consulting possibilities. Moreover, there are social assets, such as the faculty itself that is not mentioned in its own accounting system. Therefore, there must be accounts for the items, such as the fixed assets, the building and installed equipments, for current assets and for the commercial net asset of the faculty. Moreover, there is a social cash account that is due to collect cross entries concerning current social benefits and costs.

There are also additive adjustments of social assets, adjustments of the value of the faculty building and other assets, and adjustments of social liabilities related to the faculty. Consequences of accidents, burdens of public debts to finance the faculty activities, fiscal and other liabilities not expressed in accounting of faculty and changes in real estate values as well as social losses related to the allocation of financial means to faculty activities symbolize other additive social liabilities. We also have to consider liabilities referring to the building and the additional net-benefit.

Social benefits stem from operations of the faculty including the 3 colleges, which are due to the main tasks. They consider four groups (c.f. table 4):

Teaching (1); Research (2); Consulting (3); Management (4); and Other tasks (5).

Add (1): This task concerns activities such as: Teaching bachelor students, teaching master students, vocational training, open university teaching, teaching in joint projects, teaching doctoral students, distance teaching, examinations, production of teaching materials, writing text books.

Add (2): Research of the faculty deals with activities such as education of scientists, publication of research results, information of public, consulting of institutions, increase of international co-operation capacities, increase of research capacities: staff, increase of research capacities: equipment, increase of research capacities: building, increase of research capacities, library, rising funds, writing articles, books, reporting, organizing conferences and meetings.

Add (3): Consulting refers to activities such as consulting to firms, consulting jurisdictions and public administrations in public management and economics, participation in planning (regional planning, urban planning, sector planning), participation in parliaments, chambers, firms, councils of public institutions, contacts to EU, contacts to scientific bodies, etc.

Add (4): To the management task of the faculty belong monitoring activities, the administration of financial means, the management of staff, participation in management decision making and faculty planning and infrastructure, participation in the University decision making, sufficient management of computer labs, special departments, contacts to other faculties, support of Colleges, representation of the Faculty.

Add (5): Other tasks concern activities such as contacts to schools, attraction of visitors, public relations, advertisement, etc.

As social benefits are determined according to the willingness to pay for the results of such activities, their social benefits are partly reflected in the revenues of the faculty. This willingness is pointed out in the contribution of the Central government, the Estonian research foundation, and in the payments from other institutions, such as towns, firms, parents and students' relatives. Partly, the payments of institutions are made according to their collective wishes, e.g. the contribution of the Central government, other faculties. There are imputed willingness to pay for services such as the payments of other institutions like chambers of commerce, associations etc. Most of them are corporations where a willingness to pay of the members for the tasks of the institution has to be considered. An imputed willingness to pay is also due for the private payments. These payments, if they are made by the faculty, are considered in the commercial bookkeeping. Therefore, additional social benefits accounts concentrate on the effects not accounted in the bookkeeping systems of the participants. Apart from purely financial operations most of the activities (1) to (3) show many education and external effects, thus, leading to additional social benefits accounts. There are other additional social benefits, which stem from the management and investment of the faculty and social

effects related to activities of the group (4). The effects causing social benefits occur with households, e.g. the students, their relatives and families, as well as with firms in many sectors, and infrastructure service facilities, insurance, public offices and other public institutions. Tax receipts of the host town, and social benefits from indirect tax receipts are also considered.

Social costs are related to the above-mentioned faculty operations. Social costs comprise costs of finance, teaching, research, etc. These costs show a willingness to pay for factor inputs. They are partly reflected in the expenses of the faculty and in the existing commercial accounting. A commercial accounting shows losses compensated by a public owner, the University, and more easily the depreciation of faculty building and installations. Willingness to pay approaches have to be applied to specify depreciation of knowledge, social costs of accidents, additional travel costs and time losses, etc., which represent additional social costs. Sponsoring also leads to additional social benefits and social costs. Then, there must be some costs included, which are not considered with the faculty in commercial bookkeeping such as depreciation of fixed and current assets. Some of them are not occurring in commercial accounting because they are in ownership of other public owners.

