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About the Author

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For students

- **Video** links providing further insights into the key concepts discussed in the book.
2


What company is this?

![Organizational Structure Diagram](image)

*Figure 2.1* A large corporation's formal organizational structure
No, it’s not one of the global white goods corporations that is shown in Figure 2.1 above. It is possibly the formal organizational structure of one of them as it appeared a number of years ago. It is, rather, a diagram depicting a common way of describing organizations, in this case the Swedish-based global white goods producer Electrolux. We recognize this way of describing organizations so well that we mix up the description with what it intends to describe, without too much thought. The reason why we are able to quickly accept the structural image as a good description of a corporation (in this case Electrolux) is that the structural framework is such an integral part of our everyday knowledge of and thinking about organizations.

The structural framework is the oldest and most established of the four frameworks. Organizational research has been conducted based on the basic assumptions of the framework since the late 1800s, and extensive structural organizational research is still carried out today. Within areas such as strategy and operations management, this type of research predominates. Even in business administration, i.e. among managers and management consultants, for example, the structural framework is still dominant. When managers say ‘organization’, they are often referring to formally structured organizational processes.

The historical roots of the structural framework

Ever since its inception 100–150 years ago, the structural framework has had one foot anchored firmly in academic social science research and the other, equally firmly, in organizational practice. During the second half of the 19th century, many new-age capitalist companies had grown so large that they became difficult to manage and control. These successful (and wealthy) capitalists needed methods and models that could create order in the companies’ increasingly complex activities and more control over the increasing number of employees. Help came from the more practically oriented organizational analysts of the day, some of whom were, just like today, celebrated and well-paid management gurus. One of the more well-known is the American engineer and consultant Frederick W. Taylor (1856–1915). His scientific management theory – also called Taylorism – was concerned with how to depersonalize employee knowledge, build up structural capital and design formalized processes. These formalized processes consisted of very precise descriptions of how highly specialized tasks should be performed (Taylor 1911). As a result, employees could not ‘get away with’ informally putting a limit on their workload, without being noticed. Management obtained new instruments to control and exploit ‘its’ labor force. At the same time, the French mining engineer and author Henri Fayol (1841–1925) developed 14 principles to ensure efficient management, which complemented Taylor’s scientific management principles (Fayol 1916/2008). Taylor and
Fayol's principles provided practical, applicable guidance for how to design and lead efficient organizations.

Taylor and Fayol were both engineers and employed a relatively simple problem-solving approach, which still characterizes much of the structural framework. However, there was, and still is, a more social, problematizing and theoretical foundation for structural organizational analysis. This can be said to be derived from sociologists such as Karl Marx, Max Weber and Émile Durkheim. An integral contribution made to organizational analysis is undoubtedly Weber's account of what he thought was the most efficient form of organization – the formal-rational bureaucracy.

What the German sociologist, economics historian and economist Max Weber (1864–1920) and his contemporaries were interested in was understanding the rise and development of industrialized Western society. Weber (1924/1983, 1924/1987) described this development as a rationalization in which efficiency and rationality gradually replaced tradition and customs. In Weber's world, however, formal organizations were not something that would benefit only the owner, management or any other category of individual, but also society as a whole. It was therefore important that organizations were protected from special interests (including capital owners) and that goals were set within the framework of democratic processes. Weber said that a capitalist and democratic society was far superior to a communist one but that the capitalists' interest in returns should not be above the will of the people and democratically developed goals. All formal organizations, regardless of whether they take the form of nation states or large corporations, were to pursue goals as rationally and efficiently as possible. According to Weber, excessive influence from a particular group, be it employees or owners, could hinder efficiency and rationally conducted activities. Weber's formal-rational bureaucracy is characterized by the following principles:

1. an established division of labor among staff  
2. coordination via an authority and responsibility hierarchy  
3. generally valid rules that determine different work tasks and rewards  
4. a clear distinction between personal and official property and responsibility  
5. recruitment and promotion of staff on the basis of formal qualifications  
6. full employment and established career paths  
7. a full-time job with a sufficient wage to live on.

Taylor, Weber and their contemporaries defined the very basics of the structural framework, as well as the more sociological strand developed in the advanced theory of social organizing. Much of the more advanced thought was downplayed as other aspects were added on, when the more current structural framework of organization theory developed. Much of the ‘add-ons’ will be covered in this and the following chapter, while some of the more advanced theory will show up in later parts of the book.
The basic assumptions of the structural framework

The more practical and academic knowledge interests that underpinned the structural framework eventually merged into one basic organizational theory. The historical interest in the sociological and social science waned, as did the problematization of democratic goal-formulation processes and special interests. Instead, the focus turned to a relatively unproblematized concept of efficiency, where overall goals and interests remained unstated, yet firmly anchored in corporate management and capital ownership. The basic assumptions of the structural framework are formulated in Weber's description of formal-rational bureaucracy to a great extent, but can be developed somewhat to better fit the extensive structural research that has been pursued since then.

The basic assumptions of the structural frame can thus be formulated as follows:

1. Organizations exist because they are efficient tools to achieve established goals.
2. Well-advanced division of labor/specialization leads to efficiency.
3. Coordination is best achieved through vertical hierarchical control (‘top down’) and formalized processes/structures.
4. People are motivated to work through material rewards (pay), clear, formalized work descriptions (information/rules) and control.
5. Optimal processes and structures are rationally designed based on objective/material conditions – by studying and analyzing facts, efficient organizations can be designed.
6. Inefficiency arises due to incorrectly or ambiguously designed processes and structures and is addressed by means of restructuring.

Given these basic assumptions, a number of key concepts form the basis of the structural framework. The three most basic concepts are efficiency, division of labor and coordination. We go through each of these below.

Efficiency

Although the structural framework can be said to be characterized by analytical models with strong explanatory and normative power, rather than problematizing interpretations, there are obviously problematizations of key concepts. The most central of these concepts is efficiency. With the framework's strong focus on efficiency, a number of different efficiency concepts have been developed.

*Efficiency* (internal efficiency) is the measure of the amount of resources needed to achieve something, such as how many working hours, or how much money, are needed to make a car. If it takes 17 hours to manufacture a car, the organization is
less efficient if it takes 19 hours to manufacture the same car (all other factors being equal). A focus on internal efficiency can also be described as production orientation, in contrast to market orientation.

*Effectiveness (external efficiency)* is about how many resources are needed to produce something that is in demand. Effectiveness thus includes (internal) efficiency, but adds demand, that is, a market aspect. It does not matter how many hours it takes to make a car if there is no one willing to buy it. It is better to manufacture a car that is in demand in 20 hours, than to manufacture a car that is not in demand in 17. If efficiency is to do something right, effectiveness is to do the right thing.

The concept of *system efficiency* can be said to include both efficiency and effectiveness but adds a time or change dimension. It is thus a measure of how quickly and efficiently activities can be adjusted if/when demand changes. The crucial aspect is that it doesn't matter whether a car can be manufactured in as few hours as possible, if this manufacturing is difficult to adjust when demand changes. It may be better to manufacture a car in demand in 20 hours than in 17 hours if, in the first case, production can be adjusted quickly and smoothly to manufacture another type of car when demand changes.

The most recently developed efficiency concept is *flow efficiency*. It can be seen as a development of the above but where the time factor is emphasized further. Flow efficiency is defined as the ratio between valued-adding time (i.e. the time spent actively working towards the completion of a task) and lead time (that is, the time it takes from an order being placed to it being delivered to the customer). Thus, this concept includes both efficiency and effectiveness but adds the time factor in relation to both needs/market and delivery/production. More on this can be found in the section on Lean in Chapter 3.

