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## **Systemic Conception of Controlling**

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# Systemic Conception of Controlling

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Controllers often seem to be concerned among themselves with the question of what role they play in companies and what tasks they have to perform. This article follows this discussion from the perspective of an outsider on the one hand and from a systems theoretical perspective on the other. Firstly, the structure of business organization needs to be modernized. In it, controlling should have the function of structurally coupling political leadership and economic value creation.

## 1 Initial Question

If an engineer comments on economic facts, this requires justification. For this purpose, the possibility and necessity of interdisciplinarity is imperative, for which, however, a broad interpretation is required, because the following is not only about interdisciplinary cooperation on a common problem, in which each profession limits itself to contributing its specific knowledge and skills; rather, theories, models and methods are to be applied across disciplines.

The latter is the core of systems theory<sup>1</sup>. It claims universality to the extent that it feeds on sub disciplines as diverse as chemistry and biology, medicine and psychology, sociology and business administration, technology (where the engineer comes into play) and philosophy (Willke 2006, p. 3) and offers a basis on which findings from various fields of knowledge have already successfully contributed to gaining knowledge in other areas of expertise. Cybernetics is an example in the economic context. While cybernetics originated in the 1940s in Wiener's technological work on an anti-aircraft predictor (Galison 1997, p. 282), it was transferred from Beer (1959) to the management of complex organizations in the 1950s and is still relevant in this field today (e.g. Malik 2008). Against this background, the intervention of an engineer in economic discussions is here justified by a systems theoretical foundation.

From the perspective of an outsider, it seems remarkable that controllers are still concerned today with the question of what role they should play in organizations and what tasks they should deal with (e.g. Bramsemann et al. 2004, p. 550 f.). For example, Hubert (2015, p. 8 f.) outlines a whole series of different controlling concepts. With regard to the following considerations, however, the somewhat coarser classification of Bramsemann et al. (2004, p. 553) is even better suited: according to it, decision-oriented concepts can be distinguished from behavior-oriented ones.

## 2 Modernization of the company organization

The terminology of systems theory is so widespread that it does not need to be explained if organizations are called systems with regard to further considerations, which consist of elements, which are connected with each other by relations. With regard to the meaning of such a description, however, the understanding in business administration is quickly lost.

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<sup>1</sup> On the isomorphism of laws in different fields of knowledge, see fundamental writings by Bertalanffy and Grochla (Bertalanffy 1950, p. 136; Bertalanffy 1968, p. 37; Grochla 1970, p. 16; quoted here after Jobst/Lösch 1999, p. 3).

Bramsemann et al. (2005, p. 554), for example, bases the behavior-oriented controlling concept on the assumption that the elements of an organization are to be interpreted as actors in the sense of natural persons. This is as obvious as it is wrong from the point of view of systems theory. Systems theorists largely agree that social systems do not consist of natural persons, but in their general form of communication (Luhmann 1996, p. 191 ff.; Willke 2006, p. 65; Willke 2013, p. 88 ff.) and of decisions in the specific form of organizations<sup>2</sup> (Luhmann 2000, p. 123; Willke 2005, p. 152 ff.; Willke 2013, p. 90 f.).

Even this first glance into the deeper layers of systems theory makes it clear that a simple adaptation of its terminology does not gain much. For further considerations, therefore, an attempt should be made to apply systems theory consistently, without however completely losing the concrete reference to practice, which in view of the high degree of abstraction of systems theory statements will not be an easy undertaking and will require concessions from both sides.

In a first step towards positioning controlling in organizations, the understanding of organization is to be modernized. Willke (2013, p. 87 ff.) provides a model for this in so far as he uses the theory of the company of Coase (1937, 1988) to characterize organizations as differentiated from markets by a hierarchical structure and historically justifies this with the development of societies. Hierarchy can be observed above all in societies stratified by power groups, classes, and religious castes such as those in India, strata, estates or other socially defined groups. The fact that most archaic societies and all early advanced civilizations were hierarchically layered societies up to the Middle Ages suggests that hierarchy as a form of order in social history had a clear evolutionary advantage over looser forms of order formation.

## **2.1 Functional differentiation**

If one continues with this historical explanation, one arrives at functional differentiation (Parsons 1977), which in the course of the Enlightenment and the resulting social modernization led to the formation of different spheres of action. The resulting increase in the complexity of social systems (Luhmann 1987, p. 37 f.) was a necessary reaction to the increasing complexity of the environment.

