

## Management Perspectives on Problems in Controlling and Cost Accounting

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### Abstract

Increasing internationalization of accounting standards has led to heightened criticism of absorption costing for external reporting and internal decisionmaking. One consequence has been that management scholars and practitioners have looked to their counterparts on the other side of the Atlantic for new ideas. Recently, prominent authorities in Europe and North America have begun to tout "German cost accounting" as the panacea for all management's controlling woes. They assert that cost accounting expertise always has made Germany preeminent in the development and application of controlling systems. German managers, they say, long ago realized that dependable controlling and cost accounting information is essential to a firm's success. Accordingly, they were "first-movers" in substituting a resource-consumption-oriented cost accounting for absorption costing. So should corporate America, concerns in the European Union, and firms in countries aspiring to EU membership all stampede to adopt German cost accounting practices?

The research reported here begins by describing controlling's historical origins and subsequent development in the United States and Germany. Next, it discusses the activities nowadays encompassed by the controlling function and examines how cost accounting fits into them. It then shows how the changing business environment is reducing the importance of cost accounting for certain kinds of controlling decisions and why other instruments are necessary for making them. After analyzing the special problem posed by the increasing complexity of cost accounting systems, it recommends simplified presentation of complex structures as the best available solution.

**Key words:** Activity-based costing, Balanced scorecard, Controlling, Cost accounting, Standard direct costing, Resource consumption accounting.

### Introduction

The Sarbanes-Oxley legislation enacted in 2002 imposes new requirements on CEOs and CFOs of all firms listed on a U.S. stock exchange. Among other things, they now are legally responsible for carefully controlling their company's activities as well as truly and fairly reporting on its performance to their stakeholders. In order to comply with this law, CEOs and CFOs will have to strengthen both their controlling functions generally and their cost accounting in particular.

A survey of 2,000 American CFOs and controllers conducted by the Institute of Management Accountants and Ernst & Young in 2003, reported that 80% of the interviewees believed cost accounting should make an important contribution to the attainment of a firm's strategic goals. Yet 98% of the same respondents also said that arbitrary bases for allocating overhead costs strongly limited the usefulness of the accounting information they received. Another 2003 questionnaire, this time administered by the RCA interest group of the CAM-I<sup>1</sup> and answered by 145 accounting department heads in the U.S., found 80% of the participating firms still used traditional absorption accounting. But only 23% of the department heads thought the resulting data were useful for decisionmaking! Perhaps most interesting of all, a recent survey by Bain & Company discovered 80% of the subjects interviewed nevertheless used absorption costing to determine product costs because it conformed with U.S. Generally Accepted Accounting Principles (USGAAP) for external financial reporting (Sharman, 2003a).

The inescapable conclusion from these three surveys is that external accounting requirements currently mask the real relationships in American business activities. Due to its inherent inaccuracy, absorption accounting information necessarily is misleading U.S. managers about

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<sup>1</sup> Resource Consumption Accounting interest group, Consortium of Advanced Manufacturing – International.  
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product and customer profitability. Both in the manufacturing and the service sectors firms therefore continue to subsidize systematically unprofitable customers, niche products, and small orders instead of dropping them.

Almost twenty years ago, Robert S. Kaplan and H.T. Johnson's *Relevance Lost* called attention to these problems and their consequences (Kaplan, Johnson, 1987). According to Paul A. Sharman, chief editor of *CMA Magazine* and head of the Institute of Management Accountants (IMA),<sup>1</sup> there simply has been no improvement in the meantime. A Briton living in Canada, Sharman finds North American executives are dissatisfied with the quality of the accounting information provided them for cost control, profit management, and other decisions. He says American CEOs and CFOs should see for themselves how their international partners, especially in the German-speaking countries, successfully plan and execute management processes (Sharman, 2003b).

Kurt Vikas, a professor at the University of Graz's Institute for Controlling and Management as well as chief editor of *Der Controlling-Berater*, believes, "The methods and practices of cost accounting and controlling always have been more highly developed in the German-speaking countries, *i.e.*, in Germany, Austria, and Switzerland, than in the rest of the world." He also holds that, as a consequence, "The numbers and the status of controllers in German companies are markedly higher in comparison with American firms." A former senior consultant with Plaut AG, Vikas attributes this state of affairs to, among other things, German, Austrian, and Swiss managers' realization that dependable controlling and cost accounting information is essential for the successful management of a firm (Sharman, Vikas, 2004).

The discussion thus far raises a number of interesting questions. Historically, what are the origins of controlling? How has it developed in the United States and Germany? What activities does the controlling function nowadays encompass? How does cost accounting fit into them? What influence does the changing business environment have on cost accounting at the enterprise level? How does such change affect the instruments available for operational and strategic controlling? Why do increasingly complex cost accounting systems pose a special problem for controlling? What options are available to controllers and other managers for solving them?

The rest of this article attempts to answer the foregoing questions. In doing so, knowledge of controlling's historic development will prove useful to understanding both the origin of contemporary controlling functions and current professional debates. Hence, the next several sections briefly describe key events in that history<sup>2</sup>.

### Anglo-Saxon Origin and American Developments up to 1945

Controlling's roots reach back into the Renaissance. Already in the 15<sup>th</sup> century, a "Countrollour" at the English royal court undertook the first controlling activity. He checked lists of monies held and goods purchased by the state administration, thereby controlling the king's property. Securing money, land, and other physical assets thus are the oldest of all controlling functions.

Three hundred years later, the rebels in the United Kingdom's North American colonies adopted a law creating the offices of "Comptroller," "Auditor," "Treasurer," and six "Commissioners of Accounts." Because the spark that ignited the American Revolution sprang from unacceptable aspects of British fiscal policy, the main task of the first American controllers was the proper administration of the government's budget and strict supervision of its expenditures. The office still exists today in the form of the "Comptroller General," who heads the "General Accounting Office." Implementation and control of the budget's execution as well as expertise in external accounting (*i.e.*, reporting to various stakeholders outside the organization, the general public, and various levels of government) therefore also are among the older duties of a controller.

Another 100 years passed before private companies began to emulate these early controlling responsibilities in the public sector. In the year 1880, an American transportation service company, the Atchison, Topeka & Santa Fe Railway Systems, became the first firm to create the position of a "Comptroller." The position chiefly involved financial tasks such as administration

<sup>1</sup> With over 70,000 members, the Institute of Management Accountants is a powerful professional organization in the United States.

<sup>2</sup> These sections set new accents and update the discussion presented in Bramsemann, 1993.

of the railroad's invested capital and securities. A little later, in 1892, the American General Electric Company became the first industrial firm to introduce the position of a controller.

The fact that early controllers in the private sector mostly dealt with matters of finance and auditing stems from the peculiarities of U.S. corporate law. In contrast to, say, the federal legislation uniformly governing stock companies in Germany, the laws pertaining to such entities vary widely across the 50 American states. Even so, all these state variants limit corporate governance to two bodies: the annual shareholders' meeting and the board of directors.

The board of directors' powers cover both the supervision and the executive management of a corporation. Among the individual American states, though, the differences in state corporate law produce considerable variation with regard to the two organs' structures and functions. For instance, many states permit the board to delegate some of its duties to persons, who may not be available to it full-time. The strong position of the board of directors, along with the absence of an internal body to oversee its decisions and a general increase in firm size, necessitated the institution of the first controlling staffs (Hoffmann, 1968). Despite this development, the position of the controller remained unknown in almost all American companies until well into the 1920s.

The large number of firms collapsing during the Great Depression, which began in 1929 and lasted until 1939, focussed the attention of American managers and researchers on the special importance of internal (cost and management) accounting systems. Although largely neglected until that time, they then experienced rapid expansion and the introduction of future-oriented planning instruments. Controllers became the internal experts for cost accounting questions and took on new challenges by preparing plans and budgets in addition to supervising their execution.