Relations between transactions and types of additional social benefits and costs are investigated. Different relations between a transaction and the resulting additive social benefits B and costs C are shown by intensity levels. As the different dependencies should be reduced for the bookkeeping system, we concentrate on relations of high intensity level.

They lead to additional social asset accounts and additional social liability accounts showing stocks of social benefits and social costs. The evaluation has to be made applying the methods mentioned above.

The first number of an account refers to a category of accounts according to the table 4 and table 6. The letter A symbolizes asset accounts and L is related to liabilities. B expresses additional social benefits and sC additional social costs, whereas V refers to adjustments of assets, W to adjustments of liabilities and T to technical accounts. The second number signals a type of additional benefits and additional social costs whereas the third number signals a sub-type oriented to the kind of social benefits and social costs or to those caused by special faculty operations. The fourth digit shows with 1 that no deferral is necessary and with 2 that a split needs to be made. These characteristics are reflected in tables 4 to 6 showing the additional social balance and the additional social operating success statement as well as the total social balance which comprises the commercial and the additional social balance.

Table 4. Additional Operating Social Success Statement of the Faculty

IIFT7101 Social Costs from			Social Benefits from		
<u>Teaching (1)</u>					
sC6101	Baccalaureate studies	1.822	B5101	Baccalaureate studies	4.858
sC6111	Master studies	0.018	B5111	Master studies	2.418
sC6122	Doctorial studies	0.183	B5122	Doctorial studies	5.547
sC6132	Promotion of skills	0.324	B5132	Vocational training	0.513
sC6141	Open University	0.928	B5141	Open University	11.775
sC6152	Publ. teaching materials	0.048	B5152	Publ. teaching materials	0.924
<u>Research (2)</u>					
sC6202	Publ. research results	0.004	B5202	Publ. research results	0.008
sC6212	Rising funds	0.298	B5212	Rising funds	0.658
sC6222	Writing proposals	0.365	B5222	Writing proposals	0.609
sC6231	Writing, articles, books	0.496	B5231	Writing articles, books	1.548
sC6242	Organizing conferences	0.139	B5242	Organizing conferences	0.148

Consulting (3)					
sC6301	To firms	0.636	B5301	To firms	1.060
sC6311	To public institutions	0.541	B5311	To public institutions	1.351
sC6321	To parliament	0.030	B5321	To parliament	0.360
sC6331	To EU	0.019	B5331	To EU	0.060
sC5341	To scientific bodies	0.023	B5341	To scientific bodies	0.046
Management activities (4)					
sC6401	Monitoring	0.015	B5401	Monitoring, control	0.231
sC6411	Financial management	0.015	B5411	Financial management	0.219
sC6421	Staff management	0.024	B5421	Staff management	0.285
sC6431	Faculty decision making	0.043	B5431	Faculty decision making	0.642
sC6441	Management of labs	0.003	B5441	Management of labs	0.041
sC6452	Contacts to other faculties	0.002	B5452	Contacts other faculties	0.027
sC6461	Support of Colleges	0.076	B5461	Support of Colleges	0
sC6471	Representation	0.012	B5471	Representation	0.024
Other faculty activities (5)					
sC6501	Contact to schools	0.002	B5501	Contact to schools	0.003
sC6512	Attraction of visitors	0.154	B5512	Attraction of visitors	0.456
sC6522	Public relations	0.001	B5522	Public Relations	0.840
sC6532	Advertisement	0.004	B5532	Advertisement	0.108
sC5542	Fiscal social costs	0	B5542	Fiscal social benefits	6.773
sC6552	Other social costs	0.200	B5552	Other social benefits	0
sC6701	Depreciation	10.170	B5801	Appreciation	0.147
B4871	Add. social net benefit	25.084			
		41.679			41.679

In the very beginning of a period we use the final total social balance of the last period, the underlying final additive social balance and the final commercial balance as a starting point for additive social bookkeeping and the related commercial bookkeeping. Transactions are accounted with their commercial consequences within the commercial bookkeeping. The additive social assessment takes place in the additional social accounts mentioned above. After striking the additive social benefit and additive social cost accounts, the remainder of these accounts, including social depreciation, is extended to the additive operating social net benefit account (c.f. figure 2 and table 4).

