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Controllers, controllership and controlling: Basic principles and categories

Guiding questions:

- 1 How has controlling developed in practice? What exactly is it that controllers do?
- 2 How does controlling differ from country to country?
- 3 How has controlling developed as an academic discipline?
- 4 Which different types of controlling conceptions are there?
- 5 What do the different accounting theories teach us?

1.1 Introduction

1.1.1 Terminology

A good textbook begins with an accurate description of what it aims to teach. This introduction to controlling is no different; however, providing such a description is certainly not easy. You will have noticed that the title of this chapter uses three similar expressions: controllers, controllership and controlling. Is there no way to simplify this? Unfortunately not, as there are significant problems with defining the term controlling. »Everybody has their own idea of what controlling means or should mean, and everybody means something different« (Preißler 2007, p. 14). The expressions controlling and controller are especially prone to being confused: When managers say »Our controlling does that«, they usually mean the controllers! We will therefore use the following working definition to start with:

- ▶ A controller is a person who carries out a certain set of tasks for a manager (e.g. making cost information available, monitoring results, and many other things).
- ▶ Controllership means the entire set of tasks that controllers are responsible for and/or carry out.
- ▶ Finally, *controlling* is a special management function that is carried out by different persons including, but not limited to, controllers.

Controllers and controllership can be seen as belonging primarily to an institutional, »actor-based« perspective, whereas controlling tends to be part of a functional perspective. Such a co-existence of two perspectives is not at all unusual in management studies (e.g. analyzing companies from the perspective of production theory versus the institutional economics perspective). This does not necessarily make the topic easier to understand; but both perspectives are needed to answer different questions. Controllership as the sum of a controller's tasks

Controlling as the function underlying the tasks of controllers

1.1.2 Basic approach

The words »controlling« and »controllership« have a multifaceted nature.

As mentioned earlier, controlling and controllership are not among the most clearly defined terms in management studies. A great diversity of terms and concepts characterizes both theory and practice. Empirical studies show that both the tasks of controllers and opinions regarding what controlling entails are very diverse.

The research on controlling recognizes and accepts this diversity, as shown by another frequently-used quotation: »In practice, people with the title of controller have functions that are, at one extreme, little more than bookkeeping and, at the other extreme, de facto general management« (Anthony 1965, p. 28). But controlling research has not really helped to clarify matters; instead, it is also characterized by many extremely diverse opinions and concepts, especially regarding controlling as a function. At first (and second) glance, a convincing integration into the theoretical edifice of business administration has not yet taken place. Overall, the situation for the three potential groups of readers of this book is therefore not very satisfying:

- ▶ Academics are bothered by two things: Firstly, the existing approaches explain neither the significant success controlling and controllers' tasks have had in practice nor their diversity. Secondly, they do not provide any prognoses regarding their future development. These two aspects the ability to explain observations and make predictions for the future are, however, core functions of research.
- ▶ Students want to know the key findings and specifics of an area of study. Knowing these makes it easier to separate what is important from what is not making life a lot easier, especially during exam times. However, specific aspects cannot be clearly identified by simply collecting facts from practice, but also require being fitted into the existing theoretical edifice of business administration.

▶ Controllers in practice are interested in knowing – amongst other things – how they should design the controlling function in their organization and whether the tasks they are currently performing will remain relevant in the future, or whether some of them will disappear while new ones will appear. Some of them may feel a certain distaste at the word »theory« (»ivory tower«), but theories can provide valuable ideas and – when linked to design-oriented controlling conceptions – give orientation for daily activities.

In the first chapter, we will try to bring some order to the variety of expressions and concepts, and we will therefore identify three separate elements (cf. also Scherm/Pietsch 2004b, pp. 6–7): (1) the »pure« description of controlling practice and of controlling as an academic discipline (sections 1.2 and 1.3), (2) controlling conceptions (section 1.4) and (3) theories relevant to controlling (section 1.5).

Theories are here defined as systems of statements that describe and explain phenomena observed in practice and that can be used to make predictions about future developments. The goal of business administration to design and thereby contribute to changes in practice is only indirectly reflected by such a theoretical perspective. In addition, predictions from research should strictly speaking only be derived from laws that apply without limitations in time or space (so-called nomological statements). Such statements are, however, generally not available for questions of business administration; instead, stochastic statements predominate. The

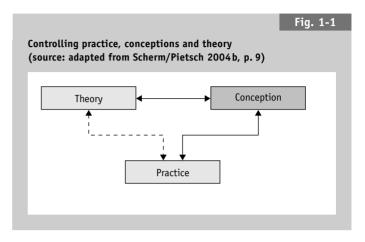
There are several reasons why these vague expressions should be specified more clearly.