The institutionalization and professionalization of controlling also began at this time. The Controllers' Institute of America was founded in 1931. Renamed the Financial Executives' Institute (FEI) in 1962, it became the Financial Executives International in 2000. In 1934 the professional journal *The Controller* (current title: *The Financial Executive*) first appeared. Furthermore, since 1944 there has been a Controlling Foundation (now called the Financial Executives' Research Foundation), which serves as the professional organization's research institute. Its charge is "to conduct objective research to identify, develop, and publicize the most modern knowledge among its members and sponsors in a format that is both readily comprehensible and practical".

## German Developments up to 1980

The European professional literature caught the international planning wave of the 1920s (Kilger, 1981). Continental scholars and practitioners also carefully followed the American development of standard cost accounting. However, there were no comparable developments in the direction of an institutionalized, professional controlling anywhere in Europe during the 1920s, 1930s, and 1940s.

In Germany, in particular, the sole major development related to controlling or cost accounting was the emergence of uniformity in systems of accounts. Johann Friedrich Schär published the first comprehensive chart of accounts (Schär, 1911). German industry used it widely for internal, cost accounting purposes during World War I. Eugen Schmalenbach's introduction of a decimal system to standardize industrial accounts (Schmalenbach, 1927) was followed by publication of model charts for different industries. Beginning in 1927, anyone learning Schmalenbach's system readily could analyze more and more industrial companies' financial records. Previously, one had had to be familiar with the peculiar organization of accounts in every individual firm, whose books one might want to examine. The result of course, was a marked increase in the transparency of enterprise accounting systems for external stakeholders.

The National Socialists were especially appreciative of this development, which facilitated their exercise of control over the German economy. They made the adoption of such charts compulsory, particularly because the price mechanism was not operating due to controls on prices and money. The uniform systems of industrial accounts made it easier for them to use political decisions as an alternative allocation mechanism.

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<sup>1</sup> Wysiwyg://16/http://www.fei.org/rf/about.cfm.

Schmalenbach's system first gained international significance, when the Nazis annexed Austria. To help them marshal resources for the Third Reich's war machine, German occupation authorities also imposed it on French and Belgian industry in 1940<sup>1</sup>.

Otherwise, there were few important impulses for a cost-oriented controlling in Germany. The application of the *Führerprinzip* to business meant that political objectives were paramount in executives' decisionmaking. The Nazis limited accounting's role to actual costing and price formulation objectives.

Accordingly, West German accounting scholars and practitioners spent the first years after World War II trying to catch up with international developments. To do so, they undertook numerous study visits to the United States. There they (re-)discovered plan cost accounting, whose use they helped to spread rapidly back home (Auffermann, 1957). At the same time, further developments in absorption and partial cost accounting enabled West German firms to implement new costing systems and planning models.

The most noteworthy of these developments came neither from an accounting practitioner nor from a business administration scholar, but from an automobile engineer. Between 1946 and 1953, Hans-Georg Plaut drew on his experiences with investment and cost accounting tasks in German industry during the early 1940s to devise a new form of cost accounting. He termed it *Grenzplankostenrechnung* (Plaut, 1951; 1953). Plaut based his new system on an analytical method of cost planning, also referred to as *flexible Plankostenrechnung*. He and the employees of his consulting firm introduced this system not only into industrial enterprises, but also into service-sector firms (e.g., various banks and the German Post Office) throughout German-speaking Europe.

Wolfgang Kilger subsequently expanded the theoretical basis of Plaut's cost accounting model. Parallel to his effort, Klaus Agthe and Paul Riebel developed a complex system of direct and contribution margin accounting (*Einzelkosten- und Deckungsbeitragsrechnung*) (Agthe, 1959; Riebel, 1994). Over time, scholars and practitioners merged the two models to form a modern German cost accounting system. Today it enjoys general recognition in German-speaking countries as the "gold standard" for budget planning and cost accounting. Written by Kilger and published by Gabler in 1961, *Flexible Plankostenrechnung* was the first book to deal with this subject.

Although original, these important contributions to cost accounting theory were not unique because an equivalent system, standard direct costing, had emerged earlier in the United States (Harris, 1936). In addition, the traditional organizational structure of German firms often hindered application of the new cost accounting models as an element of a cross-functional, practical controlling. At the time, German corporate law, the typical organization structure of German firms, and the general economic situation in postwar West Germany rendered moot the question of creating independent, central controlling staffs.

To begin with, German corporate law strictly separates the board of directors' executive functions from the oversight functions of the supervisory board. The principle of collegiality within the board of directors also indirectly strengthens the weight of the supervisory board. As a result, there was neither a formal legal nor an organizational necessity to introduce the position of a controller patterned on American examples.

Moreover, the organization of most German firms then was along rather sharply drawn, functional lines. One result of this sharp division of responsibilities was that each director endeavored to make all the requisite decisions about his respective part of the company's plans and the associated function's budget himself. Consequently, there were relatively fewer opportunities for analysis and decisionmaking across functional lines.

Finally, the steady increase in demand during the postwar reconstruction years generated both high rates of growth and high profits without West German firms having to set concrete goals for themselves. Faced with no existential threats, scarcely any firm had an interest in changing the existing (and at the time, successfully functioning) organizational arrangements already in place.

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<sup>1</sup> Interestingly, variations on Schmalenbach's decimal system of accounts still exist today in the French national plan *comptable général* and the Belgian plan *comptable minimum normalisé*. In addition, the plan *comptable général* has served as a model for Spain. In the latter's decimalized system of accounts, the headings even are in the same order as in the French scheme, although the subheadings vary to some extent.

Hence, until the mid-1960s, the driving force behind the creation of institutionalized controlling, both in the German-speaking countries as well as elsewhere in Western Europe, was the large, multinational, American concern. It organized itself and its European subsidiaries on the basis of decentralized "divisions" or "business units." Due to its size, a concern accounted for each such element individually because the traditional instruments for coordinating and managing the firm's activities were no longer adequate. Whereas Germany's functional managers of that period were insufficiently familiar with the new instruments, including the cost accounting involved, the subsidiaries had to recruit additional staff. Although they often lacked practical experience, these new employees at least had acquired some of the requisite theoretical knowledge during their programs of higher education. After thorough training in applying this knowledge, the first German controllers began to put the new budgeting and cost accounting instruments to practical use. As they did so, the instruments' utility for producing and analyzing the information needed to supervise and manage a complex firm's activities became increasingly apparent. Impressed with the operative capability demonstrated by the controlling services in American concerns' European subsidiaries, managers of traditional German big businesses began to create their own controlling staffs too.

### German Developments Since 1980

Since the beginning of the 1980s, the number of insolvencies among German firms has grown dramatically. The greater frequency of business failure has further strengthened the demand for controllers as "internal consultants." Companies want them for their leadership competency and for their demonstrated skills in quantitative data analysis. Furthermore, the large number of help wanted ads in large circulation dailies has shown that many small and medium-sized firms also have recognized the value of controllers in introducing and using improved planning and management instruments. The same is true of the public sector and nonprofit organizations.

Recent legislation has been another stimulus to the demand for controllers in Germany. For example, the Law on Control and Transparency (*Gesetz zur Kontrolle und Transparenz im Unternehmensbereich* or *KonTraG*), which went into effect in 1998, requires German firms to introduce risk-controlling and early warning systems. Likewise, the introduction of ratings for business customers of banks in the wake of the accord signed in Basel in 2001 (Basel II), places stricter demands on the quality both of a company's planning and of its equity base as prerequisites for loans. As explained earlier, the American Sarbanes-Oxley legislation enacted in 2002, also demands greater control of internal procedures for foreign firms listed on U.S. stock exchanges. Since 2004, both the Law on Firm Integrity and Modernization of the Right to Appeal (*Gesetz zur Unternehmensintegrität und Modernisierung des Anfechtungsrechts* or *UMAG*) and the recommended German Corporate Governance Codex (*Deutscher Corporate Governance Kodex*) call for such controls in all German firms. As a result, the demand for controllers has tended to exceed their supply.

