International Group of Controlling (Eds.)

Controlling Process Model 2.0

A Guideline for
Describing and Designing
Controlling Processes

Preface

Since 1995 the International Group of Controlling (IGC) has had the aim to specify the occupational profile and mission of the controller and, in line with this, to establish and continuously develop further a concept of controlling.

In its controller mission statement, the IGC stated in 2013:

As partners of management, controllers significantly contribute towards the company's long-term success.

The controlling process model 2.0 presented in this book is based on this understanding as well as the controlling process model of the first edition. It focuses on ten main processes and is intended to analyse, design and document the individual processes, as well as to establish responsibilities. For the individual processes, the necessary inputs and resulting outputs are again pointed out.

In a comprehensive survey on the state of use of various IGC controlling concepts, conducted by the IGC all across Europe in 2016, also options for further developing the IGC controlling process model have been identified. The insights from this survey have been integrated in this second edition and the controlling process model 2.0. For this purpose, processes and overall design have been reworked. The following figure provides a contrastive overview of the process models of the first and the second generation.
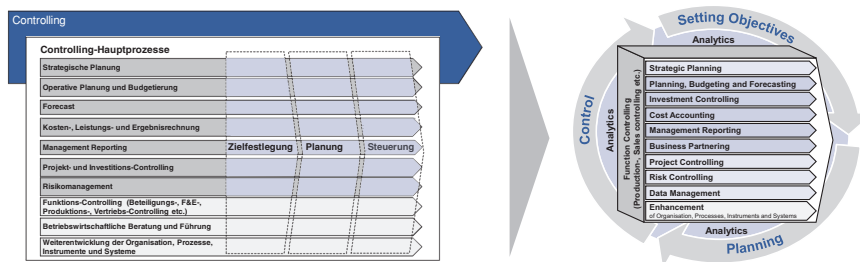
IGC controlling process models of the first and second generation

Because of the current developments of information technology and use in the areas of big data, analytics and cloud technologies, a multitude of process variants for designing the controlling processes are now being developed. For instance, in strongly technology-oriented companies in dynamic environments, highly automated sales prognoses based on time series analyses and the integration of external data can be found. However,

this cannot (yet) be called a standard feature. Similarly, it is still uncertain whether, when and in what context such a feature might become a standard. The working group has therefore decided to use an evolutionary approach in is revision: the present volume shows a controlling process model that represents the controlling processes at a majority of companies in 2017. It is not the aim to develop or prescribe a standard valid for the future, as this has been deemed highly speculative. Nonetheless, in our revisions, we have tried to include current developments as perspectives, in order to make suggestions for further developing the controlling processes, as well as controlling in general.

Hence, the present version is strongly based on the first generation of the process model and in respect of the main processes includes the following major further developments:

- Merging the main processes „Operational Planning and Budgeting" and „Forecasting";
- Dividing the main process „Project and Investment Controlling" into two main processes;
- New main process „Data Management";
- New analysis and evaluation process on the potential „transfer of controlling processes to shared service centers";
- The main process „Function Controlling" in the model is now structured as a „Controlling of Functions" across processes, which represents a second dimension of controlling;
- Highlighting main processes in colour depending on their relation to controlling;
- New model-wide structuring of the management process of setting objectives, planning and control;
- Integrating analytics as a connecting element and level between management process and controlling processes (and thus an increasingly integrated part of controlling).

In addition, the controlling process model has been integrated even more into the overall controlling approach by including new sections in this book. This refers, for example, to section 2.3, where the controlling cycle is shown, which has also been included as such in the overall illustration. Other new additions are sections 2.5 on interactions with other functions and 2.6 on tools and analytics in controlling.

The present IGC controlling process model 2.0 provides systematic guidance for designing controlling processes in companies and tries to take into account current requirements and trends in controlling. In particular, it is to provide managers and controllers active in the field

with an opportunity to align established controlling processes with the IGC's understanding of controlling and generally promote process-orientation in controlling.

As the present book to a large extent builds on the first edition of the IGC controlling process model, the IGC Board would like to extend its thanks to both the working group for the „controlling process model 2.0" and the working group of the first generation of the „controlling process model".

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The preparation of the controlling process model presented here by the members of the IGC working group „controlling process model 2.0" took place over the course of a year. The working group had access to not only the know-how of its members and affiliated experts, but also the previous work done by the working group „controlling process model" of the first edition. Thus, this present version of the „IGC controlling process model 2.0" is predominantly based on the first edition of the process model and is to be seen as a further development and optimisation by means of revision and addition of new sections.

The members of the working group have many years of experience in controlling in industry, business consulting, practice-related education and training of controllers and managers, as well as in academic research in controlling.

Below, the members of the IGC working groups „controlling process model 2.0" and „controlling process model" are listed together with further authors of the book:

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Contents

Management Summary

The controlling process model should serve to analyze, shape and document controlling processes, as well as to support communication about them.

The process model is built upon a foundation consisting of the IGC definition of controlling and the range of tasks and responsibilities of a controller laid down in the IGC's mission of the controller. In this book, controlling is described as the entire business process of identifying goals, planning and directing within the company. Furthermore, the Controlling Process Model applies terminology from the controller dictionary of the IGC and adheres to the quality standards for controlling formulated by the IGC and ICV (DIN SPEC 1086) as well as the controller mission statement of the IGC.

The Controlling Process Model has a hierarchical structure. Controlling as a process on Level One within the process landscape of a company comprises ten main controlling processes (Process Level Two). Generally, Level One processes are known as business processes or corporate processes. In this book, the ten main controlling processes as well as cross-functional controlling processes are described in a standardized way down to subprocess level (Process Level Three) and also portrayed graphically. The next level of detail down (Process Level Four, activities) is shown by example using the process of management reporting. The model is constructed in such a way that a fifth level can also be added; normally, this level would describe transactions and the link to IT systems. This would be necessary or useful if the respective controlling processes were to be standardized and implemented in IT systems. There is no description of Process Level Five as this would go beyond the scope and objectives of this book.

The Controlling Process Model can be used as a standard map for controlling processes in a company. In general, industry or size do not play a role, but the model rather focuses on mid-sized to large manufacturing companies and service providers. Additionally, it does not deal with the specifics of financial service providers (banks and insurance companies) or public organizations. The Controlling Process Model helps to explain controlling processes in a quick and uncomplicated way and as such is very suitable for use as a template for both designing and analyzing processes. Moreover, it is helpful for controllersor managers in the evaluation of controlling concepts. Finally, as a standard controlling process model it can form the basis for striving towards a uniform perception of what controlling is.

1 Aim and Structure of the Book

The International Group of Controlling (IGC) aims to establish a commonly accepted concept of controlling, as well as a unified controlling terminology. Its foundation is the IGC's definition of controlling: „Controlling is the whole process of defining objectives, of planning and controlling (in the sense of steering and regulating) and includes all relevant financial and commercial aspects".

Background and motivation of this book

Thus, as in many other functions of the company, thinking in processes is also applied in the controller's work. Companies have realised that they can improve their productivity by adopting a procedural point of view and control system. Process management, for example, makes it possible to raise the efficiency and effectiveness of processes, e.g. by reducing long lead times and improving insufficient flexibility. For many areas of the company, particularly where value added is generated, process models such as the SCOR model have been developed. Processes in logistics, marketing, and distribution, for instance, have been identified and documented and can be analysed and controlled. Controlling processes should be no exception. The standardised controlling process model presented in the first edition of this book has, in this second edition, been revised and adapted to all current developments in controlling.

Relevance of processes for controlling

Based on the IGC's definition of controlling, this book still aims at formulating an up-to-date standard controlling process model. It thus also addresses current challenges in controlling and new opportunities for more effective controlling. Controlling processes are to be determined, described in a uniform manner, graphically depicted and supplemented with specific hints for practice.

Aim of the book

This book is intended to

- serve as a standard map of controlling processes,
- provide a guideline for designing processes in the company,
- explain controlling processes quickly,
- help controllers and managers in checking their concepts and evaluating their strengths and weaknesses and
- build a foundation for a uniform and modern understanding of controlling in theory and practice.

The book targets both controllers as the „process owners" and people outside controlling services, particularly those that provide the input for controlling processes and those that receive controlling services: the managers. It is to provide the reader with a guideline how to design and monitor controlling. It also addresses everybody dealing with controlling theory.

Target group of the book

Structure
of the book

Following the introductory chapter, this book includes three further sections. Chapter 2, Mission of the Controller and Controlling Process Model, forms the basis for all further descriptions and depictions. For this purpose, the IGC's mission of the controller is briefly outlined in section 2.1. Section 2.2 shows how the function controlling is assigned in the company and how it can be integrated into the map of corporate processes. In section 2.3, the controlling cycle is outlined, while section 2.4 presents the controlling process model 2.0 newly designed by the working group. Section 2.5 discusses the interfaces between controlling and other processes and tasks in the company. Section 2.6 deals with tools and analytics in controlling.

Chapter 3 describes the main controlling processes and cross-functional processes underlying the process model, generally down to the level of the sub-processes. The main process „management reporting" serves as an example of the level of activities (process level 4).

In chapter 4 it is shown how the controlling process model could be expanded in more detail in order to enable the adequate control of controlling processes. For this purpose, the controlling processes are analysed in connection with a controlling year planner. Finally, the book provides an outlook on how the performance of controlling processes can be measured.

2 Mission of the Controller and Controlling Process Model

2.1 The IGC's Mission of the Controller

Range of tasks of
the controller

According to the IGC's mission statement, controllers as partners of management, make a significant contribution to the sustainable success of the organization.[1]

Controllers...

1. design and accompanythe management process of defining goals, planning and management control so that every decision maker can act in accordance with agreed objectives.
2. ensure the conscious preoccupation with the future and thus make it possible to take advantage of opportunities and manage risks.
3. integrate an organization`s goals and plans into a cohesive whole.

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[1] The IGC's mission of the controller (2013) is available under the header „Services" at the IGC homepage at http://www.igc-controlling.org/.

4. develop and maintain all management control systems. They ensure the quality of data and provide decision-relevant information.

5. are the economic conscience and thus committed to the good of an organization as a whole.

From this task profile it becomes clear that controllers mainly assume two roles within the company: on the one hand they are internal consultants and partners of the management and thus co-responsible for achieving objectives. On the other hand, controllers are service providers in that they are responsible for providing accurate and relevant information for consulting.

Two roles of controllers

The distinction between controller and controlling also becomes clear: controllers are service providers for different units. They support and advise other functions and people in the company. In this context, the term controller service is used. Controlling, on the other hand, is concerned with defining objectives, planning and managing a business and is the task of the managers. It is the management's responsibility and the controller contributes to this task and shares this responsibility in his role as a sparring partner. The cooperation of controller and manager results in the controlling intersection (see Fig. 1).

Controller and controlling

The **Manager**
- operates the business
- is responsible for the result

Controlling

The **Controller**
- has the economic authority
- is responsible for he transparency of the result
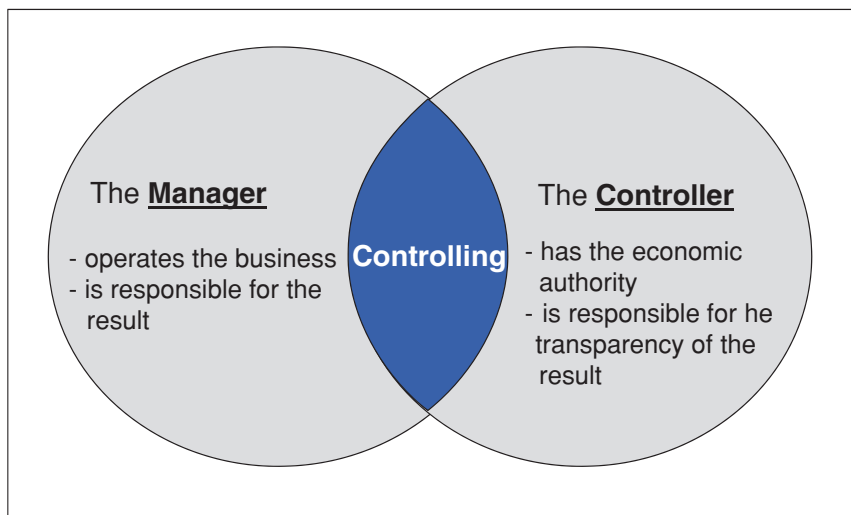
Fig. 1: Controller and Controlling[2]

Controlling is thus not just „created" by the controller alone. It emerges from the interplay with the management and hence the various funtions

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[2] Adapted from IGC (ed.), Controller-Wörterbuch, Stuttgart (2005), p. 58.

in the company. This results in a multitude of interactions between controlling and other processes in the enterprise. Section 2.5 gives more details on this multi-faceted and interconnected system.

2.2   Positioning Controlling in the Company

Process map of the company

As shown in section 2.1, controlling is integrated into the management process and thus part of modern management. This shows that seeing management as a process entails a fundamental approach towards understanding it and its goal-oriented support through controlling. A process in this context is a sequence of activities whose output is a service for an (internal or external) customer. The total of all processes within a company can be depicted in a corporate process model or process map and broken down into the categories of management, core and support processes. Accordingly, controlling can be positioned in this map as a management process. The structure shown in Fig. 2, the categories used and the definitions and names of the processes are one option used in this or a similar manner in many companies, but need not be generally valid.
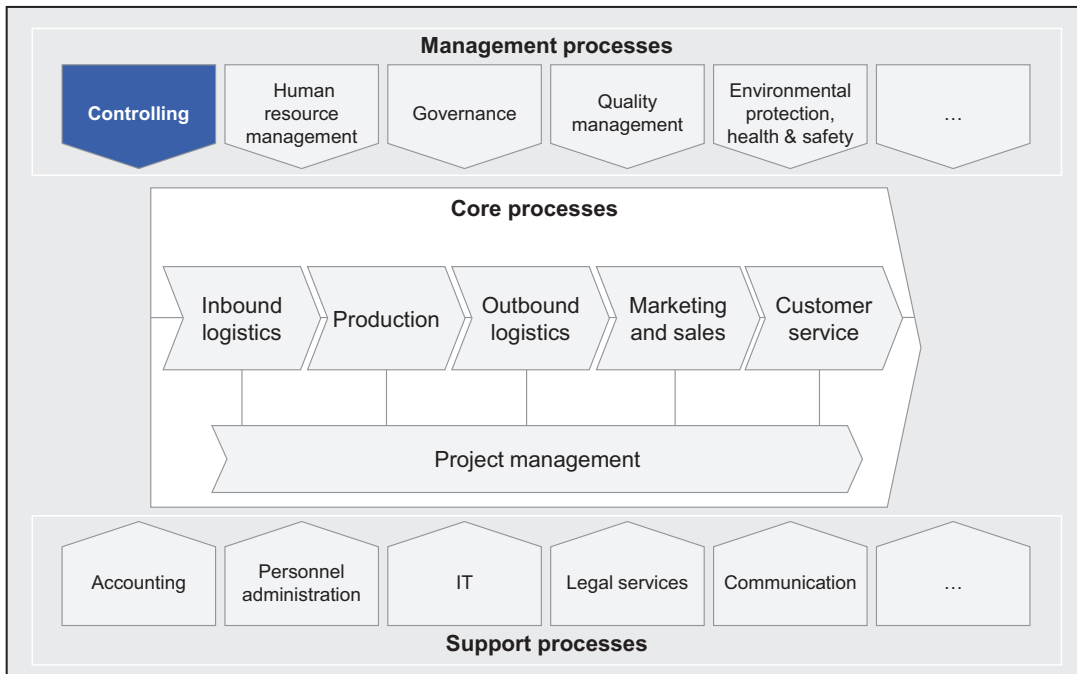
Fig. 2:   Positioning controlling in the company's process map

In core processes (in the process classification shown in Figure 2, the core processes are based on the primary activities according to Porter), the actual value added is generated in the company. They are defined as directly fulfilling the customers' needs and include, for instance, production and customer service.

Support processes, in contrast, provide no direct benefit for the customer but assist and enable core and management processes. They are responsible for providing all resources required for implementation and management processes. These support processes include accounting and IT.

Management processes serve to orientate and coordinate core and support processes in companies. A particular focus is put on structuring the organisational roles and their tasks, as well as safeguarding the quality of processes and results.

Controlling is the process of setting objectives, planning and managing, all oriented towards sustainable productivity, and hence an essential part of a company's management processes. From this perspective, the controlling process's description can include the issue of company development. The extent to which the controller service assumes these tasks as an organisational unit or department, or whether other units or departments are responsible, differs from company to company. Alternatively, company development can be shown as a separate management process.

Core processes

Support processes

Management processes

Controlling as a management process

2.3 The Controlling Cycle

Controlling is management work, goal-oriented, future-oriented, holistic and transparent. Controlling is the whole business process of setting objectives, planning and control in a company.[3]

It means to orient one's thinking towards the objective and to direct all decisions depending on their effective success. Controlling is an ongoing process of setting objectives and following objectives, in which managers and controllers

- agree objectives,
- plan and align activities towards these objectives, and

Controlling objectives cycle

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[3] Regarding this section, see the general positions of the ICV and IGC, Grundsatz-positionen (2012), as well as DIN SPEC 1086, Qualitätsstandard Controlling, Berlin 2009, p. 5.

- constantly measure the degree to which the objectives are met, so that the thus established transparency makes it possible to detect and counteract variances early on.

Therefore, the activities of planning, management and control are of central importance. This holds true for both every individual management decision and the overall management of the company. In the latter case, it must be ensured that providing information, planning and control interact properly when managing the company:

- The decision-making processes in strategy development and planning define the objectives and the means to meet them. As this entails thinking about the future, it also helps to cope better when everything does not go according to plan. Controlling means designing the future actively, taking the company's fate into one's own hands and leaving nothing to chance or indeed to the competitors. What is needed is not a passive „what might happen?“ but rather an active „what do we want to happen?“, or, in other words, a commitment to an objective that has been set which is expressed in figures and measures. Not „the way is the goal“, but „the goal determines the way“.

- During the control stage, it is checked whether the objectives have been met and – if not – what the reasons are. The insights thus gained are then used as quickly as possible in order to take countermeasures and to improve implementation and planning. Planning and control do not aim to avoid variances or to hinder entrepreneurial flexibility. Rather, the aim is to consciously think about the future in order to be prepared for potential developments and to react faster through ongoing control.

- Planning and control pose certain limits to an individual in the company, but at the same time also enable decentralised leeway and initiative.