Three levels are identified for this purpose: (1) The empirical

- perspective
 (2) The conceptual level
- (3) The underlying theories

result is that there is often a wide gap between theory on the one hand and design recommendations for practice on the other hand.

Therefore, controlling research needs systems of statements that are not only aimed at describing and explaining observations, but that also focus on providing design guidelines for practice. »Such practice-oriented, normative systems of statements can be termed >conceptions<. These play the role of an intermediary between theory and practice by making eclectic use of theoretical statements with the aim of deriving



design recommendations, combining them with normative postulates and relating them to practice. ... They create ... a framework that has to be concretized in corporate practice by taking into account the specific conditions of each individual case« (Scherm/Pietsch 2004b, p. 8).

Controlling is primarily a phenomenon found in practice, and academics in German-language controlling research have traditionally placed a greater emphasis on the design rather than the explanation task of research. It is therefore not surprising that the academic debate on the topic of controlling in Germany has resulted in several conceptions (see section 1.4.2), and it is only in recent years that the research objectives of description and explanation have begun to gain importance. Nevertheless, we briefly want to present the key accounting theories related to controlling in section 1.5. They open up interesting perspectives on the field and may stimulate readers of this introductory textbook to reflect in an unconventional way on the subject matter. First, though, we will sketch the practice and theory of controlling in the light of empirical research and present key controlling conceptions.

1.2 The practice of controlling: first impressions

1.2.1 A brief description of how controller positions emerged in the USA

The first controllers worked in the public sector in England and in the USA. As early as the 15th century, the job title »countroller« was used for the role of keeping records about incoming and outgoing funds and goods at the royal court in England. In a similar function, a »comptroller« was responsible for monitoring the balance between the national budget and expenditure in the USA since 1778.

Further historical roots of controlling in the public sector can be found in the positions of the »controller of the currency« (as head of the federal banking super-

Controllers first emerged in the public sector in the USA.

vision, from 1863) and the »comptroller general« at the head of the supreme auditing agency (from 1921) in the USA. These origins in the areas of accounting and supervision correspond to two responsibilities of controllers whose key importance has not changed to the present day, as will later be shown in detail.

In private sector institutions, controllers (called »comptrollers«) appeared for the first time in Atchison, Topeka & Santa Fe Railway System (1880), a transport company. Comptrollers essentially carried out financial duties: »The duties of the Comptroller are largely financial and relate to the bonds, stocks, and securities owned by the company« (from Santa Fe's articles of association, as cited by Jackson 1949, p. 8). Controller positions only became widespread much later, however, from the 1920s onwards. An empirical survey carried out by Jackson in 1948 amongst 143 U.S. enterprises showed an »average age« of about 20 years for controller positions (cf. Jackson 1949, p. 7). This was a consequence of the changed economic circumstances in the USA in the 1920s:

▶ The number of large corporations grew. These found themselves confronted with increasing problems of internal communication and coordination.

The first controller position in a company dates back to 1880.

From the source

Excerpts from the article »The Comptroller: His Functions and Organization« by J. Hugh Jackson on the emergence of comptrollers (1949):

»This expansion of American industry, and the unprecedented growth in the size and complexity of individual business units, increased correspondingly the demand for better management practices, which in turn required more adequate and scientific accounting and more exact financial control. The result has been the development during the last half-century of the functional field commonly known as >comptrollership<, and the addition of business concerns of an executive designated as the >comptroller<.

The modern offices of president, secretary, and treasurer have long been recognized as indispensable to proper corporate organization, and, as a result, custom and business practice, as well as statutory provision, have caused these officers to be included in the managements of American corporations. ... The history of the comptroller in business corporations, however, is quite different. This office is a development in corporate practice of more recent years, and, while the importance of the comptroller's position in industry is unquestioned, it has not reached the universal usage and more uniform treatment accorded to the offices of secretary and treasurer. So far as the writer has been able to determine, based upon studies of corporate reports and of inquiries made of several hundred corporations, the earliest American comptrollership in a business corporation dates back only to

1880, and the average pages of the 143 comptrollerships already referred to in this study is a matter of only some twenty-two years. ...