### Education and In-Service Training in Germany

Parallel to the heightened demand for qualified controllers, the need for education and in-service training has grown correspondingly. In German-speaking Europe, the "Controller-Institut zur Ausbildung in Unternehmensplanung und Rechnungswesen GmbH, Gauting" (Controller Institute for Education in Enterprise Planning and Accounting, Inc., Gauting) assumed a pioneering role. The Institute supports the "Controller-Akademie," which offers training seminars for controllers. The founding of the "Controller-Verein, e.V." (Controllers' Association) followed in 1975.

West German higher education began to adjust its instructional offerings to the increased demand for educated specialists too. In 1971, Elmar Mayer started up the first position for controlling and accounting at the *Fachhochschule Köln*. Some time later, German-speaking universities also followed his example by creating institutes or chairs for controlling, often in combination with other subject areas. Thus, in 1975 Rolf Eschenbach assumed the Chair for Management and Controlling at the *Wirtschaftsuniversität Wien*, which later expanded to encompass an in-service training center. In 1980, Peter Horváth accepted the Chair for Business Administration and Controlling at the University of Stuttgart. He later expanded it to include a management program. An additional noteworthy

example was the appointment in 1986 of Jürgen Weber to the Chair for Controlling and Logistics at the *Hochschule für Unternehmensführung (WHU)* in Vallendar, near Koblenz (Deyhle, 2004).

The last two decades of the 20<sup>th</sup> century in Germany witnessed burgeoning growth in seminar activities and the professional literature pertaining to controlling. In particular, publication of the journals *Der Controller-Berater* (since 1983), *Controller-Magazin* (since 1986), *Controlling* (since 1989) and *Controlling und Management* (previously *Kostenrechnungspraxis*, since 2000) have contributed substantially to spreading controlling concepts throughout German-speaking Europe.

### **The Controlling "Profession" and Cost Accounting**

Despite the progressive institutionalization and professionalization of German controlling, today several major deficiencies require remedy. First and foremost, there is no consensus about a common set of skills every controller should have or about the degree to which a controller should have mastered them. Accordingly, the title "controller" is an unprotected designation, which anyone in German-speaking Europe (or in the Anglo-Saxon countries, for that matter) can appropriate for him- or herself.

A similar deficit exists in the area of cost accounting. Nowadays, a mastery of cost accounting is a widely-held expectation for controllers. Not every cost accounting expert may be a controller, but every controller needs to be a cost accounting expert. In the Anglo-Saxon countries, there is general agreement among academics and practitioners about the skill set qualified cost accountants should have mastered. It finds its expression in the national certification examinations of the various countries' professional associations. For example, in the U.S. only an individual who has passed the IMA's written examination is entitled to the designation Certified Management Accountant (CMA).

In contrast, no such consensus exists among German-speaking scholars and professionals. Vikas asserts (with more than a little exaggeration), that "every student of business administration in the German-speaking countries becomes more or less familiar with *Grenzplankostenrechnung* sometime during the course of his studies" (Sharman, Vikas, 2005). Yet the lack of agreement on the contents of cost accounting courses across German higher educational institutions has prevented the creation of a uniform test of professional competencies equivalent to the CMA-exam. Indeed, academic jealousy is so extreme that students mastering identical skills are unable to transfer credit for them readily across (and often within) the different types of institutions in German higher education (*Universitäten, Hochschulen, Fachhochschulen, and Berufsakademien*).

In addition, research and literature are overfreighted with normative concepts, which all too seldom confront data. Empirical research typically analyzes case studies, thus affording no basis for drawing generally valid conclusions or for constructing broadly applicable theories. For example, out of the 179 articles published in *Der Controller-Berater* between January 2000 and March 2005, only 9 in any way involved the use of large-group ( $n > 30$ ) statistics.

### **Controlling in International Comparison**

Due to growing regionalization and globalization of formerly national economies as well as developments in the area of information technology, controlling concepts in the economically most advanced nations have come to resemble one another rather closely. As a rule, in these countries there no longer is an individual controller, who is responsible for an organization's controlling. Controlling – or "steering" a firm toward specific goals – now is the responsibility of everyone in management, indeed of every employee. Today, a controller manages this self-controlling within a company. He or she does so by helping other managers apply analytic instruments and reporting methods, by making housecalls on "internal clients," by emphasizing selected questions and problems, and by a friendly insistence to remain focussed on certain issues. Moreover, executives, who themselves have gained more controlling competency, seem to place higher demands on the quality of these controller services.

Still, international differences in the application of controlling concepts admittedly continue to exist. They well may stem from different mixes of pragmatism and perfectionism preferred by various users. For example, the stronger trend toward academization of controlling in German-speaking countries has led to the creation of closed conceptual systems, such as the

above-mentioned *Kontenrahmen* and *flexible Plankostenrechnung*, which practitioners then have applied to concrete goals. In the 1950s, 1960s, and 1970s, however, there was little or no computer support available to help professionals apply the latter system. Because the manual calculations involved were quite time-consuming, the lack of IT-support undoubtedly slowed the spread of *flexible Plankostenrechnung*. Yet, in the early 1980s, when Germany's SAP decided to develop standard software for controlling and accounting purposes, it both could draw on a logically consistent, full-blown model and large numbers of experienced Plaut consultants to support its efforts (Sharman, Vikas, 2005). This German approach no doubt partly explains why SAP leads America's Oracle and Microsoft on the market for business management software.

In contrast, several of Germany's European neighbors, Japan, and the United States have taken a more pragmatic approach. For example, in the U.S., participation of the entire management in controlling tasks (*e.g.*, through the employment of balanced scorecards or BSCs) appears to be more widespread. Furthermore, controllers in Japan and the United States seem to be more oriented on market demand and customer wishes. Supporting these assertions is the fact that most new insights and impulses for the development of controlling have come from Japanese and American scholars and professionals. Besides the balanced scorecard, one can cite benchmarking, *Kaizen*-budgeting (*i.e.*, continuous-improvement-budgeting), perfection standards, activity-based costing (ABC), total quality management, Sigma Six, target costing, and so forth among the more innovative contributions.

Summing up the discussion thus far, controlling's origins historically lie in the Anglo-Saxon countries. Conceptual and methodological developments with regard to controlling there, and more recently in Japan, clearly have been more varied and more numerous than in Continental Europe. On the other hand, these developments also have tended to occur piecemeal, while the German-speaking countries' contributions generally have been more systematic and more narrowly focussed on cost accounting. Furthermore, German firms have demonstrated great openness to accepting and implementing many foreign innovations with relevance for controlling, such as ISO 9.000, ISO 14.000 and the European Union's Eco-Audit.

## A Definition of Controlling and the Controller's Position

Turning next to the questions of what activities the controlling function encompasses and how cost accounting fits into them, it will be useful to begin by defining the term "controlling." The definition offered below makes no claims on perfection or universal applicability. On the contrary, its purpose is merely to serve as a starting point for the subsequent discussion of the controller's position within an organization, the various duties usually associated with it, and the differences between operational and strategic controlling.

Controlling is a way of thinking. It involves all the managers and employees of an organization in the attainment of a set of specified goals. Therefore, leadership constitutes an important element in controlling. Hypothetically, a company could exercise this leadership element in the controlling function without creating a special position or department for it. The presence of a controller or a controlling staff accordingly just represents a firm-specific division of labor. In practice, though, most medium-sized and large businesses find it advantageous to have such a position or department. In small businesses, on the other hand, the general manager (chief executive or chief operating officer) typically exercises the controlling function in addition to his or her other responsibilities.