If we stick to the car example, we may say that Ford’s great success in the first decade of the 20th century was due to a strong focus on internal efficiency. The cost of manufacturing a Ford Model T (the first practical, affordable car for the general public that was mass-produced on assembly lines) dropped radically during its 10-year success story. However, this focus on internal efficiency was driving Ford, the world’s most profitable company, towards bankruptcy because its competitor, General Motors (GM), was more effective (external efficiency). Once the large, newly rich American masses had bought their first car, they wanted something nicer and different. With its different brands and variations, GM offered a wider range of car models than Ford. Fifty years later, however, the Japanese car industry, and in particular Toyota, showed that it was better at adjusting production than the US car industry. Instead of optimizing the manufacture of a range of variants of basically the same car construction, Japanese car manufacturers worked according to more dynamic principles that required lower investment in machines, and production was thus easier to adjust. In an industry characterized by customers who were not satisfied with variations on the same theme, but instead wanted station wagons one year, a mini-van the next, an SUV the next,
and then wanted to buy an alternative-fuel vehicle, the capacity to adjust was perhaps the most important factor. The fact that Toyota could also push down its manufacturing costs more than its European and American competitors can be explained by its dynamic and continuous efforts to increase its flow efficiency.

These different concepts of efficiency point to a major organizational problem: how to organize in order to maximize efficiency in both the short and long terms. On the one hand, the fewer resources invested in developing future products and processes, the more you can gain in the short term. On the other hand, the more resources you invest in future products and processes, the better the organization is equipped for the future. However, it is important to distinguish between efficiency and profitability. Profitability is primarily about the distribution of added value created, while efficiency is more about how the production of goods and services is organized. But how should efficient organizations be structured according to this structural framework? This question leads us to the other two key concepts of the structural framework: division of labor and specialization.

**Division of labor**

In order to organize efficiently, the work involved in the production of goods and services should, as far as possible, be divided up, i.e. broken down, into different activities. What is possible is limited by a variety of circumstances, which we will soon return to. However, it should be noted that it is not only possible to divide labor in terms of degree, but also in different qualitative ways – based on a number of different principles. We discuss each in turn below.

**Division of labor based on function**

The functional organization is considered the first developed form of organization, as it was developed well before modern organizational theory. In the organization of the Roman Empire’s armies, the construction of Ancient Egypt’s pyramids, indeed, as far back in time as we can say something about human organization, division of labor by function has been a recurring principle.

Although functional organization has been supplemented and, to some extent, replaced by other work division principles, it is generally always possible to find elements of functional organization in present-day organizations as well. The main motive for dividing up an activity into different functions is that they require different knowledge and skill-sets. An expert on purchasing does not have the same skills as an expert on manufacturing or financing. The purely functional organization has different departments for, for example, purchasing, production, product development, marketing and sales. These functions are placed side by side in an organizational structure and together
form the organization’s internal value chain. Above this can be found a formal organizational hierarchy with management at the top, assisted by support staff (see Figure 2.2).

![A typical/simple function-based organization](image)

**Figure 2.2** A typical/simple function-based organization

**Division of labor based on product**

Organizations whose offerings include several goods and services that differ in terms of product and production technology often create organizational units for the different products or product groups. For example, a company that sells both personal computers, large integrated customized IT systems to multinational companies, and strategy and management consultancy services can divide labor in its organization on the basis of these quite different offerings.

**Division of labor based on customer and market**

Different customers may have different needs regarding different goods and services, but also the ways these are marketed and distributed might need to be different. For example, one computer could be marketed and distributed in completely different ways: to companies purchasing computers for their employees, to people purchasing a computer for personal use and to students, who have a different range of requirements. But even the product itself and its manufacturing can be organized differently. For example, washing machines look different in the USA to those in Europe. In the USA, top-loaded machines are used to wash quickly, while in Europe the preferred machine is front-loaded and washes more slowly and gently. Washing machine manufacturers can try to change these consumer behaviors in order to achieve greater economies of scale, but, if this is difficult, it is better to divide labor for product design and manufacturing instead, based on different types of customers.

**Division of labor based on location**

Division of labor based on location is often combined with the principle of labor division based on the customer, as in the washing machine example above: on two
different continents, different types of washing machine are in demand. Different locations also have different conditions for efficient production. For example, in areas with many highly educated people, ‘knowledge-intensive’ activities (like in consulting and advisory business) are appropriate, whereas, in low-wage areas, it is more efficient to conduct more manual, ‘work-intensive’ activities.

**Division of labor based on time**

Several types of activities are suitable for organizing based on time. Regardless of the demand for, for example, bread and tomatoes, agriculture often has a more or less logical organization of time: sow, manage and harvest. Even though modern technology has made and is still making a lot of industrial agriculture less dependent on weather, daily and seasonal rhythms still play a major role in how labor is divided in agricultural production over time. Another example is the police. Different crimes have different seasonal cycles and are committed at different times of the day. For example, more police are out on the streets on Friday and Saturday nights, and more administrative follow-up work is conducted at the beginning of the week.

**Division of labor based on process**

In a way, the principle of dividing labor based on process has become more common, replacing the more traditional functional principle. At the same time, the difference between process and function can be problematic. The basic idea behind division by function is that it is based on logical steps in a value-creating chain or process: purchasing, product development, manufacturing, marketing and distribution. The basic idea behind division of labor on process is that the work should follow a flow of gradually adding value to the product or service. We return to the issue of whether or not a reorganization from function to process is real or mostly a change in how to describe the same organization in the chapters on the symbolic framework. However, there can be real differences. In the service sector, for example, the work can be set up so that a customer meets a single service provider throughout the process (for example, in the form of a personal banker or family doctor). This contrasts with the customer meeting different people at different stages (like one doctor for testing, another for diagnosis and a third for treatment). The same applies to the manufacturing industry, where the work is often organized on the basis of processes and flows of material, information, financial capital, and so on, and not on different resources, such as purchasers, machines or warehouses. To take the example of a car factory, you can really see the process of flowing material when a car gradually evolves with its movement through the factory. We look at this in more detail when we discuss lean and flow efficiency in the next chapter.
Division of labor based on projects

Project organization, according to the structural framework, means delimiting resources in time and space to reach a specific goal. Each project is allocated the resources needed to achieve the goals for that particular project. Dividing labor based on projects is often combined with other labor division principles. For example, in a functionally divided organization, cross-functional groups can be formed that carry out activities to which the otherwise functionally divided organization is not suited. A project group can, for instance, be formed to develop a new product, a new manufacturing process or something else that requires resources from several functions. Labor in project groups can also be more permanently divided and combined with labor division based on, for example, function. Then a ‘matrix organization’ emerges in which employees and other resources are both divided and coordinated by two different management structures, in this example by both project managers and function managers. Both project management and matrix organization constitute extensive areas of knowledge within the structural perspective and are therefore treated in separate sections (matrix organization later in this chapter and project management towards the end of the next).

Coordination

The more labor-divided or specialized an activity is, the higher the requirements for coordination. Coordination takes place using the same processes, rules and structures designed for operational labor division. However, language usage has changed over the years when talking about efficient organizations based on a structural framework. Sixty years ago, it was said that well-developed bureaucracy was the key to success. Thirty years ago, clear structures were said to be the key to success. Today, instead, we speak of ‘setting the processes’. However, it is the same model behind the reasoning, and the basic principle is the same: that hierarchical, vertical coordination or ‘top-down’ control determines what is being done, when and by whom.