Table 5. Technical accounts

T7101	Additional opening social balance
T7201	Additional operating social success statement
T7301	Additional Social final balance
T7401	Total social balance
T8202	Deferral to assets (stocks)
T8212	Deferral to liabilities (stocks)
T9302	Deferral to social benefits
T9312	Deferral to social costs

The additive operating social net benefit account remainder is closed to the additive final social balance. There, the remainder of the additive social assets, social cash and the remainder of the additive social liabilities, along with the additive social value adjustments to additive social assets (c.f. tables 6 and 7), is assembled in the additive final social balance. A following step includes the additive social balance together with the final commercial balance to form the total final social balance.

Table 6. Total Social Balance (Commercial and Additional Social Balance)

IIFT7401		Total Social Balance	
IFT711		Commercial Balance	
IFT711	Commercial Assets	IFT711	Commercial Liabilities
1.	Non-current assets 71.515	1.	Net assets, capital 72.714
2.	Financial assets 0	2.	Liabilities 3.023
3.	Current assets 3.222		
4.	Accrued income 1.0		
IIFT7301		Additional Social Balance	
IIFT7301	Additional Social Assets 0	IIFT7301	Additional Social Liabilities 0
IIFA0101	Value of buildings 0	IIFL4001	Stock of previous net benefits 0
IIFA0111	Value of assets not booked 36.328	IIFL4011	Accidents 0
IIFA0201	Knowledge of baccalaureate 3.238	IIFL4021	Emissions, etc. 0.710
IIFA0211	Knowledge of master 1.093	IIFL4101	Future financial obligations 0
IIFA0222	Knowledge of doctor 0.544	IIFL4201	Closing down consultancy 0
IIFA0231	Knowledge Open University 6.615	IIFL4301	Loss of staff 0
IIFA0242	Knowledge vocational training 0.354	IIFL4401	Loss of res. by political act. 0.020
IIFA0251	Knowledge teaching staff 0.031	IIFL4501	Employment losses 0
IIFA0261	Knowledge of Scientists 0.030	IIFL4511	Reduced infrastructure 0
IIFA0301	Lasting research results 11.400	IIFL1001	Soc. cash (add. Soc. capital) 42.387
IIFA0312	Incr. intern. cooper. capacity 0.603	IIFV3101-3612	<u>Value adjustment:</u> 10.170
IIFA0321	Incr. research capacities: staff 1.426		
IIFA0331	Incr. research capacity: equipm. 0.160		
IIFA0341	Incr. research capacities: buildings 0		
IIFA0351	Incr. research capacities: library 0.094		
IIFA0361	Contribution to research centers 0		
IIFA0401	Capacity to consult firms 1.060		
IIFA0411	Capacity to consult governm. 0.901		
IIFA0421	European funds 0.060		
IIFA0501	Dev. Estonian language 1.915		
IIFA0511	Increased Employment 2.724		
IIFA0521	Increased infrastructure 3.500		
IIFA0601	Changes of profits of other firms 1.554		
IIFA0612	Increase of tax receipts 4.594		
IIFW3001-3511	<u>Value adjustment:</u> 0.147		
		IIFB4871	Additional net benefit 25.084
	154.108		154.108

The bookkeeping system of the faculty as well as the budget-structure is organized according to the commercial bookkeeping system of the University (c.f. University of Tartu, 2006, similar, Heiling 2007, p.129). There are revenues and expenses booked in accounts that enable to identify commercial success and in accounts that show the change in assets and liabilities. Moreover we have accounts expressing the assets, equity capital, reserves and liabilities assembled in balances (c.f. table 6). Some changes and adaptations are necessary, because a balance is only available for the total University. It has to be split in order to fix one for the faculty and the related Colleges.