In medium-sized and large businesses, controlling also traditionally has been a service that supports top management across departmental and functional boundaries. As part of the executive staff, controllers typically have provided services *for* line unit managers too. Hence, the controller's office has been responsible for the development and application of instruments, techniques, and know-how. It has introduced and coordinated various systems, applying them to the organization's goal-setting, planning for attainment of those goals, steering a course toward the goals, and checking its position along the way. *De facto*, one or more controllers have done the company's controlling.

Even today, in many cases, the controlling service's primary duties still have to do with goal-setting, planning, navigating, and course-checking tasks in support of the firm's leadership. Within the framework of the new, so-called self-controlling concept, however, individual line

managers themselves partly or completely assume the controlling function and exercise it within their area of responsibility. In keeping with the self-controlling concept, a controller then acts more like an internal consultant, who aids managers by providing them with technical assistance and guidance (Gruber, Nausner, 2004).

Despite the current trend to more self-controlling, in the future a certain amount of traditional controlling will continue to be the controller's responsibility. That will include tasks (1) requiring a greater command of specialized knowledge (*e.g.*, cost accounting) or (2) spanning functional or departmental boundaries (*e.g.*, budgets covering several line units).

The controller also will remain a crucial, critical partner for top management for another reason. As a rule, organizations tend to try to maintain an established *status quo*, because that affords all its members a certain sense of security. This aura of security, though, can lull them into a fatal complacency. To ensure a firm's long-run survival, the controller periodically must question existing arrangements, supply new impulses, and help to adapt or replace existing strategies as appropriate. In both the traditional and the newer self-controlling concepts, the controller's position therefore will endure because it is essential to the good functioning of controlling in more complex organizations.

### **The Controller's Duties**

While the concept of who actually is doing certain aspects of a firm's controlling is changing somewhat, the controller's core responsibilities are not. In 1962, the Financial Executives' Institute worked up a classic list of duties for American controllers. It has remained unchanged to the present day. These duties include planning, internal reporting and interpreting, evaluating and advising, processing of tax matters, supervising and coordinating reports to public authorities, protecting the firm's property, and conducting economic analyses. The following few paragraphs explain these duties in greater detail.

- **Planning:** Formulation, coordination, and implementation of the firm's plans for controlling its activities. Such planning includes profit and sales goals, financing and investment programs, budgets for overhead costs, determining standard costs, and so forth.
- **Internal reporting and interpretation:** Comparison of actual results with planned and standard data; reporting and analysis of the company's business results to all levels of management and to the owners. This duty also involves the formulation of guidelines for balance sheet preparation, the coordination of systems and processes as well as data analysis and the preparation of special reports.
- **Evaluating and advising:** Advising all management levels with responsibility for the formulation of directives and their execution with regard to (1) attainment of designated goals in every process phase, and (2) the effectiveness of the measures, organizational structures, and procedures employed.
- **Tax matters:** Preparation and application of guidelines and procedures for processing tax-related matters.
- **Reporting to public authorities:** Supervising and coordinating responsibilities in the preparation of reports for submission to various levels of government.
- **Property protection:** Ensuring the security of the firm's property through internal controls and audits as well as reviewing its insurance coverage.
- **Economic analyses:** Continuous examination of economic, technological, social, and political factors in the firm's environment and assessment of their effects on its future opportunities and risks.

### **Current Developments in the Practice of Controlling**

Besides historical developments, two further interrelated factors are having a major impact on controlling today. First, the economic environment, in which cost accounting takes place, is changing. Second, through controlling's reliance on cost accounting, this environmental change is affecting current controlling practices.

As explained previously, management's chief responsibility is to lead a firm on a path of development so that it can attain specified goals in a dynamic environment and survive in the long run. The priority given decisionmaking for achieving operational goals, though, often poses a practical obstacle along the way to long-run survival. That is because a controlling service typically relies heavily on traditional cost accounting instruments and techniques in providing everyday support to operational management. But due to fundamental changes in the economic environment, these operationally useful instruments and techniques have decreasing relevance for a firm's survivability.

Both the scholarly literature on, and the practice of, management have witnessed a perceptible shift in the weighting of success indicators away from traditional "hard" facts toward "soft" ones. As a result, immaterial, human potentials have replaced physical resources ("bricks and mortar,") in importance. This development is particularly pronounced in, but not limited to, the IT- and many other service industries.

In addition, over the years, an evolutionary viewpoint has established itself in the scholarly literature, which recognizes the limitations of human cognitive capacity and intellect in solving complex problems. Constructivist notions about the manageability of socioeconomic systems therefore increasingly have been subject to critical questioning. Among other investigators, Herbert A. Simon debunked the often-made assumption of the feasibility of solving problems rationally (March, Simon, 1958). In 1978, he received the Nobel Prize in Economics for his insight that, confronted with incomplete information, time pressure, and their limited cognitive abilities, humans at best can solve complex problems only within the confines of a "bounded rationality."

Simon's insight has huge implications for cost accounting generally as well as for such models as *flexible Plankostenrechnung* and standard direct costing in particular. Underlying them all along has been the implicit, constructivistic assumption, that they supply management all the information needed for optimal decisionmaking. In fact, however, executives work with just a finite quantity of performance indicators derived from selected, manipulated, and aggregated cost accounting data.

Both the new emphasis on "soft" facts and recognition of the limits on rational decision-making suggest the monetary variables used in cost accounting do not describe a firm, its activities, or its environment adequately. Overreliance on purely financial indicators is especially susceptible to the following weaknesses.

1. Changes in the external environment and within the firm appear in reports only after a considerable time delay because most financial information is not available until an accounting period has closed. In addition, the monetary variables included in such reports just reflect how successfully the company acted in the past. The financial indicators (*e.g.*, ROI, operating profit) to which management usually devotes most of its attention also are quite difficult to influence directly. Consequently, introduction of early warning systems is a necessity.

2. Enterprise accounting systems generally exclude the kinds of nonmonetary variables typically found on balanced scorecards (*e.g.*, customer satisfaction and supplier reliability as well as employee qualifications and motivation). Yet precisely these variables may prove decisive in determining the company's future success.

3. In practice, managers try to improve a business's profitability chiefly through cost reduction measures. But their efforts seldom clearly distinguish whether the costs involved have to do with the unnecessary consumption of input factors or with potential resources, which management has not utilized to the full. In the latter case, there is a danger that cost reduction programs unintentionally may shrink or altogether destroy productive potentials essential to the firm's competitiveness. For example, under certain circumstances the premature dismissal of employees can lessen a company's potential to innovate promptly in the future.

4. In connection with cost reduction programs, one unfortunately still can assume that cost categories rather than production, customers, employees or other stakeholders continue to dominate executive thinking. Be that as it may, firms undertaking an *avantgarde* role in reducing personnel subsequently seldom appear on anyone's list of best companies. Hence, the relentless pursuit of efficiency and productivity increases often seems to hurt a firm instead of benefiting it. The traditional concentration on current costs and optimization of the *status quo* furthermore can blind decisionmakers with regard to promising future market developments.

5. Moreover, a management strategy focussed exclusively on short-term economic success criteria runs the risk of overlooking environmental developments crucial to its survival. Ignoring social and ecological conditions impinging on profitability ultimately reduces the potentials for future success too. Although investments in continuous improvement processes and innovation are especially important for a firm's competitiveness, cost accounting systems send management negative signals about them. Instead of showing how investments boost productive potentials, these systems report only their contribution to increased financial outlays.

