The Design and Use of Management Accounts in Small and Medium-Sized Companies

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Abstract:

In Sweden several associations have since the 1960s been engaged in supporting the development of better management practices in small and medium-sized companies. One pioneering effort was made by the Swedish Employers' Confederation in designing a comprehensive self-test material called "Look after your company" (Se om Ditt företag). Based on experiences and surveys from the use of this material it soon became evident that one area in which the practice in companies fell short of what was believed to be an acceptable standard, was in accounting and management control.

The Confederation jointly with the Federation of Swedish Industries therefore initiated a major project in developing standard models in these fields. The major output from this project was a standard chart of accounts, the BAS-chart. The first edition of this chart was issued in 1976 and it soon was commonly used in Sweden, not only by small and medium-sized companies, but also by large companies. It is still commonly in use as it has been adapted to the new accounting schemes enforced by law (EU-BAS). The BAS-chart has also been adapted for used by public agencies and also translated into several foreign languages. The BAS-chart initially only covered the financial accounts. But it was also assumed that in order to run the companies efficiently and effectively the managers were also in need of management accounts. In the first publication that included the BAS-chart, some very broad suggestions pertaining to how management accounts could be designed and related to the financial accounts were presented. These suggestions were later on developed into more detailed models (1982) and the use of the models in some cases was shown in another book (1983).Ever since the publication of these books, more examples of management accounting have, however, been demanded.

Due to changes in the organization of the BAS-project, another effort in this field was not undertaken until 1997. The newly established BAS-group then decided that a feasibility study should be made with the purpose to suggest the aims and scope of a major study. The authors of this paper took on this task. In order to reach our goals we made several investigations:
1.A review of books, research reports and current research mainly published or conducted in Sweden was made
2.the companies used as cases in the 1983 book were revisited and the development of management accounting since the beginning of the 1980s in these companies was described 3.a questionnaire was distributed via Internet and all companies were invited to complete it.
In all 338 companies have responded. However, only 242 of the completed forms were considered to be of use.

Keywords: management accounting; standard chart of accounts; BAS-group

JEL-Classification C42; M41

1. INTRODUCTION

Background

Research in the area of management control is extensive and covers a large number of sub-areas. Research is conducted with varying points of departure, and with the aid of different methods[1]. The objects of study in most of these studies are larger organizations, however. Research into management control in small and medium-sized companies is not at all as common. This is true internationally as well as in the case of Sweden[2]. The lack of interest for management control in small and medium-sized companies on the part of researchers may have several reasons: Larger organizations offer opportunities for more interesting issues; it is easier to identify larger organizations and to get access to data; a lack of interest for management control among smaller and medium-sized companies; tradition; and, perhaps most important, the availability of financing[3]. The expression "big is beautiful" still appears to apply to research on management control, but regardless of the reason for the dearth of studies, we perceive a real need for increased knowledge about management control in smaller and medium-sized companies.

Management control is made up of a number of sub-areas, which raises a need for demarcation when a study is to be made. This can be done either in terms of domain (i.e. one or more companies are studied), or in terms of the number of aspects studied. We have elected to limit the number of aspects studied, in order to perform a more exploratory study encompassing a larger number of companies. The aim of the study is to provide an image of the design and use of management accounts in small and medium-sized Swedish companies. The reason for this is, in part, that the studies that do exist about management control in small and medium-sized Swedish companies primarily

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[1] Shields (1997), Foster and Young (1997) and Atkinson et al (1997) gives a good résumé of past, present and future development within the area. All three articles where published in *Journal of Management Accounting Research, volume 9, 1997.*

[2] There are of course some studies. Foreign (eg Govindarajan and Anthony, 1983; Joye and Blayney, 1990; Neergrad, 1986; Hood et al, 1996) as well as Swedish (eg Glader and Mårtensson, 1980; Glader 1989; Bohman and Boter 1979).

[3] Some of these explanations where suggested already in the 1970s (eg Ramström, 1971; McGuire, 1976)

focus on other things, and in part by the fact that in contacts with representatives for employer organizations, it was discovered that management control was seen as a neglected area. Management accounting cannot be removed from its context entirely and be studied independently of other parts of management control, however. The various parts are connected and linked to each other, and even if the focus in this study will be on management accounting, other parts of management control will also be studied.

History

In Sweden, there has been an evolution in accounting practices of small and medium-sized companies over the last several decades. Legislation and recommendations for standards have led this development. Employer and industry associations in particular have taken initiatives in this area, among them the work performed with the so-called BAS Group. The development work in the area of accounting for small and medium-sized companies[4] performed by this group and its predecessors since the late 1960's has related primarily to external reporting. The BAS chart of accounts is now used for external reporting by virtually all small and medium-sized companies, and also by many large companies. It has also been adapted to and adopted by the public sector. In spite of various adaptations for different industries, this development has meant a standardization of charts of accounts and accounting procedures in Swedish business and industry.

Already at an early stage, the BAS Group also became aware of a demand and need for efforts in the area of management accounting among small and medium-sized companies. Even the very first publication from the BAS Group (1976) contained sections about management accounting. Different models of how such information could be linked to the standardized financial accounting were shown. This section came under criticism,

[4] According to Almi´s (a Swedish Government founded Authority) definition of these types of companies small companies have up to 20 employees and medium-sized companies have up to 200 employees. These definitions have not been strictly applied, however, since not all companies with more than 200 employees have been excluded. To the extent such companies offer solutions or experience of interest to the primary target group, they have been included. The BAS Group's case studies from 1983, for instance, contained several companies with more than 200 employees.

however, as it was felt to be to general in character. More concrete models were sought. In response to these wishes, a book was published in 1982 (partial report 1979) with proposals for how the general models could be made more company-adapted, and in 1983 a paper with case studies was published. The latter publication showed practical examples of how management accounting in companies active in different industries could be combined with the standardized chart of accounts according to BAS. After 1983, no further efforts have been made on the part of the BAS Group. When the group was re-established and activated in 1996, the first item on the agenda was to update the BAS chart of accounts for the purposes of financial accounting. Interest thereafter has been directed at management accounting and control, which in the Group's opinion warrants further development efforts.

This study

The earlier attempts, within the BAS Group, to develop propositions for a chart of accounts for management accounting had the standardized charts for financial accounting as their point of departure. The basic ideas could be characterized as integration between financial and management accounting and reliance on standardized charts of accounts, although with some flexibility for variations. The introduction of the BAS chart of accounts for financial accounting have been very successful and have, as mentioned above, a dominant and unchallenged position whereas the propositions for standardized internal accounting have not at all gained the same interest which is interesting to reflect on when standardization of internal accounting is discussed. Is such a development possible, and is it desirable? The aim of this study is to investigate this by a three-step methodology. First will a review of recent Swedish studies within the area be made. Secondly, the companies brought forward by the BAS Group as good examples of developed, sophisticated and well-functioning management accounting solutions some fifteen years ago will be revisited. Thirdly, a survey will be done with the purpose to get a broad picture of what issues and demands small and medium-sized companies are focusing on today when it comes to management accounting.

2. CONTROL AND MANAGEMENT ACCOUNTING IN SMALL AND MEDIUM-SIZED COMPANIES – A FRAME OF REFERENCE

In this section we will provide a brief description of the terms *management control* and *management accounting*. We begin with generalized terms and in a second step we relate them to small and medium-sized companies.

Management control[5] has evolved gradually. Product costing was used very early (several hundred years ago). There are also early examples of accounting for different objects, such as departments (or equivalent) and projects or products. During the 20th Century other forms of costing and budgets came into use. Since the 1960's, a differentiation is also made between the relatively short-term control exerted by product costing, budgets, etc. (which are typically at the core of the formal control system, and which is collectively called the accounting information system) and more long-term, strategic control. Following this development, there has been considerable growth in the number of terms used (such as product structure, market areas, financial accountability, etc.) The formal control system, and determination of strategy and business concept, are two main means of control.

The concept of control has been further developed over the last decade. It is not only a matter of preparing different types of calculations and drawing up plans. It is also about distributing responsibility and tasks in an efficient manner among the company's personnel, to determine an appropriate organizational structure. To design a reward system that stimulates people to perform good work in furtherance of the company's goals is also an important part of the control mechanism, often linked to job descriptions. A fourth means of control, finally, is all the conscious action taken to ensure that the

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[5] The formal definition of the term control used by us is "different forms of influence on an organization towards set goals consciously chosen by the organization's management." When goals are financial, which is typically the case in a business, we speak of financial control. Management control is often used with the same meaning. It would appear, however, that in everyday language this term is often used in a more limited sense to describe the formal control system (accounting information systems with budgets, costing, accounting reports, etc.). A certain confusion of ideas thus exists. Its is therefore important to clarify which meaning of the term applies when the term is used. The term is here used in its broader meaning.

entire staff is aware of and understands the company's goals and strategies, allowing everybody to act independently but in the spirit of the company. We are speaking here of developing a kind of corporate culture, and that the management philosophy itself is a central part thereof. The premise that the formal control systems ensures goal fulfillment has thereby been developed into a model with four main groups of means of control, which in interaction with each other can ensure goal fulfillment.