Applied to organizations, this means that they too cannot remain within hierarchical structures if the increasing complexity of their environment requires structures that are more adequate. In addition, there is no doubt that complexity, especially in the economy, is increasing in view of globalization and technological progress (cf. e.g. Boyksen/Kotlik 2013, p. 48 ff.). In addition, many companies have become so large that their internal complexity can no longer be managed hierarchically. Based on Luhmann's definition of complexity (1996, p. 46), Ahrens (2015, p. 3 ff.) shows that even companies that are considered to be SMEs are already complex in this sense.

The functionally differentiated structure of modern organizations will be outlined in the following using the AGIL scheme by Parsons (1986, p. 14 ff.; 1996, p. 13 ff.), without taking into account the distinction between structural-functional and functional-structural approaches (cf. e.g. Willke 2006, p. 5 ff.), which is undoubtedly important for systems theoreticians, as this would contradict the intended practical relevance. Thanks to its scale invariance (cf. *ibid.*, p. 136), the scheme, which is often used to model societies, can also be used to depict organizations, especially commercial enterprises (Fig. 1).

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<sup>2</sup> However, this must not be misunderstood as a system-theoretical confirmation of those controlling concepts that Bramsemann et al. (2004, p. 553) categorize as decision-oriented.

Parsons identifies four subsystems within social systems (cf. e.g. Münch 1992, p. 30 ff.; Willke 2006, p. 136 f.): The A-system (A: adaptation) serves to adapt the overall system to its environment; in companies, the actual benefit serves this purpose. In the G-system (G: Goal attainment), political decisions are made to give the overall system a goal; in companies this is the task of corporate management. The I-system (I: integration) ensures that all elements see themselves as a community, and the L-system (L: latency) has the task of understanding the overall system rationally through reflection and of providing arguments for specific action. Of these four subsystems, only two, the A-system and the G-system are to be examined in more detail in the further course, since the other two systems are of less significance for the statements intended here.

Goal-attainment	Adaption
Management	Value creation
Community	Corporate culture
Integration	Latency

Figure 1: AGIL scheme according to Parsons (Münch 1992, p. 30 ff.)

Each subsystem distinguishes itself from the other subsystems by using specific semantic codes according to which communication is selected as system-relevant or system-irrelevant (Willke 2006, p. 67). Following Luhmann's coding (ibid., p. 213), everything in the A-system (hereinafter also referred to as the economic subsystem) revolves around money. What cannot be expressed in money is irrelevant in this subsystem. The concrete function of this subsystem is the allocation of scarce resources. In the G-system (hereinafter also referred to as the political subsystem), it is not about money, but about power to exercise control.

Figuratively speaking, it can be said that the two subsystems speak very different languages, which makes it difficult to communicate in an unmediated way. To exaggerate, for example, this means that company management is only interested in whether the company earns money to the extent that it serves to gain and retain its own power. This can even go so far that managers have an interest in losses, i.e. when they can attack competitors in order to assert themselves against them. In the context of conventional views, such a statement undoubtedly seems absurd, but precisely for this reason, it can be particularly conducive to understanding a systems-theoretical perspective, because it emphasizes the autonomy, self-reference and operational unity of social systems (Willke 2006, p. 61 ff.).

In contrast to these dominant properties of the subsystems, the relationships between them and their possibilities of influencing each other are much weaker. In general, five possibilities of interaction can be identified: Dominance, adaptation, isolation, reconciliation, conflict and interpenetration (Münch 1992, p. 23). However, since only interpenetration is suitable, only it will be examined here. The starting point for this is the observation that the boundary between two systems does not lead to the complete termination of mutual relationships. However, cross-border processes [...] are placed under different conditions of continuation when crossing the border [...] (Luhmann 1996, p. 35 f.).

### 2.1.1 Function of the political subsystem

In relation to the economic and political subsystems, for example, this means that money is understood as the language of the economy in the political subsystem only to the extent that it appears useful for the acquisition and maintaining of power. As an illustration, one can imagine that two managers competing for a more powerful position can use economic arguments if and to the extent that they are suitable for profiling. Within the political subsystem, however, such arguments are no more and no less helpful than any other argument that allows profiling, such

as highlighting personality traits, claiming protection, or dynastic relationships. Likewise, decisions in the political subsystem are not made primarily with a view to the economic success of the company, but to acquire and maintain the power of the decision-maker and to achieve goals. Economically advantageous are political decisions only indirectly, since the purpose of an enterprise as an overall system primarily consists in the generation of an economic profit, so that political decisions also do not completely bypass this success criterion in the end. Since, however, the effect of each individual decision on profitability cannot always be directly and precisely proven, the political subsystem offers great scope for primarily power-oriented action.