Applications of controlling

The sequence of planning, implementation and control is shown schematically as regulation in the management cycle in Figure 3. Controlling should be used wherever there are objectives that are to be met. Therefore, controlling is an important issue not just for profit-oriented companies, but also for non-profit and public activities. Only the characteristics of the objectives (planned) and later of the successful performance (actual) are specific.
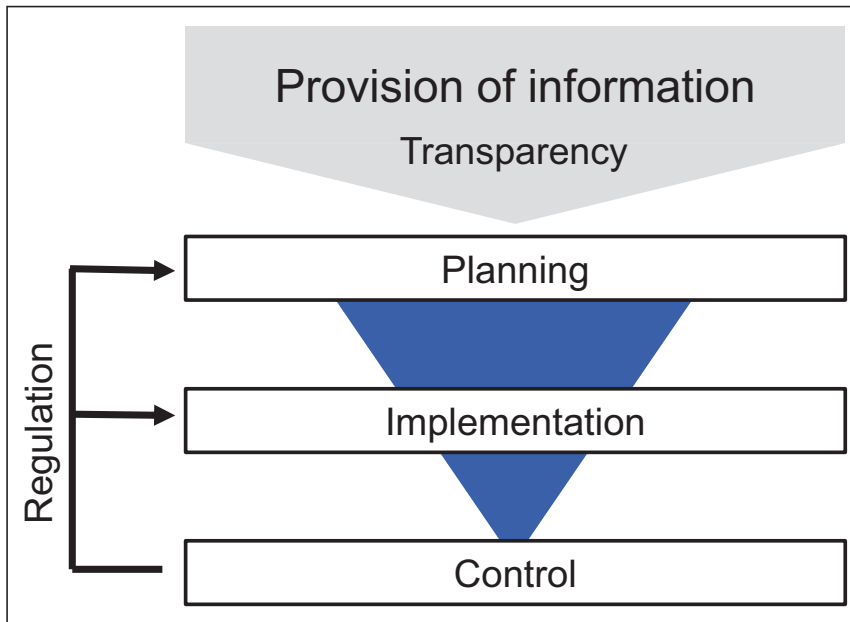
Fig. 3: Regulation in the management cycle

The underlying approach of thinking in objectives here induces a long-term, comprehensive perspective that aims at meeting objectives on a long-term basis. Therefore, financial and non-financial aspects, as well as all relevant stakeholders in the company's management, are of great importance to the extent to which they help safeguard long-term success as a means to an end. Thinking in objectives and aligning all decisions with their successful effects is at the core of rational company management and an essential task of every manager. Controlling is thus not an activity that is restricted to controllers or other specialist management providers. Controlling cannot exist without management. Controlling, however, is so important and complex that it makes sense to support managers in that task. A major part of this support comes from controllers, as has been shown in the mission of the controller in section 2.1.

Thinking in objectives in controlling

Controlling as a process of setting objectives, planning and control in cooperation between managers and controllers is comprehensive. For efficient and effective controlling, a multitude of process steps, activities and instruments have to be structured and carefully coordinated. The following process model aims to achieve just that. The controlling cycle is thus a conceptional frame that also graphically surrounds the

Prerequisites for effective controlling

controlling process model 2.0 and provides the framework for the main and cross-functional controlling processes.

2.4   The Controlling Process Model

The controlling process model is intended to document, analyse, evaluate and design controlling processes, as well as to aid the communication on controlling processes. Its aim is to contribute substantially to further a unified understanding of controlling. Therefore, it has to fulfil the criteria of completeness and general applicability.

Quality standard controlling

Additionally, the model is to follow the guidelines established by the International Controller Association (ICV) and the quality standards for controlling set by the International Group of Controlling (IGC) (DIN SPEC 1086). More details on this matter can be found in DIN SPEC 1086 itself. It is important to use the definition of controlling as a process there as a starting point. IGC and ICV define and describe the controlling process as follows and already indicated in section 2.3:

The controlling process

Controlling is the overall process of setting objectives, planning and controlling a business. It aims at safeguarding a sustainable economic development of the business and relies on the interrelatedness of a variety of control systems all involving setting objectives, planning, implementing, measuring and improving.[4]

Process hierarchy

This book describes the processes that actually make up controlling. The controlling process model is a standard model that can analyse and describe the different areas of controlling. It is based on a hierarchical process model and looks at processes on different levels (see Fig. 4). The process hierarchy creates transparency and clarity regarding processes and structures by systematically depicting the connections between higher-level processes and details, as well as details within the higher-level processes. It not only furthers process participants' understanding of their contributions, but also serves as the basis for allocating tasks, competences and responsibilities, and so creates the prerequisites for the IT implementation of controlling processes.

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[4]   DIN SPEC 1086, Qualitätsstandard Controlling, Berlin 2009, p. 5.
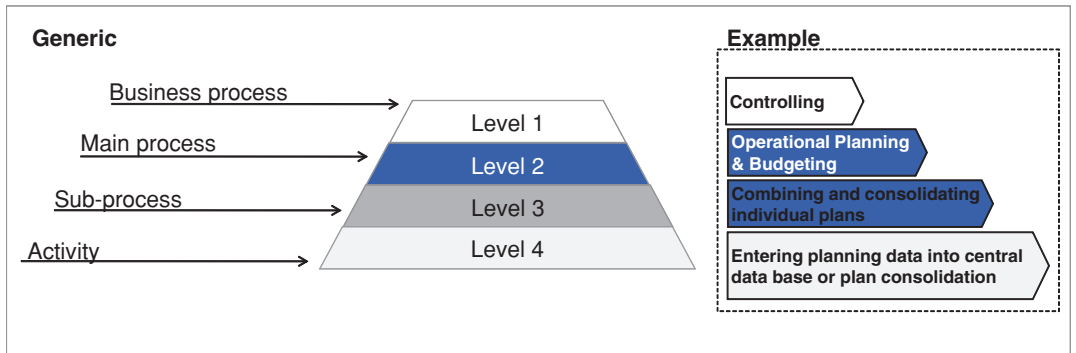
Fig. 4: Overview of process levels

Based on the business process „controlling" on level 1 of the company's process map, the controlling process model in this book distinguishes between four levels of detail. As shown in Figure 5, level 2 includes ten main controlling processes.

Main controlling processes (process level 2)

The ten main processes are subdivided further: amongst the ten main processes, the five processes of planning, budgeting and forecasting, investment controlling, cost accounting, management reporting, and business partnering represent the core of controlling and its absolute core processes. The four main processes of strategic planning, project controlling, risk controlling, and data management are also relevant, but not absolute core processes of controlling, as they take place in cooperation with other functions and areas in the company. The process of further development of organisation, processes, instruments and systems includes the permanent quality control and improvement of structures and processes in controlling and is, due to its importance and institutionalisation in the company, considered to be a main process. It differs from the other controlling processes, however, in that it aims at developing the controlling function further and is thus different from the management support of the other processes. In the cross-functional processes, found in the controlling of the individual functions (e.g. controlling for subsidiaries, R&D controlling, etc.), mainly the controlling processes of planning, analysing and controlling are found, and are specific to the respective functions.
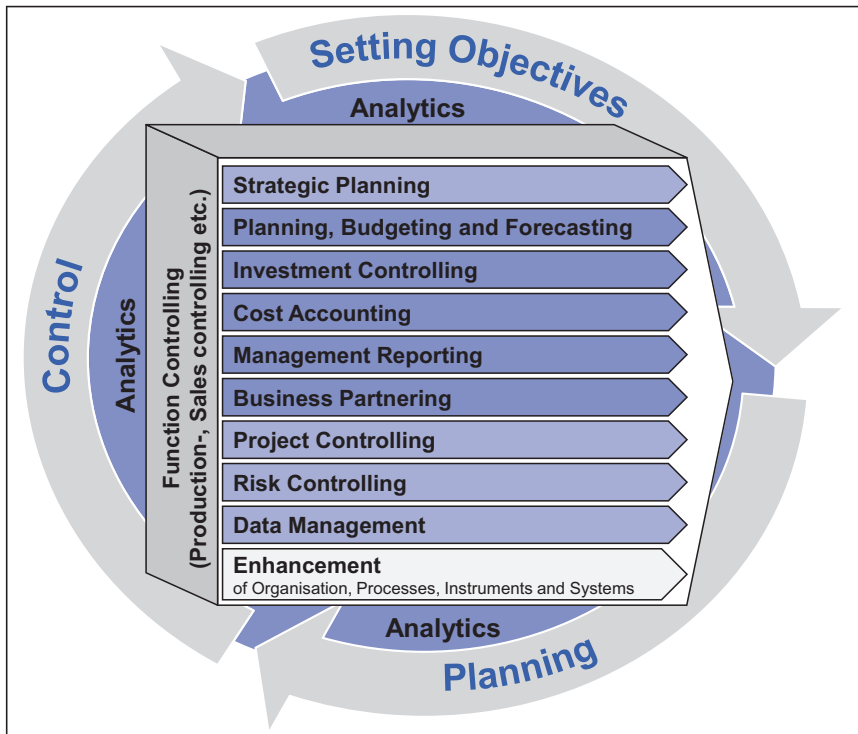
Fig. 5: The IGC controlling process model 2.0

Controlling
sub-processes
(process level 3)

For each main controlling process, the sub-processes are defined on level 3. These are described in the chapter on the respective main process. For the description of main and sub-processes, templates have been developed that document objectives, content and process interfaces – Input, Output, Start, End – for each process.

Controlling
activities (process
level 4)

Taking a look at process start and end has, however, further importance in practice. The example of the annual planning and budgeting process shows that it starts at a particular date – in most companies in the summer – (process start) and ends at a particular date – in most companies in the late autumn – (process end). The same thing holds true for core processes. The process of order processing, for instance, in many enterprises starts and ends many hundreds and thousands of times and in many cases mainly runs parallel. In this context, the term „process start" is to be seen as the event triggering the process implementation. The term „process end" refers to the event defining the end of process implementation. In this book, the terms process start and process end are used without further explicitly referring to these events. There are process descriptions, the so-called event-driven process chains, where these events are a very

important element of process description. Event-driven process chains are normally used for depicting process level 4. These events are, amongst other things, again referred to on process level 5, as they are important elements in the IT implementation of processes.

Process level 4 – activities – is too extensive for a detailed discussion here. An example, for management reporting, is given in section 4.3. Normally processes are described on level 5 (transaction level) in order to be able to describe IT implementation. However, this is not the task of this book.

In chapter 3, all main controlling processes are outlined based on a uniform pattern. For better readability, objectives, content, process start, process end, process input, process output and sub-processes are shown for each main process, based on the same pattern. The process description following for each main process summarises the major content of the sub-processes and concludes with useful recommendations for practice.

In conclusion, we can summarise: the controlling process model is a purpose-oriented, simplified depiction of the activities in the processes of setting objectives, planning and control. It defines the input required for running the processes and the output transferred to other processes (interfaces). It is used for documenting, analysing, designing and communicating the controlling processes, as well as for allocating roles and responsibilities.

Description of the controlling processes

2.5 Interaction with Other Functions

As shown in section 2.2, controlling can be included as a management process in a company's process map. Apart from goal-setting, planning and control activities on an overall company level, controlling processes also add important value in the various functional areas of a company. Controlling provides assistance for core, support and management processes of the company. In the section below, first the interaction of controlling with other functions within the area of finance will be discussed, before the interaction with other functional areas of the company is shown in more detail.

Support function of controlling

The area of finance is that functional area in the company that has the most interfaces with controlling. At its core, finance consists of accounting, tax and treasury processes, which help the company to systematically record and to quantify the corporate activities. Regarding the recipients of the financial information processed, a distinction between internal and external accounting can be made. The core processes of finance can be used to identify specific examples of the interaction between finance and controlling. Here, the results of core processes of finance, such as receivables or

Interaction with the financial sphere

payables accounting, fixed asset accounting or consolidated financial reports, provide information on processing in internal accounting, which subsequently are used for management decisions in various controlling processes. Figure 6[5] gives an overview of the core processes in finance.

Finance Process Model

Receivables accounting		
Payables accounting		
Payroll and travel expense accounting	Accounting	
Fixed asset accounting		
Ledger accounting		
Consolidated accounts		
Taxes	Taxes	
Treasury		Treasury
Internal audit		
Enhancement Organisation, Processes, Instruments and Systems		
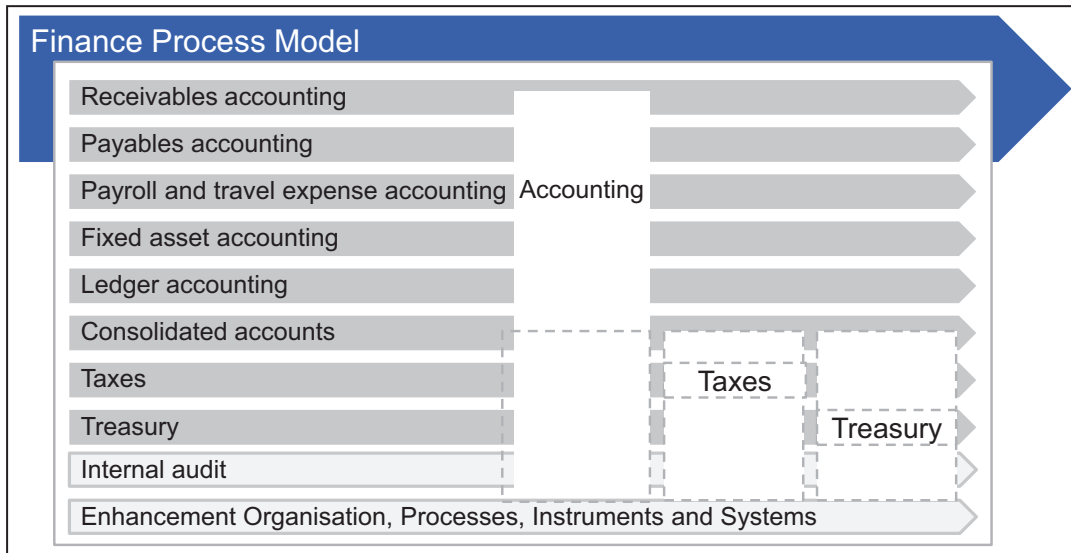
Fig. 6: Finance process model

The close connection in content between the two functional areas results in a multitude of interactions. One example of an interaction between finance and controlling is the core processes of external accounting, which are used as the basis for preparing the annual financial reports. The information in the financial reports can then be prepared for internal control purposes by controlling and be used, for instance, for investment decisions or in financial controlling.

Interaction with core processes

Besides the interactions with finance, controlling also has numerous interfaces with the core processes of value creation in the company. With classic industrial enterprises, the function-specific sub-areas of procurement, production and sales controlling arise from these interactions (see also section 3.12). Procurement controlling has the aim of minimising the costs of the input factors required by the company under given quality standards. Procurement controllers normally accompany all purchasing processes in the company in order to rationalise the company-wide supply to the greatest possible extent. A core task of procurement controllers is the evaluation and optimisation of the relationships with suppliers according to

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[5]   Taken from Horvath & Partners, 2015, p. 22.

individually adapted assessment criteria. In addition, procurement controllers also take optimisation measures across all stages of the procurement process from both a quality and a cost point of view, which has a significant effect on balance sheet and income statement due to the amount of capital tied up. Standard instruments of procurement controllers include working capital management, target costing, process cost accounting or value-added analyses.

In the following stage of the value-creation process, controllers also assist in safeguarding business activity. The main objective of production controllers is to make sure that output is produced economically. For this purpose, the production controller mainly safeguards and monitors production-related value-creation processes in the company. A core task of the production controller relates to the development of a production-specific controlling system, which generally includes both a production budget and a KPI-supported production control system. The diverse range of tasks of a production controller can be divided into strategic and operational tasks. While strategic tasks include, for instance, long-term production and investment planning, operational production controlling includes short-term production planning and optimising the production range and production costs. The current challenges in production controlling lie in integrating the new digital approaches in production management. By digitally connecting systems and machines, production work is increasingly made more flexible, which makes it possible to deal with the dynamic business environment more adequately.

Interaction in production controlling

The aim of the sales controller is to safeguard business activity across the whole sales process. Core tasks include providing external and internal information sources for sales planning and control. In addition, sales controllers are responsible for developing processes for the planning and reporting systems for sales volume, sales revenue and contribution margins. A further field of application lies in the inclusion of sales controllers in marketing activities that, for example, include the provision of instruments for planning advertising costs and services. As marketing and sales activities in many companies reflect a constantly increasing group of costs, the current challenge in sales controlling is to continuously increase sales efficiency. For that purpose, sales controllers increasingly align their control instruments with rising sales efficiency.

Interaction in sales controlling

As business activity has to be safeguarded not just in the fundamental value-creation processes but company-wide, controllers also add value in the company's support processes. One support process that is rapidly gaining importance is the company-wide provision of IT infrastructure and services. Because of the growing importance of IT and the accompanying increase in IT costs, IT controlling is also becoming a focal issue. As in

Interaction with support processes

other functional areas, IT controllers act as business advisors to management. Thus the core of their activities relate to planning and control of the company-wide IT costs to support the IT management. To ensure the efficient provision of IT, the controller conducts variance analyses and, based on this, plans measures to minimise IT costs and improve IT performance.

<div style="float:left; width:18%;">Interaction with other management processes</div>

Finally, controlling can add value to the efficiency of management processes in the company. Examples of a function-specific controlling of management processes include personnel, quality and green controlling. Important tasks of personnel controlling are, for instance, personnel planning and the factor and process-oriented controlling of personnel recruitment, utilisation and development. In order to address these diverse tasks, personnel controllers use both operational and strategic control instruments, which either monitor individual personnel management measures or assess efficiency and effectiveness of the company-wide personnel management. In contrast, green controlling supports the management in developing and implementing strategies for ecological sustainability. Here, identifying ecological risks and opportunities for the company, creating transparency regarding the implemented status quo and supporting the management in defining ecological objectives are central.

Apart from the types of function controlling presented here (in German formerly regularly referred to as „hyphenated controlling"), further interactions with other functional areas are becoming more and more established. Besides the already classic research & development controlling, forms such as innovation controlling or subsidiary and group controlling are also worth mentioning. As these terms are broadly in use and well-established, the German terms are now commonly used as one compound noun, rather than with a hyphen.

2.6 Analytics in Controlling Processes

As in the last few years the opportunities provided by IT have increased substantially, specific or comprehensive IT support of processes has become possible, which in the controlling process model 2.0 is represented by the connecting level of analytics. Depending on the company and also the business, management or control model, analytic support can be provided in specific cases or on a comprehensive basis. For example, business analytics can be used in the goal-setting phase in order to systematically support setting objectives by means of market and competition analyses or even widely automate the process and make it more dynamic. In the field of planning, forecast analytics can automate making prognoses. In the field of control, simulation analytics is increasingly in use, i.e. a dynamic

approach to potential future developments supported by scenario and simulation models, which improves the decision-making and control process. Consequently, this book follows the idea of treating analytics as a part of controlling processes rather than as a separate process.

With central controlling processes such as planning or reporting, there is a clear need for action in many companies. The planning instruments provide good qualitative results, yet the amount of resources needed for this has been heavily criticised. The same is often true for reporting. A main reason for the massive use of personnel is still the low degree of automatisation with these processes. In line with this, improved IT support is seen as the most important optimisation project both in planning and reporting. In planning, there are a further two big problems: most companies are still not able to plan income statement, balance sheet and cash flow statement in an integrated form. Thus, the companies have no comprehensive picture of their financial position, performance and cash flow. Especially large companies and groups have the additional problem that no real process management is possible in planning. Hence the demand for workflow support rises in order to be able to better monitor and control central and decentralised activities in planning. Moreover, controllers in reporting often have the problem that the tools used are not able to implement state-of-the-art information design and that, therefore, it is still Microsoft Excel that is used for the last mile to the recipient.