This notion of the control concept is illustrated in Fig. 1. This frame of reference also shows that control is influenced by the market and the society in which the company operates; that different owners can have different requirements with respect to control; and that control ultimately should lead to goal fulfillment for the business as such. The fact that information technology plays an increasingly important part for the orientation and shaping of the business has also been noted.

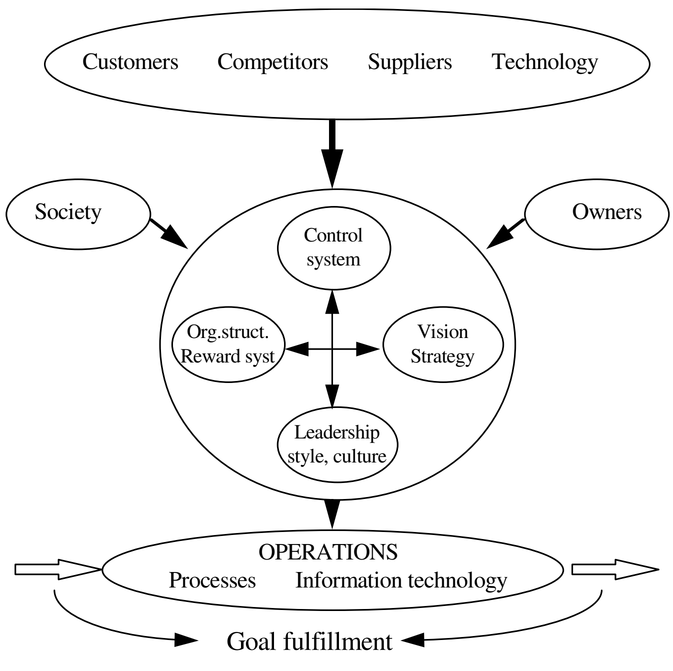

Figure 1 A frame of reference for management control

As companies grows, the job of controlling them in these different respects becomes bigger and more formalized. But the basic issues are the same. One important overall development is that control does not focus exclusively on different monetary measures in calculations and reports. More and more interest is also directed to following product quality, processing times and many other aspects. The company must respond to developments in the marketplace. If the company fails in this respect, competitiveness is quickly lost.

A model that reflects current interest in exercising control with the aid of many different measures is the balanced scorecard[6]. According to this model, the control measures are derived from the company's business concept and strategy. The measures are set within a number of areas (perspectives) important to the company. It is common to use four or five different perspectives: one customer, one process, one learning and developing, and one financial perspective. The term balanced is used to emphasize the importance of exercising control not only with financial measures, which tends to lead to an excessively short-term approach, but also to ensure that goals are actively set in other areas, which puts the company's long-term development into sharper focus.

As seen above, this study is aimed at the control and management accounting of small and medium-sized companies. But in view of the overall expansion already seen, it is natural to see management accounting as a part of the company's control of its operations. It would therefore seem less important to discuss a development of the management accounting as much of the current development relates to areas other than those that traditionally are associated with internal accounting. One example of this is the determination and use of other control measures than the traditional monetary ones.

We have here described a frame of reference for control. In view of the direction and aim of the study, we will complement this with a frame of reference for management accounting.

[6] See Kaplan & Norton (1996).

The terms external (or financial) and internal (or management) accounting have been defined as follows in prior writings (see i.a. The BAS Group, 1976)[7]:

> Financial accounting primarily refers to the company as a whole. It reflects its relationships – business dealings – with other companies and persons. It is greatly influenced by the desires of parties outside the company. Management accounting reflects conditions within and among the various parts, functions, products, goods, services, or projects, etc. of a company. The information is primarily adapted to the needs of persons or groups working in the company.

It will be seen that these concepts are associated with different qualities. First, it is a matter of what is reported on, the entire company and its external transactions, or matters within the company. Second, the definitions are also different depending on who sets the standards for the reporting, external parties or internal. There are examples of definitions of the concepts that relate them to only one of these qualities. They have thus been defined with respect to recipient (e.g. Östman, 1975), or the character of the transaction (e.g. Johansson & Roots, 1996).

Looking at the development in general, there are traits in this development that makes finding simple and clear definitions more difficult. The external requirements thus refer increasingly to information about internal factors (such as business segments or equivalent). The internal reports primarily contain the external transactions, complemented with classification on several objects (products, organizational units, projects, etc.), internal transactions and perhaps other values.

Since the control increasingly relates to measures other than only accounting measures, the basic structure of the information can be described as follows:

Internal requirements

[7] These definitions also conform with Johansson & Samuelson's widespread textbook (9:th edition 1997).

Financial accounting

In monetary terms

Management accounting

on and needs of information for control

Other data

Figure 2 BAS chart of accounts linked to internal requirements for control information

External transactions are reported in the financial accounting according to external requirements. The internal requirements on the accounting may also refer to registration of internal transactions, or use of values other than those used in the external financial accounting. The requirements for measures other than accounting measures are handled outside of the accounting system as such, consisting of financial accounting, internal transactions, etc. in a class of accounts with accompanying codification.

When it comes to the definitions of financial and internal accounting, we will use here the ones previously used. For many concrete questions about reporting, system design, etc., these general concepts appear not to be sufficient. The discussion will then become more specific and aimed at issues such as transactions, objects, recipient, etc.

When it comes to the design of management accounting in the sense of using different classes of accounts, different object codes, etc., there are many alternatives described in the literature (refer to the following section). To the extent there is a need for additional models or descriptions thereof, the study will contain them.

3. MANAGEMENT CONTROL AND MANAGAMENT ACCCOUNTING IN SMALL AND MEDIUM-SIZED COMPANIES – A LITERATURE REVIEW

Given the objective of examining the design and use of management accounts in small and medium-sized Swedish companies, a first step in the study is to look into whether this has already been done. One of the tasks relating to the study will therefore be to survey and compile literature in which the problem area has been dealt with. This has been accomplished by reviewing previous BAS publications, and by examining and compiling relevant research reports published at Swedish colleges and universities.

3.1 BAS publications

A natural start of this review was to take a closer look at what has previously been published by the BAS-gruppen (The BAS Group). The first publication from The BAS Group on the subject of management accounting was published in 1976. It was followed up by two additional publications during the 1980's. These publications have been briefly referred to above, but their content is summarized below.

Accounting in small and medium-sized companies (1976) (translation of Swedish title)
This first publication of The BAS Group is best known because it introduced the BAS chart of accounts for corporate financial accounting. The publication centers on the companies own need of accounting information and deals with the main principles for internal reporting. It contains internal performance reports, product costing, and budgets and budget reports. Examples of internal reports are also included.

The reason for differentiating in depth of detail between financial accounting and management accounting was that requirements and needs differ. The financial accounting is subject to general and uniform requirements. Uniform reports are to be produced and this is simple to do on the basis of accounting built on a uniform chart of accounts.

On the other hand, the requirements on, and the need for, management accounting varies sharply between companies in different industries and of different size. It is therefore not possible to identify uniform management accounting. Each company must design its management accounting to meet its own needs, although it is possible to lay down certain principles for how the management accounting should be designed, and give examples of how it can be done. This was the thrust of the publication.

One of the supplements to the publication dealt with the relationship between financial accounting and management accounting. Distinction was made between two main types of management accounting.

1. Management accounting with codes for different objects (cost centers, cost units, or similar) linked to transactions in the financial accounting.

2. Management accounting where all expenses are transferred to internal cost accounting in a special class of accounts (called class 9), with addition of codes for cost centers and cost units.

To the extent special internal transactions were needed, they were also accounted for in class 9.

BAS accounting in small and medium-sized companies. Customized management accounting with uniform financial accounting (1982) (translation of Swedish title)
The BAS chart of accounts was quickly adopted by the business community. The writings in the 1976 publication about management accounting were criticized for being too standardized and theoretical, however. More concrete and detailed recommendations were sought. Two actions resulted from these comments: The original publication's treatment of the area was expanded in the 1982 edition, and a separate publication with case studies was developed.

The basic theories are unchanged in the 1982 edition. Internal requirements are seen as basic and the management accounting must be customized to fit the needs of the individual company. The principal methods for management accounting are also the same. The description of management accounting was expanded with concepts from the Accounting Plan [Redovisningsplanen – RP] developed concurrently with the BAS plan. The information needs of three main groups of companies were defined: Trading companies, service-producing companies and manufacturing companies. It was also demonstrated in greater detail how the management accounting in different ways can be linked to the financial accounting, primarily through the use of object codes and the use of class 9.

BAS case studies – Nine applications of internal accounting (1983) (translation of Swedish title)

This publication presented detailed examples of how management accounting system can be designed. Four of the nine cases referred to manufacturing companies, four to service companies, and one to a conglomerate. Taken together, the cases deal with accounting for order production and production in series, project and contracting activity, retail and wholesale trade, and trade in know-how companies.