The faculty does not show some items such as investments in associates, property, land, customer receivables, other receivables, inventories, long-term loans, accumulated surpluses. In others it is engaged according to its activities, e.g. cash, receivables accrued incomes, capital, reserves, legal reserves or its assets such as its buildings, equipment. There are no long-term credits of the faculty, however shares in long-term and short-term credits of the faculty. That is also due to cash assets and a general reserve.

This scheme is also used for the bookkeeping procedure. The revenues, expenses, assets, liabilities, reserves, equity capital are shown for the year 2006 (University of Tartu, 2006). Revenues and expenditures differ in size. They get equalized by an amount, which stems from the University. There appears a loss in a commercialized success statement (in the table 6 deducted from capital).

This procedure concerning the additional social bookkeeping is illustrated by six transactions (c.f. table 7).

Table 7. Examples of Transactions

A0222 Knowledge from doctor studies	
Higher income from doctor decree (A1001)	Deferral of costs paid by other institution (T8202) Remainder to social balance (T7301)
V3302 Value adjustment to knowledge from doctor studies	
Remainder to social balance (T7301)	Depreciation of income increase from higher knowledge of doctor studies (C6501)
L4021 Emissions (Social liabilities)	
Remainder to social balance (T7301)	Emissions (A1001)
W3021 Value adjustment from Emissions	
Appreciation of Emissions (B5801)	Remainder to social balance (T7301)
T8202 Deferral to social assets and liabilities (stocks)	
Deferral of costs paid by other institution (A0222)	Remainder to social cash (A1001)
T9302 Deferral to social benefits	
Remainder to social cash (A1001)	Deferral of incomes of other economic units (B5152)
T9312 to social costs (other economic units)	
Deferral to writing proposals by non-faculty members time (sC6222)	Remainder to social cash (a1001)
sC6701 Depreciation	
Depreciation of income increase from higher knowledge of doctor studies (V3302)	Remainder to social operating success statement (T7101)
B5801 Appreciation	
Reminder to social operating statement (T7201)	Appreciation of emissions (W3302)
A1001 Social cash	
Emissions (L4021) Income from publication of teaching materials (B5152) Deferral to social assets and liabilities (stocks Remainder from (T8202) Remainder from Deferral to Costs (T9312)	Higher income from doctor decree (A0222) Value of time dedicated to writing proposals (sC6222) Remainder from Deferral to social Benefits (T9302) Remainder of social cash to social balance (T7301)
T7201 Social operating success statement	
Remainder from social costs of writing proposals (sC6222) Remainder from depreciation (sC6501) Net social benefit to (T7301 through B4871)	Remainder from social benefits of publication of teaching materials(B5152) Remainder from Appreciation (B5801)
B5152 Social benefits from publication of teaching material	
Deferral of incomes of other economic units (T9312) Remainder to operating success statement (T7201)	Income from publication of teaching materials (A1 001)
sC6222 Social costs of writing proposals	
Value of time dedicated to writing proposals (A1001)	Deferral to writing proposals by non-faculty members time (T9302) Remainder to social operating success statement (T7101)
T7301 Additional social balance of faculty	
Remainder from knowledge from doctor studies (A0222) Value adjustment from emissions (W3021) Remainder from social cash (A1001)	Remainder of emissions (4021) Value adjustment to knowledge from doctor degree (V30222) Net social benefit from (T7201)

Social assets related to the improvement of knowledge of doctoral studies A0222 increase because of willingness of employers to pay for services of managers with PhD degree. A stock of social benefits is created, which is booked to A0222 on the left side. The cross-booking is in A1001 at the right. As professors from other universities are involved in the doctor courses, the social benefits have to be split and booked into the right of A0302 and the left T8202 deferral to other institutions such as other universities.