From a structural perspective, it is always efficient to have specialized activities as much as possible, as well as to coordinate the specialized working tasks with formalized rules, processes and physical structures. Designing tasks, structures and processes should also be done from the top. The fact that top management has both the most responsibility and the most influence is a rational and logical consequence of the fact that, according to the structural framework, the ideal organization not only consists of a bureaucratic system but also constitutes a meritocratic system, that is, the higher up in the hierarchy you go, the more qualified and skilled are the people involved in organization and leadership. The right person in the right place is thus the same as recruitment and career paths being governed by formally established qualifications and skills, rather than favoritism, personal relationships or other criteria that are not primarily about how well duties can be performed.
Although, within a structural framework, you should always strive for maximum specialization, the clearest possible processes and the development of formal control structures, sometimes specialization and hierarchical or vertical coordination are not always the most appropriate. In these cases, you can supplement or replace hierarchical vertical coordination with horizontal coordination. There are thus two basic strategies for how to coordinate and control labor-divided activities, vertically or horizontally, and we look at each in more depth below.

**Vertical coordination and control**

Vertical coordination is about the higher, hierarchical levels defining and controlling what the lower levels do. Vertical coordination and control can take place in different ways. For example, it may be a manager giving a direct order to their subordinates, who is in *direct control*. Vertical control may also consist of the organization’s management designing formal rules and structures that those subordinates on lower levels are expected to follow. This *bureaucratic control* can range from detailed employment contracts and job descriptions to formalized process instructions and incentive structures in the form of payroll systems. It may also include instructions on how service personnel should address their clients, on consultant companies’ ‘up-or-out’ policies (if you do not show a specified level of performance within a specified timeframe or before you reach a specified age, you will be asked to leave the company) or on financial institutions’ risk-management systems. An important part of such structural or *bureaucratic control* is the design of physical structures, such as the workplace and work technology. Such structures set limits to what actions it is possible to take. The conveyor belt is perhaps the most famous example of a highly controlled, physically designed workplace.

**Horizontal coordination and control**

When, for different reasons (more about these in subsequent paragraphs), it is not possible or appropriate to coordinate an organization vertically, it can be coordinated horizontally instead. Horizontal coordination and control, in principle, mean that people on the same hierarchical level interact with each other and decide what to do together, without giving a higher-level manager more right of determination. Horizontal coordination can consist of face-to-face interaction in, for example, cross-functional project groups and teams. If these groups are made more permanent, so-called ‘matrix structures’ (see final section in this chapter) are obtained, combining coordination in two dimensions. Horizontal coordination may also consist of different networks that span multiple functions or units that are labor-divided according to other principles. These networks may, but need not, be supported by information technology and are
Structures, Formalized Processes and Rational Decisions

sometimes referred to as knowledge management systems (cf. Nonaka and Takeuchi’s (1995) model for knowledge dissemination in organizations in Chapter 5). There may also be special coordination roles that, instead of exercising vertical control, have the task of disseminating information among employees and units on the same hierarchical level. An example of such a horizontal coordination role is ‘runners’, who, in large merchant banks, run between different units or ‘desks’ specializing in different types of securities trading, and disseminate information between them.

An initial simple model

If an organization is stable in terms of production methods, material use and customer demand, it is rational to break it down into as many small, specialized tasks as possible. According to the structural framework, it is also efficient to coordinate these with job descriptions and rule systems that are as specific as possible. However, in other situations, similarly detailed processes and structures cannot or should not be developed, nor should the activity be steered using vertical control alone.

In an organization that is characterized by great uncertainty, for example due to a changing market, new competing manufacturing technologies, changing legislation or simply highly technically complex products, it can be a complete waste of resources to design detailed processes and complex organizational structures. For example, if production has to be readjusted, perhaps because people want to buy small hybrids or electric cars instead of large, gas-guzzling SUVs, then it would not have been a good investment to build a large specialized production plant for large gasoline engines. Neither is it smart to plan in detail and structure the work of developing a product, the physical appearance of which is not known, for example, the advanced development of software that will be used in next-generation spacecraft in 15 years. In these cases, the organization includes so much uncertainty that the work can and should not be broken into small specialized tasks and coordinated by means of vertical structural control. Instead, problems have to be solved as and when they occur, and the work should be carried out more flexibly by qualified teams. Coordination should then take place horizontally, through interaction and communication between employees on the same level. This reasoning leads to a simple, one-dimensional model that can be used to analyze the efficiency of an organization (see Figure 2.3).

Using this particularly simple but practical model involves asking two questions:

1. To what extent is our current organization characterized by specialization and vertical coordination? That is, where on the scale of the model are we?
2. To what extent is our organization, including its environment, characterized by stability and predictability versus changeability and uncertainty? That is, where in the model should we be?
If you are where you should be, the analysis explains why things are going well. You have efficient structures, given the level of uncertainty that characterizes the organization and its environment. If you are not where you should be, it indicates that there are problems that can be addressed through the reorganization of structures and processes.

For example, if we analyze the organizational structures and processes of the Stockholm School of Economics (SSE): does SSE have optimal structures and processes, given the nature of its activities? In the last ten years or so, SSE has expanded its organizational structure and formalized previously informal processes. More hierarchical levels have been created and decision-making has been centralized, and the school is hence relatively bureaucratically organized. Overall, SSE is today further to the right on the scale in Figure 2.3 than it was 10–15 years ago.

If, instead, we look at how SSE should be organized, we can see that the school is very small compared to its competitors, and that there are no more teachers or researchers today than 10 years ago (although the administrative staff has increased considerably as a result of the expanded structure, formalization and bureaucratization). Moreover, the ambition is extremely high in terms of advanced knowledge content in the research and education being conducted. SSE is a distinguished elite school. All this means that it should not have an overly developed formal structure but instead work more with horizontal coordination.

A clearly formulated conclusion based on this analysis and on the one-dimensional structural model in Figure 2.3 is that SSE has changed for the worse, i.e. it has gone in the wrong direction. You should not move to the right on the scale. Today, the school is even smaller than before, relative to its large competitors, yet it has at least as high
elite school ambitions as before (today, the school competes with major international prestigious schools more than ever before). This is an argument for more horizontal coordination, more work in teams and projects, and less hierarchy and formalism.

It can seem paradoxical that a top school with high-end master’s and executive programs in management cannot organize its own activities according to this simple normative model. However, it should be added that it may not be as easy as the model makes it appear. We will therefore return to this example when we have further advanced the structural analysis. A strong argument suggesting that the above analysis bears some importance is that relatively recently, in the past few years, the newly appointed SSE management has abolished a number of formal positions and reduced the number of hierarchical levels. Maybe the current school management has better management skills than the previous one?

Although the above one-dimensional structural model is very simple, using it usually provides major new understanding. If the uncertainty of the organization and/or its environment increases, care should be exercised when investing in formal structures, formalized processes and greater division of labor. On the other hand, if an increasingly stable and predictable market is detectable, and there are opportunities to modularize and produce similar goods or services, then efficiency increases if you structure, systematize and formalize, or, in other words, ‘set the processes’.

**Uncertainty**

The simple described model above talks about uncertainty. However, there are different types of uncertainty. We can distinguish between uncertainty in the production of goods and services and uncertainty in the environment, for example in different markets. You can also differentiate uncertainty in terms of employee skills and incentives, what kind of future goals and strategies are chosen, and so on.

