

**Step 1 Getting Started**

1. Assessing the Scope and Goals of the Organization

**Step 2 Assessing the Strategy**

2. Strategy
3. Environment

**Step 3 Analyzing the Structure**

4. Traditional Configurations of the Firm
5. New Organizational Forms

**Step 4 Assessing Process and People**

6. Work, Task Design, and Agents
7. Leadership and Organizational Climate

**Step 5 Analyzing Coordination, Control, and Incentives**

8. Coordination and Control
9. Incentives
10. Designing the Structure and Coordination

**Step 6 Designing the Architecture**

11. Designing the Architecture and the Sequence of Change

**Step 7 Implementing the Architecture**

12. Implementing the Change: Who Should Do What When?

# 1 Assessing the Scope and Goals of the Organization

## The Challenge of Designing

*Organizational design* is an everyday, ongoing activity and a challenge for every executive, whether managing a global enterprise or a small work team. The response has been varied designs: matrix, modular, cellular, network, alliance, collaborative, or spaghetti organization designs – to name a few. Globalization, worldwide competition, deregulation, increased focus on sustainability, political risks, and ever-new technologies including *digitalization*, artificial intelligence (AI), robots and machine learning drive ongoing designs and redesigns of organizations. Digitalization may be the biggest driver for change in the years to come moving the “traditional firm” into the “digital firm.” The digital firm is a general term for organizations that have enabled core business relationships with employees, customers, suppliers, and other external partners through digital networks and digital processes. The digital firm comes along either by companies that are born digital or by a digital transformation of an existing firm.

Yet, fundamental design principles underlie any well-functioning organization. Organizations require a formal design – including digital and self-organizing organizations. The fundamentals are: What are our goals? What are the basic tasks? Who makes which decisions? What is the structure of communication, and what is the incentive structure? Who has access to resources? Who has the formal responsibility? In terms of deciding who does what when, the “who” in today’s companies may be an individual, a team, or an intelligent robot, the what may be cloud-based services, and the when, in terms of timing, may be determined by the need for an ever-speedier response.

For these reasons, we have seen the rise of new organizational forms. However, Fenton and Pettigrew (2000, p. 6) state that “a closer inspection of the literature reveals that many of the new forms are not entirely new but reminiscent of earlier typologies, such as Burns and Stalker’s (1961) organic and mechanistic forms and Galbraith’s (1973) preoccupation with lateral relations.” Puranam *et al.* (2014) similarly argue that while the ways in which modern firms obtain differentiation and integration may have changed, the fundamental issues inherent in solving differentiation and integration remain fundamental for the modern organization of today and tomorrow (Puranam *et al.*, 2014).

Research on the relationship between organization design and performance shows that approximately 30 percent of the variation in performance can be explained by the organizational design (Obel, 1993; Doty *et al.*, 1993; Burton *et al.*, 2002; Volberda *et al.*, 2012). It is therefore important to get the design right. "Poor organizational design and structure results in a bewildering morass of contradictions: confusion within roles, a lack of co-ordination among functions, failure to share ideas, and slow decision-making bring managers unnecessary complexity, stress, and conflict" (Corkindale, 2011).

Let us illustrate the above points with a couple of examples from both the private and public sectors:

In the annual report 2018, Microsoft CEO Satya Nadella states:

Our mission is to empower every person and every organization on the planet to achieve more. Our business model is dependent on our customers' and partners' success. We are grounded in creating local economic opportunity in every community, helping to unlock the power of technology to address our customers' most pressing challenges. Our platforms and tools enable creativity in all of us. They help drive small-business productivity, large business competitiveness and public-sector efficiency. They also support new startups, improve educational and health outcomes, and empower human ingenuity. Our sense of purpose lies in our customers' success.