A value adjustment of the improvement of knowledge has to be made, expressed by a percentage of reduction of knowledge related to the rate of losing knowledge annually. The amount is booked as depreciation, right of the value adjustment account V3202. The cross booking takes place in the social depreciation account sC6701. Its remainder is extended to the social operating success statement T7201 on the left.

The cares of students, guests, staff driving to the faculty cause emissions. A part of them demonstrates a social liability, which is booked in the right of L4021 and marked at the right side of social cash A1001, too. The remainder of L4101 extends to social balance T7301 to the right.

There is a value adjustment of emissions which implies an appreciation booked on the left side of W3201 and the right side of B5801. The remainder of W3301 is extended to the social balance T7301 on the left. The remainder of B5801 is booked to the right of the social operating success statement T7201.

The publication of teaching materials may lead to higher income of the authors not paid by the faculty. The social benefits consist of the publisher's monetary willingness to pay for publishing these materials. The respective amount is booked in social benefits account B5152 and the cross entry is at social cash A1001 on the left. As the material may be written by the help of assisting people who have to be paid, however, are not paid by the Faculty, a part of the benefit is due to them. Therefore, a deferral is considered on the left of account B5152 and in the deferral account to benefits T9302 on the right side. The remainder of social benefits B5152 extends to social operating success statement T7201 to the right side.

Social costs are linked to writing proposals as much free time has to be used that is not available for other purposes and possibilities to earn money. Therefore, the willingness to pay for this time is used to formulate a monetary value term. The value is booked on the left side of sC6222 and in social cash A1001 on the right side. As many proposals are for joint projects, there might be efforts of colleagues from other Universities involved. Deferrals are necessarily right of sC6222. Cross entry takes place on the left side of the deferral account T9312. The remainder of sC6222 again extends to the social operating success statement.

The consolidated remainders of the deferral accounts T8202, T9302 and T9312 show the net benefit of other economic units. These remainders of T8202, T9302 and T9312 are extended to the social cash account A1001. Its remainder is transmitted to the social balance T7301, where it is found on the left or on the right side as social cash.

The strike of the social operating success statement shows additional social net benefit as a remainder on the left side, which is extended to the net social benefit, at account B4871 and through its remainder extended to the right side of the additional social balance. The additional social balance is consolidated with the commercial to the total social balance, where the total social net benefit results as the sum of consolidated commercial profit and additional social net benefit (c.f. table 6). We booked the transactions within the chart of social accounts for the year 2006.

The total social net benefit turns out to be positive with faculty, although the commercial loss is 2 million kroons. The additional social net benefit is positive and especially high through the many social benefits. As the faculty is a non-profit oriented institution, its total net social benefit largely depends on the additional social benefits from research and educational effects. The total social net benefit is considerably bigger than the commercial loss. The social net benefit comes up to 25 million kroons. An additional social capi-

tal of 42.4 million kroons exists. The consolidated cluster of department and colleges shows also a positive social net benefit in amount of 38.2 million kroons and additional social capital 96.5 million kroons.

4. Positive aspects and problems in applying social accounting for the University accounting

One aspect to consider is that exchange and co-ordination of social and economic goods is not only limited to markets in monetary terms, e.g. horizontal and vertical transfers of goods and money, commands as well as external effects. Although difficulties arise, the net benefit analysis is the best developed social evaluation scheme existing. As faculty's activities are accounted in financial dimensions, net-benefit analysis seems adequate. The weaknesses of evaluation methods based on benefit cost analysis cannot be overcome as long as the social accounting system relies on evaluation in monetary terms.