In the following section, Mintzberg’s structural configurations model is presented. This model distinguishes between different types of uncertainties and situational dependencies, which determine the ways activities should be structured.

**Mintzberg’s structural configurations**

In order to facilitate the choice of efficient organizational form, that is, how to divide labor and coordinate, Mintzberg (1983) developed a typology consisting of five ‘pure’ structural configurations. With the help of Mintzberg’s typology, more were developed and nuanced conclusions can be drawn on the type of structure and processes that are most effective in a given situation. The five configurations – machine bureaucracy, professional bureaucracy, simple structure, adhocracy and divisionalized form – are presented below. In the ‘Dimensions and situational dependencies’ section, Mintzberg’s
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multi-dimensional model is then presented, which shows which configuration is most effective given different types of uncertainties (or dimensions of dependencies; see below).

However, we begin by reviewing the five basic parts from which the five configurations are built (see Figure 2.4).

![Diagram of structural configurations]

**Figure 2.4** The basic parts of structural configurations

*Source: Mintzberg (1983)*

Each structural configuration consists of a strategic apex or top, which corresponds to the highest management group in real-life organizations. This is where the highest decision-making right resides in the organization, as well as the highest level of responsibility. You can also include the board and thus the owners in the strategic apex, but most often you treat these in the analysis as part of the organization’s environment, at least when the owner and management team are not the same. Beneath the strategic apex are the line managers or middle management. In real organizations, the number of levels varies, but, in the model, they constitute one basic part. Under middle management is the operational core. This corresponds to the workshop floor, the restaurant and its kitchen, the cash office, the sales team and/or any of an organization’s other core activities. Continuing our previous SSE example, SSE’s operating core
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consists of teachers, students and classrooms, but the school’s research activities are also part of the operating core.

In addition to these three basic parts, the model consists of *technostructure* and administrative *support functions*. These can sometimes be difficult to differentiate, but the main idea is that technostructure is designed to control the operating core, i.e. the division of labor and coordination of the operational core activities in a certain considered way. The clearest example is the conveyor belt, which defines tasks as well as when they are to be performed and by whom. A company’s formalized project model is another example. Technostructure covers both the governing physical or formal structures and the people who design them. In other words, technostructure includes the staff function that, at the behest of the management, designs the new factory layout and its conveyor belts, for example, or the updated formal project model that everyone should use in their tasks. Support functions, in turn, lend their support to operational core activities rather than control them. A corporate staff restaurant, its payroll administration, free fruit and health care are relatively clear examples of support functions. However, it can be argued that all support systems have a controlling effect and that all technostructures provide support. The same structure can also be perceived differently by different people in an organization. However, such uncertainties and interpretations are best analyzed within the context of the symbolic framework (see Chapters 8 and 9). An analysis based on the structural perspective tries to keep these two basic parts separate.

By combining the five basic parts in different ways, Mintzberg (1983) designs five structural configurations: machine bureaucracy, professional bureaucracy, simple structure, adhocracy and divisionalized form. These five, their distinctive characteristics and their strengths and weaknesses are described below.

**Machine bureaucracy**

In a machine bureaucracy, labor division has been taken as far as possible, and coordination is conducted vertically through directives from the management at the top of the hierarchy or in the form of technical and formal structures designed by management and its staff. Machine bureaucracy is thus characterized by many formal and specialized roles and routines, by vertical coordination in the form of many hierarchical levels and a developed technostructure, as well as by many support functions (see Figure 2.5).

Of the five configurations, machine bureaucracy is that closest to Weber’s classic formulation of formal-rational bureaucracy (see the section on historical roots earlier in this chapter), which Weber considered to be the most efficient organizational form. Machine bureaucracy can be said to be the core of the structural frame. If you can organize according to this configuration, you should do so. The strengths of typical machine bureaucracy are that it maximizes economies of scale, repetition and predictability in a stable environment and in an organization with production processes that are not overly complex. Because recruitment to different positions takes place on
the basis of formal qualifications and education, it counteracts arbitrariness, favoritism and irrational decisions. Two well-known examples of machine bureaucracies are the Ford Factory, which manufactured the Ford Model T, and McDonald’s hamburger restaurants.

In a machine bureaucracy, labor division has been taken as far as possible, and coordination is conducted vertically through directives from the management at the top of the hierarchy or in the form of technical and formal structures designed by management and its staff. Machine bureaucracy is thus characterized by many formal and specialized roles and routines, as well as vertical coordination in the form of many hierarchical levels and a developed technostructure.

Machine bureaucracy is typically found in large organizations that mass-produce relatively simple and standardized goods and services in mature and stable markets. Even a product characterized by advanced technology, such as a personal computer, can be a simple product to manufacture and distribute. Most of the components of a personal computer are mass-produced standard products developed by companies other than the one putting it together and distributing it. Most personal computers are also sold through a system characterized by mass distribution through a small number of large retail chains and online stores.

One can even assert that knowledge-intensive service production, for example in major management consulting companies, is best done in the form of machine
bureaucracy. This is because many of these companies’ consultancy services make minor adjustments to highly structured models and are based on standardized and labor-divided processes. It is absolutely possible to argue that large parts of these company activities are too complex for a machine bureaucracy to be optimal. But developments over recent decades within the management consulting industry give machine bureaucracy support: the most successful consultancy agencies are large international companies with relatively formal structures.

Machine bureaucracy also has weaknesses, however. To begin with, it is unnecessary to develop extensive bureaucratic systems in order to coordinate activities in organizations with few employees. If there are five people whose work is to be coordinated, it is easier and cheaper for them to interact directly with each other, that is, to coordinate horizontally, than it is to create layers of hierarchical management levels, that is, to coordinate vertically. Neither is it rational to invest in large systems or build formal hierarchies if there are major uncertainties in the organization and its environment. If demand changes, or brand new production methods are developed, such systems can quickly become antiquated. Machine bureaucracy is thus slow-moving and difficult to change.

Another weakness is that there are often problems with work motivation in machine bureaucracies. This is due to decisions taken in the strategic apex usually being general and not adapted to the needs of the different departments further down the organization. However, this weakness can be analyzed in more depth, using models and theories that focus on human resources and relationships, namely the HR framework. We return to the conflict between efficient structures based on the structural framework and motivated staff based on the HR framework in Chapters 4 and 5.

In summary, machine bureaucracy has well-developed formalized processes and hierarchical structures with extensive specialization, large technostructure and vertical coordination. Its primary strength is efficiency and its biggest weakness is inertia.

Professional bureaucracy

Although activities in the operating core involve uncertainty in the form of complex production processes and technologies, the idea of formalized processes and bureaucratic structures should not be completely relinquished, according to the structural framework. If the operational environment is predictable and stable in terms of demand for the goods and/or services produced, complex activities should be organized in accordance with what Mintzberg calls professional bureaucracy.

Professional bureaucracy is a more decentralized organizational form than machine bureaucracy. Vertical coordination is not extensive, neither in terms of the number of hierarchical levels nor in the form of a developed technostructure (see Figure 2.6). It is not as easy to divide labor and formalize the production of goods and services that involve considerable uncertainty and complexity. Hence, complex production should
be characterized by a lower degree of specialization and vertical coordination. Manufacturing amateur welding equipment, for example, requires a much simpler production process than developing software for next-generation spacecraft. Making and serving fast food is a relatively simpler service than a law firm’s assignment in major business projects. Waste collection is a much easier service than emergency stroke surgery. In all these examples, the simple processes (welding equipment manufacture, fast food production and waste collection) are typically suitable for organizing as machine bureaucracies, while the more complex processes (software development, legal assistance in business projects, and brain surgery) are suitable for organizing as professional bureaucracies.