This is an outward-looking perspective on effectiveness, less on efficiency. However, in a market with very high competition they do have a focus on costs and efficiency. This is particularly true as Microsoft is changing from a product company to a service company. They do sell hardware products, such as Xbox and Surface computers, but more and more of their offerings are cloud services such as Azure and Dynamics.

Aarhus University has about 40,000 students and 10,000 employees, including faculty, staff, and Ph.D. students. For decades, Aarhus University had a very stable organization design with few changes in the overall structure. Since 2010, a series of major changes has been made. The point of departure for the reorganizations was the creation of the new Aarhus University by a merger of the old Aarhus University and six smaller research and teaching universities and national research institutions. To support the merger and the new strategy, the university was completely reorganized to break down the old faculty and department silos for the purpose of supporting cross-disciplinary research and educational programs to address the grand challenges. The organizational structure was changed from a divisional configuration to a matrix, with four faculties and four cross-faculty layers on teaching, research, talent development, and knowledge exchange. Further, the administrative structure was changed from many local faculty administrations to one central administration with local service centers. In 2016, Aarhus University got a new president. The first thing he did was to start a new strategy process, and as a result the administrative structure was rolled back to what it was before 2010. In January 2019, the president announced yet another strategy process and that the faculty structure would be reassessed, with possibly more faculties than the current four. The reason given was issues of internal efficiency and effectiveness, as well as changed conditions for the university in a modern world.

Turning to another public sector example, in 2007, the Danish Government decided to reorganize the emergency departments in Denmark. This reorganization

started a series of major changes that are still ongoing in 2019. Before 2007, there were about sixty hospitals with emergency facilities. In 2014, there were twenty-one. Further, five new large hospitals at a total cost of \$10 billion are being built to replace some of the old ones that do not fit the new design. The first of these hospitals was opened in 2018. The architecture and building layout of the new hospitals are designed to fit the new organization structure. Additionally, many of the remaining hospitals were rebuilt to be able to facilitate the new design.

Before the new design was implemented, the patients with a need for acute care were admitted to the department which was the most appropriate for each particular patient. Now, all acute patients enter the hospital through the new emergency departments. The redesign of the national system has also required a significant restructuring of the individual hospitals: new department structures, new staffing, new information systems, new decision rules, and new coordination of patient flow. The purpose of the redesign is to increase the quality of patient care and to be able to handle the expected massive increase in acute patients due to demographic changes – with a large increase in older people with more complex diagnoses. Further, the new design is expected to optimize the use of resources and thus also to control costs better. The implementation of the new structure is ongoing in the twenty-one hospitals, with a trial-and-error effort in choosing and deciding the details of the design (Petersen and Petersen, 2014).

Burberry is an example of restructuring based on a digital transformation. The change took place over a number of years and had multiple steps. Burberry spent several years implementing a backbone enterprise platform to consolidate their information systems. Then, they focused on digital marketing, allocating a substantial portion of their annual marketing budget to digital media. They revamped Burberry.com in eleven languages; developed Tweetwalk, live-stream fashion shows, with Twitter; collaborated with Google to create Burberry Kisses, allowing users to capture and send their "kiss" to anyone in the world; and collaborated with the Chinese social media platform WeChat. Burberry then began to collaborate with technology companies to make the "retail theater" concept real, enabling broadcasting multifaceted content to stores globally. They used technology to bring the Burberry brand to life in the stores: from the music to the rich video content on giant internal and external screens and to the iPads carried by all sales associates that gave access to the full global collection regardless of what was available in store. Customers were invited to watch runway shows live in stores and could shop the collection on iPads immediately for delivery in six to eight weeks. The company also made big investments in customer service, training salespeople both in stores and on its website, where customers can click to call or click to chat with customer service representatives 365 days a year, 24/7, and in fourteen languages (Westerman *et al.*, 2014).