Need for action in planning and reporting

As the controller organisation is also in a bind between required improvement in performance, for example, a greater focus on business partnering, and increasing cost or productivity pressure, tool support and automation of controlling processes has to make an important contribution. Increased use of software and automation in controlling processes can provide the following specific benefits:

Benefits of controlling tools

- Relieving the controller organisation of operational activities and freeing up more time for activities that add value
- Reducing manual activities and improving data quality
- Speeding up processes and enabling faster decisions
- Establishing a „single source of truth" and thus an official data source for authorised reporting and
- Improving documentation and increasing revision security

These benefits are achieved through optimisation measures in the respective controlling processes. However, this also means that software tools and analytics have to meet process-specific requirements. As these requirements vary, in many cases it will not be possible to realise these optimisations by means of a central tool. The software market can therefore be segmented into different application fields (see Fig. 7):

Software requirements

Planning	Reporting	Legal Consolidation
• Flexible gathering of planned data • Implementing an individual planning application, e.g. description of business models • Depiction of a financial integration of profit, finance and balance-sheet planning	• Static and dynamic presentation of information • Tabulated reports, graphs and comments • Advanced options for formatting and distributing reports	• Preparing legal consolidated accounts according to national and international accounting standards • Planned and actual consolidation
Analysis	**Dashboarding**	**Data Mining**
• Multidimensional analysis of data by the expert user (controller) • Excel (or similar) front end	• Aggregated presentation of KPIs in graphical design • Interactive use by end user (management)	• Data analyses without hypotheses in large data volumes with statistic methods and complex algorithms

Fig. 7: Typical requirements of controlling tools

Structured
software
selection

In order to develop controlling processes on a long-term basis, companies must formulate specific requirements and evaluate the available solutions in a structured manner. By using a proven step-by-step model, the complexity of the selection process is reduced and it is ensured that the optimum software is chosen (see Fig. 8).

Preparing list of criteria	Identifying longlist and selecting shortlist	Shortlist evaluation and final selection	Implementation scenarios	Negotiating
• **Generic list of criteria** as a basis • Adapting to **customer-specific requirements** • Defining **mandatory criteria**	• Preparing **longlist** • Selection based on central **knock-out criteria** • Preparing **shortlist**	• **Sending the list of criteria** to providers on the shortlist • **Evaluation** based on an **evaluation grid** and **software presentations** • **Visiting reference customers**	• Drawing up a **time schedule for implementation**	• **Negotiation** • **Conclusion of the contract**

List of criteria | Preparing longlist — 3-5 solutions (shortlist) — Preparing long- and shortlist | Selection | Implementation plan | Conclusion

Fig. 8: Model for software selection

Besides the „classic" requirements listed above, the following trends can be detected in the business intelligence environment:

■ Self–Service BI

With self-service BI, the expert and final user can access company data without involving the IT department or a business intelligence (BI) expert or controller, as well as display, analyse, enrich or modify these. The advantages are a faster access to data and information as well as faster decision-making by the recipient. The flexibility and agility thus gained, however, also mean that users can make their own appraisals and thus create their own „reality". Therefore, data governance plays an important role in self-service BI. It serves to provide a framework within which the individual appraisals and analyses can be conducted. It will be interesting to see how self-service BI is to develop between the poles of standardisation and individualisation.

■ Mobile Reporting

The management's demand for mobile information gets more intensive the more wide-spread, available and powerful devices (smart phones, tablets) are. Today, all established software providers offer this functionality.

■ Information Design

The reporting of the future will be optically much clearer and better structured, which is reflected by explicit information-design rules (economical use of colours, clear type face, avoiding 3-D graphics, avoiding redundancy and decorative effects, etc.). In this respect, a clear convergence can be detected with software manufacturers.

■ Big Data and Advanced Analytics

While for classic financial controlling, processing and analysing bulk data is of minor importance, recognising patterns and gaining analytical insights must be deemed important in a strategic context. Additionally, on an operational level there are increasingly developments towards predictive analytics, i.e. generating planned and forecast data on the basis of perceived patterns in the past.

■ Performance

The amount of data in companies increases for a variety of reasons (companies themselves expand, still an exaggerated love for detail in controlling, big data, etc.). This proves a big challenge even for established

providers in providing a speed of data processing that is acceptable for the user. SAP, with its S/4 HANA platform, tries to offer not just better performance but, at the same time, on an aggregate level (e.g. group), also the full data volume (e.g. allocation to accounts on the receipt level).

■ **Business Analytics Competences**

The development of business-analytics competences in companies is on the rise. These competences comprise, apart from an understanding for basic topics such as data modelling, also tool-related and analytical abilities (e.g. analysing and structuring the data and extracting the relevant information). Companies increasingly see a need for such data scientists and have started to establish business-analytics competence centres.

3 Main Controlling Processes

3.1 Strategic Planning

Objectives The aim of strategic planning is to support the management in safeguarding the company's existence and increasing its value on a long-term basis. Existing success potentials are to be secured and developed further and new success potentials have to be identified and created.

Content Strategic planning (see Fig. 9) establishes the basic organisational framework for central corporate decisions. It defines objectives and measures and determines important elements in all major areas. It always moves inside the overall parameters of company policy. Subjects of strategic planning include markets, products, portfolio, competition, innovations, technology, core competences, and resources.

Controlling			Level 1
			Level 2
Strategic Planning			Level 3
			Level 4

Process start	Sub-processes	Process end
Kick-off for strategic planning according to planning diary	Setting up the process	Strategic plan including financial plan for several years is approved
	Conducting strategic analyses	
	Checking and, if necessary, adapting vision, mission, values and strategic objectives	
	Checking and, if necessary, adapting underlying business model	
	Deriving and updating strategic orientation	
Input	Defining specific strategic targets and measures, including the relevant benchmarks	**Output**
■ Vision ■ Mission, values ■ Results of strategy implementation ■ General underlying objectives, assumptions and expectations	Evaluating strategy financially – drawing up financial plan for several years	■ Strategic plan ■ Determining markets, products, etc. ■ Quantified plan for several years (financial benchmarks) ■ Strategic target system (e.g. with strategy map)
	Coordinating strategy with relevant stakeholders, presenting and approving it	
	Communicating strategy over various management levels	
	Monitoring strategy implementation	

Fig. 9: Structure of the main process „Strategic planning"

Within strategic planning, the controller has a major moderating role. Controlling itself does not determine the strategy, but rather supports the people responsible (management and company development) by moderating the whole strategic planning process, e.g. by providing tools, analyses and systems.

Moderation

Strategic planning starts with setting up the process. In this preparatory phase, responsibilities, tools and specific content have to be established or adapted. Furthermore, a timeframe with milestones has to be set up that must be adhered to. The time horizon of strategic planning depends on the individual company (in most enterprises, between three and five years) and provides the framework for subsequent operational planning. Thus it is crucial to define an interface management that secures the link to operational planning.

Setting up the process

The set-up is followed by the stage of strategic analyses. Market and competition analyses are used e.g. to analyse the firm's environment. What is also needed is a realistic self-evaluation, e.g. in the form of value-chain, portfolio and business model analyses, in order to detect the firm's own strengths and weaknesses. By combining internal company analysis with an analysis of the external environment (e.g. through a SWOT analysis, an instrument to analyse the situations regarding the dimensions of „strengths, weaknesses, opportunities and threats"), strategic gaps can be identified from both a quantitative and a qualitative angle.

Strategic analyses

29

Strategic orientation

The pressure for change thus detected provides the input for the phase of strategy development. Vision, mission, strategy and business model are checked for market potential regarding the core competences and value-creation processes identified and, if required, adapted. Based on the updates, strategic orientations have to be defined.

Strategic map

From the strategic orientation, strategic targets have to be derived and visualised by means of a strategy map or other suitable methods. For each strategic target, variables with specific target values must be defined and required measures have to be planned that have a clear timeframe. The measures planned are to be evaluated (e.g. by means of a quantified plan for several years) financially (e.g. with costs, revenues, in- and outflows of money) and aligned with the funds available. If necessary, different strategy scenarios can be evaluated financially and compared.

Strategy implementation and anchoring

After coordinating the strategy with the stakeholders, the strategy agreed upon is to be documented and communicated throughout the company during the strategy anchoring phase. Here the concept of the balanced scorecard (BSC) has been found to be useful. The BSC is a ratio-based management system that translates strategy into strategic targets for various perspectives.

Strategic monitoring

For strategy implementation, the use of a performance measurement system is absolutely essential. Performance measurement provides insights into whether the targets agreed upon were met and the measures were implemented successfully. For this purpose, key performance indicators (KPIs) have to be defined and continuously monitored. Through continuous monitoring and regular strategy reviews, e.g. in the form of institutionalised strategy meetings, variances can be detected in time and countermeasures can be taken early on. Because of a variety of feedback loops, the sequence of sub-processes and activities outlined here is not relevant. Especially for the purpose of continuous control, any particular phase can be entered at any given time.

Recommendations for a successful strategic planning process

- Keep the number of strategic objectives within limits, following the motto of „twenty is plenty".
- Break down strategic objectives to one to five years and evaluate them financially.
- Coordinate the strategy with everybody involved and communicate it all over the company.
- Tie the employees' incentive system to strategic objectives.

3.2 Operational Planning, Budgeting and Forecasting

Corporate planning, budgeting and forecasting fulfil important functions in an enterprise. These include the planning, control, coordination, prognosis and exploration functions. The planning function is taken care of by planning and budgeting. Planning focuses on deriving content-goal oriented company objectives, as well as measures derived from these, and allocates to these the appropriate resources required to ensure objectives are met. Planning thus induces the management's future-oriented thinking and acting, as measures to realise company objectives are actively integrated into the company's activities of the business period from the beginning. Budgeting accompanies the planning process by focusing on the monetary effects of the content-goal oriented plan. Budgeting translates the planned company activities into monetary values and so reflects the formal-goal oriented perspective of corporate planning.[6] In addition, budgeting has a control function if the budget values during and after the business period are used to check the degree to which objectives have been met. If the variance analyses are taken not just to adjust measures to meet existing objectives, but also to re-position existing objectives and strategies, budgeting also fulfils an exploration function.

Functions of planning, budgeting and forecasting

In order to cover the whole monetary development of a company, it is also necessary to align the sub-plans of the individual company areas. Through the accompanying coordination of the corporate plans in sub-areas of the company, planning and budgeting also has a coordination function. Supplementary to planning and budgeting, forecasting serves to fulfil the prognosis function where, based on actual values and figures, predictions on the future financial development are derived. Normally these predictions of the future financial development take place at fixed, defined dates during the year or ad-hoc if there is an additional need for information.

In order to meet the manifold requirements of information provision in a company, different planning levels have been established in corporate practice. Besides strategic planning and budgeting, medium-term planning and forecasting are also made use of. To make the company's planning system as simple and flexible as possible, it is necessary to integrate the different planning levels. Connecting strategic, medium-term and short-term planning, as well as forecasting, has to be based on targets that can be derived from each other. Strategic objectives are an important foundation for operational planning, which are included in the budgeting process as key data and provide the most important early warning indicators for prognoses of the financial development. The integration of

Integration into a process

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[6] See Horvath/Gleich/Seiter, 2015, p.120.

the different planning levels must also be reflected in the planning process. Figure 10 shows an example of a comprehensive planning, budgeting and forecasting process.
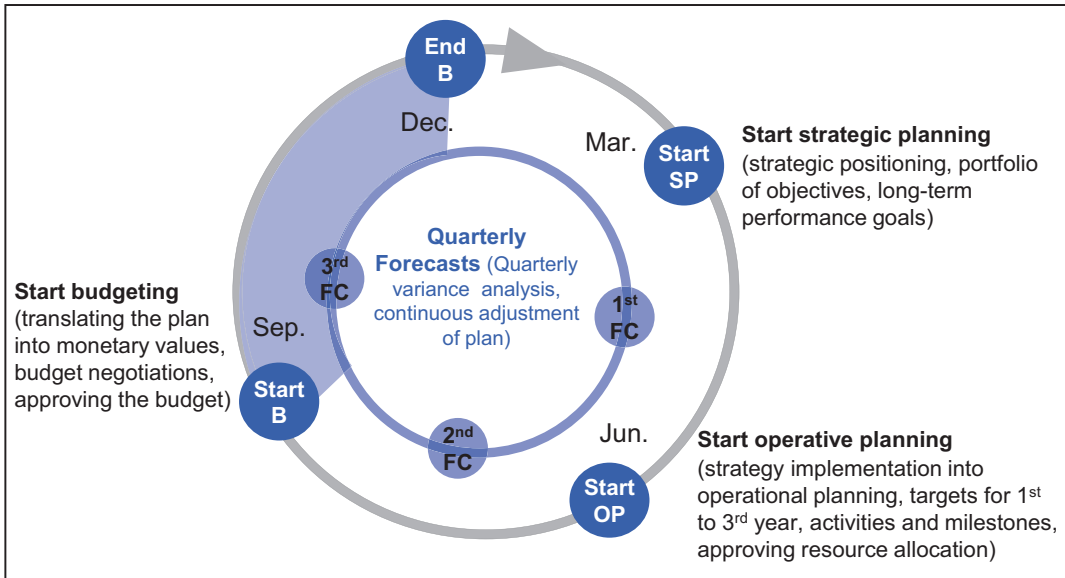
Fig. 10: The integrated process of planning, budgeting and forecasting

3.2.1   Planning and Budgeting

Objectives   The aim of operational planning and budgeting is to promote the active and systematic examination of objectives, measures and budgets in the organisational units. It is to make a substantial contribution towards supporting management in meeting the long- and medium-term targets derived from the strategic objectives, as well as in controlling the company and its individual units from a revenue and liquidity-oriented point of view.

Content   Operational planning creates an orientation framework for activities and decisions in the short and medium run based on strategic objectives. Targets and measures are determined, resources are allocated and, both for the overall company and its individual units, financial parameters are quantified. Elements involved include profit and loss account, balance sheet, cash flow, sales, costs, result, investment, projects, volumes, capacities and employees (see Fig. 11).

Controlling				Level 1

Planning, Budgeting and Forecasting

Process start	Sub-processes	Process end
Kick-off for operational planning according to planning calendar, regular and ad-hoc forecast dates	Setting up the process (planning and forecast dates, depth of detail, persons involved etc.)	Plans and budgets are approved
	Establishing and communicating planning premises and top-down targets	Forecasts are updated and measures have been determined
	Preparing, combining and consolidating individual plans and budgets	
Input	Checking planning results, adapting plans if necessary and approving planning	**Output**
▪ Strategic plan and planning targets	Preparing/updating forecast, comparing with the last forecast/plan/budget and analysing variances	▪ Annual financial plan, budget, forecast (income statement, balance sheet, cash flow etc.)
▪ Planning letter	Working out countermeasures	▪ Resources/employees
▪ Actual values, variance analyses		▪ Volumes & capacities
		▪ Countermeasures

Fig. 11: Structure of the main process „Planning, budgeting and forecasting"

Setting up the process

The integrated planning process starts with setting up the process. In this preparatory phase, all organisational aspects of pla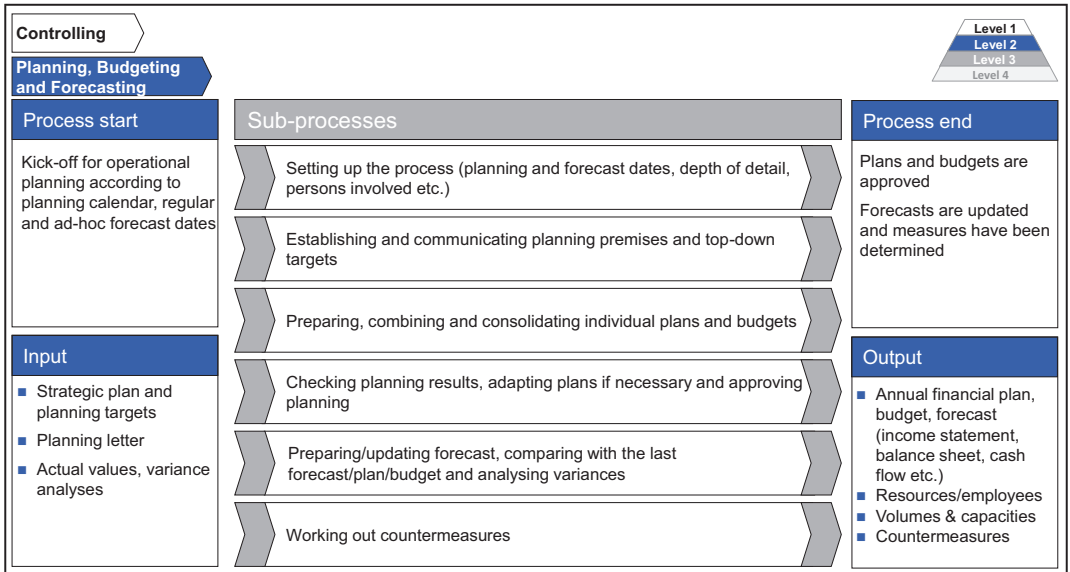nning (such as drawing up the planning diary, preparing the planning templates and forms, establishing and adapting the level of detail of planning) are to be handled. The preparatory activities can mostly be handled by the controller service; the milestones in the planning diaries are to be coordinated with the management.

Planning premises and objectives

What is critical for a planning process that uses resources efficiently and is based on the strategic objectives is the establishment of planning premises and objectives at the start of the planning process. Premises are necessary assumptions regarding conditions that cannot be influenced but are relevant for planning (e.g. development of crude oil price). The premises are to be established centrally, i.e. by a relevant department, and parallel assumptions are not advisable. Planning objectives are the specific targets and milestones in line with company strategy (e.g. increase in sales, funds available for investment). Targets are to be made transparent in order to dissolve potential target conflicts (e.g. growth vs. debt reduction) and to be able to break down the targets to operational planning levels. Only a well-managed top-down start of planning provides orientation for the following levels.

Centralised vs. decentralised planning process

While in centralised planning targets are set top-down, in decentralised planning targets are derived bottom-up or according to the „against the

stream" principle. Plans „close to business" are normally drawn up in a decentralised manner (e.g. functions along the value chain, such as distribution, production, purchasing), but for the sake of simplicity or competence, budgets are also managed centrally and thus planned centrally (e.g. training budget by the personnel department). Hence it is important for planning to be based on specific measures. If there is great insecurity in planning, then a flexible definition of targets can counteract this. Methods here include planning in ranges or establishing relative performance assessment.

Making plans plausible

The controller service – apart from continuously supporting the planners – has the task of calling in these individual plans in time, to summarise them and to make them plausible. Making them plausible not only ensures the quality of an individual plan's content, but also helps identify gaps (e.g. increase in sales in distribution planning without taking into account the need to expand capacity in the distribution team) or overlaps (e.g. similar investments at two locations) so these can be tackled properly.

Planning as a cyclical process

A central alignment of the plans towards a desired result is to be avoided, as this in most cases results in the planners losing their commitment to the targets to be reached. Planning, in addressing the open issues, has hence to be seen as a cyclical process that might require two to three planning loops. Better communication and coordination in setting goals and targets at the start of planning has a positive effect on the cooordination loops required. The time needed for this is to be taken into account in the – generally tight – planning diary. The results of planning thus established are discussed with the top management and approved. Experience has shown that the need for reworking plans usually arises shortly before these are to be approved. Controllers have to be prepared for this and must be able to deal with short-notice changes in final planning quickly and flawlessly with the use of planning tools.

Recommendations for a successful operational planning process

- Set up a controller service-internal kick-off in order to prepare planning.
- Draw up a new planning diary and communicate it to everybody involved.
- Take updates and necessary planning loops into account in the planning diary.
- Put down planning-relevant objectives and premises in a central document („planning letter") and coordinate the planning letter with the people involved at the beginning of planning.
- Start planning top-down and break down targets as early as possible in order to provide orientation for the planners right from the start.
- Differentiate planning into „running business" and change/development measures.

3.2.2 Forecasting

Forecasting is a planning activity and significantly interacts with operational planning and budgeting. The aim of forecasting is to provide information early on on deviations and variances from planning expected in the future, to develop focused measures to close gaps in targets and, if necessary, to initiate fast adaptations of the sales, cost and investment budgets, etc. under changing conditions.