The semantic code "money" is thus quasi translated into the semantic code "power" in the course of the interpenetration of the economic with the political subsystem. This may seem unusual at first glance, but from a systems-theoretical point of view, it is extremely useful, because both functions are essential for the existence of the entire system, but can only be perceived if they unfold according to their own laws.

The starting point for the identification of the specific function of the political subsystem is the situation described as contingency by Luhmann (2000, p. 132 ff.), in which every action can take place in such a way, but also differently, but not arbitrarily. The function of the political subsystem is to transform this "so, but also differently" into a "so, and not differently" (Luhmann 1988, p. 170). Corresponding decisions make an essential contribution to the reduction of complexity. They provide security where this does not result from the facts themselves. Therefore, it does not have to be decided that  $1 + 1 = 2$ . However, whether an investment in one technology or in the other, or even the abandonment of it, will be successful, cannot ultimately be calculated with certainty, despite all the calculations usually made in the economic subsystem. Therefore, the final decision is not left to the economists, but is made by politicians, in this specific case by executives. While the responsibility of economists, for example, is to apply appropriate calculation procedures without errors, the responsibility of managers begins where the calculations reach their limits<sup>3</sup>. This makes it clear that these are two different spheres of action that must be preserved in their difference so that they can perform their respective specific functions.

Of course, this contradicts the widespread conviction that decisions taken by management are rational from an economic point of view and must therefore be explained causally. However, contingency, the absorption of which is an essential task of political decisions, precisely means that every decision can be made differently and is therefore not economically unambiguous, i.e. causally conclusive from an economic point of view. In addition, this is usually observed by those who are affected by political decisions; the possibility that decisions could have been taken differently remains in the awareness even after a decision has been taken (Martens/Ortmann 2006, p. 437 f.), which leads, among other things, to decisions still being questioned afterwards, as well as being used for later attributions of responsibility. In this respect, the absorption of contingency is usually limited anyway. This is the reason why there is at least an apparent attempt to give causal reasons for decisions (Zimmermann 2004, p. 315 ff.) and also to use economic arguments, especially in companies, because of their profit orientation. Here it can be used that only a few people are usually aware of the apparent nature of causal explanations. In this respect, objectification also helps to reduce contingency. It serves what Zimmermann (ibid., p. 316) calls the illusion of causality.

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<sup>3</sup> Limits result, for example, from uncertainty as a result of underlying assumptions and forecasts, from the influence of non-quantifiable monetary influences such as image/prestige, from calculation methods, if, for example, exact methods are replaced by heuristics, etc.

In order to make a decision, one must have the appropriate power. However, power attainment and power retention take place according to one's own rules and very different rules depending on the type of power (Weber 1972, p. 122 ff.; Wolf 2011, p. 63 ff.). These rules constitute the autonomy of the political subsystem and are necessary within the political subsystem. However, pure self-legality would ultimately lead to a Machiavellian power politics (Münch 1992, p. 17), power obsession and power oblivion. The task of interpenetration, which is explained in Chapter 2.1.3, is to prevent this and to place power at the service of the entire system without hindering self-legislation.

### **2.1.2 Function of the economic subsystem**

The economic subsystem has the task of ensuring adaptation to the environment of the overall system. The corporate environment forms the economic subsystem at the societal level, at which the AGIL scheme is applied in a comparable manner (cf. e.g. Münch 1992, p. 30 ff.; Willke 2006, p. 136 f.) as here at the level of organizations. Success in this area is measured according to mathematically calculable and thus clear criteria, namely in particular whether a contract is concluded, whether an exchange transaction of goods/services/rights for money actually takes place and whether this results in a business profit.