In professional bureaucracy, instead of by means of a developed technostructure and hierarchical levels, much of the organization is coordinated by the profession itself. Employees in a professional bureaucracy are characterized precisely by the fact that they belong to the same profession. This means that they have similar education and similar knowledge and skills that make their working tasks predictable and easy to coordinate. Coordination in a professional bureaucracy can be perceived to be largely horizontal, as there are no clear vertical coordination mechanisms as in a machine bureaucracy. However, by recruiting employees from one and the same field of education, for example from law school in the case of law firms, from medicine in the case of health and medical care, or from a business school in the case of management consultancy agencies, coordination can be said to be vertical to a certain extent. Management exerts some degree of control when recruiting from a specific profession.

Medical doctors have much more control over their working tasks than employees at fast food restaurant chains. A professional bureaucracy thus has a relatively undeveloped technostructure, but more support functions (see Figure 2.6). The work of a doctor, a lawyer or an equity analyst is simply too important for computers, projectors, stock exchange...
systems or assistants to go wrong: if a system breaks down in a hospital, patients can die; if a stock exchange system breaks down, large corporations can go under.

The strength of professional bureaucracy is that, at the decentralized level, in individual assignments and working tasks (the consultation assignment or the individual operation), it provides both efficiency and effectiveness. (Internal) efficiency is ensured by the profession having a stable and proven knowledge base that makes it possible to repeat difficult working tasks. Effectiveness (external efficiency) is guaranteed by the fact that employees are not controlled by rules but can adapt their theoretical professional knowledge to an endless variety of tasks.

A weakness in professional bureaucracy is that it is difficult to coordinate and control if you want to change it more fundamentally. For example, if management wants to change strategy for the entire organization, there is a great risk that the profession will dig its heels in. For example, an airline can relatively easily outsource its service and cabin crew but will find it significantly harder to outsource its pilots.

**Simple structure**

Mintzberg’s third configuration, simple structure, can be said to be a miniature version of machine bureaucracy. It is characterized by clear vertical coordination, but, unlike machine bureaucracy, this is not in the form of many hierarchical levels or developed technostructure but in the form of a strong and dominant manager. The simple structure is common in small, young companies managed by their founder and owner. This person controls virtually everything, and the employees do as the manager (founder/owner) says (see Figure 2.7). A typical organization with simple structure is the small

![Simple structure](image)

**Figure 2.7** Simple structure

*Note: The arrows symbolize how one or a few people have all the authority and micro-manage the work of all other employees.*
architectural firm dominated by a more or less established architect. The employees work as the architect’s assistants. Other examples include small industrial design companies, small consultancies and small subcontractors. These smaller companies, with up to around ten employees, are often organized into simple structures.

A strength of the simple structure is its flexibility. Because the manager decides and controls virtually everything, it’s easy enough for that person to decide to do something slightly different and simply tell his staff to do it. The simple structure is more agile than machine bureaucracy because no formalized processes or hierarchical structures have been built up that need to be changed. Neither is there any large group of employees who are shaped and stabilized by a common profession and therefore dig their heels in when change is attempted.

But this concentrated authority has its limitations. If the manager does not understand or realize that changes are necessary, the simple structure becomes rigid and difficult to change. The risk of this increases if the organization grows and includes more and more employees. Then it becomes increasingly difficult for the manager to control everything. As managers are forced to devote more and more attention and energy to micromanagement, the risk of them missing the major strategic issues increases. For example, if changes occur in the customer market, if new competitors establish themselves or new technologies develop, there is a risk that the manager in the simple structure will not see it. If the organization grows even more, but maintains the simple structure, there is also a risk that the manager won’t be able to cope with day-to-day micromanagement. Activities will then be unmanaged or under-managed, which can lead both to inadequate day-to-day coordination and a lack of longer-term strategic planning.

The simple structure therefore fits best in small organizations where its flexibility is its strength. It is also better suited to less advanced and less complex production processes, goods and services. In very complex production involving a high level of uncertainty, a simple structure has a limitation in that only one person determines everything. In the very complex production of goods and services, it is better if several people try to solve problems, either in the form of a professional bureaucracy or in the form of Mintzberg’s fourth configuration, adhocracy.

Adhocracy

Adhocracy is coordinated by horizontal coordination, that is, by people who continuously solve problems together and decide what to do. Adhocracy is the opposite of machine bureaucracy. In the simple, one-dimensional analytical model previously described in this chapter (Figure 2.3), adhocracy is found to the far left (and machine bureaucracy to the far right). Adhocracy is characterized by its lack of vertical coordination. The pure adhocracy has neither technostructure, hierarchical levels nor authoritarian managers. It could be said to be managerless and self-organizing.
Typical activities where adhocratic organization is suitable are research and development as well as temporary or time-limited activities such as projects, programs, assignments and investigations. In organizations where new products and technologies are developed, or which do extensive and complex customizations of existing components, adhocracy is often appropriate.

Just like simple structure, adhocracy best suits activities that involve relatively few people, such as the small research group or a small development team. However, with technological development and the advent of various social media, as well as the spread of open-source development, the limits on how many people can be involved in an adhocratically organized activity may be questioned. As open source is a model that can be said to be both adhocratic and highly decentralized, the boundary of this configuration has to do with the ownership, control and distribution of created added value. In the context of profit-driven entrepreneurship, adhocracy can be said to be most suited to small groups. This is true since the horizontal coordination in the form of face-to-face interaction becomes too costly and clumsy if it comprises a large number of people. Here is a parallel to simple structure, which also has a limitation as regards size.

Adhocracy is an innovation-promoting and flexible organizational form. The lack of formalized processes, hierarchical levels and technostructure makes it agile. The horizontal coordination with people constantly interacting stimulates new thinking.
and problem-solving. If the great strength of adhocracy is innovation and flexibility, its weaknesses are mainly its resource intensity and how difficult it is to control. If a number of highly trained specialists are free to develop new technology, new goods and services, there is nothing to prevent them from developing products that nobody wants or is willing to pay for.

In a business context, therefore, an adhocracy should be framed by some governing constraint: a cost budget, rough targets, some sort of steering group or a representative of outside interests. However, these types of constraints are more difficult to design than you might imagine. For an outsider, it is virtually impossible to assess what a research team is really doing. The development of the gastric medicine Losec, developed by Swedish pharmaceutical company Astra, is a well-known example. Although Astra’s management team formally decided to cancel the development work of Losec, on at least two separate occasions, the work continued. Losec then became so successful that it was the world’s best-selling drug for several years and laid the foundation for AstraZeneca’s development into one of the world’s largest pharmaceutical companies. In Losec’s case, the adhocracy’s lack of control became a great success, but things can just as easily go in the opposite direction.

When different types of control and constraints on an adhocracy are introduced, the pure theoretical form of this configuration, coordinated by horizontal control only, must be partially abandoned. In real organizations, it is difficult to imagine a completely ‘free’ and pure adhocracy. However, this applies to all the configurations presented here. Real organizations are more complex and usually include elements of several configurations. This leads us to the fifth and final configuration in Mintzberg’s structural analytical model: divisionalized form.