Remediating these deficiencies in financially-oriented cost accounting systems poses a major challenge for controllers. They must direct decisionmakers' attention to all performance indicators crucial to a firm's success – not just to the monetary ones. That will not render such accounting systems superfluous. As the chief source of information about financial variables, their value in operational controlling will remain undiminished. However, when top management needs answers to strategic questions, the controlling service increasingly will have to tap additional information categories and sources.

### **Operational and Strategic Controlling in Comparison**

While academics generally discuss operational and strategic controlling in isolation of each other, practitioners are less concerned about distinguishing between them. That is because, in the business world, simultaneous operational and strategic thinking is essential to successful controlling. Nevertheless, to show more precisely where cost accounting continues to have utility, and where its limits are, the following discussion begins with an explanation of the differences between operational and strategic controlling. Having made that distinction, the discussion then delves more deeply into the growing importance of controlling intangible assets as well as the relationship between controlling and financial accounting.

As depicted in Figures 1 and 2, there are cybernetic (*i.e.*, self-regulating) feedback loops for both operational and strategic controlling. Among other things, elements of each loop pertain to the following business administration processes: goal-setting based on a vision or mission for the firm; planning to achieve specified goals, including budgeting, information gathering and reporting; analyzing data with various techniques and instruments; and steering the firm toward its goals.

In the operational area ("doing things right"), the controller service helps to create action plans for steering the firm's activities toward achieving its goals. If economic prognoses and reality overlap within a certain margin of error, such planning continues on a rolling basis along a time horizon extending from 12 to 36 months into the future. Hence, during any given month, the controller service is planning a new 12<sup>th</sup> (24<sup>th</sup> or 36<sup>th</sup>) month to add to the existing series of monthly plans. That way the temporal distance to the operational planning horizon remains constant.

### **Operational Controlling**

Within this time period, operational controlling allows management actively to pursue its profit goal. For example, assume management's performance contract specifies the goal amount as a standard contribution margin (in percent). The use of off-the-shelf software nowadays facilitates ready comparison of actual with standard costs. Suppose the comparison shows: actual contribution margin = 32% < standard contribution margin = 36% => an unfavorable variance of 4%. The analysis is immediately comprehensible. In the business world, a variance of either 5% or a threshold absolute amount (*e.g.*, > € 25,000) typically sparks a search for its cause, followed by initiation of appropriate countermeasures so that the planned profit goal remains attainable.

### **Strategic Controlling**

In the strategic area ("doing the right things"), the controller service supports long-run decisionmaking by top management. For example, analysis of customer contribution margins reveals which customers deserve preferred treatment (actual contribution margin > standard contribution margin) and which ones require "therapy" or should be dropped (actual contribution margin < standard contribution margin). Customer contribution margins start a process of reflection on all

the firm's activities, with the objective of generating better solutions to preferred customers' problems more quickly than the competition. As depicted in the two figures, proceeding in this fashion effectively builds a bridge linking the contribution margin results revealed by operational controlling with strategic controlling concerns such as innovation (R&D) and new fields of business.

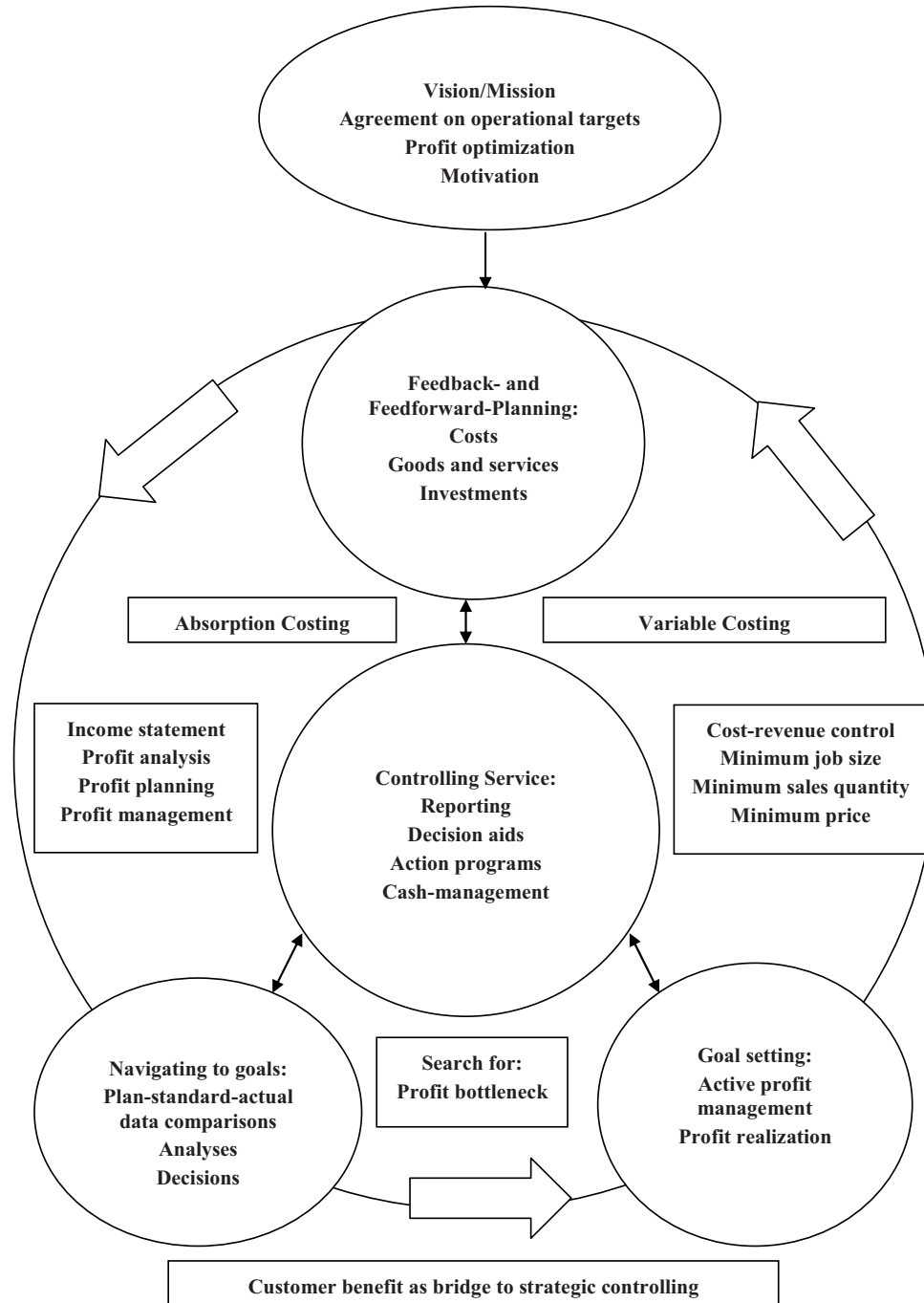
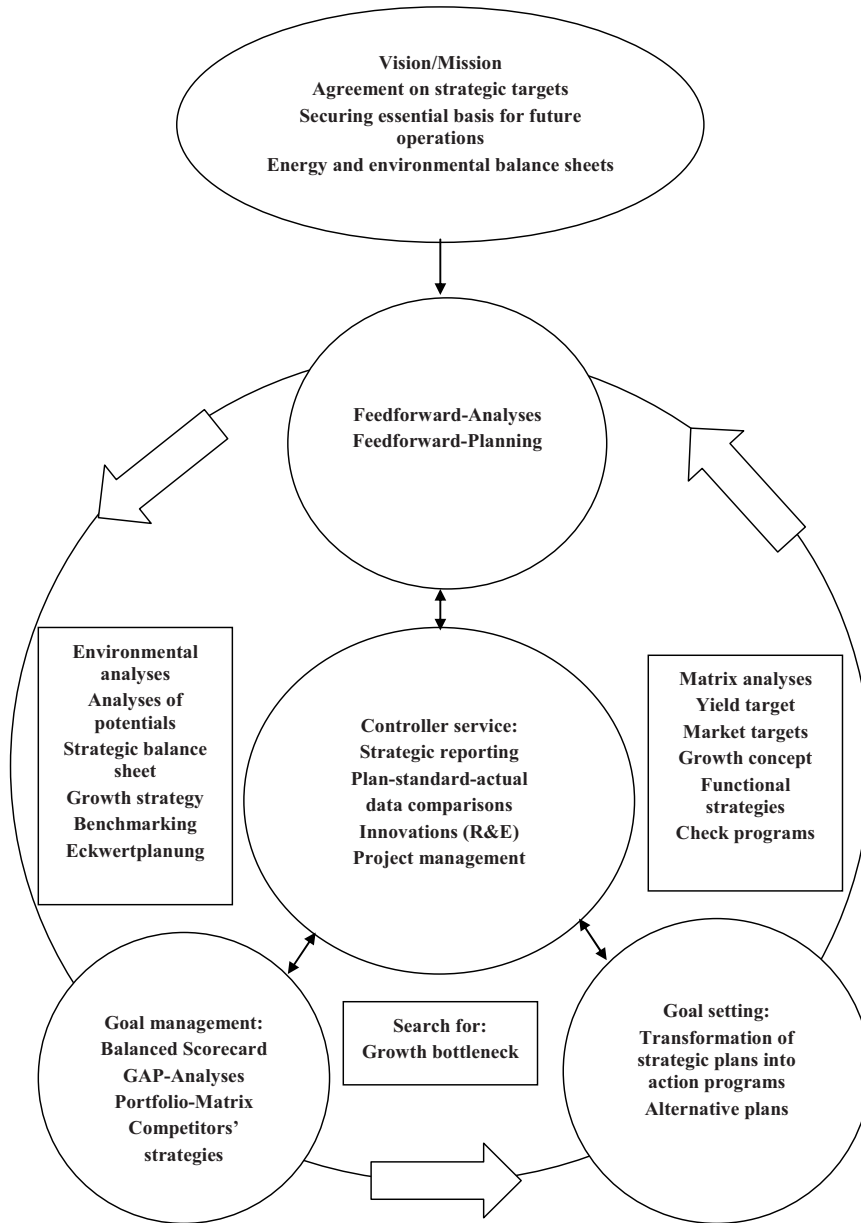