Systems theory agrees with practitioners that the economic subsystem requires the greatest flexibility and dynamics compared to the other three subsystems. This requires a maximum of freedom. Internal system restrictions, for example by following bureaucratic rules, slow down action and limit freedom of movement. This explains why complaints about too many rules, both at the economic and at the company level, can primarily be heard from the economic subsystem. The task of politics, on the other hand, is to select very specific possibilities from the variety of possibilities with regard to certain goals, which can also be set differently (contingency), and thus to exclude others. This already restricts dynamics and flexibility. The common subsystem, which limits political decisions by orienting them towards additional values such as social and ecological compatibility, goes even further, and the most far-reaching restrictions ultimately result from the cultural subsystem, which demands, for example, that everything should result in an inherently consistent pattern, that decisions should, for example, be consistent with the tradition of the company.

The economic subsystem usually regards such restrictions as an obstacle. In addition, if these restrictions were to suddenly guide any economic activity, flexibility and dynamism would generally be (too) severely impeded. At the macroeconomic level, this could be observed in the centrally administered economies of socialist-governed states (Willke 2006, p. 195 ff.). In market-economy oriented states, this justifies the privatization of state-owned enterprises such as the Deutsche Bundesbahn or the Deutsche Bundespost (formerly non-legally capable special federal assets)<sup>4</sup>.

However, a complete unleashing of the economy would make economies an end in themselves. In fact, however, economic activity serves only to direct scarce resources to where they are most beneficial. Moreover, the economy is at the service of the overall system in order to ensure the prosperity of society as a whole at the macroeconomic level and to secure an adequate income for all members of a company at the microeconomic level under acceptable working conditions and taking into account other boundary conditions (A-system). In addition, the resources generated serve to achieve certain goals (G-system), maintain a community (I-system) and serve higher purposes (L-system).

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<sup>4</sup> This reference is not to be understood in such a way that privatizations based on the systems theory can be generally advocated. In fact, reasons can also speak against privatizations.

### 2.1.3 Interpenetration between subsystems

The functionally specialized subsystems must now interact in such a way that they support each other without abandoning their respective autonomy or disturbing the autonomy of the other subsystems. In concrete terms, this means that a subsystem that imposes greater restrictions than another, for example the political subsystem, must not dominate a more dynamic subsystem such as the economic subsystem. Conversely, a dynamic subsystem such as the economic subsystem must not force a more restrictive subsystem such as the political subsystem to adapt. Equally problematic would be an isolation of the subsystems, i.e. a renunciation of interaction (Münch 1992, p. 23). What remains is what Parsons calls interpenetration (Willke 2006, p. 207 f.). Alternative terms for this are loose coupling (Weick 1976, p. 1 ff.; Wolf 2011, p. 173 ff.), structural coupling (Maturana 1982, p. 144 and p. 150 ff., quoted from Willke 2006, p. 63 ff.) or contextual control (Willke 2006, p. 241 ff.).

Figure 2 shows some of the services that the subsystems perform for each other in this way. In addition, this figure illustrates how interpenetration takes place between self-regulated, operationally closed subsystems. Parsons has divided the four subsystems into four further subsystems (Willke 2006, p. 208; Münch 1992, p. 129), which will be referred to as sub-subsystems in the following to identify the system level. For example, the A-subsystem consists of the AA, AG, AI and AL-sub-subsystems. This makes it clear that even within the economic subsystem (A-system) a sub-subsystem, namely the AG-sub-subsystem, takes the lead, while the actual benefit is primarily generated in the AA-subsystem. In practice, this can be demonstrated by the fact that in the AG-sub-subsystem of companies, for example in production, there are managers such as department heads or foremen who, despite their management tasks, are usually not assigned to the company management, since they only play a very limited political role.