The publication has found broad use as a supplier of ideas, and as a guideline for the design of management accounting. Even though certain industries dominate, the solutions offered are different and should therefore be able to provide ideas for a much wider spectrum of different businesses.

3.2 Studies performed at Swedish universities and colleges

A search for current research reports published during the past five years has been conducted in order to get an overview of the current status of research into management control and management accounting in small and medium-sized companies.

The review has been limited to reports that are a maximum of five years old since interest is centered on the current situation among companies. The review has focused on studies of surveying character. In addition to such studies, there are a number of case studies of individual companies, but these are not commented upon here (see i.a. Nilsson 1998). These reports are presented briefly below.

Ask, U. & Ax, C., (1997) *Product costing in literature and practice* (translation of Swedish title)

The report is a doctor's thesis dealing with product costing. The empirical part of the thesis is based on a survey aimed at manufacturing companies in five industries. This thesis is relevant to our study, even though it focuses neither on small and medium-sized companies or management accounting, because it deals indirectly with these aspects. As far as company size is concerned, this is one of the variables that in the explanatory part of the study is assumed to be of importance to the way product costing is handled. This is statistically tested in a number of ways and it is found that the size of the company significantly impacts the manner in which product costing is performed in several respects. Among other things, it is revealed that there are differences in the way indirect costs are distributed, in the choice of costing method, in the handling of capital costs, and in the use of standard costs.

The design of management accounting is dealt with only in three parts of significance for product costing. A size-independent observation made is that product costing less and less is followed up against the actual accounting records. The system solution is that they are followed up with the aid of data from various pre-systems and side systems.

Ax, C., (1997) *Product costing and economical production* (translation of Swedish title)

This research report investigates to what extent, and in which respects, product costing methods are changed when manufacturing conditions change. The particular change studied is the introduction of the just-in-time philosophy in seven medium-sized companies (200–400 employees).

Most of the changes actually made are system-related. For example, the results show that data from the accounting systems are used less after the change, and that the number of transactions and data detail diminishes.

Changes in costing models, allocation of indirect costs, and calculating actual costs, and feedback reporting have been minor. The author contends that changes are surprisingly small relative to what could be expected after a review of the literature. However, the companies are planning changes in these areas, and even if not much has yet happened, the planned changes, if made, involve a relatively substantial adjustment to changed manufacturing conditions. One consequence of this is likely to be that accounting's importance to product costing will diminish further.

Bergström, I. and Lumsden, M., (1993) *Accounting information systems in small companies* (translation of Swedish title)
The report is a doctor's thesis based in part on a major survey, and in part on follow-up interviews. The study claims to investigate both the design and use of, among other things, management accounting in small companies. It could perhaps be said that they are actually investigating the existence of rather than the use of management accounting. In their analysis they say, inter alia, that the company's competitive situation, and the education and background of the corporate managers, impacts the design and use of accounting systems in small companies.

Häckner, E., (1993) *Management Information Systems and Profitability*
In the report 24 medium-sized (>20 employees) companies in the modular housing industry are examined. Among other things, the study seeks to determine if there is a relationship between the companies' profitability and the design of their accounting information system. In certain respects the study indicates that a relationship exists. Positive covariance between the degree of sophistication of costing systems and profitability, as well as between well developed financial follow-up in the form of reports and profitability, appears to be the case in the material covered by the study. When it comes to other parts of the financial control systems, such as budgeting and the design of (management) accounting, the tendency of positive covariation with profitability is questionable according to the author, and should therefore be further investigated.

The study is a cross-section study performed at one single occasion. An attempt has been made, however, to get a longitudinal perspective with the aid of questions on how different parts of the financial control system have developed historically, and how this development relates to the company's earnings performance. The answers here indicate that the development of financial control systems and profitability are positively correlated. But as the author points out himself, answers about historical events must be taken with a large grain of salt. Experience shows that respondents often rationalize.

Häckner, E. And Nilsson, A. (1994) *Accounting Information Systems: Instrumental Impact, Sense-Making and Profitability*

This study is based on the same data as the previous study. The analysis has been carried a few steps further. The relationship between well-developed costing and report systems and high profitability presented in the first report is further confirmed, but an addendum hereto is also introduced. In several types of decision situations of a more troublesome character, the decision-maker uses his or her previous experience, in part together with information form the accounting system, as a basis for the decisions. This is also true in the case of companies with more sophisticated accounting information systems.

The author suggests that the function of the accounting information system should be evaluated in five dimensions:

- How completely is the complex of problems at hand covered by the accounting information system?
- How complex is the accounting information system relative to the complex of problems at hand?
- What is the relationship between the logic of the accounting information system and the logic of the current situation?
- Are the various parts of the accounting information system consistent?
- Can timely information be obtained?

The first four of these dimensions were defined already in the previous study, but are expanded upon here.

Karén, M. and Ljunggren, S., (1996) *Ekonomiska mått och metoder i praktiken*
The report is a licentiate thesis that investigates the existence of different economic measures in 15 medium-sized (100–450 employees) Swedish companies in different industries. A narrow definition of the concept economic measures and methods is applied, and the measures and methods discussed by the authors are monetary.

Among the companies surveyed they find a large variation with respect to which economic measures and methods are used. Many of the measures and methods found in the literature are also found among the companies surveyed. Of 202 measures and methods from the literature, 163 are found in at least one company. In a single company the number of measures and methods is limited, however. Overall, simple measures and methods are more common than complex ones. Complex measures are most common among manufacturing companies. Otherwise the authors find that covariation between descriptive factors (independent variables) and the presence of different measures and methods is unclear, and it is difficult to discern any patterns. A few comments are ventured, however, among them that there is covariation between the number of products and the presence of simple costing measures in such a way that the number of products tends to increase the presence of simple costing measures.

Hägg, I., Karén, M and Ljunggren, S., (1997) *Management accounting measures and methods in practice*
The report contains mostly a translation to English of the main features of the licentiate thesis presented above. Some deeper studies have also been performed. In closer analysis of the presence of measures and methods it has thus been found that the combination of measures and methods is unique to each company, and that in certain cases a measure or a method is found in only one company.

Zetterberg, M. and Öström, B., (1996) *Ekonomistyrningens funktioner*
Also this report is a licentiate thesis. This study centers on the various functions of management control in different companies. Data has been collected through interviews with 103 managers in the same fifteen companies surveyed in the above two studies by Karén and Ljunggren (1996) and by Hägg, Karén and Ljunggren (1997).

A first conclusion is that the design of the formal management control system is of importance to controlling the company, even if information from the accounting system is not the most important instrument in support of decision-making. The authors try to apply a contingency perspective, but no clear patterns are discernible in terms of the functions of management control in the companies. From this they draw the conclusion that no single situation factor can explain the frequency of functions.

3.2.3 Summary

There is no doubt that small companies use and have a need for simpler and less extensive models for pursuits such as product costing and management accounting. This is confirmed by the above reports, but with an interesting twist. More developed management control seems to have a covariance with higher profitability. This phenomenon cannot be entirely explained by differences in size among the companies. The importance of the development of management accounting is more doubtful in the context. It also appears to diminish in importance and follow-up of, inter alia, product costing which increasingly appears to occur with the aid of other system solutions. Company-unique combinations of measures and methods for management control seem to be common.

4. FOLLOW-UP OF PRIOR BAS STUDY

The need to make our own investigations and collect primary data was perceived as great after the literature review. The relative dearth of material from other projects meant that our data collection came to be rather extensive. Interviews with particularly interesting companies have been conducted, and a survey for a more general overview has been performed.

4.1 Follow-up of case studies in prior BAS studies

The most recent of the previous BAS publications, *"BAS case studies – Nine applications of management accounting"* from 1983, shows how the BAS chart of accounts is used for management accounting in nine different companies. One of the purposes of the examples was to serve as a source of inspiration and a model for others who wanted to advance their internal accounting.

Contact has been established with all the companies[8] described in *"BAS case studies – Nine applications of management accounting"*. Contact was made with the companies in such a way that representatives of the company were interviewed on at least two occasions by telephone. On the first occasion, a brief interview was made (30 minutes). The company's management control and internal accounting were talked about in general, but no specifics were discussed. Since both the current state of affairs and the development since 1983 are of interest, a copy of the sections in *"BAS case studies – Nine applications of management accounting"* dealing with each company was provided. At the time of the next interview, about a week later, the respondent had read the section on his or her company's management control as it appeared fifteen years ago, and was thus able to relate the present situation to this. In several of the companies the respondents had actually been with the companies for more than fifteen years and were thus involved in the design of the company's internal accounting system. The second interview with the company lasted for about an hour. In addition to this were personal

[8] One company was fictitious, and another was rendered anonymous and could therefore not be revisited.

interviews made with the companies residing in Stockholm (KPMG Bohlins and TeleLarm). In the conglomerate, the chief financial officer of one of the largest subsidiaries was also interviewed by telephone.