The positive and critical aspects for such accounting systems refer to a type of accounting system suggested here or to social accounting in general. A group of arguments considers:

The basis of developed social accounting is an individualistic welfare theory (van Graaff, 1963) that does not necessarily reflect true evaluation in a society. The role of social groups in determining social welfare is ignored. Moreover, it implies severe assumptions about the equity of a kroon of willingness to pay, ignoring the fact that it may stem from a rich or poor individual. So-called compensation tests are discussed in literature on welfare theory.

If the bookkeeping system suggested for one Faculty should also be applied to several Faculties and the University itself, the chart has to be adapted. Then, the conventions of deferral are evidently much more specific and complicated. The chart of social accounts needs further elaboration, when isolated social net benefits of the group of clients, such as types of students or of research clients, should be assessed. Some social benefits and costs are to be excluded. More group specific conventions to deferral of social benefits and costs have to be developed. Additional corrections of social benefits and costs, which are booked in commercial bookkeeping, have to be made and considered in the additional social accounting. Total social net benefit and total social assets and liabilities can be assessed in principle.

Some may argue that social accounting on the basis of benefit cost analysis tries to integrate too many evaluations and is not appropriate to stress social implications of Faculty's activities and moreover is it an argument in case of several faculties and the University as whole. However, the above-mentioned goal structure of faculty and its role in the society require such a broad approach combined with commercial bookkeeping. Therefore, social accounting approach for the University accounting becomes necessary.

One has also to consider, that the approaches to education accounting applied at present are rather weak. This is especially true concerning services of the Faculty. Most of the education evaluations are not more than a reporting on the basis of indicators in physical terms and costs without reference to the social or administrative goals of the Faculty and the contribution of involved economic units to social success. But more sophisticated systems of social higher education accounting are expensive even offering more insight into faculties operations. The reporting shows effects on stakeholders without spinning off the contributions of other economic units.

And last, but not least some efforts are necessary to complete the commercial bookkeeping and to develop sophisticated criteria to split social benefits and costs and allocate them to the institutions causing the social net-benefit. On the other hand, EU declarations, national laws and fiscal stress increase the demand for a social welfare oriented management of the Faculty and the University. To overcome difficulties with respect to the type of information gathered and to apply the same evaluation standards to all institutions involved, certain regulations are required similar to those concerning commercial accounting. An aggregated version of the additional social success operating statement, the additional social balance and the total social balance should be published.

Conclusion

In the past generally, maximization of wealth has been seen as a main goal of the companies and organizations. In 1970s social accounting was defined for purpose to broaden the approach of financial accounting. This new approach of accounting was concerned about accounting for an entities full impact on society, covering four main themes as environment, human resources, energy and community involvement.

In the article social accounting approach for the University accounting purposes was under the observation. For that a case of one faculty was taken under consideration as an example. The activities of the faculties and whole University have social implications, which are not reflected by conventional – commercial book-keeping system. Therefore more sophisticated system of social accounting and related bookkeeping tools for higher education, offering more insight into faculties operations, are necessary.

The exchange and co-ordination of social and economic goods is not only limited to markets in monetary terms. In developing social accounting system difficulties arise. The net benefit analysis is the best developed social evaluation scheme existing. As Faculty's activities are accounted in financial dimensions, net-benefit analysis seems adequate. The weaknesses of evaluation methods based on benefit cost analysis cannot be overcome as long as the social accounting system relies on evaluation in monetary terms. Here a chart of social accounts and the bookkeeping results for the year 2006 get presented. As well the issue, that if the social accounting bookkeeping system should also be applied to several faculties and the University itself, the chart must be adapted. Then, the conventions of deferral are evidently much more specific and complicated. Therefore several efforts are necessary to complete in the commercial bookkeeping and to develop sophisticated criteria to split social benefits and costs and allocate them to the institutions causing the social net-benefit.

Still, EU declarations, social accounting best practices from developed countries, national laws and fiscal stress situations increase the demand for a social welfare oriented management of the Faculty and the University and for that purposes social accounting approach seems to be suitable approach.

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