The comptrollership may be considered, therefore, as a logical outgrowth of the offices of secretary and treasurer when it became necessary, because of the large volume of accounting work involved, or advantageous for other reasons, to separate the accounting functions from the secretarial and financial functions of the corporate business. ...

In summary, the underlying causes for the changes in organization leading to the present stage of comptrollership development are to be found chiefly in two basic requirements of business: (a) the increasing necessity for a greater degree of concentration and specialization in the conduct of the accounting, auditing, and tax functions; and (b) the need not only for preserving one of the important >checks and balances of the corporate mechanism - whereunder the process of accounting and internal auditing may better serve as an independent check upon the receipt, disbursement, and custody of corporate funds - but also in further strengthening the controls over expenditures, costs, and profits so essential to the successful conduct of business today. Both requirements have increased immeasurably in importance during the past half century through the increase in the size and complexities of our modern industrial units« (Jackson 1949, pp. 5-14).

- ▶ As production plants became more productive because of technological innovation, the share of fixed costs increased and thereby limited entrepreneurial flexibility.
- ▶ Innovative management tools as yet rarely used in practice and not widely known became available at the same time as the need for them increased as a result of economic turbulence.

In this context, the typical set of tasks of controllers also changed: whereas their responsibility as chief accountants, auditors or treasurers previously consisted mainly in tracking transactions that had already taken place, they now also had to introduce planning procedures based on accounting language, and coordinate and analyze budget-related data. By switching its focus to the user-customized collection and processing of information by controllers, accounting evolved from being a pure recording and monitoring tool to being an instrument for dealing with the future. This helps explain why its importance increased and how it led to the institutional upgrading of the role of controllers.

These changes also resulted in the foundation of the »Controller's Institute of America« in 1931. This institution, which was later renamed the »Financial Executives Institute«, subsequently managed to create a widespread consensus about controllers' duties and responsibilities. In an often-cited catalog of tasks, controllership is represented as a subset of tasks within financial management, counterbalanced by the tasks of treasurers. This catalog of tasks is shown in Figure 1-2. The tasks listed are neither arbitrarily thrown together, nor do they depict wishful thinking on the part of the controllers who were members of the institute. Instead, they are mutually dependent or can be derived logically from one another, as shown in the following.

At the core of controllers' tasks lies their responsibility for planning. As was briefly outlined above, the need to create plans for a company's future activities was a key input leading to the emergence of controller positions. Corporations became too big for a single person – the entrepreneur – to manage. Allocating management responsibilities to various managers in a sensible way meant it was necessary to have precise descriptions of their respective competencies and objectives. But creating such a description could not be done without prior planning. The increasing uncertainty inherent in the company's environment required explicit planning: simply extrapolating historical data was no longer helpful in dynamic times. Planning and the plans resulting from the process were seen to be the appropriate tool for ensuring that companies remained manageable. The newly created controller positions thereby became responsible for developing a concept for results-oriented planning, creating the required sub-planning processes and providing support for the planning process.

Goals defined in plans are ineffective if compliance is not monitored. In the absence of monitoring, there is no opportunity to learn from deviations, nor is there sufficient motivation to make people really want to achieve their objectives (at least, this is the case for most people). Building up planning systems and formulating consistent, coordinated plans therefore requires creating systems and procedures for *monitoring* purposes. In addition to contrasting planned-vs.-actual values ("reporting"), it also includes analyzing the reasons for variances ("interpre-

Controller positions are a response to increasing competitive pressure and the growth in company

Results-oriented planning is at the focus of attention.

Anything that is planned also needs to be monitored.

Fig. 1-2

Controllership vs. treasurership according to the Financial Executives Institute 1962, p. 289

Financial Management

Controllership

Treasurership

Planning for control

To establish, coordinate and administer, as an integral part of management, an adequate plan for the control of operations. Such a plan would provide, to the extent required in the business, profit planning, programs for capital investing and for financing, sales forecasts, expense budgets and cost standards, together with the necessary procedures to effectuate the plan.

Reporting and interpreting

To compare performance with operating plans and standards, and to report and interpret the results of operations to all levels of management and to the owners of the business. This function includes the formulation of accounting policy, the coordination of systems and procedures, the preparation of operating data and of special reports as required.