Objectives

In the forecast, the future economic development and the effects on targets, plans and budgets are estimated, always taking into consideration countermeasures and resource adaptations. A forecast is hence more than just a simple prognosis. It deals with financial and non-financial information as well as looking at simulations and scenarios. A forecast can be conducted on both a regular (standard forecast) and an irregular basis (ad-hoc forecast), for the overall enterprise or for individual topics, units or products. Standard forecasts can be divided into different types, such as the rolling forecast or the year-end forecast. The expected value is made up of the realised actual value and the future value, the qualified new estimate on a defined period in the future, e.g. the rest of the year. It is thus possible via a forecast to utilise the improved state of knowledge during the year for controlling the company without changing the original plan.

Content

A forecast is usually made at least quarterly. As it takes the actual data as a starting point, fairly recent monthly or quarterly statements are important. The development of actual values compared to the previous forecast has to be analysed and the effect on the full year is to be determined.

Variance analyses

Based on this analysis, the most important result drivers (e.g. sales volumes and sales prices, prices of raw materials, deviations from the investment plan) are to be reworked together with the management and measures for improving the result have to be defined. These measures, which have to be included in the forecast (i.e. subsequently to be implemented), must be coordinated with the management and pursued in a measures controlling system. Going over the overhead costs on a cost-centre basis frequently does not make much sense, particularly in the case of monthly forecasts. Reworking the result drivers can, for reasons of time and resources, be effected on a more centralised basis, with a more active role of the controller, than this is the case in operational planning.

Reworking result drivers

With the year-end forecast, the validity of the forecast keeps increasing with every instance during the year, but at the same time the room for manoeuvre keeps decreasing. In dynamic industries, the first forecast can be used to analyse the budget in view of new insights and quickly identify areas for action. This does not change the obligatory nature of the original plan. The half-year and third-quarter forecasts are particularly important, as at these dates the current business year can already be

Increasing validity vs. decreasing room to manoeuvre

assessed quite well and measures for optimisation can be determined with some accuracy. Towards the end of the year, the focus is only on including measures to influence the result and the balance sheet, and therefore a passive prognosis of the result („profit warning"). Depending on the industry and the company's autonomy, it might be useful to move away from quarterly forecasts, e.g. if there is a strong seasonal element. Forecast dates could then be set in off-season (e.g. by 31st August after the end of the summer season).

Standard vs. ad-hoc analysis

The forecast, with the exception of an event-driven forecast, is strongly intertwined with the standard reporting process. The comparison of planned values with actual values and the comparison of planned values and future values are reported and commented on at the same time. An explicit preparation of the forecast process is only necessary if changes in the process (e.g. stronger centralisation) or the content (e.g. increased use of third-party services, simplification of material costs) are made or event-driven forecasts are to be conducted. Event-driven forecasts are ad-hoc analyses, which depending on the requirements call for cooperation between controller and line functions or other departments.

Forecasting and predictive analysis

The forecasting approaches described so far are based on traditional techniques of analysis that show past and future development of business activity on the basis of internal, structured data, for example in the form of planned and actual values, with the help of descriptive methods of analysis. As a further development of these traditional approaches, when using predictive analytics, in the course of digitalisation new approaches of data-driven or predictive forecasting emerge. Taking into account external data sources and using advanced statistical methods of analysis, amongst other things, makes it possible to predict key results. Making use of external and internal data sources, statistical models at first quantify the influence of a variety of value-drivers on key result figures. Building on this, the future development of business activity can be forecast from the current development of value drivers.

Example of application: sales forecast

A German car manufacturer recently, for example, implemented a pilot project in sales control. The defined framework parameters included a focus on a defined market, the sales of particular automobile types and total sales as target values, a daily forecast frequency, and a forecast horizon of one month.

Modelling was gradually refined in a three-step approach. First, forecasts for all automobile types were developed on the basis of simple time-series models and the historical sales figures available. The best results were delivered by a model that combines three types of time-series model (ensemble model). In the second step, external factors such as sales figures of competing products were prioritised using simple

machine-learning methods and the most important covariates per automobile type were incorporated in a time-series model with external factors. As a third variant, on the basis of granular receipt data from the sales system and advanced machine-learning methods, different models with varying parameters per type class were developed.

The mostly automated forecast enables the people responsible for the market a detailed prognosis of sales in the target market in the following month that is updated daily. On the basis of the experience of the people responsible, as well as of a comparison with past figures, the forecasts provide very good qualitative results.[7]

Recommendations for a successful forecast process

- Reduce the resources required, such as material and personnel costs, by critically estimating the level of detail required and the people/organisational units to be involved.
- Define the frequency of forecasts individually and on demand.
- Support the management's assessment of the forecast by providing relevant information such as extrapolations.
- Focus on measures that improve the result and establish a measures controlling system.

3.3 Investment Controlling

With the help of investment controlling, rational investment decisions are to be made and investment projects are to be managed successfully. For that purpose, investment controlling creates transparency regarding the profitability and financial feasibility of investments and establishes appropriate standards for their evaluation and documentation (see Fig. 12). — Objectives

Investment decisions are amongst the most difficult and important management decisions. In most cases, investments tie up significant funds and are highly irreversible. Investment controlling provides support in evaluating, prioritising and selecting, in planning and control, as well as in the follow-up analysis of investment projects. Investment controlling is closely connected to project controlling, as many investments are implemented in the form of projects or necessitate these. In investment controlling, however, the profitability and financial feasibility of investment projects rather than the organisational challenge of projects takes centre stage. Investment controlling can be divided into three major stages, namely planning and planning approval, monitoring and follow-up analysis. — Content

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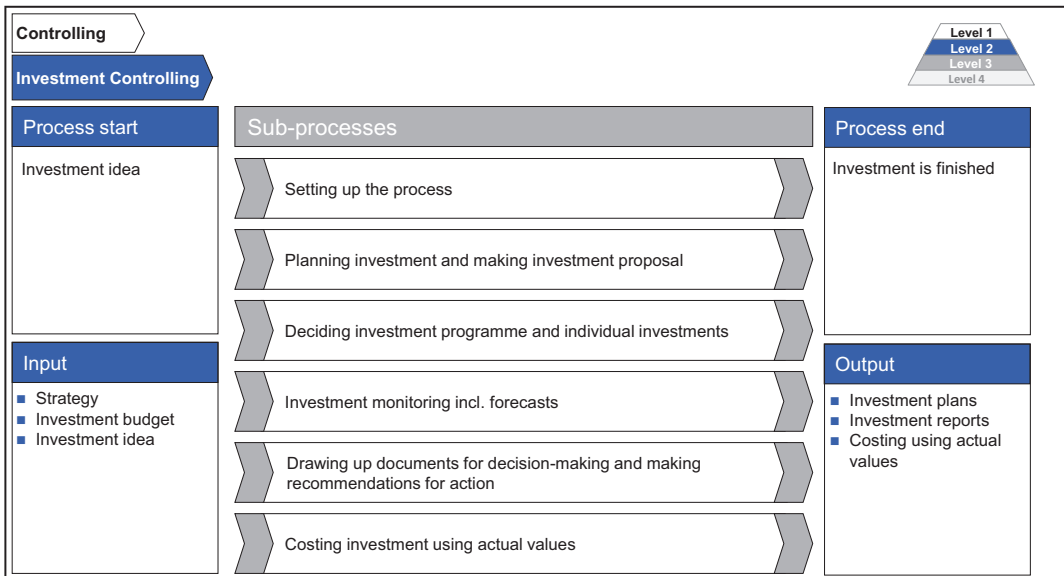[7] See Brauchle/Hanisch, 2017, pp.222ff.

Fig. 12: Structure of the main process „Investment controlling"

Set-up process
Investment controlling should follow clear standards and methods. These are defined in the set-up process and provide the framework, such as approval limits, capital budgeting methods or minimum yields for investment evaluation and management. The set-up process should be at the beginning and repeated at regular intervals in order to check the suitability of the defined standards.

Despite the close interconnectedness of investment and project, not every project is necessarily an investment. Investments are payments for capital goods (capital expenditure– CAPEX) such as property, plant and equipment, long-term financial assets or intangible assets, irrespective of whether they are purchased, produced in-house or leased. Investing normally means using significant funds. In line with the importance of investment decisions, exact standards for investment controlling, particularly as regards the approval process, are necessary.

Investment planning and approval
The journey from an idea to the investment proposal is accompanied by investment controllers, who assess investment amount, profitability and risks of the investment from the point of view of an individual project. Depending on the type of investment, various investment appraisal methods are used. It also has to be checked to what extent the investment has already been budgeted or results in further capital requirements. Substantial investments must also be assessed from an overall company perspective. Strategic fit, priority of the venture, effects on balance sheet

and main KPIs, remaining investment budget or additional capital requirement, interdependencies with other investment projects in the portfolio, and effects on the risk for the company as a whole are relevant topics from the company's point of view.

The sub-process „investment decision" consists of, on the one hand, determining the investment programme, which is often derived from strategic objectives and is decided on in the annual budgeting of the company or sub-areas. On the other hand, the sub-process includes the approval/rejection of specific individual investment proposals. These are checked for compliance with the company's targets and individually decided upon by the management or a special committee.

Investment decision

If the investment is approved, a detailed project plan is drawn up and the implementation of the investment is accompanied by decision-oriented reporting. Progress reports, comparisons of planned and actual values, variance analyses and forecasts establish the necessary transparency for early countermeasures. If conditions change significantly or the forecast is unfavourable, suggestions for alternative actions are developed for decision-makers.

Investment management

The exact documentation of changes and additions is facilitated by variance analyses and the costing of investment projects using actual values. These should be performed for all important and recurring investments after their conclusion (or abandonment) in the sense of „lessons learned". In the case of very long-term investments such as power plants, these can also take the form of forecasts before the project's conclusion.

Costing using actual values

Recommendations for a successful investment controlling process

- Make sure there are a simple investment handbook and templates that safeguard a uniform framework for investment assessment, decision and management.
- Interconnect strategic corporate planning, investment planning, financial planning, multi-year planning and annual budget.
- Document without gaps project additions and alterations (due to change requests/alteration requirements).
- Ensure that there are regular status reports on the investment's progress and forecasts concerning the investment budget required.
- Cost the project using actual values for lessons learned regarding future investments.

3.4 Cost Accounting

Objectives
The aim of cost, output and result accounting, or simply cost accounting, is to create transparency by correctly allocating costs, outputs and revenues to the relevant objects (e.g. products or business units) in order to support decisions and responsibilities with a view on costs, output and results. The process aims at providing a responsibility-related management result accounting as its output. Additionally, cost accounting aids in complying with legal stipulations (e.g. transfer price calculations).

Content
It is concerned with costs, outputs or results relating to products or services, or, on an aggregated level, product groups or units responsible for results such as business units. Cost accounting deals with recording, distributing, allocating, analysing and checking costs, outputs and results that emerge when goods are used up or produced in a company.

<table>
<tr><td colspan="2">Controlling</td><td>Level 1
Level 2
Level 3
Level 4</td></tr>
<tr><td colspan="2">Cost accounting</td><td></td></tr>
<tr><td>Process start</td><td>Sub-processes</td><td>Process end</td></tr>
<tr><td rowspan="3">Existing business transaction, updating cycle to be initiated (e.g. cost centre structures in planning)</td><td>Defining and maintaining master data</td><td rowspan="3">■ Calculations are available
■ Accounts are available</td></tr>
<tr><td>Conducting cost type accounting and cost centre accounting (incl. cost allocation)</td></tr>
<tr><td>Making offer/order/plan calculations (preliminary cost calculation)</td></tr>
<tr><td>Input</td><td>Making accompanying and actual cost calculations</td><td>Output</td></tr>
<tr><td rowspan="4">■ Data from the bookkeeping systems
■ Activity recording
■ Data from external sources</td><td>Calculating results for the period</td><td rowspan="4">■ Cost and result reports e.g. by organisational unit, cost centre or cost object (product costing per period)
■ Calculations (product unit costing)</td></tr>
<tr><td>Drawing up accounts for the period in cost accounting</td></tr>
<tr><td>Conducting variance analyses</td></tr>
</table>

Fig. 13: Structure of the main process „Cost accounting"

Master data and alignment of IT systems
Cost accounting, building on external accounting, is the core of managerial accounting. It starts with the process of defining and maintaining the master data (amongst other things, cost types in close coordination with accountss from financial accounting, cost centres or cost centre structures), which have to be adapted constantly to the respective company structure and the business model. The defined data models

are to be put into the respective IT systems. To ensure the control effects, the structures of cost accounting have to match the existing management structures and responsibilities.

Cost type and cost centre accounting is based on the defined master data of cost accounting (see Fig. 13). The most relevant cost information is already recorded in bookkeeping when the receipts are recorded (based on master data and specific ordering requirements). To ensure uniform recording and allocation of costs and outputs, obligatory account assignment rules have to be defined and documented in an account assignment handbook.

Cost type accounting, account assignment rules

Cost type accounting amends and structures the costs and outputs in the firm based on a uniform chart of cost types or accounts (based on the existing chart of accounts) and ensures the allocation of primary costs to the cost centres actually responsible for incurring these costs. As a preliminary activity for cost centre accounting and calculation, cost types can be split into fixed (structure costs) and proportional (product costs) components.

Proportional and fixed costs

Cost center accounting includes internal cost allocation of services exchanged and is a prerequisite for product unit costing (costing) and product costing per period (short-term result calculation). For doing so, the cost centers rendering services are to define appropriate output processes or outputs and, at the cost centers receiving services, the outputs consumed have to be recorded. The aim is to allocate the costs of internal services transparently to the unit consuming the output. Across the board allocations of costs that cannot be clearly assigned should be avoided. After cost center accounting, all costs are recorded in the final cost centers as primary and secondary costs. On this basis, the final cost centers determine the allocation rates for product unit costing.

Cost center accounting

The sub-process of offer/order/plan calculation (as a preliminary calculation) includes determining the cost of goods sold for individual products or orders as planned costs or standard costs. Apart from the mere establishing and allocation of costs, this information can also be used to determine sales prices. Preliminary cost calculation depends on the respective business model. A producer of standard goods with a very stable production programme, for instance, can conduct the preliminary cost calculation on the basis of standard or planned costs at the product level during the planning process. Results of the calculation are normally fixed for a particular period. Companies with customer-specific production, on the other hand, generally pre-cost each order.

Preliminary cost calculation

In contrast to preliminary cost calculation, accompanying or actual cost calculation is used to record and allocate the actual costs to the cost object. Normally this is done at the level of individual production or

Accompanying/actual cost calculation

customer orders. By comparing preliminary and actual cost calculations, important information can be provided for variance analysis. In order to valuate inventory or calculate transfer prices, actual production costs are to be used, i.e. planned values plus (not necessarily all) variances. It is essential to take legal stipulations (e.g. IFRS, tax laws) into account here.

Accounts for the period   Following a period, accounts for the period for cost accounting have to be drawn up. These include the calculation of the operating result and the correct allocation of costs and outputs to the units (e.g. business fields). When determining the result for the period, both the cost of sales method and the period costing method can be used. As the calculation of the result is designed as a multi-step contribution accounting method, and because of the stepwise allocation of fixed costs (structure costs), for certain levels of contribution margins, more detailed dimensions of analysis than the units of the company, such as customer or product groups, can be defined.

Variance analysis   To support the management in defining measures, cost accounting provides variance analyses as a preparatory activity for deriving measures. At various levels, standard or planned costs (flexible marginal costing) are compared to actual costs. The most common variance categories are price and volume variance, both on the sales and the purchase side. In addition, production cost centres calculate usage and capacity variances.

Recommendations for a successful cost accounting process

- Make sure there are clear and uniform definitions of all terms in cost accounting.
- Try to integrate internal and external accounting, e.g. by using uniform value concepts.
- Regularly analyse all products, customers, units, etc. regarding their profitability.
- Make use of the transparency gained in cost accounting in order to initiate measures that improve the result.
- Critically question the details required (e.g. number of cost centres).
- In internal cost allocation, take care of transparency and simplicity and critically analyse the necessity of allocations.

3.5   Management Reporting

Objectives   The aim of management reporting is to produce and deliver information relevant for decision-making in the sense of relation to objective/degree of goal attainment, in a recipient-oriented and timely manner for the

control of the company. With the information and documentation task, reporting is to ensure company-wide transparency (see Fig. 14).

As a rule, financial and non-financial information in the dimensions Actual, Actual previous year, Planned, Target and Forecast is provided in the form of regular standard reports as well as ad-hoc reports. Based on identified and explained variances and prognoses on goal attainment (comments), specific recommendations for countermeasures are worked out and coordinated with the management. Relevant elements include, amongst other things, profit and loss account, balance sheet, cash flow, sales, costs, result, investment, projects, volumes, capacities and employees, related to the management units in the company.

Content

In order to take into account a dynamic company environment, reporting should also include dashboards/cockpits. These vary significantly regarding their suitability for interactive use. Using selection fields and drill-downs, managers can take different views on the reporting dimensions depending on the respective current focus.

In addition, in times of ever greater data volumes, data analysis is gaining in importance. In intensive cooperation with IT, systematic approaches towards data provision and analysis must be developed and the interfaces between the two areas must be defined exactly. The main value added then emerges when controlling creates messages for the management (see Fig. 15).
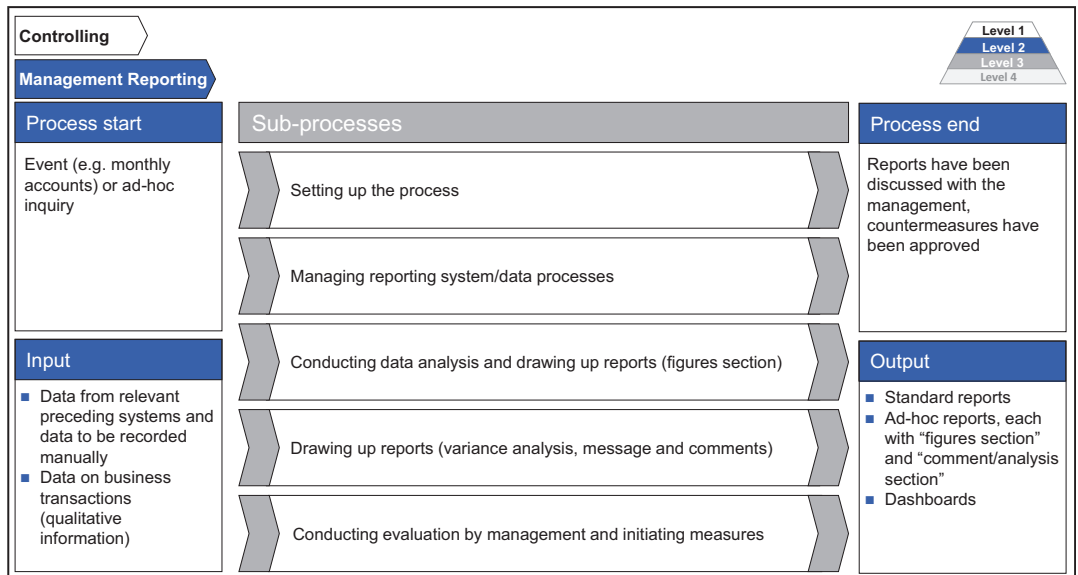

Fig. 14: Structure of the main process „Management Reporting"

Control concept and set-up

An important prerequisite for successful management reporting is a clear business control concept for the company, which establishes how the different organisational units in the company are controlled. From this, it can be derived which information reporting has to provide for which recipients. Similarly, the structure of management reporting is derived from this. Specifically, dimensions of analysis, report structures and ratios are defined and responsibilities and the circle of recipients are established.