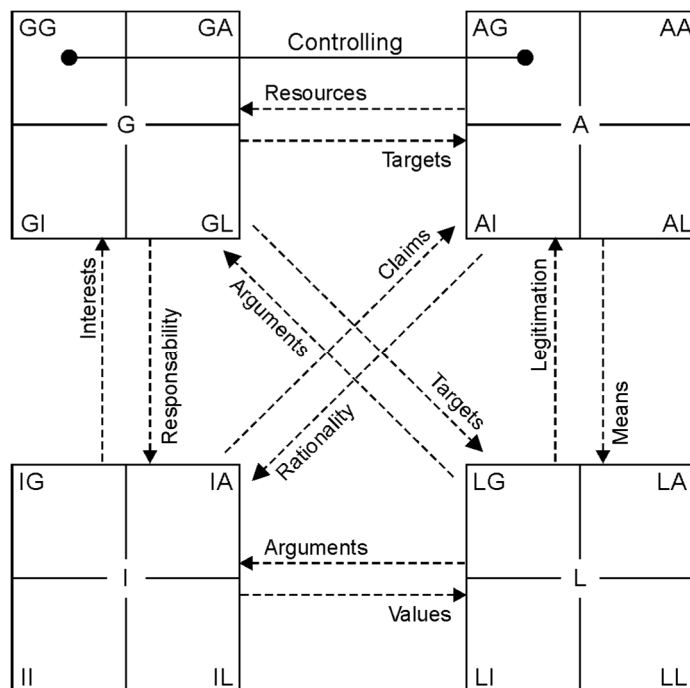


Figure 2: AGIL scheme with input-output relationship

The corresponding sub-subsystems form so-called interpenetration zones, which interpenetrate each other and provide the necessary translation services. For this topic, the penetration of the GG-sub-subsystem with the AG-sub-subsystem is relevant and will be investigated in detail below.

## 3 The role of controlling

The sub-subsystems take up elements of different sub-subsystems that mediate between them (Münch 1992, p. 14). What this looks like in practice will first be outlined with regard to the role of controlling in companies on the basis of a concrete example at the social system level. The Federal Bank of Germany<sup>5</sup> (BBk) will be consulted for this purpose:

<sup>5</sup> To simplify matters, the links between the BBk and other institutions such as the European Central Bank (ECB) or the Federal Financial Supervisory Authority (FSA) are not shown here.



- Its anchoring in the political subsystem is indicated by the fact that, as a federal direct legal entity under public law (§ 2 BbankG), it belongs to the indirect public administration. Furthermore, the Board of Managing Directors is appointed by politicians (Section 7 (3) BbankG). In addition, its primary mandate to contribute to ensuring a stable price level (§ 3 BbankG) is also politically motivated.
- At the same time, the BBk is anchored in the economic subsystem. This can be seen at first glance in the fact that it acts as a bank and not as an authority. Its most important instrument is monetary policy, which it pursues independently of political directives (§ 12 BbankG). In doing so, it influences the semantic code that directs action in the economic subsystem. This influence is reinforced by the fact that it is also responsible for supervising the private credit and financial service institutions, which in turn have a decisive influence on the semantic code. However, the Federal Bank of Germany has no authority to issue instructions to market participants.

The BBk thus acts as a loose link between the political and economic subsystems. Directly effective power is replaced by indirect influence:

- Although the BBk has an advisory function in the political arena (§ 13 BBankG), it does not have voting rights (cf. e.g. § 9 para. 3 of the Rules of Procedure of the Stability Council).
- In addition, banking supervision (§ 7 KWG) does not permit direct intervention in individual bank transactions, but only the definition of framework regulations and the verification of their compliance.
- In concrete terms, for example, the determination of the key interest rate only defines the costs at which commercial banks can obtain cash and credit. Whether and, if so, to what extent they do so is up to them.
- Analyses of financial and monetary stability merely serve as a basis that other actors can, but do not have to, draw on in their decisions.

In this way, the respective inherent laws of the power-based political subsystem and the money-based economic subsystem are preserved without losing themselves in them. Political decisions are influenced by economic boundary conditions just as economic action is put at the service of politics. This gives the economy the necessary freedom to allocate scarce resources, which, thanks to political influence, are used not only for individual but also for collective goals.

### 3.1 Status quo

In companies, the link between politics and the economy is often far from as loose as it is at the level of modern societies. Here, other interaction strategies are usually to be found, such as the dominance of politics over the economy or the conflict between the two subsystems.

Dominance is particularly evident from the widespread notion of a hierarchical order in which management as a political authority is perceived as at the top. This results in the assumption that it has direct access to all other instances that are perceived as subordinate via a continuous chain of command. However, this is not compatible with system-theoretical models, because they recognize boundaries between functionally differentiated subsystems that require more than simple instructions to overcome (cf. e.g. Willke 2005).