The result of the interviews is presented below, first by company, and then in the form of a summary of our impressions from the discussions with the companies.

AB Abia Industriautomatik

The company designs, manufactures, and installs equipment for the process industry. The company's business orientation remains virtually unchanged, and the production continues to be order-driven. The company has grown somewhat in size. The number of employees is just over 100. The organizational structure has been simplified, however, and all operations are now conducted in-house.

The basic complex of problems that management attempted to solve by introducing an advanced internal accounting system, fifteen years ago, remains unsolved. Only half-way solutions to certain problems were found. For example, the goal then was to create an integrated accounting system with financial accounting, costing, purchasing, and personnel administration. Only now is this goal nearing actual fulfillment. In all other respects it was stated that the main features of the internal accounting solution of fifteen years ago remains intact and is still in use. The costing model is about the same, and the transfer pricing system is unchanged. Changes made so far have been in the form of simplifying the model used fifteen years ago in various ways. The company seems to feel that opportunities exist for further simplification. Certain aspects, such as some of the transfer pricing schemes, are perceived as being unnecessarily awkward, but uncertainty as to how changes here would affect the whole, and plans for a more comprehensive overhaul of the entire accounting system, have put a damper on changes since 1983. But as indicated above, a major development project has been started.

The company currently operates with separate systems for accounting, production, personnel, etc., but the goal is to integrate these systems. One project involving installation of a new computerized accounting system has the highest priority, and the goal is to integrate those systems that are now independent of each other.

Another prioritized project is to update the project reporting system to get access to more current data. The project reporting system is now totally dependent on entries in the accounting system. Project reporting is therefore today a once-a-month occurrence, with a certain delay, which is inadequate as an instrument to control projects. In this context, it would also be desirable to get a better time reporting system, but this project has lower priority and will not be implemented until the other development efforts have been completed.

Hags AB

The company makes playground equipment. Most of the manufacturing is for inventory. The company has about 100 employees.

The design of the management accounting system introduced fifteen years ago was very voluminous and sophisticated, with extensive use of the accounts for internal accounting proposed in BAS chart of accounts. This solution has been simplified quite a bit. Large portions of the management accounting has been extricated from the general accounting system. Previously, for example, supplier invoices and wage information were recorded separately and in different ways in the financial and the management accounting, respectively. Over time, this led to an administrative nightmare, which soon was seen as intolerable. Several elements of the management accounting procedures have thus been eliminated, and it is no longer necessary for everything to pass the accounting system.

Overall, the company feels that the same problems as before are now solved, and the same requirements as before are fulfilled, except in a simpler way. But the company is not prepared to agree that the solution introduced fifteen years ago was over-elaborate.

Instead, it is changes in computer systems that have made feasible the development efforts implemented.

The design of the internal accounting system is seen as having had very positive effects, not least in sales, where its has made it much easier to get the sales representatives to go along with economic reasoning. Aside from data about gross revenue and gross profit, the system produces information about complaints, discounts granted, assembly, returns, etc. By product and sales unit, which in practice corresponds to one sales representative. This information has to a great extent contributed to changing sales representative behavior to become more profit-oriented instead of sales-oriented. The effects on production have also been positive, but in total significantly smaller.

The company is basically satisfied with how the management accounting system now functions, but continual development work in different ways is being done within the framework of "the same thoughts as before". One problem that has arisen when the financial accounting no longer is the funnel through which the accounting information system is channeled, is that the various parts of the overall system are no longer fully integrated. Coming to grips with that situation is a perpetual project.

<u>AB Persson Invest</u>

The company is a conglomerate which to some degree has concentrated its business compared to the situation fifteen years ago. Breweries and engineering industries, which were part of the group then, have thus been sold, and four business segments remain: car dealerships, saw mills, forest management and real estate management. The latter business segment has been added since 1983.

Hardly a trace of the internal accounting solution in place fifteen years ago exists today. "It was ill-conceived from the beginning", is the word now. Trying to push as diverse businesses as car dealerships, breweries and saw mills through the same standardized template was a mistake right from the start it is said.

Today its is up to the individual subsidiaries to set up their internal accounting as they see fit themselves. And there are no central requirements or directives, nor any central resources to support development projects. None of the subsidiaries have special management accounting any longer, other than that some use more or fewer levels in the chart of account.

For the costing sheet and the costing follow-up the sawmills generally use the production planning system, which actually has links to the accounting system. Certain vestiges of the solution as it looked fifteen years ago thus remain here, such as the system for calculating and reporting cost of capital.

Overall, there is a trend of exerting control with the aid of financial accounting data, even if defined requirements for return are not used.

Asplund Bygg AB

The company is a medium-sized construction and real estate management company with about 260 employees. Compared to the situation fifteen years ago, the business has contracted by just short of 100 employees.

Most of what described in *”BAS case studies – Nine applications of internal accounting”* has been removed. The model for management accounting developed in conjunction with the BAS Groups propositions for internal accounts never worked very well and was discarded at a rather early stage. The whole thing was cumbersome and labor-intensive, but still did not provide sufficient information. In practice, it was not possible to do follow-ups in reasonable time.

Today, the accounting system has a simple structure where “everything” is posted to projects (almost everything as it would later turn out). The account string has three parts, the first of which determines if it is an external or an internal transaction, the second is the account number according to the BAS chart of accounts, and the third is the project number.

The company says that it is satisfied with the current state of affairs, and there are no current plans to develop the management accounting system.

Westberg Måleri AB

The company is a painting enterprise with about 20 employees. The company was substantially larger during a part of the 1980's, with subsidiaries at other locations but are now back to the same size as fifteen years ago.

The management accounting system has basically the same design and features as fifteen years ago. The description in *"BAS case studies..."* is a little embellished, however. It has actually never worked as described there. The description is 60–70 percent accurate according to the President and owner of the company.

Overall, it is felt that the management accounting system functions satisfactorily. The project accounting part is the most valuable feature. "It fits us like a glove."

Another comment was that during the company's growth period, there were no problems in the sense that the management accounting system was inadequate. Quite the opposite, in fact, as it helped maintain control over the company's expansion.

In summary, the company's representatives said that they were satisfied and there are no current plans to develop the system, except to adapt the financial charts to new legislation.

Bohlins Revisionsbyrå (KPMG Bohlins)

Organizationally, the company has undergone major changes since 1983, and it has grown to about 1,500 employees from about 500. The systems described in the prior BAS study are in effect all gone. The business orientation has changed less than the size of the company, however. The basic complex of problems with time and assignment reporting as central components thus remains.

Registration of data takes place in three main systems: A time accounting system with, inter alia, invoicing and accounts receivable, an accounting system with integrated financial and management accounting, and a personnel administration system. For reporting on the business of, for instance, departments or assignments, data is culled from a common database with the aid of in-house-developed report generators in the form of spreadsheet software applications. The accounting system has no collecting function, but delivers data to a common database just like the other systems.

Accounts proposed by the BAS Group is used in the accounting system for some internal transactions, such as charging calculated interest, internal allocation of rent, and for internal trading of certain types of time or services.

The internal control system has definitely been developed since 1983, but the role of the accounting system itself is different, and less central.

TeleLarm AB

The company's business is to manage and deliver alarm systems. The company was previously a subsidiary of the Swedish telecommunications administration, but was recently acquired by Securitas AB. If and how this will have an effect on the design of the management accounting system is not known at this point in time. The description of the current situation is therefore the situation prior to the sale to Securitas. TeleLarm has informed that no major changes of the management accounting system are expected as a result of the ownership situation.

The use of internal accounts fifteen years ago, as described in the prior BAS study, was very voluminous and sophisticated. In connection with the installation of a new computer system, hardware as well as software, in the mid-1980's, the whole layout of the management accounting system was changed substantially. The solution described in *"BAS case studies – Nine applications of internal accounting"* was "right in theory", but much too detailed to function well in real life. Re-allocations and summations of different types were then done by special accounts , for instance. These are now done much simpler with more dimensions in the accounting system.

Developments in terms of systems have opened new opportunities. A step-by-step development that, among other things, has meant that the management accounting system has been expanded, with factors such as cost of capital. All reporting, planning, and follow-up is still in financial terms. No requirements for other measures or reporting are seen to exist in the company, aside from certain statistics on things such as availability and security, which are also produced.

There are no current plans for further development. A step-by-step approach to future development in the area is seen as likely.

Summary

A few brief descriptions by company are found above. As seen here, the development has been different for the different companies. In some cases the companies very quickly abandoned the applications described in *"BAS case studies – Nine applications of internal accounting"* from 1983. In other cases the applications have been retained as they were fifteen years ago, and developed. A couple of observations can be noted as being generally applicable, however:

- One is that all respondents state that simplifications have been made of the systems described.
- Another is that the accounting as such is not the primary source for management control. The accounting system is not the central "funnel", to use RP terms[9], as it was fifteen years ago.