Evaluation and consulting

To consult with all segments of management responsible for policy or action concerning any phase of the operations of the business as it relates to the attainment of objectives and the effectiveness of policies, organization structure and procedures.

Tax administration

To establish and administer tax policies and procedures.

Government reporting

To supervise or coordinate the preparation of reports to government agencies.

Protection of assets

To assure protection for the assets of the business through internal control, internal auditing and assuring proper insurance coverage.

Economic appraisal

To continuously appraise economic and social forces and government influences, and to interpret their effect upon the business.

Provision of capital

To establish and execute programs for the provision of the capital required by the business, including negotiating the procurement of capital and maintaining the required financial arrangements.

Investor relations

To establish and maintain an adequate market for the company's securities and, in connection therewith, to maintain adequate liaison with investment bankers, financial analysts and shareholders.

Short-term financing

To maintain adequate sources for the company's current borrowings from commercial banks and other lending institutions.

Banking and custody

To maintain banking arrangements, to receive, have custody of and disburse the company's monies and securities and to be responsible for the financial aspects of real estate transactions.

Credits and collections

To direct the granting of credit and the collection of accounts due the company, including the supervision of required special arrangements for financing sales, such as time payment and leasing plans.

Investment

To invest the company's funds as required, and to establish and coordinate policies for investment in pension and other similar trusts.

Insurance

To provide insurance coverage as required.

ting«). Monitoring depends on the availability of precise, objective actual data to contrast with planned figures. Under these conditions, it makes sense also to give controllers responsibility for ensuring the availability of information, which can at the same time be used as the basis for planning.

Information is needed for planning and monitoring.

The third area of responsibility of controllers seamlessly connects to planning and reporting/interpreting. Whoever is intimately involved in creating plans and analyzing deviations (monitoring) will have enough knowledge about the company and the subject matter to provide valuation and consulting services to management.

The other four controller tasks listed in the FEI catalog do not fit this line of argumentation, but are related to two specific aspects of the U.S. context:

- ▶ U.S. companies do not maintain separate financial and operational accounting systems. Stand-alone cost accounting systems, which have been standard in Germany since the 1920s in large companies, are a rarity. On the one hand, controllers in the USA therefore carry out tasks that are usually part of external accounting in Germany (e.g. »tax administration«, »government reporting«). On the other hand, as central information sources, they also capture the interface between a company and the economy in which it operates.
- ▶ The capital market acted more »directly« in the USA than in Germany. The intermediary position between capital providers and management that German banks typically held is not as pronounced in the U.S. As a consequence, controllers were also given the function of securing assets, almost as an extended arm of the shareholders. Such considerations were alien to German thinking. However, the recently increasing popularity of value-based management is resulting in significantly more advanced approaches in this direction.

At its beginnings and during the early stages of evolution, controllership appeared as a diverse, but consistent and precise concept.

1.2.2 The evolution of controllership in Germany

In Germany, the expression »controller« remained unknown for a long time. Even early contributions to the debate dating from the 1950s and resulting from trips by German academics to the USA did nothing to change this (see the excerpts from Auffermann 1952). The dominant attitudes were rejection and a lack of understanding (see the quotation from Goossens 1959). Even at the end of the 1960s, controllers were usually only found in German subsidiaries of U.S. companies. Then, suddenly, things appeared to change: According to an often-cited study by McKinsey (basis: 30 typical German enterprises with sales greater than 1 billion DM), 90 percent (!) of the companies had controller positions by 1974 (Henzler 1974, p. 63), even if these were not always thus named. The general validity of this finding – which at first glance appears excessively high – was confirmed in the following years by other empirical surveys (for an overview, cf. Richter 1987, pp. 23–29).

The development becomes clearer in an analysis of job advertisements in the Frankfurter Allgemeine Zeitung, a major German newspaper, for the period 1949 to 1994 (for more detail cf. Weber/Kosmider 1991, pp. 17–35, and Weber/Schäffer 1998, pp. 227–233). In order to depict the way the expression might have changed,

Controllers have become more common in German companies too – but the process took over 20 years.

job advertisements for positions similar to that of a controller were also included in the analysis. In accordance with the functions and roles typically covered by controllers, these included all advertisements mentioning the areas of business administration, accounting, and planning. Concerning the quantitative development of the job advertisements, the survey provided three key findings:

- ▶ The first advertisement for a controller dates back to 1954.
- ▶ As was assumed in the relevant literature, the controller positions were initially mainly offered by local subsidiaries of U.S. parent companies.
- ▶ The number of controller positions developed exponentially; but only in the 1980s did it exceed the number of positions similar to that of a controller.