IT architecture and data processes

The control concept leads to a business data model, which is implemented by appropriate IT systems that are integrated into the overall IT architecture of the company. Supervising the reporting systems is a major cross-sectional task in the management reporting process. This includes maintaining the systems and tools for reporting, providing structured data processes (data collection, maintenance, processing, distribution), maintaining interfaces to the preceding systems, preparing and maintaining reports in the system, and supporting the users (management & controllers) in using the report systems.
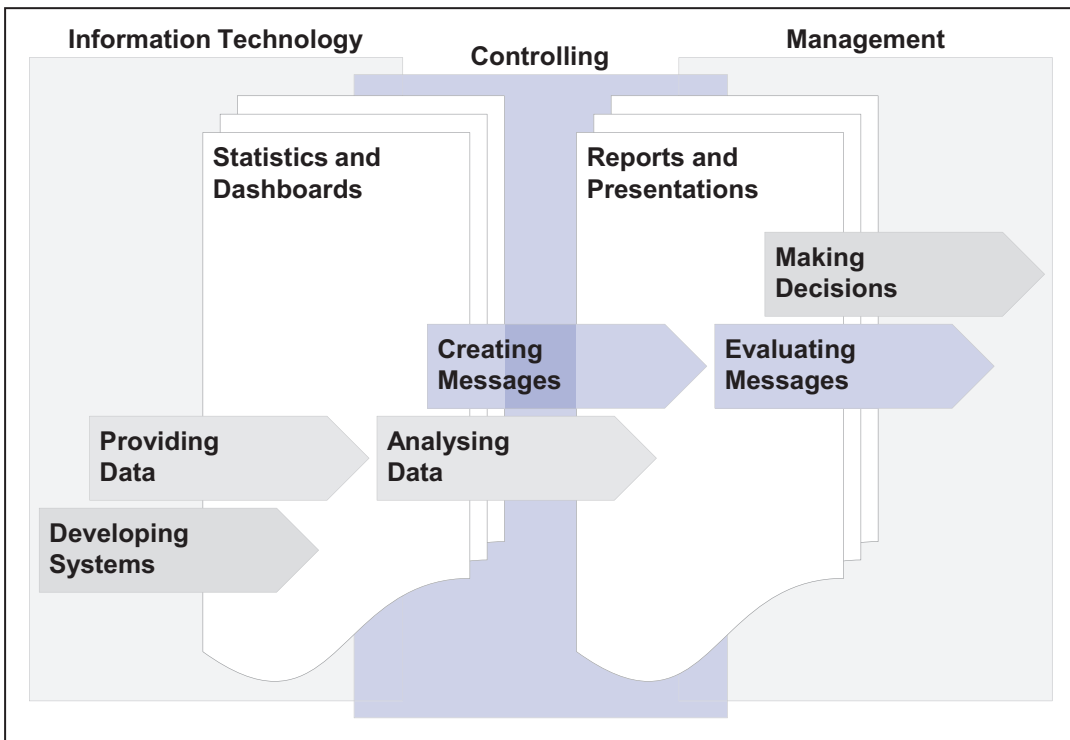
Fig. 15: From data to decisions[8]

8 © HICHERT+FAISST, www.hichert.com

In the report preparation process proper, first data are collected and a preliminary analysis regarding data relevance is conducted (automatically/manually – from preceding systems or via report forms). This is then made plausible on a technical and a business level and the data are combined, including aggregation and consolidation according to the data model defined. As a result, the business data are then available in the form of the defined reports as tables and graphs. They compare the values currently achieved with the respective values from comparable periods, the target, planned and also the benchmark values, and thus illustrate variances and changes.

Drawing up reports – figures section

After approval (and possibly also distribution) of the „figures section" of the report, the report analysis is conducted. It includes a discussion of the values achieved in the light of relevant comparative values, the addition of qualitative information, such as e.g. following up measures, projects, special situations, etc., a prognosis on goal attainment and a comment on and interpretation of the results. Ideally the report includes a specific message for the management as regards the goal, further comments and possibly already specific suggestions for measures to be taken. With the conclusion of the analysis and the full distribution of and approved access to the reports, the report preparation process is finished.

Report analyses – adding qualitative information

The final step in management reporting is the active discussion of the report contents in management. This can be done individually, between manager and controller, or in supervisory or management board meetings. Here, reports are presented and discussed, suggestions for measures to be taken are considered, actions are initiated and the progress of measures taken is monitored.

Management, discussion, measures

The process of management reporting as described above stands for a traditional view that is rapidly changing in the face of digitalisation. New technological developments, known by buzzwords such as big data, predictive analytics, in-memory computing, cloud computing, mobile apps, digital board room, internet of things, industry 4.0 and more, enable a new dimension of reporting, in respect of both time and quality, as well as faster and more automated processes. Although the digital potentials can be conceived already, they have not actually been much used for test purposes in corporate practice yet. Many companies, in particular SMEs, are still biding their time, others gather early experience in pilot projects, while just a very small group of companies in the vanguard actually make use of the technical potential on a broad scale. For this reason, it would be inappropriate to define the conceivable opportunities already as a standard in the process model. Still, it is important to prepare for the changes to come and to gradually realise the potentials in the process of management reporting:

- Use of big data and analytics function for new, deeper insights and better decision-making support for the management
- Stronger focus on making the quality of the underlying data plausible (see also the new process of data management, section 3.9)
- Need for visualising large amounts of data better
- Near-time and real-time reporting in addition to the classic reporting cycles
- Use of fast what-if analyses, simulations and scenarios for interpreting the report contents
- Clear automatisation of formerly manual activities in reporting
- Stronger analyses by managers themselves while at the same time increasing coordination efforts of controllers to secure „one version of the truth"
- Cooperation with data scientists in developing analytics models
- Fewer standardised print reports, more interactive online reports in various formats, from large screens for analysis together in the team to mini formats on mobile phones or watches.

Recommendations for a successful management reporting process

- Make use of management reporting as a central anchor point in controlling and management meetings.
- For preparing your reports, use the IBCS (International Business Communication Standards).
- Prepare a one-page „management summary" as an introduction to the report.
- Include non-monetary values.
- Implement business intelligence systems outside the ERP system (but integrated into it) and keep reporting structures and processes flexible and controllable.
- Automatise report processes as much as possible in order to save time for analyses, comments and measures.
- Prepare a binding reporting diary to support a professional process management of the reporting process.

3.6   Business Partnering

The aim of business consulting and management support by controllers is coordinating across departments and ensuring the rationality of decisions within the management process of setting objectives, planning and control. Business-related thinking and behaviour is to be anchored in all

management levels. Because of the rising need for permanent further development of the company, controllers are becoming more and more popular as business consultants in initiating and implementing change processes. Through their analyses, function-specific controllers aim at specifically identifying any existing need for adaptation in established processes and accompanying the implementation of the change project.

Controllers, as service providers with a regulating function, make sure that the main controlling processes are used in the company and design them in the process of setting objectives, planning and control. They support the management with useful tools and information relevant for decisions, show the effects of alternative actions and create transparency across departments relating to strategy, result, finances and processes. They are the management's „sparring partners" and „business conscience". The sub-processes listed in Figure 16 are examples.

Content
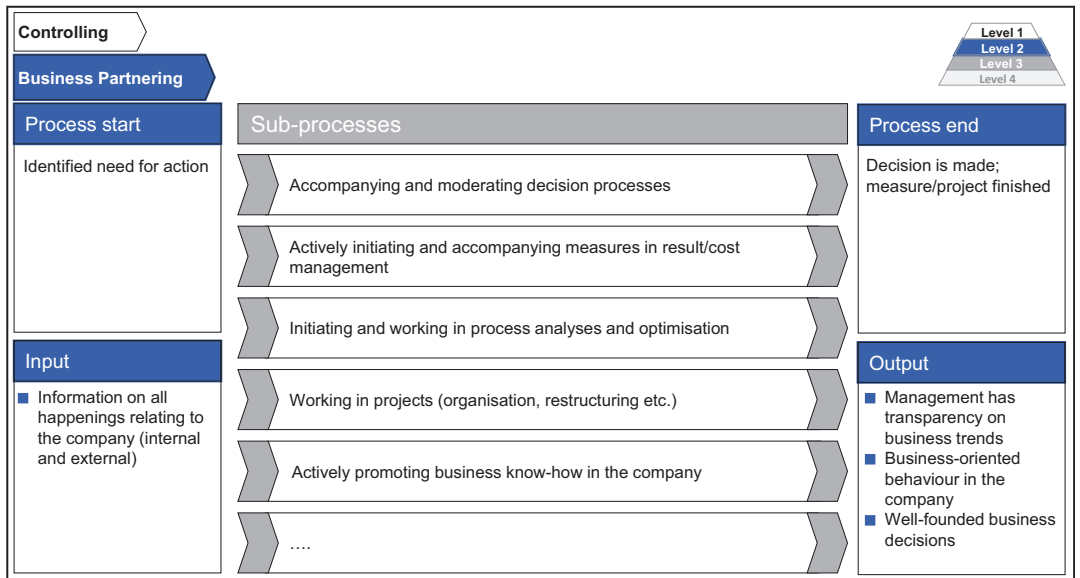
Fig. 16: Structure of the main process "Business Partnering" (example)

Besides expert competence, including extensive method knowledge, focused and target-oriented consulting requires a high degree of business competence, for example knowledge on relationships and processes regarding the operative area, the market and the products. In order to recognise holistic relationships and to make them transparent for management decisions, hierarchical and departmental interfaces have to be bridged.

Target-oriented consulting

Requirements of controller competences

For the successful implementation of goal-oriented advice, controllers require, beside their expert competences, not only social, but also activity and implementation competences. As regards social competences, controllers, as management partners, should have good language skills and an ability to communicate. Additionally, consulting competences and the ability to solve conflicts are essential. Against the backdrop of initiating and accompanying change processes, for controllers to be successful in this main process, a pronounced willingness to act and the ability to provide impulses is decisive.

Controllers as sparring partners and business conscience

Consulting supports the company's managers in managing. At the same time, the controller himself has a managing function. Through his regulatory function, the controller, for instance, determines what is planned and how this is done. Management support can be found in all processes of the controlling process model. Controllers, by means of internal communication, exemplary behaviour and trainings, infuse all management levels with business-related thinking and behaviour. They support the manager as „sparring partners" and the „business conscience". The sub-processes of management support are designed company-specifically in the main processes.

Strategic consultants

A special form of business consulting increasingly focuses on change processes and projects in the company. Controllers can be used not only to support decision-making during the change process, but also to identify the need for change. The field they are active in is by no means restricted to operational topics such as process optimisation. Instead, the controller has to act as business consultant also on the strategic level of the company. Controllers, due to the simultaneous application of their planning, control and coordination functions, have a comprehensive overview of the company's overall development and should derive not only operational but also strategic control impulses from this. Instead of using analyses of causes relating to the past, controllers fulfil their mission as consultants better when they provide future-related analyses. Content-wise, strategic questions concerning future profitability and options for adapting the business models are central items.

Recommendations for a successful business partnering process

- Make yourself knowledgeable regarding the business model, the business processes, products, markets, competitors and customers.
- Make yourself familiar with objectives, processes and general conditions in the individual areas.
- Provide the departments with orientation on the company goals, the holistic view of the company and the relationships between subordinated goals.

- Explain the controlling instruments and methods and use them in the context of the subject area.
- Contribute pro-actively in the day-to-day business, in projects and in company and organisational development.
- Make sure there is a controller as a contact/person responsible for each area.

3.7 Project Controlling

Project controlling aims at assisting the management in successfully selecting and managing projects. It creates transparency regarding benefit, results and profitability, as well as adherence to quality, time and cost targets, of projects. Project controlling thus establishes the foundation for successful project management (see Fig. 17).

Objectives

Project controlling supports all project stages fromevaluating prioritising and selecting, planning, and ongoing controlling, to checking goal attainment once a project is finished.

Content

Controlling		Level 1
Project Controlling		Level 2
		Level 3
		Level 4

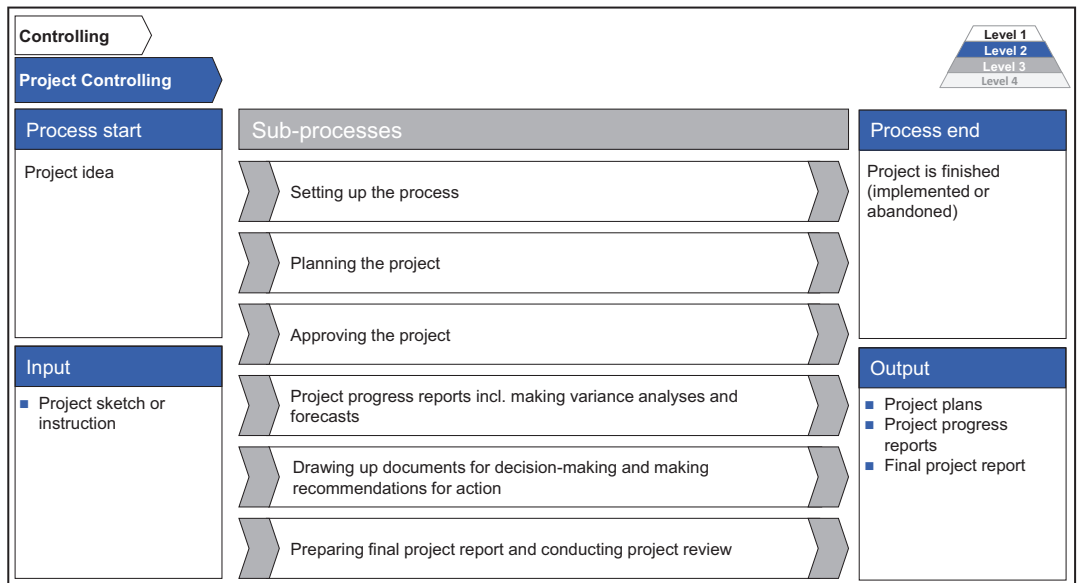| Process start	Sub-processes	Process end
Project idea	Setting up the process	Project is finished (implemented or abandoned)
	Planning the project	
	Approving the project	
Input	Project progress reports incl. making variance analyses and forecasts	**Output**
■ Project sketch or instruction	Drawing up documents for decision-making and making recommendations for action	■ Project plans ■ Project progress reports ■ Final project report
	Preparing final project report and conducting project review	

Fig. 17: Structure of the main process „Project controlling"

Project controlling should follow clear standards and methods. These are defined in the set-up process and provide the framework for project selection and management. The set-up process should therefore be at the

Set-up process

beginning and repeated at regular intervals in order to check the suitability of the defined standards. Initially criteria have to be defined that have to be fulfilled for a project to be called a project and so project controlling can be conducted. Typical features of a project include a task that is limited in its extent, both content- and time-wise, with a defined start and end, an appropriate volume, the uniqueness of conditions in their totality, generally cooperation across business areas (interdisciplinarity) and the specific project organisation. Projects require clear targets regarding content, date, budget, result and benefits. Project phases such as analysis, definition, planning, realisation and final phase, as well as criteria for progressing from one phase to another, or abandoning the project, should be established. Depending on type, length and priority of the project, as well as in line with the processes of corporate controlling, methods for prioritising the project, contents and frequency of reports, possibly the desired returns and the process of risk detection and evaluation are defined.

Project planning: from project idea to project application

The path from project idea to project proposal is accompanied by the project controller, who supports the project management,defines project targets, evaluates the project's benefit and estimates costs and outflows. Earlier projects can be used as a comparison here. After preparing a project structure plan that establishes sub-processes, work packages and milestones, a bottom-up project and budget plan, as well as a risk analysis follow.

Project approval

The project proposal thus resulting is checked for compliance with the company's specifications and presented to the management, or another decision-making body, for a decision. The project should be integrated into the overall project portfolio and budget of the firm. In case of budget or capacity bottlenecks, measures to improve efficiency or the prioritisation of projects are suggested and their effects are made transparent.

Project control

Once the project is approved, the specific project planning starts and project control is supported by comparing planned with actual values. Project progress reports with comments and variance analyses create the transparency required for potentially required countermeasures and a forecast of the project end. If the conditions change significantly or the forecast looks unfavourable, alternative actions are worked out, evaluated from the point of view of the project's and the company's objectives and a recommendation for action is prepared for the decision-makers, including the potential abandonment of the project. The exact documentation of project changes and additions facilitates variance analyses and costing the project using actual values. This should be done in any case once the project is finished (or abandoned). Comparing planned and actual values, as well as using variance analyses, makes it possible to draw conclusions for follow-up projects (lessons learned) and should be summarised in a

final report. Apart from variances relating to content, dates or budget, it is also advisable to evaluate the cooperation in the project team.

Recommendations for a successful project and investment controlling process

- Make sure there is a simple project handbook that provides a project method and a framework for project work.
- Integrate project budgets into the annual budget and planning for several years.
- Fix clear criteria for abandoning the project.
- Document any project additions and changes without exception (through change requests).
- Provide regular status reports regarding the project's progress.
- Cost projects and investments at actual values after they are finished, for comparison and lessons learned.

3.8   Risk Controlling

The aim of risk controlling is to safeguard the firm's long-term existence by orderly and consciously dealing with risks and opportunities. Risk controlling is to ensure opportunities and risks are transparent and aims to improve the quality of planning by identifying and controlling early on positive and negative influences on profitability and cash flow in a continuous process (see Fig. 18). | Objectives

Risk controlling is a company-wide process that includes identifying, recording, analysing, evaluating and checking risks, as well as deriving and implementing suitable risk prevention measures. This is to be achieved within the framework of established risk policy and strategic orientation. | Content

Every management activity, and therefore also controlling, is confronted with the fact that the future cannot be foreseen and hence with risks and opportunities. They are included in operative and strategic planning mostly implicitly in the form of an expected value, derived from the average expected probability of the event occurring. Possible results are condensed into one value, which results in the loss of the information on distribution, which is valuable information on planning uncertainty. This knowledge about opportunities and risks connected with individual planned values exists implicitly with the respective planner, but is rarely formulated explicitly. Apart from the expected value, it is also common to show risks in the form of surcharge rates in various controlling instruments, e.g. risk | Risks and opportunities

costing or risk surcharges when determining the cost of capital and evaluating an investment. Risk controlling makes it possible to integrate opportunities and risks explicitly into controlling by showing the distribution or distribution function of important plan assumptions and results, resulting in planning that is closer to reality. It might also be useful to determine the resilience of important plan parameters by means of marginal scenarios.
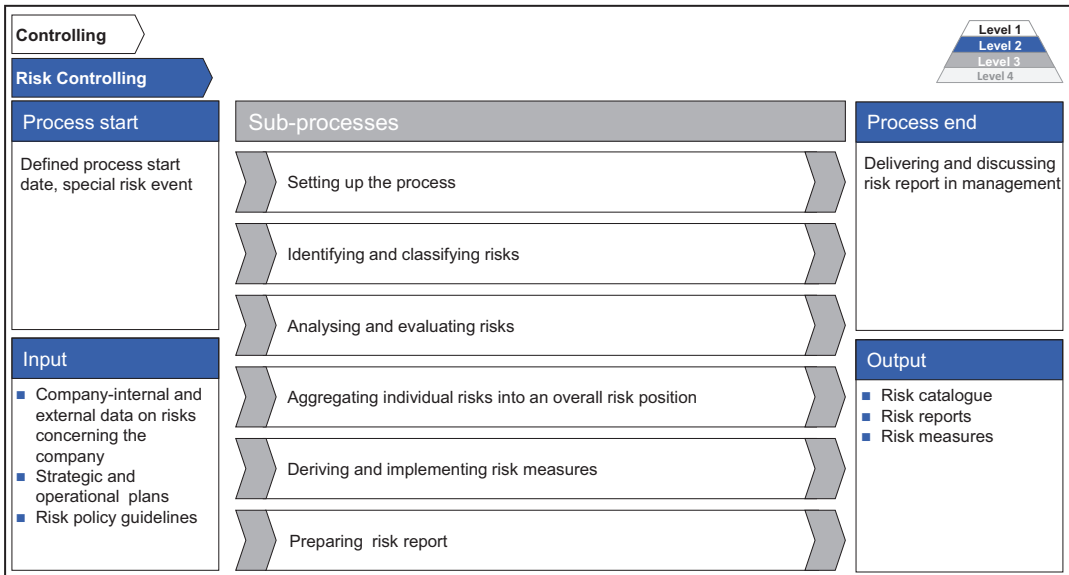

Fig. 18: Structure of the main process „Risk controlling"

Identification, quantification and aggregation

For an opportunity and risk controlling suitable for controlling, it is necessary to, as fully as possible, identify, classify (risk inventory, risk catalogue) and, if possible, quantify the relevant risks on the basis of the company's risk-policy guidelines. This means that the distribution functions of the individual risks have to be established either subjectively or on the basis of historical data. The evaluated individual risks are then aggregated into one companywide overall risk position, taking into account any interdependencies. Only aggregation enables the analysis of the opportunities and risks connected with planning on a company level. This method is relevant for all planning tools (forecast, operative, medium-term and strategic planning, balanced scorecard). Risk identification and risk assessment should (depending on the volatility and dynamics of the business) be updated at least once a year. In between, additions are made if there is reason to do so.