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[9] See for example "Development of accounting information systems according to RP" (translation of

The way the various companies have developed is far from homogeneous, however. This is also true of the companies' propensity for change. Again, attitudes vary here, but when we during the interviews brought up development trends at larger companies for discussion, interest for things such as alternative product costing models and balanced scorecards was lukewarm at best. Interest appeared to be greater for more cash flow-oriented control and follow-up, but none of the companies had current plans for such tools.

Swedish title), Magnusson & Wahlgren (1995).

5. SURVEY

The above review of prior studies revealed that a broader survey, of Swedish companies, of the area covered by this study hardly exists. By undertaking a survey it should be possible to add interesting data and contribute to increased knowledge.

5.1 Design and implementation

The discussion below covers:

- The areas covered by the survey.
- Selection of respondents.
- Implementation of the survey.

The purpose of the survey is to collect data about the current state of affairs and the need for change in the area of management control in general and management accounting in particular. The survey will aim to provide an understanding of the importance attached to management control and financial control measures among companies in the target group, and how the internal accounting is designed. Development trends and any perceived need for change will also be captured by the survey. These areas are covered by the survey. Without claims of total coverage, the survey aims to provide a broad picture.

As far as **selection** of respondents and **implementation** of the survey is concerned, these issues are related and are therefore dealt with in their own context. Respondent at the target companies is either the company's chief financial officer, or its chief operating officer.

When it comes to selection of companies, there can either be a typical *random sample* of a defined population of small and medium-sized companies, or you can perform a self-selecting survey, allowing all companies in the total population we are interested in to respond.

The first form of survey gives greater control over who will be allowed to respond, and results will therefore be easier to evaluate, inter alia in terms of possible inference. In view of the purpose of the survey, the second form has more advantages, particularly in terms of cost. The problem is that you risk various forms of bias, and the possibility of inference is none existing. The basic question thus was if we, in view of our objectives, could make do with the less expensive and simpler variant, i.e. a self-selecting survey.

The disadvantage of not using a random sample approach can be mitigated by posing questions about matters which can be suspected to produce skewing, such as the size of the company, its industry, and its business orientation. Skewing cannot be totally avoided, but by having data about different circumstances which may affect responses, certain control over skewing can be achieved. Even a study based on sampling entails the risk of skewed responses. After all, the only thing that can be controlled is the selection of companies given an opportunity to respond, not which companies actually do respond.

Nor is the purpose of the survey to test a hypothesis; it is exploring in nature. The problems with skewing and the limited opportunities for inference will be smaller when the premise is as described. If, for example, one hundred companies express a certain need for change, this may be sufficient for the question to be interesting to study, irrespective of whether or not the companies are typical of the entire population. The disadvantages of this kind of a study cannot be totally eliminated, but sufficiently so for the study to be expedient. For continued scrutiny, another type of study may well be an option.

Different techniques can be used to distribute the questionnaire. In this case we are using an Internet-based questionnaire. Among the advantages are that the cost of distribution is negligible, and that you continuously have an updated database with very little administrative effort.

How the problem with self-selecting surveys as such are dealt with is described above. These problems include lower validity of responses caused by skewed distribution of respondents with respect to size of company and/or industry. These factors are taken into consideration, since data about them are collected. We have no control over how other factors, such as access to the Internet or geographical location, may affect responses to the survey.

The alternative to the Internet as distribution form is a traditional mail-in questionnaire. But such a survey does no automatically solve the problem with number of responses. The experience from previous surveys by questionnaire among small and medium-sized companies is that the response rate is rather low. Experience from questionnaires distributed via data media is not as extensive, but limited experience from the Stockholm School of Economics indicates that the response rate is good.

Before the questionnaire was made available to the companies in the target group, a test of the questionnaire was performed by letting eight companies with between 2 and 35 employees respond to the questionnaire. The selection of test companies was guided primarily by availability, but variation in size and type of operation were also guiding criteria. Respondents were subsequently interviewed to get a reaction on the ease of responding to the questionnaire.

The result of the test prompted a number of changes, several of which involved making the questions easier to understand and more precise.

5.2 Results of the survey

A total of 242 usable responses to the survey were received. The number of companies responding to some part of the survey was 338, but some responses were sorted out based on the criteria discussed in the appendix. The technical design of the questionnaire, accessibility, and reliability are also discussed in the appendix.

The number of responses was judged to be satisfactory and in line with expectations.

A formal drop-out analysis is not possible to perform, but an account of the size of responding companies and their industry affiliation is given below. Certain comparisons

between this account and the corresponding data for the entire population of small and medium-sized companies is also possible in order to try to determine if size of company and industry affiliation is a determinant among responding and non-responding companies.

Company size is measured by number of employees. Compared to measures such as revenues or capitalization, this is the measure most often used in studies of management control. The complexity and design of management control varies more with the number of employees than with revenues.

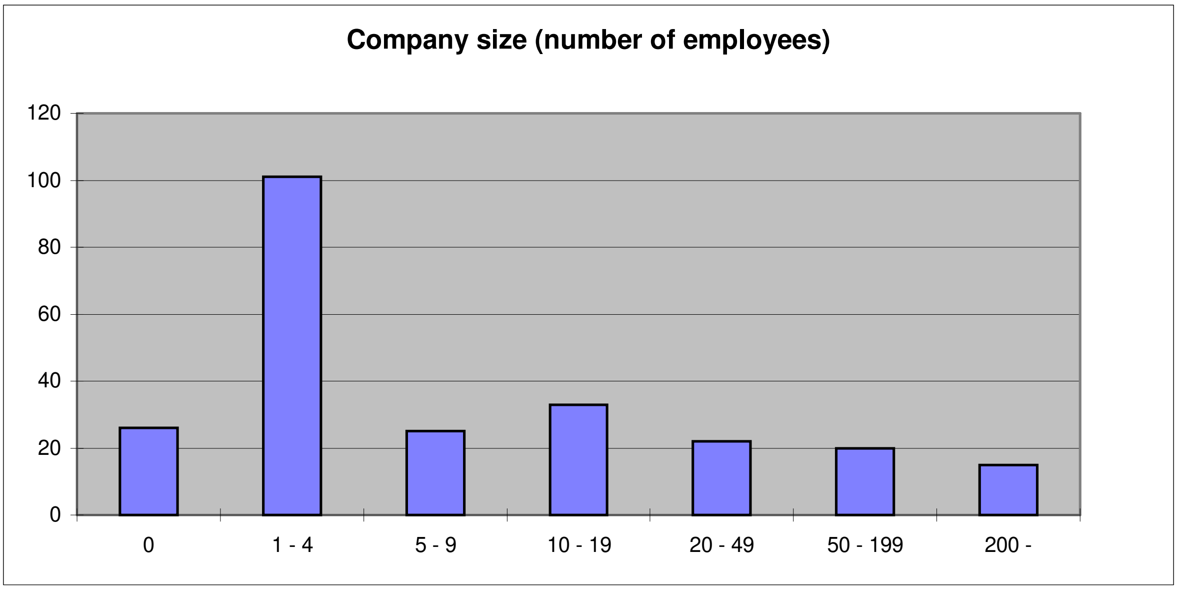

Figure 3 Size distribution

About 53 percent of the responses to the survey have been given by companies with no or 1 – 4 employees. These small companies dominate in absolute terms among responding companies, but relative to their total number, they are underrepresented. At the time of the survey, as many as 82 percent of all companies had no or 1 – 4 employees according to data from Statistics Sweden. Against this background, the larger companies of the

target group are over-represented among respondents relative to their actual number. This is also reinforced by the fact that the larger companies more often gave more complete answers than smaller ones.
Industry affiliation can be defined in several ways. For the purposes of this survey, Statistics Sweden's industry grouping was used as a basis for classification. The companies were given the option of placing themselves in one of 34 pre-defined industries, or as alternative number 35, they could mark another industry than those pre-defined. This grouping can obviously be discussed, and other alternatives can be considered, but this one has the advantage of being well known and easily accessible. In the interest of a good overview, industries are aggregated to a smaller number of classes in the figure below.

The figure shows that companies offering "Consulting services" is by far the largest category. The largest single industry is data consulting and data service. This is hardly surprising as the survey was performed via the Internet.

The third largest industry is "Other", that is companies who felt that their business did not fall into any of the pre-defined industry alternatives in the survey.