Another characteristic of the dominance of the political subsystem over all other subsystems is the widespread practice that political actors almost automatically receive higher salaries than actors in other subsystems. At the social level, things are different: politically unwise, but factually correct, Chancellor candidate Steinbrück pointed out in the respective Bundestag election campaign that even a savings bank director as head of a public institution can earn a significantly higher salary than the Chancellor. From a system-theoretical perspective, there is nothing wrong with that, because according to it, the subsystems do not differ in their more or less great

significance or responsibility for the overall system, from which, among other things, the amount of salaries could be derived, but only in their specific functions. In this respect, there is nothing against a differentiation of references in principle, but against the often-observable automatism with which this is derived from belonging to a certain subsystem.

One of the problems resulting from the dominance of the political subsystem over other subsystems, for example, is the high attractiveness of leadership positions, which motivates many to prefer a leadership career to a specialist career, even if they would be much more suitable for the latter and thus benefit the overall system more. In this way, companies lose a lot of potential (see also Peter/Hull 2001).

More serious, however, is the fact that the economic subsystem is thus constantly threatened in its autonomy, which limits its ability to optimally perform its function. This can be seen in practice, for example, when sales, as part of the economic subsystem, is confronted with the wishes of customers and has to react flexibly and quickly to them, while at the same time being exposed to the ideas of the political leadership of its own company, which naturally has its focus less on the customers and more on the owners. Flexibility and speed often fall by the wayside when dealing with the resulting conflicts.

Although it can be justified based on New Institutional Economics that a central control of economic processes is characteristic of companies because they differ from markets in precisely this respect (Coase 1937, p. 386 ff.; Williamson 1975; Willke 2013, p. 88 f.), this only justifies the necessity of leadership, but not its concrete form. From a system-theoretical point of view, the central administrative allocation of resources can certainly be limited to the economic subsystem; control then takes place through the AG-sub-subsystem, whereby the autonomy of the A- subsystem can be maintained without having to forego central administration. Moreover, of course, political control of the economic subsystem is also necessary. However, this must take place through a loose coupling, similar to the coupling at the societal level, and with regard to the role that controlling plays in this, the role of the Federal Bank of Germany can be a suitable model.

In fact, however, controlling today is primarily seen as part of the management system (G-system). This can be exemplified by the controlling concepts of Horváth (2011, p. 121) and Küpper (2005, p. 28 ff.), which will be discussed below in the interpretation by Bramsemann et al. (2004, p. 559 ff.). According to this, the task of controlling according to Horváth is to coordinate various subsystems of the management system, namely the planning, control and information supply systems, with each other (cf. *ibid.*) and to align them to result targets. The necessity for this is justified, among other things, by a limited rationality of the actors and by a potentially opportunistic pursuit of self-interests (Horváth 2011, p. 121). In addition, Küpper (2005, p. 28 ff.) also sees the task of controlling primarily as coordinating within the management system (cf. Bramsemann et al. 2004, p. 560). This is also based, among other things, on the assumption that the actors pursue individual goals (Küpper 2005, p. 69).

From the point of view of systems theory, there are several corrections to be made before the actual discussion of the role of Controlling:

- First, the assumption of limited rationality seems to imply that there is only one permissible type of rationality, namely economic rationality. However, based on the AGIL scheme, it becomes clear that each functionally differentiated subsystem has a system-specific rationality, its own semantic code. Thus, if political action is taken within the leadership system, it is not limited rational and, moreover, not more oriented towards private goals than acting in other subsystems, but just as unrestrictedly rational as it is unrestrictedly rational to act economically within the economic subsystem (A-system). What is missing is merely a mediation system such as the Federal Bank of Germany, which replaces the previous domi-

nance of the political subsystem with an interpenetration (loose coupling, structural coupling, context control) of the two subsystems.

- Secondly, from the point of view of systems theory, it is not about the actors as persons, but about their communication. If a person acts politically in the leadership system, this does not result primarily from the personal interest of the person, from his or her personality traits or from other characteristics associated with the person, but from the fact that within the leadership system it is not possible to act otherwise than politically. Conversely, the same person could only communicate economically within the economic subsystem (A-system), because otherwise it would not be understood, could not have any effect. The elements of a system do not influence the system as a whole; the system produces the elements of which it consists (Willke 2006, p. 143; Luhmann 1996, p. 43). In addition, the elements of social systems are not persons, but acts of communication. While people can move in different systems, but are forced to use the specific semantic code to understand, be understood and make an impact, each semantic code is quasi trapped in its own system and can only leave it if it is translated by a mediation system into the semantic code of the target system, thereby losing some of its power, just as a poem written in one language often loses some of its expressiveness if translated into another language.
- Thirdly, the pursuit of personal interests in particular is not limited to executives. It makes sense for each person to pursue his or her own interests, which is also quite legal (legally permissible) and legitimate (morally justifiable) within the usual limits. In addition, incentives not to lose sight of the common good despite one's own interests are not limited to economic incentives in well-functioning social systems. In addition, there are solidarity obligations that are generated in the I-system, as well as cognitive insights and convictions that are communicated in the L-system. Despite all the weaknesses that can also be identified in modern societies, they are basically good examples of how a well-balanced overall system can emerge from well-functioning interpenetration between the subsystems (Münch 1992).