**Divisionalized form**

The divisionalized form is a little bit of an odd configuration, and in various ways it does not fit the logic of the overall model. Its most important contribution is to problematize where an organization’s boundaries are and to show that different configurations can be combined in all sorts of ways (see Figure 2.9). When analyzing real organizations using the described configurations, a number of choices must be made. One such choice is which unit or units to focus on. For example, in a large multinational firm, there are always a variety of activities that can be analyzed separately. At which level should you then focus your analysis? Throughout the multinational firm, in a subsidiary, department or particular business unit? The choice should be guided by, for example, the purpose, the issue at hand and the problems faced, but it is often appropriate to employ trial and error and analyze on several levels and at different widths and depths.

The divisionalized form is found in large organizations containing several different businesses (see Figure 2.9). Samsung manufactures everything from dishwashers...
to tablet computers and drones for military use. Should such different activities not be organized according to different configurations, perhaps? The answer is in the affirmative if these activities involve different levels of complexity and uncertainty. Is dishwasher manufacturing possibly more suited to being organized as a machine bureaucracy than, for example, the development of advanced military technology? An analysis involving such large groups with different products and customer markets, so-called ‘conglomerates’, should also include the divisionalized form configuration. Questions that should be asked are: Which configuration is similar for the entire group? Which configurations do we find in its different divisions? Are these forms of organization appropriate?

The strength of a divisionalized form is that different branches of activity can be adapted to their different conditions and that synergies between them can still be utilized. For example, the same administrative support functions and other resources can be shared, everything from product marketing to communication with financial markets.

The divisionalized form’s weaknesses include the risk of conflicts between the divisions. Because the divisions share the same resources, they are dependent on each other, while they are organized according to different configurations and principles. How common resources are to be designed and distributed is a matter that can easily lead to conflict. There is also a risk of short-sightedness. Since the divisions are often evaluated and compared to each other in financial terms, there is a tendency to focus on aspects that are mostly easily and securely measured, i.e. the current and historical financial situation, rather than the future. The divisions will thus compete with each other, based on their financial performance in the current quarter, rather than on the basis of the expected five-year outcome. Short-term results are, in turn, easiest to achieve by

Figure 2.9  Divisionalized form

Note: The arrow from the technostructure symbolizes vertical coordination in the form of joint business systems and centralized resources in the form of, for example, marketing and contact with financial markets. The arrow from the strategic apex symbolizes financial return requirements but also complementary management dialogues.
cutting costs rather than investing in future business. Short-sightedness becomes a reality. Research shows that, by conducting regular dialogue between the group and division leaders, the risk of short-sightedness and conflict can at least in part be counteracted.

**Dimensions and situational dependencies**

One way to analyze a specific activity in order to answer the question of how best to organize it is to compare it with Mintzberg’s five structural configurations. If it is a question of a large organization in a stable environment, simple structure or adhocracy are probably not the best configurations. If it is a question of a very complex activity in an uncertain environment, machine bureaucracy is probably not suitable. And so on. By comparing the studied activity with all five configurations, a reasonably normative response can be achieved.

An even more meticulous variant of analysis based on a structural perspective is to clearly distinguish between the description of the unit to be analyzed and the normative analysis that leads to an understanding of how the studied activity should be organized. By dividing the analysis into a clearly descriptive part and a clearly prescriptive or normative part, the analysis can be made clearer and more specific conclusions can be reached. Mintzberg’s five structural configurations should then be used primarily in the descriptive analysis part. In the prescriptive or normative part, the uncertainty in and around the activity is instead analyzed by dividing up the uncertainty into six different dimensions. Each of these dimensions comprises a situational dependency, that is, depending on the situation, described in six dimensions, the activity should be structured in different ways. By analyzing all six dimensions and their respective situational dependencies, it is possible to draw fairly accurate conclusions about which of the five structural configurations the analyzed activity should resemble.

A thorough analysis based on a structural framework should thus comprise two separate parts. One part should answer the question: Which structural configuration/s resemble the organization in focus? The other part should answer the question: Which configuration/s should the organization in focus resemble? Mintzberg’s structural configurations are used primarily to answer the question of which configuration/s the organization resembles, and the dimensions and situational dependencies listed in Table 2.1 can then be used to answer the question of which configuration/s it should resemble.

Of the six listed dimensions and dependencies in Table 2.1, the first three can be said to be the most central and well-researched from a structural perspective.

**Size and age**

The first dimension, *size and age*, is relatively easy to understand. It is quite obvious that a large organization, with perhaps tens of thousands of employees, requires more forms of coordination than, for example, a company with five employees. It is also
Quite obvious that the age of the organization has an influence – over time, you learn how activities can be conducted, and the opportunities to divide labor and formalize processes increase over time. As uncertainty decreases, you can set the processes. Often, size and age coincide; successful organizations often grow over time. The fact that McDonald’s has a much more extensive, bureaucratic structure than a small fast-food stand is a clear example of how an activity can and should be structured according to this situational dependency.

Central processes and core technologies

The central processes and core technology and environment dimensions, respectively, can be seen as a breakdown of an activity’s uncertainty into two dimensions: central processes and core technologies refer to uncertainty within the organization, and environment refers to uncertainty beyond the organization’s boundaries. In the one-dimensional simple structure model described in the introduction to this chapter (see Figure 2.3), these two dimensions are clumped into one. However, when separated from each other, the analysis can be taken further and more precise conclusions on how to organize an activity (see Figure 2.10) can be drawn.

The central processes dimension consists of uncertainty in the production of goods and services, in regards to both the complexity of the product itself and the manufacturing process. Developing next-generation passenger aircraft is a technically complicated process. Flying and maintaining such an aircraft may not be as complex.

Table 2.1 Dimensions and situational dependencies

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Situational dependency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Size and age</td>
<td>The bigger and older the organization, the more formalized the processes and hierarchical structures</td>
</tr>
<tr>
<td>Central processes and core technology</td>
<td>The higher the complexity in central processes and core technology, the less formalization and hierarchy</td>
</tr>
<tr>
<td>Environment</td>
<td>The higher the uncertainty and turbulence in the environment, the less formalization and hierarchy</td>
</tr>
<tr>
<td>Strategy</td>
<td>The more ‘high-end’, that is, high quality and high tech, the less formalization and hierarchy</td>
</tr>
<tr>
<td>Information technology</td>
<td>The more developed the information technology, the more decentralized organization and the smaller number of middle managers, but also the more centralization and vertical control</td>
</tr>
<tr>
<td>Labor force</td>
<td>The more highly educated and skilled labor, the less formalization and hierarchy</td>
</tr>
</tbody>
</table>

Source: based on Mintzberg (1983)
Selling tickets, receiving and filling planes with passengers, luggage, fuel and crew, and taking off and landing are even less complex, and can be both planned and structured using formalized processes. The mass production of nails is a much less complex activity than particle-physics experiments. The higher the complexity of the central processes, the more appropriate are less developed structures and less formalized processes.

**Environment**

An organization's environment can be turbulent in several different dimensions. The market for the organization's offerings may be more or less turbulent; the competitive situation likewise. Changes in laws and regulations can cause major and unpredictable challenges. The global economy, demographic development and other environmental factors may be more or less difficult to assess. However, with regard to the turbulence of the environment, it should be borne in mind that a temporary increase in uncertainty and turbulence does not necessarily mean that we should not formalize and build structures in the longer term. Reorganizations take time and constitute investments that cannot be realized directly. Therefore, we should try to assess the possible growth of an organization, the complexity of central processes and the relative turbulence of the environment in the slightly longer term. Even if you experience a radical and turbulent shift in technology, a crucial readjustment or another major change, the increased uncertainty may be of a more temporary nature. Perhaps you should therefore choose to organize as you expect the situation to look in the slightly longer term, rather than just what it is at the moment.