From the source

Foreword from a report by a study commission on the role of controllers in the USA:

»This report by the English study commission that traveled to the USA in 1950 to investigate the causes for the greater productivity of American industrial accounting as well as its methods has caused a stir not only in England, but also in Germany on the basis of the publication and discussion of excerpts. ...

One could focus on many interesting and important issues raised in the report, such as the description of the sense of responsibility for costs, performancebased pay, reporting systems or cost control and cost analysis. However, this is not the place to go into such detail. The report should speak for itself. Nonetheless, it should be pointed out how important the institution of the >controller< in the USA appeared to the English study commission. The controller's tasks are hard to describe: As a result of their special [!] accounting knowledge, >controllers< or >controllers departments analyze business data to monitor the performance of individual departments and generate and disseminate business metrics to top management, department heads and supervisors, thereby enabling the business side of the company to be run properly. The greater productivity of U.S. companies is often explained as resulting from the key position held by >controllers< in the organization's management. In many cases, both the head of bookkeeping and the head of the entire cost accounting department report to him.

In Germany, only a few large companies have oriented themselves towards the same concept by creating a central business management department that compiles and prepares the figures that the executive management needs to make decisions. I am convinced that a significant improvement in performance could be achieved if we introduced an institution such as that of the >controller< into our companies</td>
(Auffermann 1952, p. 6).

Excerpts from a paper by Goossens dating from 1959: »The >controller< – head of the company without overall responsibility«:

»So the controller is a man who designs his own plans, coordinates them - and even monitors them! Not only that, he also controls ... the entire organization and auditing, production monitoring, cost accounting, bookkeeping, balance sheets and taxes. In this way, the controller essentially becomes the head of the company, but without appearing externally as the head or taking the overall responsibility associated with that position. Even on its own, vesting the combination of planning, production monitoring and reporting in one person amounts to an inordinate concentration of power in a large company. But if organization and auditing are added, then all other office bearers - including the chairman of the board and the supervisory board - become insignificant, marginal figures. ...

One should always and everywhere learn from others – and not only from the USA. But the >controller< does not really fit into the legal structure of German corporate management. Adopting him in Germany would hardly signify progress, but rather sliding back to the conditions which German organizational research believed had been overcome a long time ago – at least in its theoretical findings and on the basis of practical experience« (Goossens 1959, pp. 75–76).

Fig. 1-3

Changes in controller's task descriptions as reflected in a longitudinal analysis of job advertisements (source: Weber/Schäffer 1998, p. 229)

Time period	1949- 1959	1960- 1964	1965- 1969	1970- 1974	1975- 1979	1980- 1984	1985- 1989	1990- 1994
Task area	1959	1904	1909	1974	1979	1904	1909	1994
Reporting	-	14.3	6.5	4.7	8.4	8.5	11.4	13.2
Short-term/annual/ operational planning	_	-	6.5	6.2	9.6	12.0	9.2	11.6
Strategic planning	-	-	-	1.6	4.0	7.1	3.6	3.6
Advice and consulting on business issues	25.0	4.8	4.8	2.3	3.2	3.7	4.8	4.7
Capital budgeting/ cost-effectiveness analyses	-	4.8	3.2	2.3	4.0	2.9	4.4	6.5
Budgeting and budgetary monitoring	_	4.8	12.9	9.3	11.9	8.8	10.1	7.9
Planned-vsactual comparisons/ variance analyses/cost monitoring	-	9.5	8.1	7.0	11.1	6.8	12.4	10.7
Financial planning, monitoring liquidity, financing issues	_	4.8	8.1	9.3	6.8	6.3	4.2	3.4
Collaboration on company policies and goals	-	-	-	-	2.0	1.5	1.7	0.8
Management and control tasks	-	-	1.6	0.8	2.8	2.2	1.6	3.1
IT organization	-	4.8	8.1	3.8	7.2	8.0	5.5	3.3
Project coordination/special analyses	_	-	-	4.7	3.2	3.4	3.4	5.1
Drawing up balance sheets/group balance sheets	_	14.3	3.2	6.9	2.4	2.7	2.7	4.2
Bookkeeping	-	9.5	4.8	7.8	3.2	3.4	2.1	2.5
Cost accounting/costings	50.0	18.9	14.5	11.6	5.5	9.5	7.7	6.4
Taxation	25.0	9.5	4.8	5.4	3.6	2.0	1.2	0.8
0ther	-	-	12.9	16.3	11.1	11.2	14.0	12.1