Against this background, it becomes clear that it is fundamentally necessary to bring economic aspects to bear within the management system. Moreover, that can be the task of controlling. However, this will not succeed if and to the extent that controlling sees itself as part of the management system or is integrated into it. Instead, like the Federal Bank of Germany, controlling must detach itself from the management system, make itself independent of it and assume a mediating role in order to provide translation services in both directions, from the management subsystem to the economic subsystem by translating political decisions into economic action, and from the economic subsystem to the management subsystem by influencing political decisions through economic conditions.

### **3.2 Controlling as a mediation system**

As already indicated above, sub-subsystems take up elements of different subsystems that mediate between them (Münch 1992, p. 14). In this case, controlling is placed as an element both in the GG-sub-subsystem of the political subsystem and in the AG-sub-subsystem of the economic subsystem. In Figure 2, this is indicated by a corresponding connection.

Analogous to Article 88 of the Basic Law for the Federal Republic of Germany (GG), the role of controlling and its independence must be anchored in the corporate constitution. In addition, the primary objective should be defined here, which, analogous to the Deutsche Bundesbank's objective of contributing to price stability, may be to contribute to the economic stability of the

enterprise. It may even be possible to limit the aim of controlling to pure profit maximization (shareholder value) if it is ensured that further corporate objectives resulting from the consideration of all stakeholder groups (stakeholder value) are introduced by other instances.

The influence of political leadership on controlling is thus ensured by a right to propose candidates for management positions in controlling. However, appointments and dismissals are not made by the political leadership itself, but by the shareholders' meeting or the Supervisory Board - analogous to the fact that the members of the BBk Board of Managing Directors are appointed by the Federal President (Section 7 (3) BBankG). An entry in the Commercial Register is not required, as controlling, unlike management or the Board of Managing Directors, has no external effect.

Analogous to economic policy at the societal level, a division is necessary at the company level, which places fiscal policy in the hands of the political leadership, while controlling has its own set of instruments, which correspond to monetary policy. How such a set of instruments should be designed in detail is the subject of further considerations, the results of which are not yet available. However, the contours of such a set of instruments can already be seen. With this in mind, a constructive-critical examination of Beyond Budgeting (cf. e.g. Hope/Fraser 2003; Rieg 2008; Horváth 2011, p. 219 et seq.) seems to be continuing, since its intentions show clear parallels to the approach formulated here, but significant deficits with regard to its scientific foundation (Rieg 2008, p. 208 et seq.).

The critical part of the debate relates, for example, to the fact that Beyond Budgeting has so far lacked a clear model idea of what an alternative organization of companies should look like in concrete terms. Instead, it is recommended to imitate companies that are outlined as exemplary (Hope/Fraser 2003, p. 43 ff.; Rieg 2008, p. 196). The debate can be constructive, for example, in that the general demand for delegation and decentralization of decisions (Rieg 2008, p. 201 ff.), which is therefore difficult to operationalize, can be substantiated with the help of the approach presented here.

Ideas in the context of Beyond Budgeting to reduce a leader to the role of a mentor, who should discipline himself to not intervene, even if he is tempted to do exactly that (ibid., p. 202), seem unrealistic in the way they have been formulated so far, because they amount to a demand for self-denial. In fact, leaders are this because they see it as their task to lead, and if they do not lead, they are not leaders. The approach formulated here, on the other hand, envisages restricting the political leadership of the entire system to the G-subsystem and economic leadership to the A-subsystem and using controlling as a mediating instance between the two subsystems in order to transform the different rationalities (codes) without obstructing, ignoring or dominating the respective inherent laws of the two subsystems. In this way, the demand for delegation and decentralization of responsibilities formulated in Beyond Budgeting is embedded in a formal model and concretized on this basis.