As in practice the risk controlling process cannot be anchored with the controllers compulsorily, it is important from a company-control point of view to integrate information on opportunities and risk into reporting. For this purpose, either a top ratio is integrated into management reporting (e.g. „risk-adjusted EBIT" as an addition to EBIT as an operative measure of result) or a comprehensive risk report is integrated into the controlling report quarterly. This also furthers the harmonisation of reporting dates and the discussion in meeting routines. Recognising risk-induced ranges, i.e. the distribution around a target value of a company, has to result in the derivation of target-oriented (risk) control measures. These control measures are to be included in a measures controlling system, analogous to the measures derived from the monthly variance analysis of planned and actual values and the quarterly analysis of planned and future values, in order to make sure they are binding and effective.

Integration into reporting

Recommendations for a successful risk controlling process

- Identify plan assumptions that are particularly risk-prone.
- Draw up and maintain a catalogue of the risks identified.
- Quantify and aggregate the risks fully.
- Integrate the risk information into the controlling reports.

3.9   Data Management

The aim of this process is to ensure that all information the management requires in their regular management processes is available in reliable quality. While the process of management reporting (see section 3.5) is mainly concerned with the relevance of the information content, the process of data management has the task to safeguard data quality, defined as the provision of correct information content. In addition, it has to be made sure that the controller organisation can exert governance over the information that is relevant for management purposes both from an operational and a strategic angle.

Objectives

The process of data management is concerned with the following aspects:

Content

a) the business data model, which provides the content structure,

b) the data flows which the modelled data provide,

c) the material quality of the data and

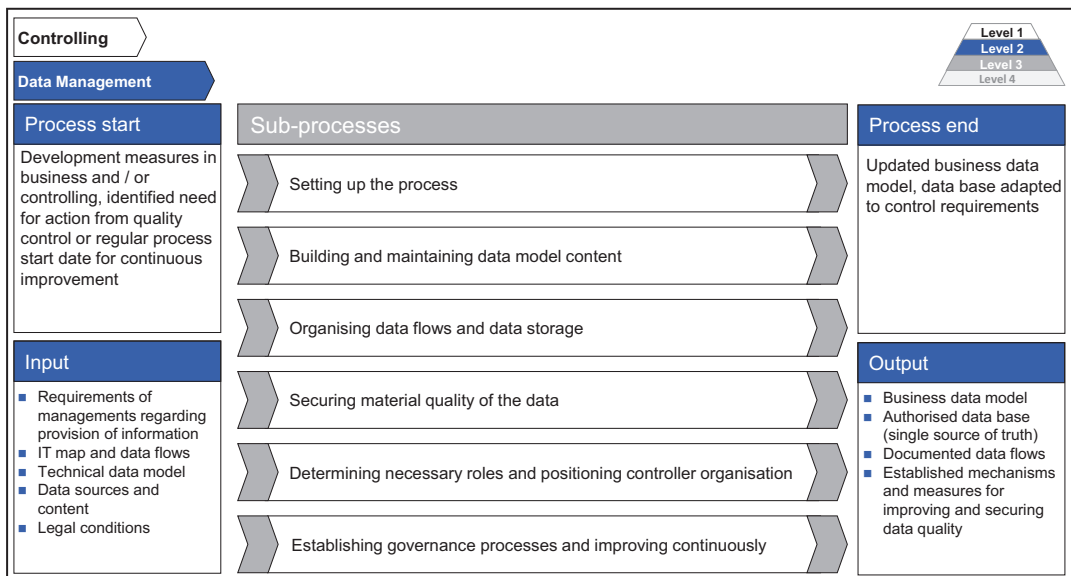d) the required role allocation, as well as governance and further development processes.

Controlling				Level 1
Data Management				Level 2 / Level 3 / Level 4

Process start	Sub-processes	Process end
Development measures in business and / or controlling, identified need for action from quality control or regular process start date for continuous improvement	Setting up the process	Updated business data model, data base adapted to control requirements
	Building and maintaining data model content	
	Organising data flows and data storage	
Input	Securing material quality of the data	**Output**
■ Requirements of managements regarding provision of information ■ IT map and data flows ■ Technical data model ■ Data sources and content ■ Legal conditions	Determining necessary roles and positioning controller organisation	■ Business data model ■ Authorised data base (single source of truth) ■ Documented data flows ■ Established mechanisms and measures for improving and securing data quality
	Establishing governance processes and improving continuously	

Fig. 19: Structure of the main process „Data management"

On the basis of a business data model, a central data source is established in the company and the management is provided with relevant and valid information by means of ordered data flows. As organisations and their business change constantly, it must be made sure that both the business model and the technical foundation are constantly adapted to the current requirements and conditions.

Set-up of the process

In companies, there can be an almost incalculable number of data sources. It would be neither pragmatic nor useful to make the controller organisation responsible for all data sources and the quality control of all data contained in these sources. Using a top-down approach, it must be identified which data sources are relevant for management. Besides the ERP core systems, such as accounting and payroll accounting, these are preceding systems that deliver to the core systems, such as invoicing or order management. For each preceding step of data storage it must be estimated to what extent and aggregation the content of these preceding systems is relevant for the management or primarily used for the operational business.

Building and maintaining the content of the data model

Based on this distinction, the process of data management establishes the data-related foundation for the control processes based on it, such as planning and reporting. Creating a data model from a business point of view is the central element. In the data model, hierarchies and characteristics (for instance of accounts, cost centres, employees, material,

54

products, customers...), amongst other things, are established for the individual areas (such as the „data cluster" finance, customer, and production data...). The data model comprises that data space that is available to preparers and recipients of reports for planning, reporting, and analysis purposes, in order to be able to make decisions based on this. It can be assumed that the data model's content and technology will be subject to alterations over time and so has to be capable to change with the organisation.

Those data sources and content that have been identified as relevant for management (and are therefore also relevant in planning and reporting) should be fed into a central data base (e.g. data warehouse, data stack), which provides the management with authorised information („single source of truth"). It is important to note that not all information in the company has to be included in this data source. For example, a conscious decision may be made to include only the group accounting standards in the central data base, but not the local standards, or not to include detailed operational data, which are only relevant for one step in the value-added chain, in the single source of truth. It also has to be determined who is responsible for the technical implementation of the data management processes, which in most cases will be the IT department. The controller organisation here takes the role of a client.

Organising data flows and data storage

In order to ensure the material quality of the data, group- and companywide compulsory measures have to be taken. Typical measures are group guidelines for the uniform recording of business transactions, controlling instructions on how to deal with organisational accounting elements (e.g. cost centres or profit centres) or specifications on maintaining various master data. To make the data quality plausible, reports must be established that are able to automatically identify outliers, missing information or data inconsistencies. Because of big data and the increasing use of external, partly unstructured data (e.g. social-media data), establishing effective measures to safeguard data quality is essential.[9]

Securing the material quality of the data

Additionally, it often makes sense to centralise activities from an organisational point of view (e.g. a central unit that handles master-data management). These units need not be part of the controller organisation.

The process steps described show that data management is a task that concerns all areas and units of an organisation. Therefore, it is particularly important to define roles clearly and to set apart the task and

Establishing roles and positioning the controller organisation

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[9] See Techmann/Möller, 2016, p. 558.

responsibility of the controller organisation clearly from other tasks. When establishing the role, it is helpful to take the content of the data into account. The controller role can generally have two forms: a) the controller organisation has end-to-end responsibility („controller as data manager") or b) the controller organisation sets standards that have to be adhered to in order to use the data emerging from the control processes sensibly („controller as data governor"). End-to-end responsibility includes all targets, standards, conceptional tasks and control mechanisms that are necessary for a data cluster. This makes broad sense, for instance, for financial data. For other areas, such as data that come up along the value chain, the controller organisation will be restricted to help prepare or set standards and processes. In practice, there is a grey area that has to be tackled in the individual company, as controllers are also active as production, logistics, sales controllers, etc. and can assume a more active role also in operational data clusters. Generally, the controller organisation must either be responsible itself for all data contained in the single source of truth or be able to set quality standards and check their compliance.

Establishing and improving governance processes

The role described above legitimises the controller organisation to establish and run governance processes. All instruments that are used to ensure the material quality of the data are put to work and provide the basis for regular measures to improve data quality. In addition, on the one hand meeting routines have to be established („KVP circles") that tie into the standard control processes (e.g. preparing and following up planning) and on the other hand initiatives arising from the situation have to be made (e.g. simplifying various structures).

Recommendations for a successful data management process

- When first establishing the process, choose a top-down approach and focus on the "management-relevant" data.
- Controllers must be able to take an active role in data management without being responsible for all data. The management must support this role.
- Establish a central data source ("single source of truth") that gives the management access to authorised, quality-controlled information. Note that not all information available in the company need be included.
- Establish reports that can check the data quality formally for missing or inconsistent information and show flaws in data maintenance.
- In case of data-quality problems, always take a look at the whole chain of effects ("record to report") and do not just correct data errors but also adapt the processes if necessary in order to avoid future errors.

- Adapt the data model to current requirements together with the users. It may make sense to implement changes not immediately but instead to collect these in the sense of a "release policy" and implement changes in bundles.
- Check actively whether newly emerged internal and available external data sources are relevant for the management and, if required, include them in the single source of truth.
- Make sure that you have the know-how and resources at the interface of business and IT to implement changes in content in a technically correct manner.

3.10 Further Development of Organisation, Processes, Instruments and Systems

A central aim is to further develop the controlling processes, instruments and systems used in the company continuously. In particular, it has to be examined which processes have to be adapted, which processes could be dropped and which areas have to be developed in general. By designing new and further developing existing controlling processes, structures, instruments and systems, the effectiveness and efficiency of controlling, after all, are to be improved. Apart from improving processes, instruments and systems, the further development of the controllers themselves is the main objective. A goal-oriented competence management serves to convey controlling-specific values, expert knowledge and qualifications that enable controllers to tackle current and future challenges independently.

Objectives

The process of further development of organisation, processes, instruments and systems also includes moderation, knowledge transfer, support and training/qualification of employees outside the controller service. This also includes the introduction of standards and guidelines. Controllers have the task of making quality standards measurable, as well as to permanently communicate quality and quality standards in order to achieve, and ideally exceed, higher quality standards. Quality management and the continuous improvement process are outlined in section 3.11. In a final example, the process of deliberating whether to transfer and the actual move of processes to shared service organisations, which frequently takes place during optimisation, is described. The sub-processes listed in Figure 20 are examples.
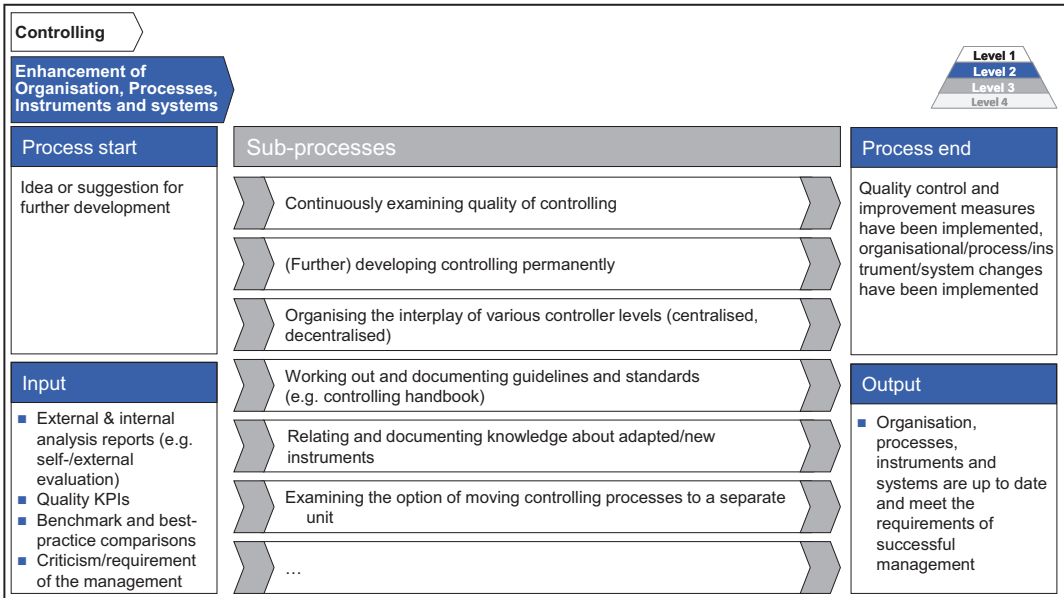
Content

Controlling

Enhancement of Organisation, Processes, Instruments and systems

Level 1
Level 2
Level 3
Level 4

Process start	Sub-processes	Process end
Idea or suggestion for further development	Continuously examining quality of controlling	Quality control and improvement measures have been implemented, organisational/process/instrument/system changes have been implemented
	(Further) developing controlling permanently	
	Organising the interplay of various controller levels (centralised, decentralised)	

Input	Sub-processes	Output
■ External & internal analysis reports (e.g. self-/external evaluation) ■ Quality KPIs ■ Benchmark and best-practice comparisons ■ Criticism/requirement of the management	Working out and documenting guidelines and standards (e.g. controlling handbook)	■ Organisation, processes, instruments and systems are up to date and meet the requirements of successful management
	Relating and documenting knowledge about adapted/new instruments	
	Examining the option of moving controlling processes to a separate unit	
	…	

Fig. 20: Structure of the main process „Further development of organisation, processes, instruments and systems"

In order to safeguard a sustainably efficient and effective management through controlling, organisation, processes, instruments and systems have to meet the current and expected future requirements of holistic management. Therefore controllers should always inquire whether there are options for further development in the sense of improving performance and quality. Possible measures of further development might be the introduction of a BSC as an instrument to find a new strategy as well as for strategy control, a reduction in the planning process and the introduction of a new consolidation method or tool.

Self- and external evaluation

For the continuous examination of the quality of controlling, benchmark- and best-practice comparisons with other companies are the main options. Besides external analyses, a company-internal objective self-analysis and an analysis by others are also required, for example, by means of a survey on how satisfied people are with the controllers' work and their customers. Suitable suggestions for further development and the new introduction of structures and processes in controlling hence have to be taken up from all areas of the firm – including the controller service itself.

Feed forward thinking

It is important that as a result of the feedback process systemic and procedural changes are initiated and so suggestions for improvements are actually implemented in a suitable manner. Controllers can ensure, e.g. by means of (method/process/system) trainings, that in other functional and

business units leading methods and instruments of management are always available and that users know how to use these and are aware of the benefits. It is thus useful to subject controllers also to regular qualification measures so that they are always up-to-date. A controlling-specific knowledge management system can come in handy.

Finally, the effectiveness of the measures initiated has to be evaluated and possible improvements for the controlling process are to be derived. Thus, quality control and improvement work turns into a permanent task for controllers. As an integrated quality management system, the concept of total quality management (TQM) is very suitable for quality control and management up to companywide quality improvement. It goes far beyond the mere measurement of efficiency and effectiveness and can, for instance through monthly quality cost reporting, record and follow every planned and current project.

Total quality management

If major changes are imminent in the company, such as a shift of production abroad, organisational structures and processes often have to be broken up and redesigned completely. Also in so-called „change projects", support and advice from controllers are welcome. Particularly soft skills are of importance here, as, in order to set up new processes and make organisational changes, employees have to be mobilised and motivated accordingly.

Change management

The increasing number of changes also lead to a substantial modification of the occupation and role of a controller. Currently, the occupation is experiencing a rise in differentiation that goes along with a multitide of new requirements. Digitalisation in particular alters the controller's work significantly. Fulfilling traditional core functions of controlling, such as providing information for making decisions, has been completely changed through the use of new data sources and advanced analytical instruments. To utilise these potentials, controllers have to be prepared for their new challenges in a focused manner. In their growing role as management partners this includes, for instance, further developing their social competences and establishing a well-founded understanding of business.

Continuous need for controllers to develop further

To answer the question how head controllers can develop their employees in a goal-oriented way, the IGC has developed a controller competence model. The controller competence model consists of a hierarchical list of competences as well as sample function and competence profiles. The structure of the model for the competence management of controller organisations is suitable as a guideline for the practice-oriented development of controllers, as it can easily be adapted to company-specific requirements.[10]

Management of controller competences

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[10] See international Group of Controlling (IGC), 2015.

Recommendations for a successful controlling process „Further development of organisation, processes, instruments and systems"

- Conduct regular benchmark analyses.
- Hold a regular controller jour-fixe.
- Set up method development teams.
- Introduce a suggestion scheme for improving controlling methods and processes.
- Introduce a specific incentive system in order to safeguard the successful introduction and application of the suggestions.
- Introduce a knowledge-management system for controlling.
- Check whether and how controlling processes can be isolated and standardised for transferring them to a shared service center.

3.11   Transfer of Controlling Processes to Shared Service Centers

Objective

Transferring processes to shared service centers has the aim of bundling tasks that are spread throughout the organisation in an internal service unit. The primary objective of moving and bundling processes in controlling is a more efficient controlling organisation, which by means of standardised and bundled processes incurs lower costs. At the same time, reorientating controlling along processes rendered leads to better customer orientation. The resources thus freed up enable controllers to dedicate their time to their core competences and to better fulfil their role as business partners.