**Strategy**

The strategy dimension shows that, in principle, you do not need to consider the first three dimensions in Table 2.1. Instead, you can choose the size of the organization, the complexity of core technologies and in what environment you conduct your business. If you choose to conduct technically high-quality activities (high-end), instead of activities characterized by low technology content and low quality, then you should not formalize, divide labor and establish hierarchy. Alternatively, if you choose to invest in more standardized (low-end) activities, with low quality, low costs and low prices, then labor division, formalization and hierarchy should be introduced as far as possible. In this way, the dimension strategy is a variant of the above, but with the emphasis that organizations can choose. This means that uncertainties in the environment or in the production of goods and services are not seen as independent and as determining variables, but as something that can be influenced. Thus, one computer manufacturer who chooses a low-end strategy should organize its activities differently to a computer manufacturer who chooses a high-end strategy. The same applies to
service production. A luxury restaurant should not be organized in the same way as a fast-food chain. The strategy dimension indicates a complexity, or even a logical contradiction, in the structural framework. On the one hand, the framework says that we should adapt our choice of organizational form to a number of objective facts (a so-called deterministic view). On the other hand, it says that an organization’s management can choose different strategies and thus affect the conditions that need to be adapted to (a more so-called voluntarist view). In practice, this can be seen as a short- and long-term issue. In the short term, we should adapt to the uncertainties (analyzed in the form of a number of dimensions and situational dependencies) that characterize an organization and its environment, but, in the longer term, we can move and change our activities more fundamentally.

Information technology

The research on the information technology dimension is contradictory. There are many studies that show that the introduction of modern information technology reduces the need for middle managers and that you can ‘flatten’ the organizational structure, i.e. reduce the number of hierarchical levels. Decision-making can be decentralized, i.e. vertical coordination can be replaced by horizontal coordination. For example, in the armed forces, it has been possible to make battle units more independent and thus more flexible, by giving them access to comprehensive strategic information previously available only at the highest level. This is often how information technology is described in textbooks and in popular media. But there are also opposing tendencies. As information can be disseminated more quickly than ever, even the highest management can obtain information about conditions in the organization’s core processes and its environment faster and cheaper than ever before. Information technology therefore also enables a higher degree of centralized decision-making and control, and more vertical coordination, than before. In addition, profits derived from the fewer hierarchical levels and the smaller number of middle managers can be ‘eaten up’ by growing IT departments or costs for external IT support. In other words, if the number of middle managers and levels decreases, the need for technostructure and support functions increases. The general idea is that IT rationalizes, but whether it does so by means of increased decentralization and horizontal coordination, or by means of increased centralization and increased vertical control, is not entirely clear. Perhaps it occurs by means of both increased vertical and increased horizontal control?

The information technology dimension, however, has a far more comprehensive and extensive impact on organizations and companies than those situational dependencies which only affect which formal structure is effective in a particular situation. Internet, social media, cloud data, artificial intelligence and block-chain technologies influence individuals, organizations and societies on all levels. We will return to this development in the chapters on the power (Chapters 6 and 7) and symbol
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(Chapters 8 and 9) perspectives but also in a separate section in the next chapter, where we delve deeper into the structural framework.

Labor force

The labor dimension has some similarities with the information technology dimension. In both cases, the major changes that have occurred in these areas are seen as indicating that organizations should not organize their activities today in the same way they did a couple of decades ago. In addition to the fact that today there are completely different technological solutions, employees’ knowledge and education levels, as well as the knowledge content of many organizations, have increased significantly. In short, this means that you cannot divide labor, formalize and coordinate vertically as much today as you could before. Countless times, it has been claimed that the ‘death of bureaucracy’ is upon us. But, at the same time, bureaucracy seems to be more tenacious than many believed. Despite the message from all consultants and popular management books, that we must now organize in terms of managerless, self-determining, autonomous teams, research shows that organizations with advanced bureaucracy continue to be successful, both those that have operated for a long time (for example, in the engineering and banking sectors) and those that have relatively recently been established (for example, in the telecom sector and the management consultancy industry).

Applying the dimensions in analysis

Regardless of these problematizations of the above situational dimensions and dependencies, it is extremely informative to analyze an organization based on all six. A good analysis of the structure and degree of formalized processes in an organization should be characterized by at least the first three established dimensions (size and age, central processes and core technology and environment). Even if unambiguous answers to individual dimensions cannot be reached, an analysis of the organization using them as a starting point will identify important considerations. In sum, they will point in a certain direction. A careful structural analysis will answer questions about whether and, to what extent, an organization is characterized by an appropriate structure and degree of formalization, or whether it should be restructured; and – given that there is room for improvement – the direction in which the organization should be steered. A very useful model for describing the structures a particular organization resembles (or is), and the structures an organization should resemble, is the four-square matrix shown in Figure 2.10.

The two-dimensional model in Figure 2.10 can be seen as a concentrated expression of a more accurate analysis based on a structural framework. It also constitutes an expanded or slightly more complicated version of the simple one-dimensional model described in the introduction to this chapter (see Figure 2.3). The four-square
matrix can be used in several ways. You can illustrate which structural configurations an organization and its activities resemble, that is, answer the ‘*is*-question' by placing it in one of the squares. You can also show which configurations the same activities *should* resemble. If these two points coincide, the activities have an appropriate level of advanced bureaucracy. If they do not coincide, activities should be reorganized, according to the structural framework. You can also insert a time and change perspective regarding both *is* and *should*. Maybe these two positions coincided a number of years ago, but reorganizations may not have kept pace with technological development and/or changes in the environment. Or, restructuring has taken place, but in the wrong direction. Similar courses of events are then illustrated with two arrows. The one arrow describes what has been done (*is* and *where*) and the other one what *should* have been done.

If we look again at the case of SSE’s increased bureaucratization, a much more far-reaching and nuanced analysis can be carried out than the one conducted using the one-dimensional model at the beginning of the chapter. With the greater accuracy of the two-dimensional model, we can see that there are different activities with partially different conditions within the SSE organization. Research, for example, is characterized by an extremely high degree of complexity but still has a relatively stable demand. Some form of professional bureaucracy might be appropriate. In individual research projects, where there is considerable uncertainty regarding process, results and demand, an adhocratic organization could also work well. Even with regard to educational programs, you might think that the development of programs and courses should take place in some kind of adhocratically organized team, albeit with more formalized processes than in research projects. Although the demand for graduate and
master economists is relatively stable, there are constant changes in specific programs and their content. In cases where development work is not too complex, we can imagine that this occurs within the framework of simple structures, that is, a competent and experienced teacher or course director conducts a course development project relatively autocratically. In order to effectively provide these programs and courses, it should still be possible to structure activities with extensive support functions (professional bureaucracy elements), but also to divide labor, formalize and coordinate a lot of processes vertically (machine bureaucracy elements), especially with regard to the largest and most standardized programs, the Bachelor of Business and Economics programs. A possible structure for SSE would thus be to divide activities into two divisions: one for research, with a relatively informal professional bureaucracy as an umbrella structure and adhocracies for individual projects, and one for education, with adhocracies and simple structures for program and course development, and a professional bureaucracy with machine bureaucracy elements as an umbrella organization. In order to minimize the potential conflict within this divisional structure, and to avoid becoming a ‘headless giant’ (an organization with no clear direction and a top management with little control), it is also important to have ongoing dialogue and discussion between school management, division management, faculty and staff on strategy and goals. This rapid analysis of SSE’s activities shows that, even in an analysis of a relatively small organization (SSE has just over 300 full-time employees, including researchers, faculty and administrative staff), all five structural configurations and several dimensions of situational dependencies can be helpful.