Figures represent percentage share of all tasks during a given period

From a task-related perspective, controller job advertisements are characterized essentially by the simultaneous listing of budgeting and budgetary monitoring, planned-vs.-actual comparisons, variance analyses and cost monitoring. This combination of aspects differentiates them in a statistically significant way from positions similar to those of a controller (cf. Weber/Bültel 1992, pp. 535–546). The analysis further shows a clear change of tasks over time (e.g. towards integrating controllers more strongly into strategic management issues, see *Figure 1-3* for details), although there was no change in the fundamental bundle of tasks.

Controller positions are characterized above all by the specific combination of tasks they encompass.

From the source

The genesis and ongoing development of controlling in practice can also be traced by interviewing contemporary witnesses. In the following, we show some quotes by prominent individuals who tracked the development of controlling in Germany over many years (as quoted by Binder 2006, pp. 96–105 and 128–130):

Rudolf Mann: »The need was simply there. And more people felt that controlling was needed now. There was something in the air. ... Essentially, what people were looking for was a consistent system of control rather than just raw figures«.

Rainer Bramsemann: »The integrative approach, and therefore the necessity of having rigorously to think things through from beginning to end, from analyzing sales and profits to analyzing the origin of funds and their usage. This was not being provided by the traditional partial planning and budgeting systems. The value added by marketing was also limited to market and customer-based integration«.

Hans-Ulrich Küpper: »From my perspective, what is right about this development is that accounting is removed from a pure role of generating figures. I see an independent function and task in having instruments and systems for managing such complex systems«.

Albrecht Deyhle: »Well, we got the word or the expression controller from the USA. The word controlling is not as wide-spread in the USA, as far as I know. When talking about the ensemble, they usually talk about controllership. We set it into motion ourselves. It was probably I who did it. I did it as a twin sister for marketing. Marketing from the customer perspective and controlling from the results perspective«.

Andreas Schmidt: »U.S. companies were successful with this, they had better information, financial, and

accounting systems and thereby set the benchmark. The German corporate groups were characterized most strongly by cost accounting. Controlling was an approach aimed at creating a more comprehensive reporting system«.

Péter Horváth: »My explanation of the diffusion is that, in certain industries, transparency and efficiency were not really at the focus of attention in Germany in the 1960s, 1970s and 1980s. Companies were earning so much money that this question was simply not very interesting – when looking at banking, insurance or trading. Only when these topics became more important as a result of pressure to use resources more efficiently and effectively did one naturally start thinking more about controlling«.

Ekkehard Kappler: »The practical development was determined mostly by Albrecht Deyhle. He promoted this area of study in practice through his tireless efforts. ... With the Controller Academy in Gauting, he achieved almost complete coverage of practice; he was also astute in building the Controllerverein as an analog of the Marketing Club's organization form. But diffusion took a long time«.

Dietger Hahn: »I believe that in 10 to 20 years we will still find controlling departments. The expression has established itself in the German-speaking regions. ... This area of activity will continue to exist for quite some time yet, at least that is how we see it in Germany today. ... But we are just a very small country on the planet. ... Whether the Chinese and Japanese will be prepared some day to talk about controlling, this is a question I want to leave to the future. ... Someday we will have to ask ourselves why the Americans nowadays get by almost without using the expression«.

1.2.3 Empirical findings on the current state of controllership

Companies formulate workplace requirements for controllers in job advertisements. In order to find out what it is that controllers really do, case studies or large-scale, questionnaire-based empirical studies can be used. Many such studies have been carried out in recent years. We would like to show some selected findings in the following to provide further insight into the "real world of controllers".

One of the first studies on the state of controllership in Germany, concluded in 1988, was conducted by von Landsberg and Mayer. Amongst other things, controllers

were asked which importance they placed on specific tasks and how much effort they invested in them. The resulting whit list of tasks« shown in *Figure 1-4* was derived from the 260 answers received in total. It confirms the findings of the analysis of job advertisements: controllers are inextricably linked to the ongoing operational planning of companies (budgeting, investment planning). They design and manage the