Content

The controller's range of tasks contains different tasks and activities of various levels of complexity. At the same time, the tasks in controlling interact with other processes to varying degrees. Interactions might exist with other activities within controlling or with processes in other company functions (see section 2.5). The typical form of a shared service center, which depends on the activities performed, is a center of scale (CoS), which expresses that mainly transactional activities are performed. In contrast to this, the center of excellence (CoE) refers to a shared service center where knowledge-intensive activities are performed. Companies can run centers of scale and centers of excellence at the same time. Section 3.12 shows how controlling processes can be analysed regarding their degree of standardisation and isolation by means of a systematic analysis process. The results of the analysis can then be used as the basis for deciding on the bundling.

Shared services in the finance organisation

Establishing shared service organisations for the bundling of administrative and support processes has been a common phenomenon particularly with large enterprises for several decades. The shared service organisation is an

internal service provider and as such enters into a customer relationship with its normally exclusively internal clients. The scope of services between shared service organisations and their internal clients is recorded and regulated in so-called service level agreements (SLAs). The central characteristic of a shared service center is a service management unit, which is tasked with the goal-oriented provision of services as well as the effective management of the shared service activities. What is important for the management of shared service centers is also their organisational anchoring in the company, process responsibilities of the processes rendered and the reporting lines, which are highly relevant due to the cross-functional nature of shared service activities.

Typical examples of high-volume and repetitive processes in accounting, which are often provided by shared service centers, are the transactional activities „accounts payable" and „accounts receivable". Yet also in controlling tasks of a repetitive character can be identified. The following analysis process shows the evaluation and classification of processes into different process groups.

For a systematic analysis of whether tasks in controlling are suitable for being rendered in shared service organisations, it might be useful to classify potential activities or processes according to the dimensions of standardisation and isolability.
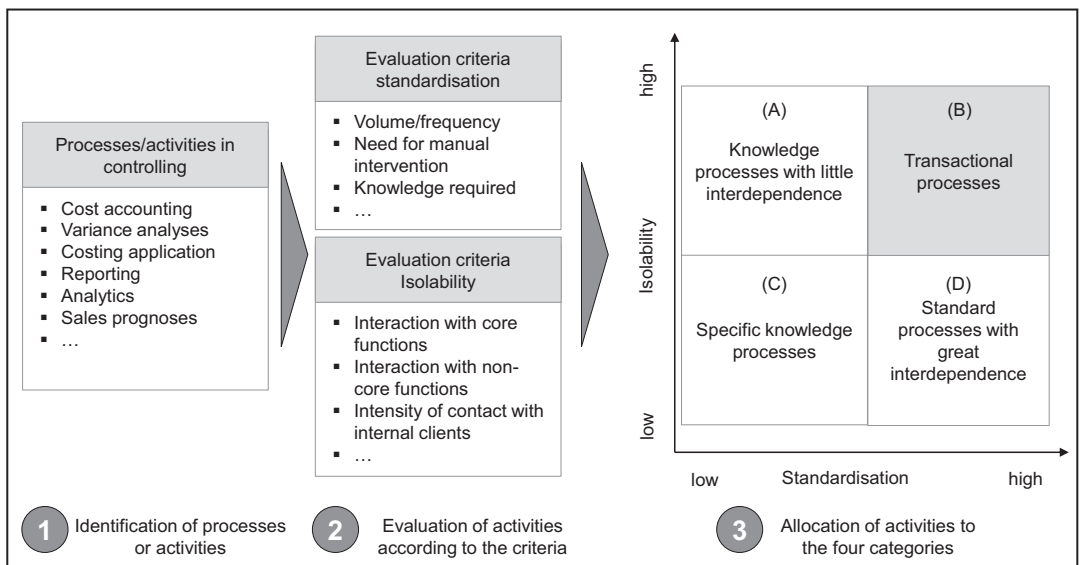
Three-stage analysis process

Fig. 21: Evaluation and classification of processes provided by a Shared Service Center

Process steps   In order to check the suitability of controlling processes for being rendered from a shared service center, the three-step evaluation and classification process shown in Figure 21 is suggested. In a first step, the potentially relevant processes are identified and collated. Following this, the processes identified are evaluated along the two major criteria of isolability and standardisation. Finally, the processes can be allocated to the four quadrants of the matrix shown. Evaluation and allocation take place in management committees and can be supported quantitatively by means of specific scoring models.

Process types with high isolability   Typical transactional processes (B) in shared service organisations are characterised by a high degree of both isolability and standardisation. The tasks are high-volume and show little need for manual intervention. At the same time, though, knowledge-based and hence hardly standardised processes with little need for coordination (A) can be offered by a shared service organisation. One example would be the task of sales prognosis. The major requirement for the suitability of the two process types mentioned to be provided by a shared service organisation is that there is little need for coordination of the processes, which is reflected in high isolability. The number of interfaces with other processes is less relevant. There are indeed processes and activities for which inputs from different organisational units are required. However, if these inputs only have to be aligned without there being any need for much coordination, the process can be bundled centrally and possibly provided more efficiently.

Process types with low isolability   There continue to be standard processes with high interdependence (D) which are difficult to isolate. With these processes, intensive or even personal contact with a controller, for example in important decision processes, may be required. Therefore, these processes are not suitable for central bundling. A final category of process is specific knowledge processes (C). These processes may be needed spontaneously and require specific expert knowledge. It can also be difficult to predict when these processes are needed. Thus, this process category is also unsuitable for bundling in a shared service center.

Context dependence   When classifying controlling activities, it has to be taken into account that no generally valid classification of controlling sub-processes can be assumed. Therefore it is recommended to analyse the suitability of controlling processes for shared service individually. The process of sales prognosis, for instance, despite the required interdependences with various company areas, might be rather technical and analytical and might be provided centrally by a shared service center as a bundled knowledge process. If, on the other hand, sales prognosis in the company involves a greater need for coordination and discussions of the content, it will not really be possible to offer this via an isolated shared service unit.

Following the result of process evaluation and allocation to one of the process categories, the final decision is made on which processes are to be offered as a central service in a shared service center and thus can contribute to a more efficient controlling organisation.

Final decision

3.12 Controlling of Functions

3.12.1 Supporting the Value Chain

Function controlling is the controlling of the individual functions in the value-creation chain, irrespective of whether they are primary activities such as R&D, production, and sales or support activities such as human resources and IT (see also section 2.5). Basically the controlling processes described above are applied tailor-made to the various company functions. Depending on the specifics of the company functions, the function-controlling processes generally vary widely (R&D controlling vs. sales controlling). It therefore makes sense to bundle the processes described earlier and to show them specifically according to function. The number of functions to be described depends on the importance of the respective function in a particular industry and business model. Figure 22 shows the areas of function controlling most commonly found in practice.
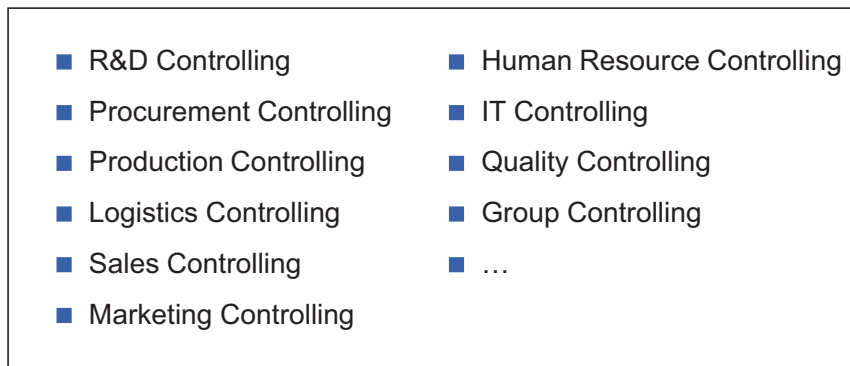
Subject areas

- R&D Controlling
- Procurement Controlling
- Production Controlling
- Logistics Controlling
- Sales Controlling
- Marketing Controlling
- Human Resource Controlling
- IT Controlling
- Quality Controlling
- Group Controlling
- …

Fig. 22: Typical areas of function controlling

The respective function-controlling processes describethe function-specific characteristics of the main processes and sub-processes of controlling described above (see sections 3.1. to 3.10.), the application of function-specific tools and the use of function-specific IT systems. The content of the function-controlling processes has to be adapted to the characteristics of the industry and the organisation of the company. Function-controlling processes are therefore specific to the industry and company and less generic than the main controlling processes described above. For this

Content

reason, it makes little sense to describe all function-controlling processes individually in this controlling process model. Rather, the area of sales will be used as an example of a typical sales-controlling process (see Fig. 23).
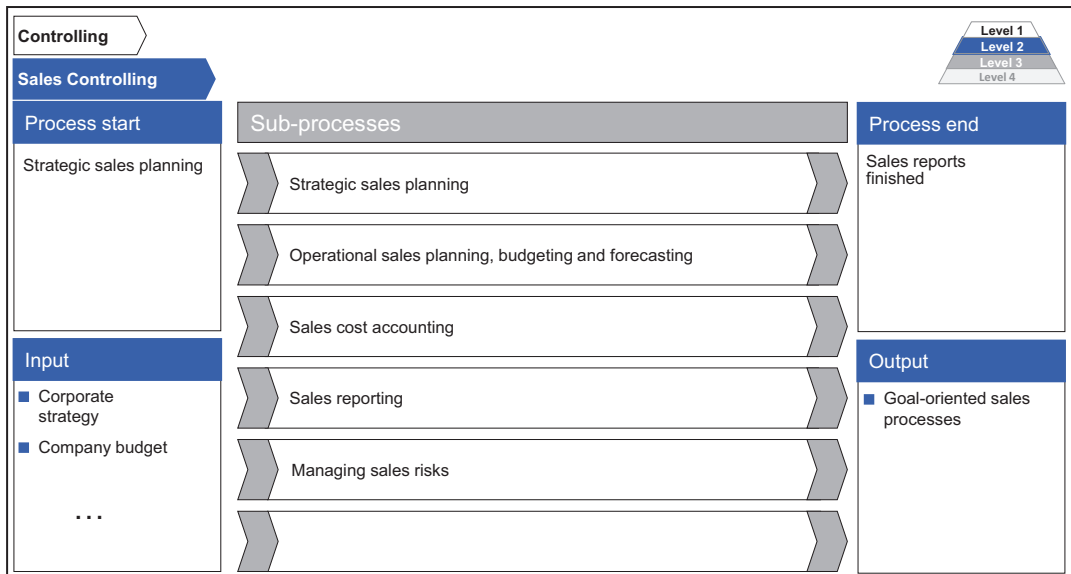

Fig. 23: Structure of the main process „Function controlling", as shown in the example of sales controlling

Recommendations for a successful function–controlling process

- Use process standards from main controlling processes (planning, reporting, cost accounting, etc.), in order „not to reinvent the wheel" and to avoid isolated solutions.
- Integrate topic-specific content into standard plans/reports, etc.
- Define and describe the function-specific sub-processes, activities, methods and systems.

3.12.2 Function Controlling – The Example of Sales Controlling

Objectives   The aim of sales controlling is the focused management of the strategic and operational sales activities in order to ensure the effectiveness and efficiency of the sales area. Generally, sales activities are to safeguard the desired sales volume in the long run, while at the same time maintaining appropriate returns and manageable risks. Moreover, reliable sales estimates are to provide timely control impulses for the functions further down the line.

Sales controlling includes the major controlling processes, each adapted to the specific requirements and conditions of sales. It includes the business process of setting objectives, planning and control of sales activities.

Content

Sales controllers are often organisationally decentralised and support sales managers as sparring partners, as described in section 3.6. At the same time, they are an important interface with central controlling. As a special feature, many sub-processes such as sales planning have major impacts on functions further down the line, where they have to be used as inputs. Further particularities include pricing and conditions policy, determining sales performance, transfer prices, non-financial KPIs such as customer satisfaction, differences between customer-oriented and batch production oriented industries, as well as the multitude of sales methods such as B2B, B2C, direct sales, sales via sales agents or online sales.

Sales specifics

Within strategic sales planning, market potentials are estimated, customer segments are prioritised, customer needs are identified, a promising product/service range that is distinct from the competitors has to be derived, sales structures and channels must be determined, and customer relationships, customer acquisition and customer retention have to be managed. The scope of strategic sales planning is significantly influenced by the relationship between sales and marketing. The result of strategic sales planning is a major influence on product development, as well as the capacities required in production. In operational sales planning (budgeting and forecasting), on the basis of the strategic orientation, the same topics are dealt with on an annual basis, with much more focus on operational aspects and the level of commitment. One important aspect is sales planning and prognosis, as it provides important control impulses for functions further down the line.

Sales planning

R&D cost accounting, depending on the industry and in accordance with section 3.4 (cost accounting), is divided into three major areas:

Sales cost accounting

1. Order costing (costing individual orders from pricing offers and concurrent costing to costing using actual values);
2. Profitability analysis in order to determine the contribution to profit of products, product groups, sales channels, etc. including variance analyses;
3. Cost center accounting in order to determine the costs of the sales area and potential budget variances.

Sales reporting provides on a regular basis, both on an aggregate level and specific to projects/orders, all control information that is relevant for sales. Sales controlling on the one hand comprises general financial, mostly monthly, standard information, such as sales costs, sales and profit statistics, discounts or open positions for product groups, countries or sales channels. On the other hand, in order-oriented

Sales reporting

industries, it frequently includes weekly information on the future sales and profit situation in the form of offers made, incoming orders and order books. Financial KPIs are supplemented by non-financial KPIs such as customer satisfaction, returns or punctuality of deliveries.

Risk in sales controlling Also in the sales controlling process it is important to identify, evaluate and control not just the results, but also the risks connected to the business activity. From the operational sales activities, mainly currency risks, statutory warranties and bad debts arise. On the strategic level, predominantly cluster risks, i.e. dependence on individual customers, products or sales channels, have to be kept in mind.

Recommendations for a successful sales controlling process

- Align the processes of sales controlling with the sales strategy and structure derived from the company's overall strategy and take industry-specific requirements into account.
- Define a clear and responsible system for evaluating and remunerating sales performance (transfer prices, profit centers, ...).
- Design sales cost accounting in line with the company's cost accounting standards. In order-oriented industries, take a contiuous view of a period's or project's results.
- Align sales reporting with the operational requirements of sales and integrate it into management reporting.
- Do not just focus on the income statement. Also look at cash flows, risks and non-financial indicators.
- Closely integrate sales planning and forecasting with functions further down the line, for instance using an integrated sales and operations planning process (S&OP).

4 Management of Controlling Processes – Specifics

4.1 Integrated and Annual Perspective

Integrated view of controlling processes The controlling processes shown and their content are not isolated from each other, but should rather be seenas integrated and interconnected elements. Partly, they represent output and input for each other or run in parallel and/or sequentially. The challenge is to coordinate all processes in such a way that quality results are achieved and deadlines set by the management are kept. All information relevant for successful management must be given to the decision-makers in time and in the format desired. In practice, keeping deadlines often turns out to be critical, as the schedules of everybody involved are often difficult to coordinate. In order to avoid

time bottlenecks and discrepancies, the preparation of a controlling year planner is advisable (see Fig. 24). This also helps in explaining and communicating the controlling processes in the company.
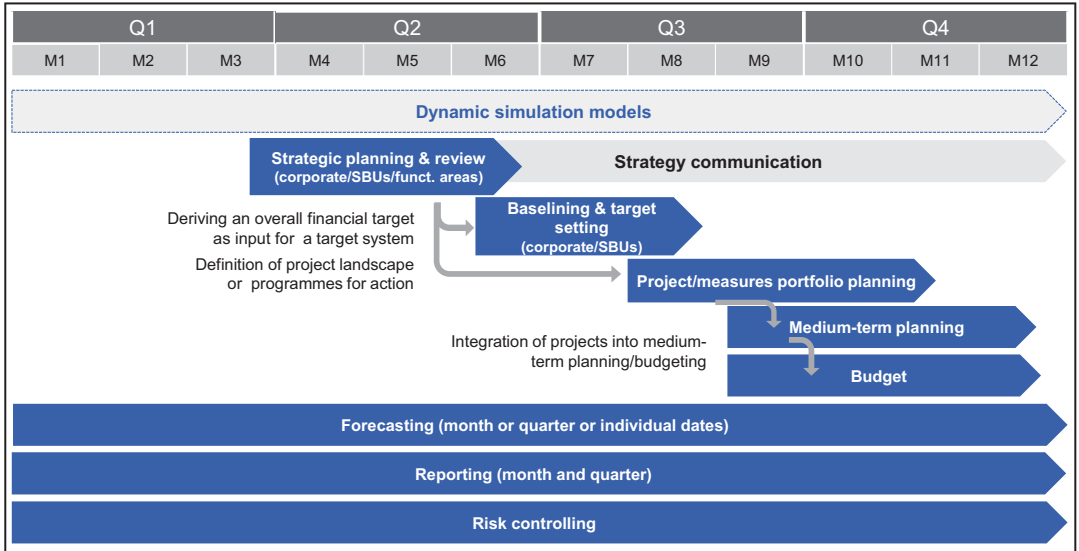

Fig. 24:   Controlling year planner

What such a controlling year planner, which covers the full control cycle, looks like is shown in Fig. 24. It does not cover the specific activities for which dates have to be set, but does provide an overview of the control processes in the course of the year. The following best practices can be derived:

Best practices in control processes

■ **Top-down orientation**

A strategic review provides the content basis for the later control processes, particularly for deriving top-down targets. „Target setting" gives a clear idea of the level of requirements the group or company and its operational units have to meet early on in the process (e.g. earnings development, investment policy, financing principles). The aim is not to waste any planning resources on detailed bottom-up planning without existing targets. The „targets" reflect a development generally to be expected („baseline"), as well as expectations from the management that go beyond this, for instance in the sense of a better performance than the competitors in the market.

■ **Orientation towards measures**

In order to meet demanding targets, it is normally not enough just to manage the status quo professionally. During planning, specific projects

and measures have to be defined, integrated into planning and checked in implementation (monitoring). Capacity tied up in planning should thus be shifted from conventionally planning operational details to an intensive discussion of strategically relevant measures to improve performance.

■ Linking budget and medium-term planning

In order to make planning processes leaner and at the same time integrate their content better, it is recommended to link preparing the budget with medium-term planning. This removes any disadvantages of the „classic" model of specifying strategy by means of medium-term planning and, derived from this, setting a framework for the budget (duplication of work due to similar processes and logical inconsistencies through more current premises in the budget).

■ Company-specific process frequencies and implementation dates

Both forecasting and reporting should be adapted to company-specific requirements as regards process frequency and implementation dates. It can, for instance, be useful to conduct a forecast as a pure update of the budget premises as early as at the beginning of the year and to adapt the implementation dates during the year to seasonal developments, i.e. move them to the off-season, to better reflect business cycles and avoid demarcation problems. In reporting, the range can go from selectively up-to-the-minute (e.g. in the case of necessary information on the classic monthly standard reporting) to a more comprehensive quarterly reporting. Risk controlling has to be linked to financial management, particularly forecasting and reporting, both in processes and content.

In addition to the controlling processes that take place tied to certain dates, ad-hoc processes are also required. This is mainly in relation to the use of simulations accompanying (strategic) management discussions and event-related analyses and reports.

4.2 Performance Measurement of Controlling Processes

Multi-di-
mensional
process KPIs

KPIs and KPI-based control have been gaining importance also in controlling processes, enabling an assessment of the status quo. In order to measure processes comprehensively and at the same time have a model that can simply be translated into corporate practice, the performance measurement of controlling processes takes place in three dimensions:

- quality,
- time and
- costs.