Fig. 1. Feedback Loop for Operational Controlling



Source: Adapted from E. Mayer, *Controlling als Denk- und Steuerungssystem*, Haufe, Freiburg, 1995, pp. 75, 80.

Fig. 2. Feedback Loop for Strategic Controlling

Within the operational area, management deals chiefly with changes in financial indicators derived from its cost accounting data. In contrast, in the strategic area management is interested especially in environmental changes that could create bottlenecks for the firm's future growth. Because these changes often also show up in a company's intangible assets (*e.g.*, human capital or customer satisfaction), controllers need to incorporate such elements in their reporting. Consequently, the controllers in many firms have developed and implemented balanced scorecards (BSCs) to supplement their cost accounting systems. The BSCs take into account the potentials, opportunities, and risks represented by changes in the firms' intangible assets.

## Intangible Assets

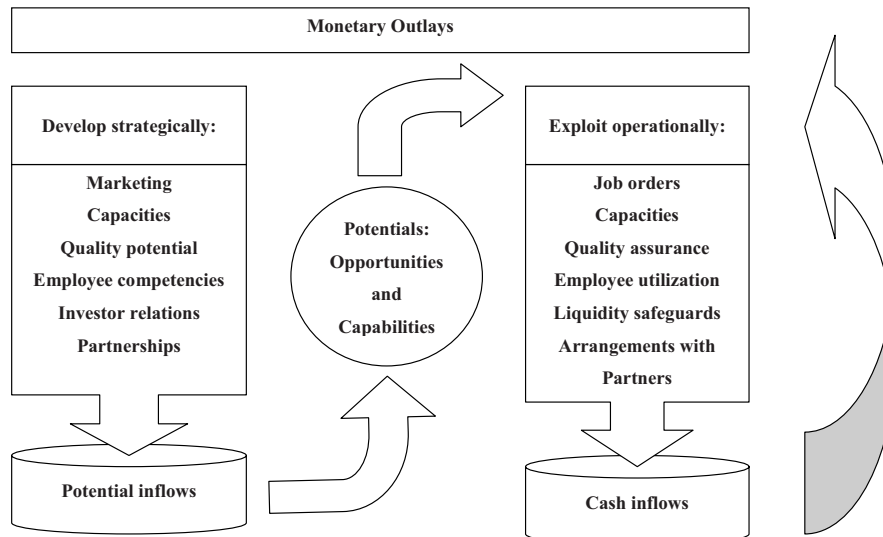
Intangible assets comprise a firm's immaterial wherewithal. They represent the non-physical resources it commands for use in current production and future development. Cultivating them in a goal-directed fashion is part of every strategy. Operational activities seek to employ them efficiently and effectively.

Potentials (*i.e.*, opportunities and capacities) constitute an important subset of a company's intangible assets. For example, in order to fill its order book, a company needs good customer relations. To grow and prosper in the future, these relations also must be stable and expandable.

To fill the orders received satisfactorily, a firm furthermore needs supportable relationships with its employees, partners, and investors. These relationships, in turn, must conform to certain aspects of the firm's job orders. For instance, if customers value individually tailored software solutions highly (as is the case with Linux-users), then the firm's employees must demonstrate a high degree of creativity and independence. In contrast, if customers place a higher value on worldwide, uniform standards (as is the case with Microsoft-users), then the firm's employees need a comparable amount of self-discipline, adapting their behavior and the product(s) to the standards' narrow requirements.

Society creates many of the potentials so essential to the firm's survival and places them at its disposal. They include such public goods as education, health, and social security as well as well-developed infrastructure – from extensive transportation systems to different cultural institutions or various telecommunications media (*e.g.*, the Internet). Besides ties to stakeholders (*e.g.*, customers, employees, suppliers, lenders, and stockholders), good relationships with both units of government and nongovernmental, not-for-profit institutions therefore are of major importance to a firm too. A firm must create for itself adequate structures and processes to transform effectively the human and social potentials of all these relationships into products.

The difference between the acquisition and the use of potentials is helpful in distinguishing further between operational and strategic controlling. A firm develops potentials strategically, which it then employs operationally. The strategic side of a business earns a firm no money, but "only" potentials. However, that is a necessary condition, in order for the firm to earn money on the operational side of the business. Without the strategic business, a firm has no chance of long-run survival. Without the operating business, it can't earn enough money to finance both its strategic and its operational activities. A firm thus cultivates potentials strategically over the long run and uses them operationally in the short to medium run. Figure 3 illustrates the interplay between the strategic development and the operational exploitation of potentials.



Source: Adapted from H. Friedag, *Der Controlling-Berater*, 15. Nov. 2004, p. 917.

Fig. 3. Develop Potentials Strategically, Exploit Them Operationally

## Differences between Controlling and Financial Accounting

A firm's decisionmakers therefore need future-oriented instruments, with which they can plan operational measures and steer it on a course toward specified entrepreneurial goals. This need constitutes the starting point for development of an operational controlling system for managing the firm's profitability.