These initiatives provided Burberry with a vast amount of data. So, the next step was to create analytic capabilities to handle and use these data for more insight into operations and customer preferences. The digital transformation had its peak in 2014, but without the intended financial results. Revenue grew, but in 2015 and 2016, the profit decreased. Burberry had a matrix structure and to integrate business, HR, and design, Mr. Bailey had the role of both CEO and Chief Designer. In 2016, Burberry hired a new CEO; Mr. Bailey continued as Chief Designer. Both the CEO and the Chief Designer reported to the chairman of the board. Many stakeholders



expressed concern with the new structure: Is Burberry swapping one ill-fitting structure for another? (*Financial Times*, July 12, 2016). The operating profit continued to drop in 2017, but made a turnaround in 2018 (Burberry annual report, 2017/2018).

One issue that has had significant effects on organizational design is AI and robotics. AI involves developing computer programs to complete tasks which would otherwise require human intelligence. AI algorithms can tackle learning, perception, problem-solving, language-understanding, and/or logical reasoning. In particular, AI is very good with regard to pattern recognition. Robots are programmable machines which are usually able to carry out a series of actions autonomously or semi-autonomously. Robots interact with the physical world via sensors and actuators. Artificially intelligent robots are robots which are controlled by AI programs. They are evolving both in production and in service and marketing, taking over a significant number of both white-collar and blue-collar tasks. The increase in network and cloud computing capacity, Big Data, and new sensors including cameras allow for new ways to interact. An example is the IBM Watson concierge robot Connie that works for Hilton.

There are many intelligent robots both with and without a physical representation. A chatbot, for example, is a computer program designed to simulate conversation with human users, especially over the Internet. Chatbots are primarily used in sales and marketing, but also in customer relations. A Danish bank has recently replaced 3,000 banking advisors with chatbots. CityBank is planning to replace up to 20,000 employees with chatbots. The rationale is that the chatbots are cheaper and better for these tasks than the humans they replace.

Uber puts a significant effort into AI. A specialized AI team develop AI solutions for challenges across the whole of Uber. Uber's mission is to drive service differentiation and business efficiencies at Uber using visual data. Uber want AI interactions to be as natural as talking to a friend. The goal is to leverage sensors as a source of truth and develop algorithms to solve users' top pain points. AI is part of features like crash detection and enhanced location accuracy innovations, and Uber's systems will send phone mounts to drivers for safer driving ([www.uber.com/us/en/uberai/](http://www.uber.com/us/en/uberai/)). There are nearly a million active Uber drivers in the United States and Canada, and none of them has a human supervisor. However, the algorithmic manager watches everything they do. Ride-hailing platforms track a variety of personalized statistics, including ride acceptance rates, cancellation rates, hours spent logged in to the app, and trips completed. Further, the platform displays selected statistics to individual drivers as motivating tools, like "You're in the top 10 percent of partners!" (Rosenblat, 2018).

These examples illustrate the challenges and complexity of organizational design. A good design is imperative and its implementation essential for good performance. Further design for many organizations is an ongoing process. Structural changes or design changes can on paper be effective immediately, but to implement a complete organizational redesign involves much more and will take time. Misfits (imbalances) between the various design components of organizational design can therefore be crucial for the performance of the organization. For example, if the organization needs to adapt quickly to many changes in the environment and has implemented a rigid organization structure, it will not be able to adapt. The negative effect can be

exacerbated if there is a misfit among several of the design components. In many cases, changes in design components are carried out to enhance the internal components of the organization (such as climate and work processes) and therefore are implemented without consideration of how these internal components are in effect interdependent with external design components. In this book, we provide a way to diagnose the need for a new design, as well as an approach to choose and implement the most appropriate design.

As can be seen from the examples above, organizational design goes beyond drawing a new organizational chart. It involves many interrelated components. An organization is a social unit of people with a relatively identifiable boundary that is structured and managed to meet a collective goal (Burton and Obel, 1984). All organizations have a governance structure that determines relationships between the different activities and the members and their assigned tasks, responsibilities, and the authority to carry out different tasks. The activities or tasks must then be coordinated (Burton and Obel, 2004) to obtain the collective goal. Structure and coordination are thus the fundamental choices in organizational design (Burton and Obel, 2018). Organizational design is deciding who does what when.