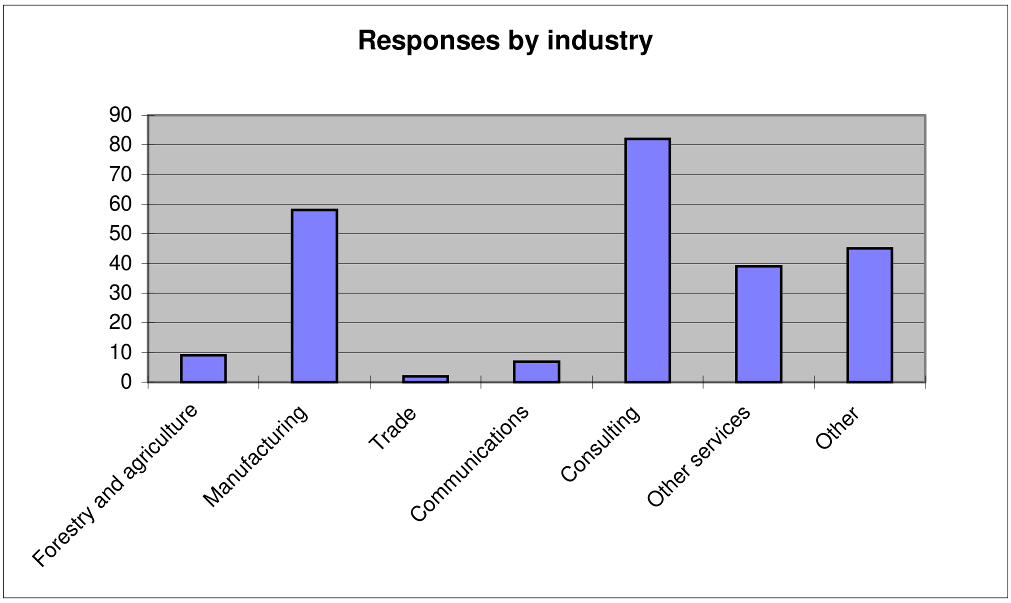

Figure 4 Responses by industry

The questionnaire contains several follow-up questions depending on which industry the responding company belongs to. Manufacturing companies got certain follow-up questions; service companies got others. Trading companies got no follow-up questions, but companies who had marked themselves as belonging to "Other" industry, got the follow-up questions intended for both categories. Responses to these questions indicate that most of the companies marking "Other" as their industry, 40 of 45, can be categorized as manufacturing companies. This more in-depth analysis of the responses seems to indicate that the highest response rate was from manufacturing companies, and the bar chart in Figure 4 can be redrawn as follows.

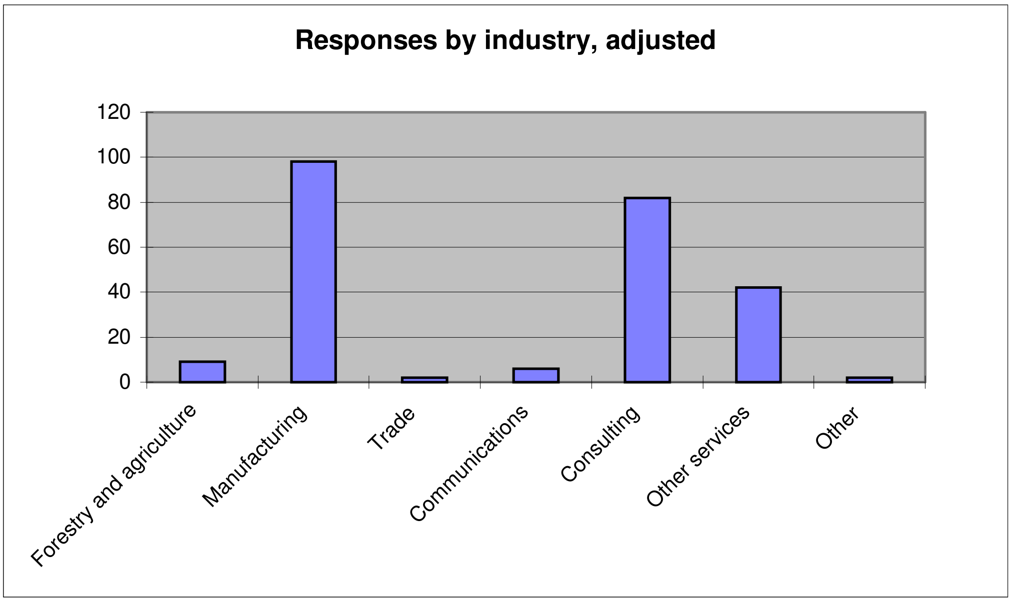

Figure 5 Adjusted responses by industry

If you compare the proportion of manufacturing companies among the respondents and their total number among small and medium-sized companies, they are over-represented among the respondents to the survey. The larger companies are also found mostly among the manufacturing companies.

The figure also reveals that only two of the companies responding are trading companies. The results therefore say next to nothing about management control and management accounting in trading companies. The number of trading companies that are small and medium-sized is very large, however, but the data to describe them is not available here.

A rough summary of the analysis of which companies responded to the survey indicates that responses do not provide a representative image of the situation among all of Sweden's small and medium-sized companies. Certain industries are grossly over-represented. The results of the survey must be interpreted against this background. The need to get an overall picture of the situation compared to getting more detailed knowledge by industry may be questioned, however. Investigations by industry is of value, at least for the companies in that industry.

5.2.1 Overall management control

The question in this part of the questionnaire touched upon three areas: **The need for information and the type of information produced at present**, which changes and what type of **development work** is planned and conducted, and finally, questions about **problems with development work** relating to management control.

Information and obtaining information

The situation in the companies with respect to need for information and obtaining information was examined by letting the respondents consider a number of statements and marking how well they reflected the company's situation. Responses were given on a scale from 1 = In no way reflects to 7 = Exactly right. Average values, standard deviation, and the proportion of answers at the upper and lower end of the seven degree scale, respectively, are presented in the table below.

	Average value	Standard deviation	Proportion 1 – 2	Proportion 6 –7
Non-financial information is very important for controlling the company	5.39	1.56	8%	69%
Informal methods are important for controlling the company	4.28	1.89	23%	33%
Financial information is not sufficiently future-oriented	4.17	1.96	25%	34%
The financial accounting is done mostly to satisfy legal requirements	4.17	1.95	22%	29%
Financial and non-financial information often give different control signals	3.57	1.88	40%	20%
Financial information always means control that is too short-term in nature	3.57	1.68	28%	15%
The financial accounting is done more to satisfy creditors than for internal reasons	2.27	1.43	61%	7%

Table 1. The importance of financial and non-financial information for controlling the company

It will be noted from the table that non-financial information and informal methods are cited as important in controlling the company. 29 percent of the companies agree completely or almost completely that the primary role of financial accounting is to satisfy legal requirements. Together with responses to questions about non-financial information, it is indicated that the latter is important for the control of the company.

To what degree does the company's accounting meet the company's need for information?

To answer this question, the companies were asked to respond to what extent the accounting satisfied the need for information in different respects. 1 = Very poorly and 7 = Very well.

	Average value	Standard deviation	Proportion 1 – 2	Proportion 6 –7
Results for the overall operation	5.71	1.65	7%	69%
Financing of the overall operation	5.33	1.51	11%	59%
Financial position of the overall operation	5.30	1.51	10%	52%
Overall liquidity of the operation	5.17	1.68	13%	48%
Reporting for areas of responsibility/organizational units	4.88	1.81	14%	43%
Reporting for (groups) of products/services	3.99	2.28	31%	30%
Project reporting	3.52	1.89	38%	17%
Reporting by customer/customer group	3.02	1.68	50%	11%
Reporting for activities	2.94	1.89	50%	16%

Table 2. Obtaining information for different purposes

Results of questions as to how well information needs are satisfied in various respects are in line with what could be expected. There is thus greater satisfaction with the information about the whole (see for example "Results for the overall operation" in the table) than about subsets of the operation.

Informational content was the issue focused on in the previous question. Other factors such as frequency of information, how current it is, its quality, and presentation, are other important aspects. Table 3 below shows a compilation of responses in these respects. Respondents were asked to consider a number of responses where response 1 = In no way reflects to 7 = Exactly right.

	Average value	Standard deviation	Proportion 1 – 2	Proportion 6 –7
I rely on the numbers in the financial information	5.55	1.84	10%	57%
I think the financial information is presented in a good way	5.28	1.67	4%	57%
I am satisfied with how quickly I get financial information	5.05	1.96	11%	52%
I am satisfied with how often I get financial information	4.78	2.05	14%	45%

Table 3. Frequency, reliability, and presentation of financial information

The values in table 3 reveal that respondents overall are rather happy with how often, and the manner in which, the financial information is presented.

Development work

Against the background of the responses given in the two previous sections, it would be of interest to examine to what extent, and in which respects, development of management control is being conducted. About 60 percent of all companies responding to the survey state that development projects are in progress, or are being planned. The types of changes considered are set forth below.