Other ideas of Beyond Budgeting can also be put into perspective and put into concrete terms based on the AGIL scheme, such as the demand for the abolition of budgeting. The relativization consists in the fact that here no complete abolition of budgeting is demanded, because the chosen approach provides no arguments for it. Moreover, empirical findings, such as those put forward by Rieg (2008, p. 208 ff.) against Beyond Budgeting, speak against such a far-reaching step. Nevertheless, not all the reasons put forward by Beyond Budgeting against budgeting in its present form can be dismissed completely, such as the immense effort often involved. Against this background, the demand for the abolition of budgeting can be substantiated based on the model on which this report is based by limiting budgeting to the economic subsystem and placing it under the sole responsibility of controlling. This removes it from political power interests and subjects it only to economic rationality. At the same time, however, the link to

politics remains intact insofar as the goals must be set politically and the results must be accountable to the political subsystem – just as the Federal Bank of Germany is bound to politically set goals and must justify the success or failure of its action in the economic subsystem to the political subsystem until the profits of the Federal Bank are also transferred to the political subsystem.

In general, the approach formulated here by no means envisages taking the control of the economic subsystem completely out of the hands of the political subsystem. Such neo-liberalism has not proved its worth on the social level either (Ahrens 1999). Just as the political leadership at the societal level reserves the instrument of financial policy and general legislation, the political subsystem at the operational level also retains comparable instruments for steering the economic subsystem. However, these instruments must be system-compliant. This means, for example, that economic actions are not directly instructed, but supported, for example, by an offer of subsidies or by the siphoning of profits. This leaves the economically motivated decision to use such offers in the economic subsystem, so that its autonomy is preserved.

In addition, the political subsystem has the task of providing the economic subsystem with framework conditions, which find their counterpart at the societal level in legislation and its implementation. These framework conditions must, however, be formulated as generally as possible in order to resist any approach that would ultimately have a direct impact on individual economic aspects. In concrete terms, such framework conditions can, for example, define the business areas and markets in which a company operates, define product groups and production technologies, and regulate overarching administrative processes.

## **4 Outlook**

The classification of controlling in the business organization carried out here presupposes a different business organization than that which is common today. The insight into the necessity of a further development of operational forms of organization is not new, and was justified in the context of controlling by Beyond Budgeting (cf. e.g. Hope/Fraser 2003; Rieg 2008; Horváth 2011, p. 219 ff.). However, empirical findings such as those by Rieg (2008, p. 208 ff.) show that the concepts presented so far have not been applied, and assumptions such as that the reason for this lies, for example, in a lack of willingness on the part of companies to make far-reaching changes appear too simple. It is more likely that the existing concepts are not (yet) convincing. Rieg (ibid.) has outlined possible reasons for this: the problem of induction, according to which the conclusion from the special (examples of successful implementation) to the general cannot lead to scientifically proven findings, the search for confirmation and not the refutation attempt usual in critical rationalism (Popper 1984) or the renunciation of the investigation of failed companies.

However, to draw the conclusion from this that there is no alternative to the predominant form of business organization does not appear to be justifiable either. The problems, as addressed by Beyond Budgeting, are too obvious and far-reaching. Against this background, the considerations presented here are part of an approach that attempts to take up problem situations and solution ideas as identified and developed by Beyond Budgeting, among others, but to avoid some of the mistakes: for example, a deductive approach is chosen that proceeds from a model that has already proven its worth in describing social systems (cf. e.g. Münch 1992) and which, according to the ideas of its author (Parsons 1986; Parsons 1996), is transferable to other levels of social systems on the basis of its scale invariance (Ahrens 1999).

A complete transformation of the model is still pending. However, it is already foreseeable that the predominant form of operational organization will be questioned to a similar extent as has been the case with Beyond Budgeting, and that a whole series of ideas hinted at in Beyond

Budgeting will be found again as a result of the intended transformation process, albeit concretized in a formal model. In this model, for example, the demand for delegation and decentralization (Rieg 2008, p. 201 ff.), which was raised by Beyond Budgeting in general and nonspecifically, is further developed into a functional differentiation, which, among other things, provides for a separation into a political and an economic subsystem, which are loosely linked to each other through controlling. This will make it possible to specify more precisely than before who plays which role, in order to perform which function, and according to which rules the contributions of individuals to the whole are to be made.

## 5 Literature

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