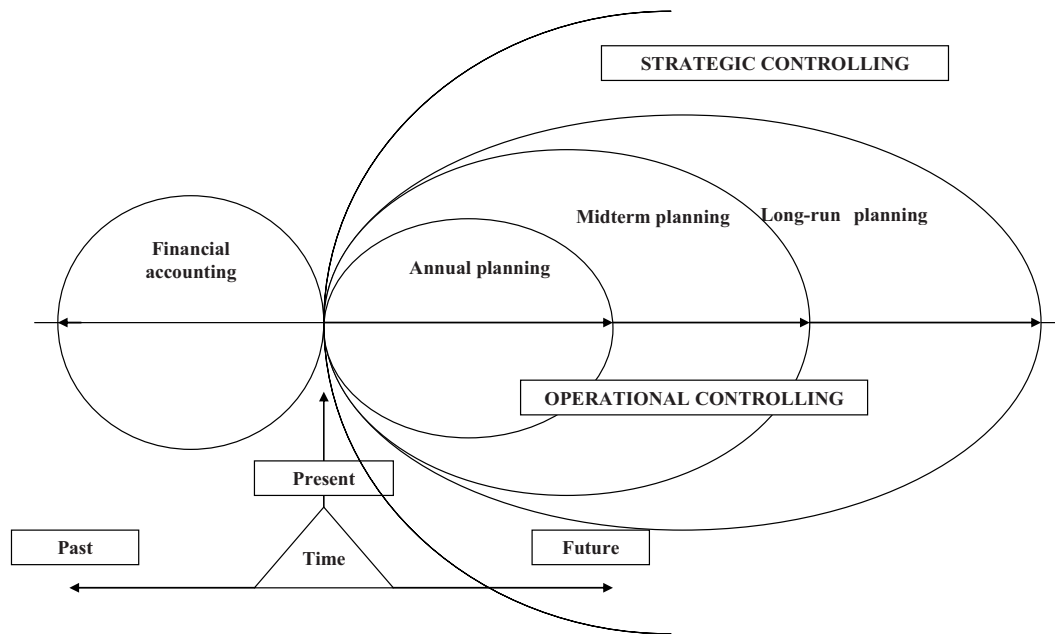
At the outset, such a system usually encompasses only an annual preview. Division of the annual plan into monthly subplans sets subgoals for the firm, which managers can control in isolation from its overall development. Accordingly, the plan-standard-actual comparisons of cost accounting data undertaken at the end of January provide the first feedback about the feasibility of achieving the overall goals set for that year. As each subsequent month passes, the degree of certainty about the opportunities and risks associated with the planned results increases.

In contrast, financial accounting furnishes decisionmakers with highly reliable and at certain intervals, audited, but entirely historically-oriented information. For example, balance sheets show how the substance of a firm has changed between the beginning and the end of a time period. They thus constitute snapshots of the firm's appearance on two different dates in the past. Extending the photographic analogy a bit further, both the income statement and the cashflow statement, on the other hand, resemble more a film of the firm's activities during the time span between the two balance sheet preparation dates. The information they convey, though, again is altogether historical.

Starting from the instant of the original annual prognosis, the controller's planning horizon, however, stretches ever further into the future. This future-orientation applies not just to long-run investment planning and capital budgeting, but also to projects requiring longer time frames for their realization. A new product's introduction or the opening of a new distribution channel (e.g., e-commerce) are examples of such projects. When a company starts undertaking projects lasting longer than a year, it begins extending its planning horizon into the midterm. The rolling process of monthly planning, budgeting, variance analysis, and control measures is particularly well-suited for linking annual with midterm plans. Nevertheless, in many businesses, midterm planning still just consists of extrapolating trend lines from the first planning year, while taking labor contract and other similar foreseeable changes into account.

Be that as it may, midterm planning nowadays generally covers a time horizon from three to five years. Then comes long-range planning, spanning the time horizon from 5 to 10 years in the future as well as strategic planning, whose time horizon is unlimited.

While long-term planning works with the same variables and instruments as annual and midterm planning, strategic planning uses other factors and tools to take likely future developments into account. Rolling budgets, plan-standard-actual comparisons, and customer contribution margins provide impulses for strategic controlling. But these operational controlling tools derived from cost accounting lose much of their effectiveness at the time horizon. While financial indicators reflect most of the important changes in the operating area, a shift in public mood or other socioeconomic and political conditions usually precedes strategic changes. Recognizing this reality, the controller tries to perceive the (oftentimes weak) signals announcing shifts of strategic significance beyond the prognosis time horizon of three to five or even ten years. Such signals typically emanate from long-run changes in the demand of preferred customers, environmental and ecological problems, the increasing scarcity of certain resources, and shifts away from currently employed technologies and existing market structures (e.g., from local to regional and global competition). Figure 4 depicts the time orientation of financial accounting, operational and strategic controlling as well as annual, midterm, and long-run planning.



Source: Adapted from E. Mayer, in C.-C. Freidank und E. Mayer, (eds.), *Controllingkonzepte*, Wiesbaden, 2004, p. 81.

Fig. 4. Time Orientation of Financial Accounting, Operational, and Strategic Controlling

### Feedback-, Feedforward-Thinking and Controlling's Orientation toward the Future

Controlling originates not from correct planning and its implementation, but from mistakes. In other words, it is the variances that prompt a controller to undertake analyses, conversations with responsible managers, and searches for appropriate remedial actions. Consequently, controllers see mistakes in a fundamentally different way than most people do. For controllers, the learning process made possible by variance analysis, rather than mistakes and "guilty" parties, stands in the foreground. For this reason, one also can think of controlling as a learning process on the basis of systematic trial and error for a firm and its management (Mann, 2003).

Figure 5 illustrates the relationship between variance analyses of historic data and the learning process sought by controllers. Because controlling functions as a system for steering the firm toward specified, future goals, it is crucial not to view variances exclusively in retrospection. Conducted in the present, variance analyses of a firm's past actions and results yield feedback for use in future-oriented decisionmaking. Besides answering the question, "Why did this variance occur?" examination of plan-standard-actual differences also reveals important information about the relationship between the actual state of affairs and management's future goals. Controllers thus understand a variance to be a signal about change in the firm's operational or strategic environment. That change may require management to incorporate appropriate countermeasures in its feedforward planning in order to compensate for the variance and still attain the specified goals.

The controller's view of variance analysis and the resulting learning process therefore consists of three components. *First*, there is the feedback gained from various comparisons, which is essential for the learning process. Plan, standard, and actual data constitute the basis for the monthly, annual, middle-, and long-run comparisons involved.

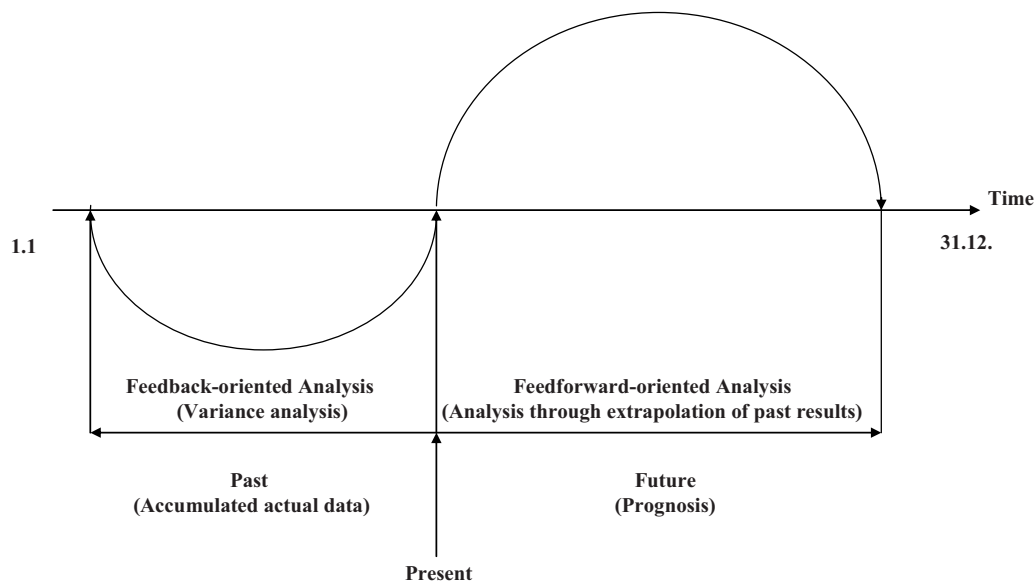
*Second*, the controlling staff uses the feedback information in its feedforward planning so that, by anticipating future variances, it won't have to compensate for them. Of course, no company can avoid variances altogether. However, the objective of feedforward-thinking is to avoid

*unanticipated* variances as much as possible. By doing so, management often is able to prevent recent mistakes from reoccurring and, perhaps, mutually reinforcing one another.