Changes most frequently said to be in progress were as follows:

Introduction of new non-financial measurements aimed at customers	30%
Introduction of new non-financial measurements for development work	30%
Introduction of new non-financial measurements for personnel	17%

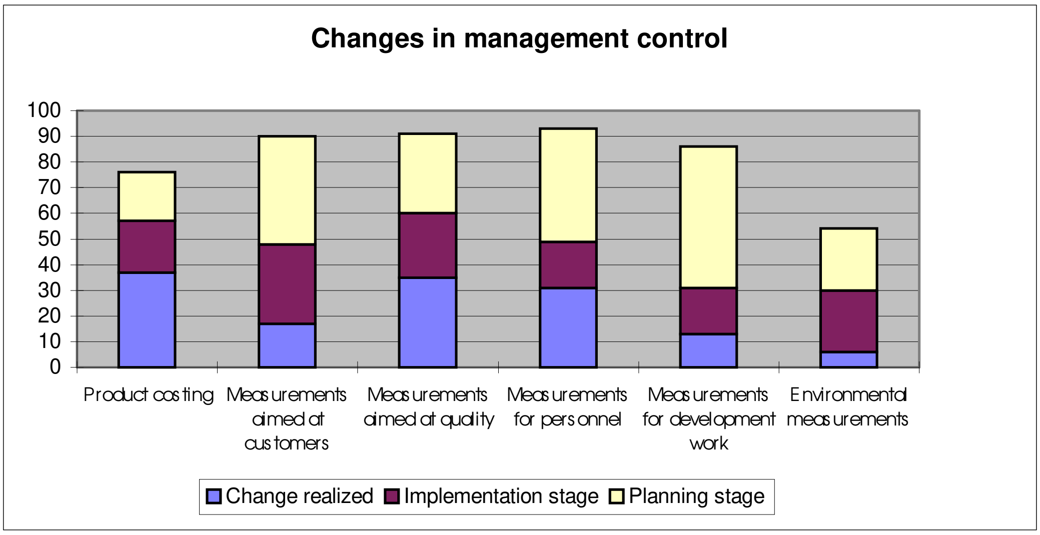

Figure 6 Changes in management control

If you only look at what is being planned, the same three categories top the list, but the order is changed:

Introduction of new non-financial measurements for development work	22%
Introduction of new non-financial measurements for personnel	18%
Introduction of new non-financial measurements aimed at customers	17%

Interest among the respondents for non-financial measurements aimed at customers is not unexpected and is in line with inquiries of listed companies (see Johansson et al. 1997), but the interest displayed for measurements for development work is striking.

Which are the problems that the companies see in their development work? The figure below summarizes how the companies have ranked the problems they see as the most pressing to implement changes in management control in the company.

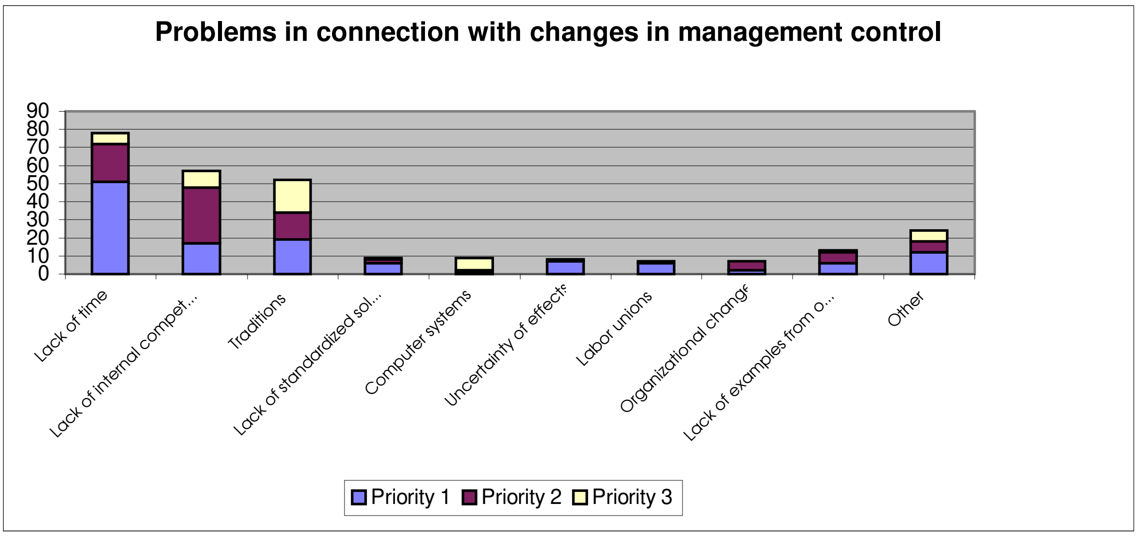

Figure 7 Problems in connection with changes in management control

Three factors stand out as the most pressing in connection with changes in management control: Lack of time, insufficient competence internally, and traditions. Other factors, such as a lack of standardized solutions, difficulty in evaluating effects, and that examples from other companies do not exist, have been cited by very few. The results of Joye and Blayney (1990) about which factors have an impeding effect fully agree with our results.

When it comes to the question of who has initiated the effort to institute changes, the most common response is the president (32 percent). Together with alternatives financial management (16 percent), and joint initiative (31 percent), almost 80 percent of the responses are covered. Very few have thus stated that the board of directors, the auditor, the operating staff at the local level, or others have taken the initiative. The accounting firm alternative received no responses at all.
Comparing these answers with conditions among listed companies gives roughly the same picture, with the exception that very few listed companies say that the president alone took the initiative (Johansson et al. 1997).

5.2.2 Budgeting and product costing

Budgeting and product costing are often seen as important parts of the formal control system. Depending on whether the companies use budgets or product costing, they were asked to consider different statements.

About two thirds of the companies that have responded to questions about budgets say that they use budgets. This must be regarded as a somewhat high proportion, which is probably not typical of the overall proportion of small and medium-sized companies that use the budget tool. The proportion is only slightly higher than that found by Bergström and Lumsden (1993) in their survey. Part of the explanation for the high proportion is probably that budgeting is more common among manufacturing companies, and that larger companies use the budget tool more often than smaller companies. Since manufacturing companies are over-represented, and the smallest companies are underrepresented among companies that have responded to the survey, the proportion of companies that use the budget tool is perhaps slightly less surprising.

The importance of budgeting in companies that use the budget tool is illustrated by the table below (Scale: 1 = Not at all true and 7 = Entirely true):

	Average value	Standard deviation	Proportion 1 – 2	Proportion 6 –7
Budgets are important in controlling the company	4.28	2.06	21%	32%

Table 4. Use of budgets I

The budget is perceived as very important by less than one third of the companies that use the budget tool. The dispersion of responses to this question is large, however. More than every fifth company say that budgeting is not particularly important and the standard deviation is high. The circumstance that many companies are not quite satisfied with the way the budgeting process functions has been debated lately, and various studies show that many, at least many larger companies, are working on ways to change the way in which they budget, and in some instance doing away with budgeting altogether[10].

Every third company responding to the questions about budgeting said that they do not use budgets. How they believe introducing a budget process would affect the control of the company is shown in the table below. The scale is the same as for the preceding table.

	Average value	Standard deviation	Proportion 1 – 2	Proportion 6 –7
The introduction of a budget process would improve the control of the company.	2.98	1.72	61%	11%

Table 5. Use of budgets II

There is no general desire among companies who do not use budgets now to begin using budgets. Other studies have come to similar conclusions, and to the extent non-budgeting companies are considering to introduce budgeting, it is most often liquidity budgets that small companies are contemplating.

Questions about product costing were posed in the same way as questions about budgeting. These questions were answered by 180 companies. 56% of these companies stated that they were doing product costing. Just like the number for use of budget, this number is surprisingly high. The proportion of companies that perform product costing is only one third of the companies in studies such as Bergström and Lumsden (1993). The explanation is probably the same as for the use of budgets.

The importance of product costing for controlling the company is summarized in the table below. The scale is the same as for the preceding table.

[10] Wallander (1994)

	Average value	Standard deviation	Proportion 1 – 2	Proportion 6 –7
Product costing is important for controlling the company.	4.19	1.77	18%	26%

Table 6. Use of product costing I

Those who do the product costing are more favorably inclined with respect to product costing's importance for control of the company than budgeting companies are to the role of budgets in the same respect. Compared to the results of Joye & Blayney (1990), the companies are much more satisfied with how product costing works. The introduction of new product costing methods are neither planned or being implemented at very many companies responding to the survey. On the other hand, it is the change that most say they have instituted. This is not quite in line with the observations made by Ax (1997). Among the companies he has surveyed, very few have made any changes to their product costing methods, but changes are planned by a large number.

Companies which said in the survey that they do not perform product costing were asked if they thought that the introduction of product costing would improve the control of the company. The result is presented in the table below. The scale is the same as for the preceding table.

	Average value	Standard deviation	Proportion 1 – 2	Proportion 6 –7
The introduction of product costing would improve the control of the company.	2.58	2.25	75%	16%

Table 7. Use of product costing II

A summarizing reflection in this context is that neither those who use budgets, nor those who use product costing, believe that the introduction of these means of control would improve the control of the company. At the same time, Häckner's study from 1993 shows that well developed product costing methods and profitability have a positive correlation in the industry he studied. Dispersion of responses is great when it comes to the introduction of product costing.