Matrix organization

The matrix organization was briefly mentioned in the introduction to this chapter in the section on how the labor involved in an activity can be divided. For example, if labor is divided based on both function and project, a two-dimensional structure, a so-called matrix, is created. Mintzberg (1983) mentions matrix organization only in passing and then as an example of a horizontal coordination mechanism. But, different variants of matrices are today very common in both large and small organizations. In addition, extensive research shows that a matrix organization is a much more complex phenomenon than just a horizontal coordination mechanism. There is therefore every reason to go a little deeper into the matrix organization and look at division of labor, coordination and control, and finally its strengths and weaknesses.

Division of labor in matrix organizations

Based on the different principles of labor division described earlier in this chapter (function, product, market, etc.), a matrix organization can be defined as an activity in
which labor is divided on the basis of two or more of these principles. Large parts of
an organization’s resources, such as its employees, belong to two (or more) different
structures. In a two-dimensional matrix organization, employees have two authority
and responsibility structures to consider (see Figure 2.11). For example, you can have
a manager for the function to which you belong (e.g. marketing or production man-
ager) and a manager of the project, customer or product you are working with. The
origin of the matrix organization can be traced back to US aircraft manufacturers in the
1950s and to the US space industry. Matrix organizations, at that time, consisted of a
combination of functional structures that managed the manufacturing of, for example,
aircraft, and cross-functional groups (or projects) that managed the development of
new aircraft models (Allen 1984).

![Figure 2.11 Dual authority and responsibility structures in a matrix organization](source)

*Source: Daft et al. (2014)*

*Note: Compare with the structure of a functional organization in Figure 2.2.*

The development of matrix organizations was intimately associated with the devel-
opment of project management (discussed in more detail in Chapter 3). One reason for
the emergence of the matrix organization was the problems that were often encoun-
tered when functionally organized departments had to cooperate. As the basic assump-
tions of the structural framework imply, cross-functional cooperation was formalized
and, together with the already formalized functional structure, formed a new kind of
structural solution. The development of new products now took place in formally
planned projects with formally appointed project managers. The project manager’s
task was to coordinate and control project resources in order to carry out product development, i.e. the project's goals. When a specific project's development work was completed, the group dissolved or received new assignments. For each assignment, however, the composition of the project groups could change, due to the organization's flexibility and resource utilization, and this increased the efficiency of the project's development work (Galbraith 1971).

The emergence of matrix organizations thus led to cross-functional projects forming entities in the formal organizational structure. In organizations with repeated and parallel projects, these formed a formal horizontal structure that cut across the various functions. This clarified an already emerging informal process in accordance with the structural perspective's view of how clear structures and formal processes lead to efficient organizations. During the 1970s, the matrix organization spread to other industries, companies and organizations. Today, it is found everywhere and is often designed to handle activities other than just product development. For example, multinational companies often combine division of labor by location, often country or region, with division of labor by product (see an example of this in Figure 2.12). It is also not uncommon to find more complex matrices with three, four or more dimensions intersecting each other.

![Figure 2.12](image)

A common matrix in multinational companies (exemplified by a vehicle manufacturer)

Coordination and control in matrix organizations

If matrix organizations are relatively easy to understand in terms of labor division, they are more complex in terms of coordination. This is because the coordination between the different dimensions of the matrix is, among other things, about balancing different goals and interests. Dual coordination mechanisms can also create an ambiguity for
the organization’s employees. One could argue that restructuring a functional structure (see Figure 2.2 at the beginning of the chapter) into a matrix structure is to complement vertical control with horizontal coordination. This is in line with projects, teams and cross-functional groups listed as examples of horizontal coordination by, for example, Mintzberg (1983) and Bolman and Deal (2013). However, since the ‘horizontal’ dimension in matrix organizations is most often formalized in the form of its own management structure (such as project manager, project office manager, project coordinator), and moreover most often in the form of formal process descriptions (i.e. new technostructure; see, for example, project management models in Chapter 3), a matrix organization consists of two dimensions, both of which comprise vertical control. These two vertical control structures tend to collide. What benefits the effectiveness of research and development work does not necessarily benefit efficiency in more day-to-day production. What benefits an organization in a certain country is not necessarily what is best for a particular product group.

According to the structural framework, the solution to this problem is about trying to find a clear balance between the responsibilities and powers of the two dimensions. If successful, the matrix organization makes use of the benefits of several different principles for both labor division and coordination. Ideally, for example, a matrix organization may develop new goods and services faster than purely functional organizations, while being equally efficient in its more day-to-day activities. For example, a well-implemented matrix can enable an organization to quickly adapt to changing local market conditions, while, at the same time, producing products as efficiently as pure product organizations. However, failing to balance the dimensions of the matrix can cause confusion and conflict, and a time-consuming and inefficient bureaucratic superstructure can also develop.

**Strengths and weaknesses of matrix organizations**

Table 2.2 lists the strengths and weaknesses of the matrix organization. Based on a structural framework, the basic principle of creating a balanced matrix is to clarify, formalize and regulate the powers and responsibilities of the various managerial structures. However, as there is an almost infinite number of areas, issues and aspects that could be the source of confusion and conflict, such formalization risks resulting in an extensive, rigid and costly bureaucracy. Even if one tries to solve the balancing problem with more horizontal coordination, all calls and meetings are likely to take time and resources. Therefore, getting a matrix organization to work takes quite a long time, usually several years. The fact that an organization eventually succeeds in implementing a working matrix is also no guarantee that the organization will continue to work if you change the dimensions of the matrix or the balance between them. Although a well-functioning matrix organization is more flexible and better at development than a machine bureaucracy, it has similar problems in dealing with more extensive changes.
To avoid political power struggles, time-consuming meetings and a sluggish and extensive bureaucratic superstructure, arenas for conflict resolution, functioning dialogues, trust and community spirit between managers and leaders in the different dimensions of the matrix need to be created. However, in order to really understand the problem of how this happens, it is necessary to go beyond the structural framework’s focus on clarity and formalization. In other words, matrix organizations should also be analyzed using models and theories from the other fundamental frameworks of organizational theory.

### Videos

Don’t forget to watch the videos to discover more about the key concepts in this chapter: [https://study.sagepub.com/blomberg](https://study.sagepub.com/blomberg)

### Notes

1. Stockholm School of Economics (SSE) is the only privately owned university-level school in Sweden. It was founded in 1908 by one of Sweden’s wealthiest and most influential banking and industrialist families, and has since been regarded as an institution providing top-quality education in business administration and economics. Today, it has programs at bachelor, master’s, PhD and executive levels and has students from all over the world. It also plays a comparatively large part in research. The school is small, having about 300 employees. It has gone through many changes but is, as it has been from the start, firmly positioned as the top Scandinavian business school.


3. Read more on the history of Losec at, for instance, [www.akademiliv.se/2013/12/15611](http://www.akademiliv.se/2013/12/15611).