*Third*, by understanding a variance as information relating actual results to the goals established for various planning horizons, controllers create a set of self-contained, cybernetic feedback and feedforward loops. This self-regulating system encompasses all the relationships between strategic, long-, middle-run, annual, and monthly plans as well as plan-standard-actual data comparisons and management countermeasures.

One can summarize the discussion of feedback-, feedforward-thinking, and controlling's future orientation as follows:

- Controlling is not fixated on past processes and their results, but on future developments.
- Analysis of past performance is only worthwhile, if it yields results indicating how to accomplish future tasks better. Hence, the purpose of plan-standard-actual comparisons is not to search out "scapegoats" responsible for past variances, but rather to serve as starting points for management's future-oriented countermeasures.
- The factors a controller needs to take into consideration change with each planning period's time horizon. The focus of analysis in operational controlling shifts between past changes in a firm's substance (i.e., its assets, liabilities and owners' equity) and factors (i.e., revenues and costs), which later will lead to new assets, liabilities, and owners' equity. In contrast, in strategic controlling, potentials stand in the foreground. A strategically-oriented controlling employs them to take advantage of economic cycles and dependencies, shortages of resources, changes in tastes and technology, and so forth to alter future revenues and costs.



Source: Adapted from R. Mann, "Neue Entwicklungen im Controlling", *Der Controller-Berater*, 6. Juni 2003.

Fig. 5. The Difference between Feedback- and Feedforward-Thinking

### Cost Accounting Complexity: A Special Problem for Controlling

As explained above, controllers have borrowed most of the instruments they use in the operational area from cost accounting. Because strategic controlling encompasses some factors not covered by cost accounting, they have found it necessary to develop additional analytic tools. Yet

even in operational controlling, the currently available tools and their application are not altogether satisfactory.

One can divide the historical development of cost accounting into four phases. The establishment of initially primitive, but subsequently ever more refined, enterprise-specific, and internally-oriented accounting systems characterized the *first* phase. They provided decisionmakers with relevant data that externally-oriented financial accounting systems could not deliver.

Standardization and a higher degree of detail were typical of the *second* phase. In this phase, business administration scholars and industrial practitioners cooperated to create *flexible Plankostenrechnung* and standard direct costing. Among the many commonalities of these German and American models are: (1) output-based planning of costs, (2) decomposition of all costs into fixed and variable components, (3) application of planned standard costs throughout, and (4) orientation on processes within the firm.

The *third* phase spanned the 1990s. In order to meet the increasingly exacting requirements of the German and American cost accounting models, ever more detailed structures (cost, revenue, profit, and investment centers and cost objects) became necessary. As a result, just the technical execution of the cost accounting involved consumed so much of a controller's time, that he or she had little capacity left for analyses, internal consulting, preparation of decisions, and so forth (*i.e.*, for his or her real job).

In the *fourth* phase, a fundamental simplification of cost accounting has become necessary in order to reestablish an acceptable balance between the time required to process information and the time available to use it. Unfortunately, though, in many instances the simplification projects have turned out to be every bit as time-consuming as the earlier standardization and model development projects of the second and third phases. In some cases, firms have pushed so hard on simplification that they have overshot their goal, resulting in high project costs that have yielded only minimal benefits for decisionmaking.

What degree of detail in cost accounting instruments does a controller need in order to meet management's current decisionmaking demands with regard to shareholder-value orientation, customer orientation, regionalization, or globalization? Three alternatives are available.

1. Retain the complex models: Neither accounting scholars nor practitioners thus far have put forward more convincing concepts than the *flexible Plankostenrechnung* or the standard direct costing models. This alternative suggests itself everywhere, where the methods involved are well-established and the associated complexity (still) has not overwhelmed the controlling staff.

Even in such cases, though, change is necessary. *Flexible Plankostenrechnung* and standard direct costing came into being when overhead was a small fraction of total manufacturing costs and industry dominated both the German and American economies. Today, overhead often makes up the largest part of total manufacturing costs, while industrial production has fallen to less than 20% of GNP. Continued reliance on absorption cost accounting to allocate overhead costs therefore steadily reduces the complex models' accuracy and effectiveness.

Sharman and Vikas believe the solution to this dilemma lies in extension of the complex models to include use of a variant of activity-based costing, namely resource consumption accounting (RCA), for allocating overhead. Unfortunately, ABC has already disappointed American practitioners. The Bain survey referred to earlier also showed that about 60% of U.S. firms had started ABC projects, but only 20% of those companies were able to complete them (Sharman, 2003). The high degree of complexity intrinsic to ABC was one reason for its failure. Another reason was the absence of software for intake of the requisite data and its integration into the firm's operational IT-landscape. Nor was there ever a consensus among scholars and practitioners about the best way to implement ABC at the enterprise level.

Horváth found the lack of valid standards for ABC so troubling, that he developed a variant (*Prozesskostenrechnung*) with clearer rules (Sharman, Vikas, 2004). Taking *Prozesskostenrechnung* a step further, German scholars and practitioners also have created their own resource consumption accounting. They now fear the European Union's acceptance of International Financial Reporting Standards will force them to abandon their existing, well-conceived RCA, only to replace it with an inferior, Anglo-Saxon RCA sometime in the future (Zehetner, 2005). Neverthe-

less, in order for the Sharman-Vikas proposal to succeed internationally, industry, universities, public agencies, and professional groups will have to cooperate to create a learnable, comprehensive, and efficient cost accounting system, that enjoys both recognition and authority in Germany, the United States, and elsewhere.

2. Radical simplification of cost accounting structures: The temptation to choose this alternative is particularly great when a firm experiences difficulties in maintaining existing structures. Such difficulties often arise in the wake of changes in top management or in the controlling department's personnel. Then, less detail generally means pure simplification. Replacing the former exaggerated degree of detail with a new coarseness in the analytic results, however, typically causes the loss of important information about complex business relationships. Due to the high information losses, one cannot recommend radical simplification under any circumstances.
3. Simplified presentation of complex structures: Management requires simple presentation of information, which still reflects the entire complexity of the firm. When requested, the presented information therefore must permit "drilling down" for data analyses yielding more detailed insights. For this reason, one cannot achieve the simplification objective merely by eliminating the underlying complex cost accounting structures. Instead, controllers must concentrate their simplification efforts on reporting and presentation systems as well as on the aggregation of information.

The personal computer is a good example of the successful simplification of complex technical processes. Today, no user has to understand how a computer works technically in order to take advantage of its capabilities. In fact, even major user mistakes seldom cause it to "crash" outright anymore. The prerequisites for the extreme simplifications embodied by the computer, though, are ever more complex technical systems. Fortunately, users need neither to know about nor to comprehend them.

The same is true for cost accounting systems. Whoever wants to strengthen self-controlling and to simplify the management of a firm without giving up dependability, the possibility of in-depth analyses, and quickness, must accept complex structures. This complexity, though, does not need to be outwardly visible. The challenge for the controller service therefore is to deliver the right information, in the right amount of detail, at the right time, in presentation formats that are intuitive for management.

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