5.3 Management accounting

5.3.1 Design of management accounting

Of the companies (183) responding to the question if they use additional coding linked to the account numbers of the financial accounting, 60% of the companies state that this is the case. In 23% of these companies one more dimension than in financial accounting's account number is used, in 25% two dimensions, in 52% three or more dimensions.

Of the companies (175) responding to if they do any adaptation of the account numbers in their financial accounting for internal purposes, 46% state that they do so. More than 40% (of 181 responding companies) say that they use special management accounting separate from the financial accounting. A similar proportion of the companies responding to the question on integrated financial accounting and management accounting say that they have management accounting integrated with financial accounting. There is a certain overlap between these questions, in that some companies say that management accounting separate from financial accounting and yet they state that they have integrated accounting. Even taking this into account, almost half of the companies have either management accounting separate from financial accounting, or integrated accounting, or both.

Approximately 18% percent of the companies use the internal chart of accounts proposed by the BAS Group to some extent.

201 companies have responded to the question if any changes of the management accounting system are contemplated. 42% of these are considering changes. This must be regarded as a relatively high proportion. In which respects, then, are these companies contemplating changes? The following alternatives were pre-defined in the survey are given most commonly:

Adaptation of the account numbers of the financial accounting in order to get information in more dimensions	43%
More dimensions in additional coding to the account numbers to be introduced	30%
Additional coding linked to financial accounting's account numbers to be introduced	29%

It is striking that 45% of the companies are contemplating other changes than those pre-defined in the survey. The survey does not capture these changes.

A final question was also put to the respondent about how he or she valued the financial information relative to the resources required to produce them. The same scale as prior tables was used.

	Average value	Standard deviation	Proportion 1 – 2	Proportion 6 –7
I think that the financial information we produce is worth the price it costs to produce it.	5.79	1.70	7%	72%

The responses to this question can be interpreted thus that either is there general satisfaction with the financial information produced, or very limited resources are expended on producing it, irrespective of whether or not it is satisfactory, or not worth its price.

6. PROBLEMS AND OPPORTUNITIES WITH DEVELOPMENT OF CONTROL AND MANAGEMENT ACCOUNTING

6.1 Observations

Observations made in the various sub-parts of the study can be summarized as follows:

<u>Review of prior studies:</u>

- Management accounting accounts for only a part of the control used by companies.
- Control is increasingly based on non-financial key figures as a complement to financial key figures.

<u>Follow up on BAS case studies:</u>

- Detailed systems for management accounting appear not to be called for in view of their use. Management accounting has been simplified and separate information systems have been developed as complements.

<u>Survey results:</u>

- Non-financial information is important for control of companies.
- The main impediments to developing control mechanisms and management accounting is limited management time and in-house competence, and the difficulty in breaking with old traditions.
- Interest for standards appears to be limited across the entire target group.

6.2 Concluding remarks

Compared to the fast dispersion of standardized charts for financial accounting the story of the standardized counterparts for management accounting purposes is a failure. The results from this study shows that even in the companies that where at the forefront fifteen years ago the use today is limited. The results from the survey can not be generalized but less than 18% of the companies responding to the survey are using the BAS Groups special standardized charts for internal accounting (class 9) although all of them are using the standardized charts for financial accounting.

The question is then why the proposals for a standardized internal chart of accounts did not succeed?
One hypothesis is that the internal needs differ a lot between companies. Some support for this can be found in Karén and Ljunggren (1996) and in Hägg, Karén and Ljunggren (1997). But still would one expect that similar companies would faces similar need and that standardized solutions could be helpful.
Another hypothesis is that time and competence in these matters are scarce in small and medium-sized companies. Since internal accounting is voluntary and the benefits not always obvious and easy to measure no time and other resources will be spent on this. This is indicated both in the follow up on the BAS studies and by the survey. But taking this in consideration a standardized solution would consume less time and other resources and demand less competence than company specific solutions.
Still another hypothesis is that financial information is of minor importance compared to other, non-financial, information. Management “accounting” in small and medium-sized companies is done outside the accounting system which in turn mostly is designed to meet external and legal requirements. The results from this study’s two parts does give some indications that financial information needs to be, at least, complemented with non-financial information. The need for a special management accounting in monetary terms and use of management accounts seems to be very limited.

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APPENDIX

Design of the survey and technical implementation

Surveys in general

The survey as a method for collecting data has its advantages and drawbacks. Identifying these advantages and drawbacks, and how they can be weighed against each other to determine the propriety of doing a survey, is described in a broad spectrum of methodology literature. This discussion will not be expanded upon here, but since the survey as conducted in this study has been performed in a special and new way, its implementation will be described and sources of errors discussed.

Who has been able to respond to the survey?

The overall design of the survey as a self-electing survey and the consequences thereof is dealt with in the study. It is also of interest to identify the opportunities offered to reach the survey.

As a matter of principle, the survey has been open to everyone. In practice this means all companies with Internet access. The survey was open for response during 9 weeks. A total of 338 hits were noted, but 96 of these were weeded out, which means 242 usable responses. The criteria for sorting out are described below.

In order to help respondents find their way to the survey, the information channels of industry associations were utilized. Serving as information channels have been links from the Web sites of the industry associations, notices in industry association publications, electronic mail, and electronic bulletin boards. Naturally, the information has also been disseminated by word of mouth. It is difficult to judge which of these channels has been most successful.

How do you know who has responded?

The survey is open, which means that other persons than the target group have been able to respond. The question then is, how do we know that is not the case? In order to try to avoid the survey from being sabotaged, the following procedures were followed:

- The time for the response was logged.
- The physical IP address of respondents was logged.
- The link from which respondents came to the survey was logged.

Manual examination and judgment has been made on this basis. 96 responses were weeded out in this process. The criteria for this process were that all sequential responses from the same IP address were automatically weeded out, except for the first one. If the respondent has answered only a few questions, such response was sorted out. Direct responses to the survey, i.e. those that did not come in via a link, have been the subject of special scrutiny. Responses coming from respondents who have followed links from industry association Web sites have also been examined, but less extensively, since they had to use their usual password to get into the industry associations Web sites.

In the weeding-out-process we have been guided by the principle of giving benefit of the doubt, meaning that responses were removed if there was the least suspicion of the response being phony.

Most responses removed were removed because of an insufficient number of answers. If the respondent answered only questions necessary to continue and a few others, those responses were laid aside. In one case responses from one and the same IP address were received in sequence. The reason for this may that someone has tried to sabotage the survey, or the reason could be technical in nature. Regardless of reason, such responses have been excluded.

No iron-clad guarantee can be given that the material collected and used is completely devoid of false responses. The motives for responding to the inquiry, even if the respondent is not involved, have been judged to be few. Nor is it particularly easy to find your way to the survey unless you have been informed of where to access it.

How was the survey perceived by the respondents?

Two of the questions in the survey provided an opportunity for the respondents to express their views on the survey. One of the questions was a multiple-choice question where the respondent was asked to say how he or she thought the survey was to answer. The scale was from 1 to 7, where 1 = very difficult and 7 = very simple.

	Average value	Standard deviation	Proportion 1 – 2	Proportion 6 –7
How was the survey to answer?	4.98	2.18	22%	48%

The average value is rather high, which indicates that the degree of difficulty was not deemed to be very high. The dispersion of responses is one of the largest in the survey, however, with a standard deviation of 2.16. Perception of the degree of difficulty thus varies rather widely.

In order to determine what the companies had found most difficult to answer, the survey closed with an open question on what was deemed to be most difficult. Those who responded to this question often held that the questions were not directly relevant to their type of business. This problem is endemic to this type of survey, with a target group as broad as this one. Another recurring opinion was that definitions of various concepts would be desirable. This problem had been anticipated to some degree, and the survey does contain some definitions, but the opinion has merit.

Are Internet-based surveys something for the future?

An evaluation of how this survey was performed will show a need for improvement in several areas. The problem of unauthorized responses, and of the same company responding several times, can be solved by using passwords. The technology is not a problem here, and the selection of companies can be performed as desired, whereupon they are asked to respond and they get a password.

The advantages compared to a mail-in survey are several:

– Lower cost of distribution, printing, etc.

- The analysis can be performed on an ongoing basis (average values, standard deviation, etc. are automatically recalculated as responses come in.)
- Less administrative work for those who handle the survey (no mailing, sorting, or receiving responses.)

Overall, there are many advantages and the largest disadvantage – that of reaching only those with access to the Internet – will gradually fade away as access to the Internet widens.

Technical solution

Technically, the survey is comprised of three parts:

- A number of html pages which is what respondents see in their client program.
- An application that keeps track of which html pages to display, and in what order.
- A database where responses are stored.

When the respondent reaches the first page of the survey, his or her responses control which pages will be displayed subsequently. Most of the pages in the survey have in common that responses at three different occasions control which questions will appear on the next page.