This furthers an orientation towards customers' needs and avoids one-sided financial control aimed at short-term optimisation. Including the non-financial dimensions of „quality" and „time" will ensure that the causes and drivers for the financial output quantities are also covered. Process owners can thus better handle their responsibilities for the use of resources and delivering performance, as well as monitor and improve the processes continuously. This multidimensional character makes it possible to actively manage classic trade-offs, such as high process quality (e.g. correct, relevant and visually convincing reports) and fast availability („fast close").

In order to establish a performance management of high quality that can also be implemented pragmatically, as much standardisation as possible is to be aimed for. This can be achieved by using KPIs across processes whenever possible and to supplement them selectively with process-specific KPIs.[11]

KPIs across processes

The following KPIs can be used for all controlling processes:

■ „Customer satisfaction" as an indicator for process quality

With service providers such as the controller organisation, the main focus is on fulfilling customers' needs. In order to have an outside view on this, regular assessment, for instance by means of a school grading system, is useful. As internal clients regard the services ambivalently („rigid planning", „flexible reaction to ad-hoc requests", „bureaucratic approval processes", etc.), it makes sense to break down customer satisfaction to all main controlling processes.

■ „Process capacity" and „Process costs" as indicators for process efficiency

Capacity tied up in the controller organisation, and therefore also costs, can also be broken down to all controlling processes. The absolute use of resources in FTE (e.g. FTE of the controller organisation or FTE per main process) is used for internal comparisons of planned and actual data and also an indicator for priorities set. The relative use of resources (e.g. FTE used in relation to FTE overall in controlling, to sales, ...) can also be used for benchmarking. This also holds true for EUR-based KPIs.

KPIs relating to the dimension of „time" will frequently be designed or defined in specific relation to processes.

Process-specific KPIs

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[11] Some examples of KPIs are presented here, for a full overview see International Group of Controlling, 2012.

■ „Lead time" as an indicator for timeliness in reporting

In management reporting, timely provision is particularly important. The KPI of „lead time" (working days from start (end of month) to finishing the report) can be used for all reports generated in the company, such as weekly, monthly or quarterly reports.

■ „Lead time" as an indicator for timeliness in planning

A multitude of planning loops do not just have a negative effect on the KPI of „lead time" (working days from start of e.g. communicating the planning letter to planning approval) but can also be an indicator of qualitative problems in planning.

On the basis of uniformly structured processes and pragmatically defined KPIs, companies can more easily gain a differentiated picture of their own controlling processes, both in critical self-analysis and in an exchange relationship with other companies, and to detect need for action. Based on this, processes can be optimised further. The performance benchmarks, for instance, can be linked with MbO and incentive systems. Finally, a multidimensional performance measurement system can also be extended towards specific service agreements betweeen the controlling organisation and its clients that include specifying the individual criteria for providing services (service level agreements – SLAs).

4.3 Illustrating the Activities Level (Process Level 4) – the Example of Management Reporting

In this book, the controlling processes are generally described on the level of main processes (process level 2), including the sub-processes (process level 3), as explained in section 2.4. A detailed discussion of the next level of activities (process level 4) is left out, in order to keep the analysis concise and the overall length of this book manageable.

SIPOC principle Level 4 is exemplarily described for the process of „management reporting" (see Fig. 25). The description here is based on the „SIPOC (Supplier-Input-Process-Output-Customer) principle" (see Fig. 26). According to this, preceding and subsequent interfaces are established for each process. Such documentation is useful to design and control processes optimally. Above all, it gives excellent support in process analysis. If there are interruptions or other disturbances in processes, the specific mention of the supplier or customer makes it easy to identify the weaknesses. However, for this, performance parameters for each process are required so that the comparability of actual and target values is given in the first place.
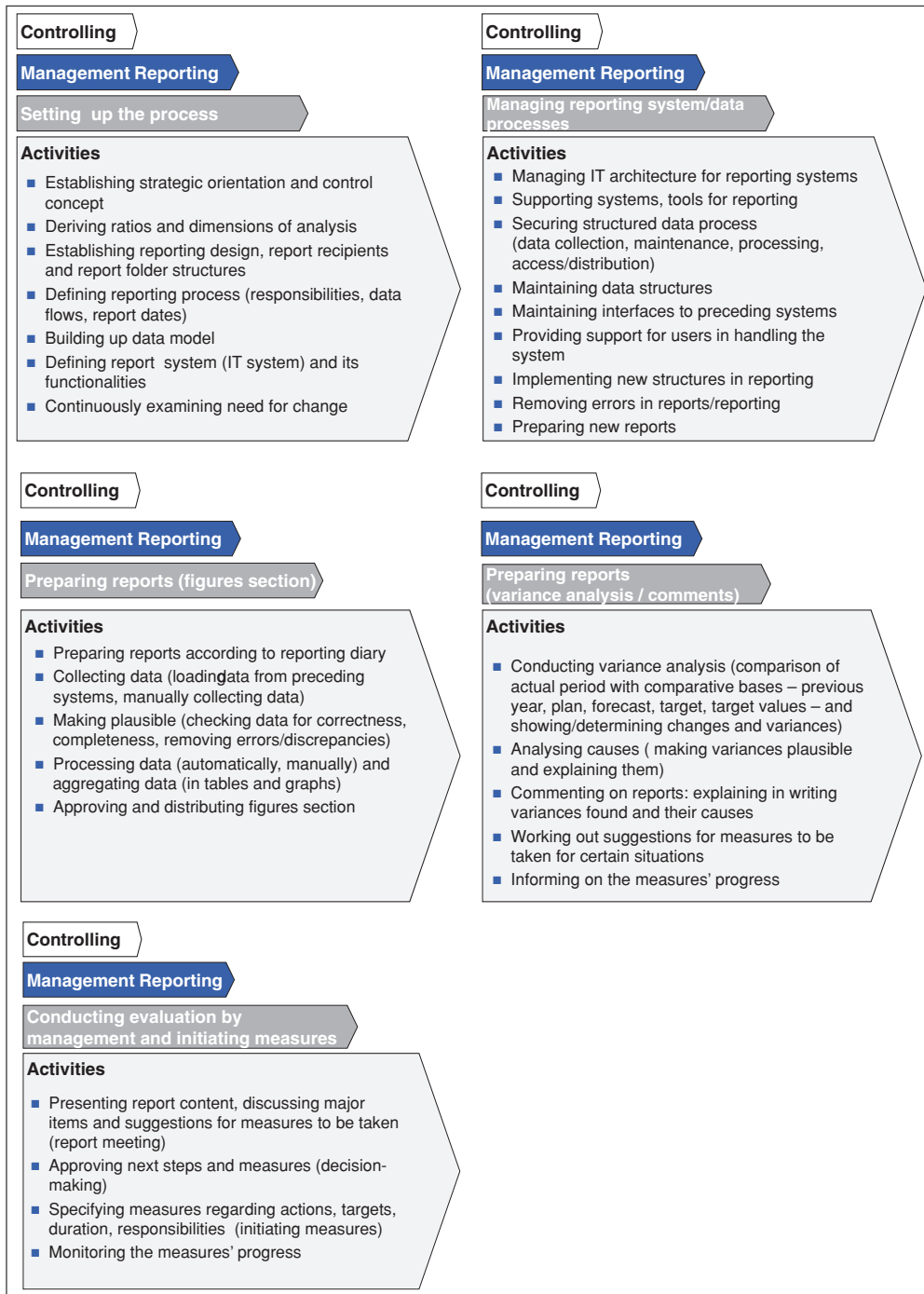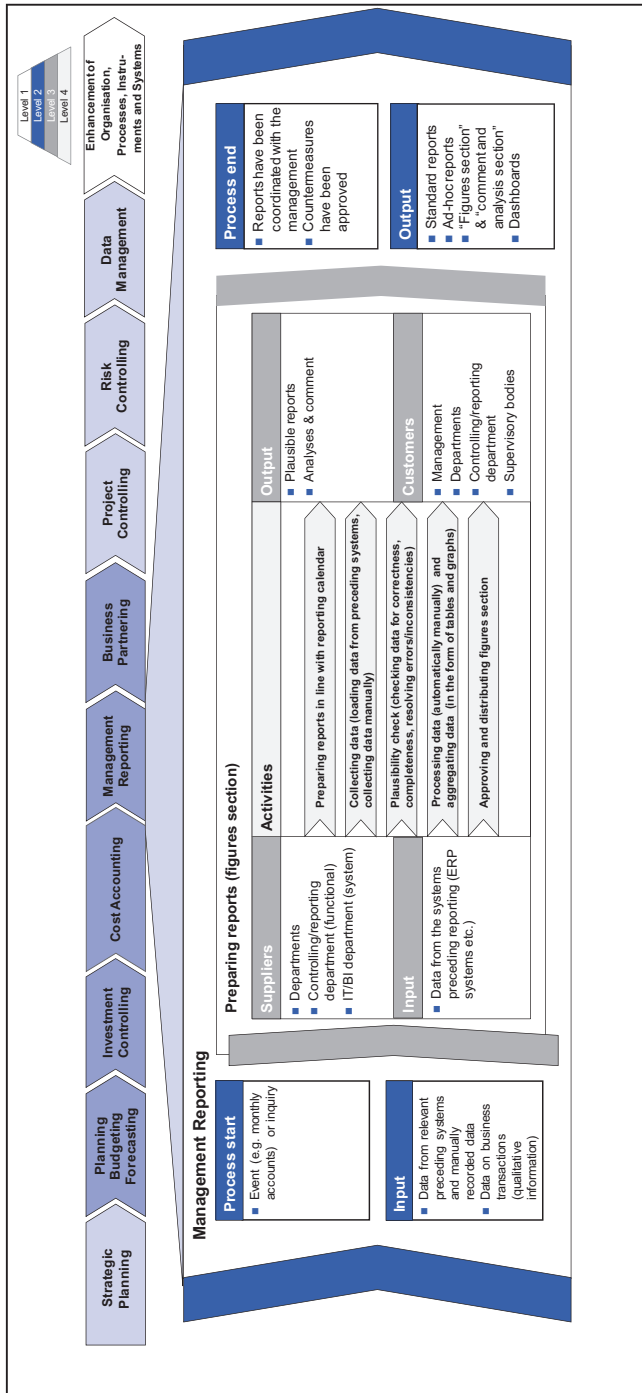
Controlling

Management Reporting

Setting up the process

Activities

- Establishing strategic orientation and control concept
- Deriving ratios and dimensions of analysis
- Establishing reporting design, report recipients and report folder structures
- Defining reporting process (responsibilities, data flows, report dates)
- Building up data model
- Defining report system (IT system) and its functionalities
- Continuously examining need for change

Controlling

Management Reporting

Managing reporting system/data processes

Activities

- Managing IT architecture for reporting systems
- Supporting systems, tools for reporting
- Securing structured data process (data collection, maintenance, processing, access/distribution)
- Maintaining data structures
- Maintaining interfaces to preceding systems
- Providing support for users in handling the system
- Implementing new structures in reporting
- Removing errors in reports/reporting
- Preparing new reports

Controlling

Management Reporting

Preparing reports (figures section)

Activities

- Preparing reports according to reporting diary
- Collecting data (loading data from preceding systems, manually collecting data)
- Making plausible (checking data for correctness, completeness, removing errors/discrepancies)
- Processing data (automatically, manually) and aggregating data (in tables and graphs)
- Approving and distributing figures section

Controlling

Management Reporting

Preparing reports (variance analysis / comments)

Activities

- Conducting variance analysis (comparison of actual period with comparative bases – previous year, plan, forecast, target, target values – and showing/determining changes and variances)
- Analysing causes (making variances plausible and explaining them)
- Commenting on reports: explaining in writing variances found and their causes
- Working out suggestions for measures to be taken for certain situations
- Informing on the measures' progress

Controlling

Management Reporting

Conducting evaluation by management and initiating measures

Activities

- Presenting report content, discussing major items and suggestions for measures to be taken (report meeting)
- Approving next steps and measures (decision-making)
- Specifying measures regarding actions, targets, duration, responsibilities (initiating measures)
- Monitoring the measures' progress

Fig. 25: Process level 4 Management Reporting

Fig. 26: Process level 4 according to the SIPOC principle

5 Conclusion

This book has shown how „controlling" can be described in a process model. The controlling process model in its second edition mainly includes ten main processes that are described here on a uniform basis, including their sub-processes. They are also shown graphically, and specific recommendations for practice have been added. Supplementing the ten main processes, we can find function controlling. This new structure of the controlling processes is surrounded by a controlling regulation framework, consisting of setting objectives, planning and control.

This book can be used as a guideline for describing and designing processes in controlling. The process descriptions and illustrations shown here can, for instance, be very useful as templates for the standardised inclusion of processes and their uniform documentation. Additionally, they can help in analysing process sequences. If these are to be improved, process inclusion should continue right up to the level of activities. For doing so, following the example of management reporting outlined in section 4.3 can serve as a guideline.

Process design

Process improvements, however, also require a solid basis for comparison. For each process, as described in section 4.2, performance indicators have to be defined that help to measure the actual situation that can then be compared to the target. Only so can potentialn be detected and appropriate measures for optimising controlling processes initiated.

Process optimisation

Equally, the controlling process model 2.0 can provide support with implementing IT systems, such as business intelligence systems for management. Starting from the interfaces defined according to the SIPOC principle, data/information flows can be shown, analysed and, if required, adapted. Because of its general validity, the controlling process model can be used in any company irrespective of the actual system structure.

IT implementation

The controlling process model is to be seen as a standard (map) that helps companies to install and run processes. If companies design their controlling processes according to the documentation suggested here, this should provide the foundation for a mostly standardised procedure in controlling. The controlling process model thus enables not just controllers to record their own processes, but also makes controlling more tangible in other areas of the company and promotes the role of the controller as an internal business partner of the company's management.

Controlling process model as standard

In summary, it can be said that the controlling process model in its new second edition provides a solid basis for standardisation, the allocation of tasks, competences and responsibilities, as well as the IT implementation of controlling processes. Thus the book supplies the foundation

Benefit

for establishing a holistic understanding of controlling and fulfils the required criterion of process orientation in controlling.

6 Abbreviations

BI	Business Intelligence
BSC	Balanced Scorecard
CFO	Chief Financial Officer
DIN SPEC	Deutsches Institut für Normung Specification
EBIT	Earnings Before Interest and Taxes
ERP	Enterprise Resource Planning
IAS	International Accounting Standards
ICV	Internationaler Controller Verein
IFRS	International Financial Reporting Standards
IGC	International Group of Controlling
KPI	Key Performance Indicators
R&D	Research and development
SB	Supervisory Board
SCOR	Supply Chain Operations Reference
SIPOC	Supplier-Input-Process-Output-Customer
SWOT	Strengths-Weaknesses-Opportunities-Threats
TQM	Total Quality Management

7 List of Works Cited

Adam, Investitionscontrolling, 3rd ed., Oldenburg 1999.

Bürgel, Controlling von Forschung und Entwicklung, Munich 1989.

Coenenberg/Fischer/Günther, Kostenrechnung und Kostenanalyse, 7th ed., Stuttgart 2007.

Deiters, Prozeßmodelle als Grundlage für ein systematisches Management von Geschäftsprozessen, Berlin 1997.

Denk/Exner-Merkelt, (eds.), Corporate Risk Management, 2nd ed., Vienna 2008.

Deyhle/Kottbauer/Pascher, Manager und Controlling, Kompaktes Controllingwissen für Führungskräfte, Munich 2010.

Deyhle/Radinger, Controller-Handbuch: enzyklopädisches Lexikon für die Controller-Praxis, volume I, 6th ed. 2008.

Deyhle, Controller Handbuch – Enzyklopädisches Lexikon für die Controller-Praxis, volume 1, 5th ed., Offenburg 2003.

DIN SPEC 1086: Qualitätsstandards im Controlling, Berlin 2009.

Eversheim (ed.), Prozessorientiertes Qualitätscontrolling – Qualität messbar machen, 1st ed., Berlin 1997.

Fischermanns, Praxishandbuch Prozessmanagement, 8th ed., Gießen 2009.

Fischermanns/Liebelt, Grundlagen der Prozessorganisation, 5th ed., Gießen 2000.

Gaitanides, Prozessorganisation, 2nd ed., Munich 2007.

Gleich/Hofmann/Leyk (eds.), Planungs- und Budgetierungsinstrumente, Freiburg, Berlin, Munich 2006.

Gleich/Horváth/Michel (eds.), Management Reporting – Grundlagen, Praxis und Perspektiven, 1st ed., Freiburg, Berlin, Munich 2009.

Gleich/Michel (eds.), Organisation des Controlling – Grundlagen, Praxisbeispiele und Perspektiven, 1st ed., Freiburg 2007.

Gleich/Michel/Stegmüller/Kämmler-Burrak (eds.), Moderne Kosten- und Ergebnissteuerung – Grundlagen, Praxis und Perspektiven, 1st ed., Munich 2010.

Greiner, Strategiegerechte Budgetierung, Stuttgart 2004.

Hahn/Hungenberg, Planung und Kontrolle – Wertorientierte Controllingkonzepte, 6th ed., Wiesbaden 2001.

Hammer, Beyond Reengineering: How the Process-Centered Organisation is Changing our Work and our Lives, New York 1996.

Horváth, Controlling, 11th ed., Munich 2009.

Horváth und Partners (eds.), Das Controlling Konzept, 7th ed., Stuttgart 2009.

Horváth & Partners, Auswertung aus dem CFO-Panel 2010, http://www.cfo-panel.de/benchmarks/benchmarks.php, Stand: 10.04.2012

Internationaler Controller Verein, Instrument – Operative Planung Budget, in Controller-Statements, Gauting, Munich 2006.

Internationaler Controller Verein, Instrumente – Projektcontrolling, in Controller-Statements, Gauting, Munich 2006.

Internationaler Controller Verein, Instrumente – Prozessorientiertes Risikomanagement, in Controller-Statements, Gauting, Munich 2006.

Internationaler Controller Verein, Instrumente – Target Costing, in Controller-Statements, Gauting, Munich 2003.

Internationaler Controller Verein, Controller-Leitbild, in Controller-Statements, 2nd ed., Gauting, Munich 2007.

Internationaler Controller Verein, Controlling-Umfeld – Controlling und Qualität, in Controller-Statements, Gauting, Munich 2006.

Internationaler Controller Verein, Instrumente – Strategische Planung, in Controller-Statements, Gauting, Munich 2005.

International Group of Controlling (eds.), Controller-Wörterbuch, 3rd ed., Stuttgart 2005.

Kaplan/Norton, Balanced Scorecard – Strategien erfolgreich umsetzen, Stuttgart 1997.

Kaplan/Norton, Strategy Maps – Der Weg von immateriellen Werten zum materiellen Erfolg, Stuttgart 2004.

Klenger, Operatives Controlling, 5th ed., Oldenbourg 2000.

Koreimann, Projektcontrolling – Methoden zur Sicherung des Projekterfolgs, 1st ed., Weinheim 2005.

Littkemann (ed.), Innovationscontrolling, Munich 2005.

Nippa/Picot, Prozessmanagement und Reengineering, die Praxis im deutschsprachigen Raum, 2nd ed., Frankfurt am Main, New York 1996.

Waniczek, Richtig berichten – Managementreports wirksam gestalten, Vienna 2009.

Waniczek, Unternehmensplanung neu – Vom teuren Managementprozess zum wirkungsvollen Steuerungsinstrument, Vienna 2008.

Weber/Linder, Budgeting, Better Budgeting oder Beyond Budgeting?, 1st ed., Vallendar 2003.

Index