Based on a large body of research, an organization's design should be chosen based on the particular context, and further, the description of the context should be multidimensional, including both structural elements and human and AI agents. Structural components of organizational design include goals, strategy, and structure. Human and AI components include task and agents, people – both leadership and employees, coordination and control, and incentive mechanisms. Together, these components provide a holistic approach to the organizational design challenge.

It is important to acknowledge a change in the context or in a component. Further, it is important to be able to adjust appropriately. Sometimes the organizational components have to be changed; other times you have to change what the organization does within the given organizational design set-up. Yet, other times you have to change both. The ability to make the right changes at the right time and at the right speed is called *agility*. A highly agile organization reacts successfully to rapid advancements in technology, the emergence of new competitors, and sudden shifts in overall market conditions. Agility in the context of organizations has been used to describe a particular method of project management or to describe a particular organizational design often as a contrast to "old" organizational forms (Fernandez and Fernandez, 2008). Here we are using the word agility as it is stated in Webster: marked by ready ability to move with quick easy grace. Thus, we see agility as a property of the organization, not a particular organizational form. Through the book we will discuss how to design an organization that has the ability to move with quick easy grace. This discussion will be summarized in Chapter 10.

We present organizational, diagnostic, design of the architecture, and implementation as a continuous process. It starts with the organization's goals, and from there we work from the top to the bottom, considering strategy, structure, tasks and agents, people, coordination, control, and incentives. This is a top-down approach to diagnosing potential design issues. Based on the diagnosis, the particular architecture is designed. Next, the process of implementing the architecture should be undertaken.

The design and implementation steps will involve iterations involving managers and employees. The diagnosis, design, and implementation follow a seven-, step-by-step approach:

- Step 1 Getting started
- Step 2 Assessing strategy
- Step 3 Analyzing the structure
- Step 4 Assessing process and people
- Step 5 Analyzing coordination, control, and incentives
- Step 6 Designing the architecture
- Step 7 Implementing the architecture

We recommend a top-down approach with a strong top executive involvement, which is complemented by iterative incorporation of lower-level issues on the top-level design. Firm political and implementation issues may suggest that the organization be designed bottom-up, but such an approach would eliminate some possible good designs because the tasks of the organization can be misaligned with its goals and strategy. A bottom-up approach very likely will build on established tasks and job titles, each of which may need to be changed. Some modern organizations are experimenting with bottom-up approaches, but the majority of firm designs are decided by the top management. The top-down approach may have to be done in an iterative fashion to make sure that micro perspectives are included in the macro design. This approach is similar to what Westerman *et al.* (2014) found to be the most successful approach to develop digital masters.

## The Multi-Contingency Model

An organization is a social unit of people with a relatively identifiable boundary that is structured and managed to meet a collective goal (Burton and Obel, 1984). Organizational design involves two complementary problems: (1) how to partition a big task of the whole organization into smaller tasks of the sub-units; and (2) how to coordinate these smaller sub-unit tasks so that they fit together to efficiently realize the bigger task or *organizational goals* (Burton and Obel, 2004). By complementary, we mean that the smaller tasks must be defined and arranged in a way that allows effective coordination. Puranam (2018) states it as the design of division of labor and integration of effort. In particular, this relates to task division, task allocation, reward distribution, and information flows (Puranam *et al.*, 2014), but it also relates to who can make which decisions and on which basis. These issues are relevant for "older" traditional organizational forms, as well as for "newer" modern organizational forms.

We address the organizational design using the *multi-contingency model* (see Figure 1.1). This model consists of nine components: goals/scope, strategy, environment, configuration, leadership, climate, task design and agents, coordination and control, and incentives. The components are inspected following the above-presented step-by-step process.

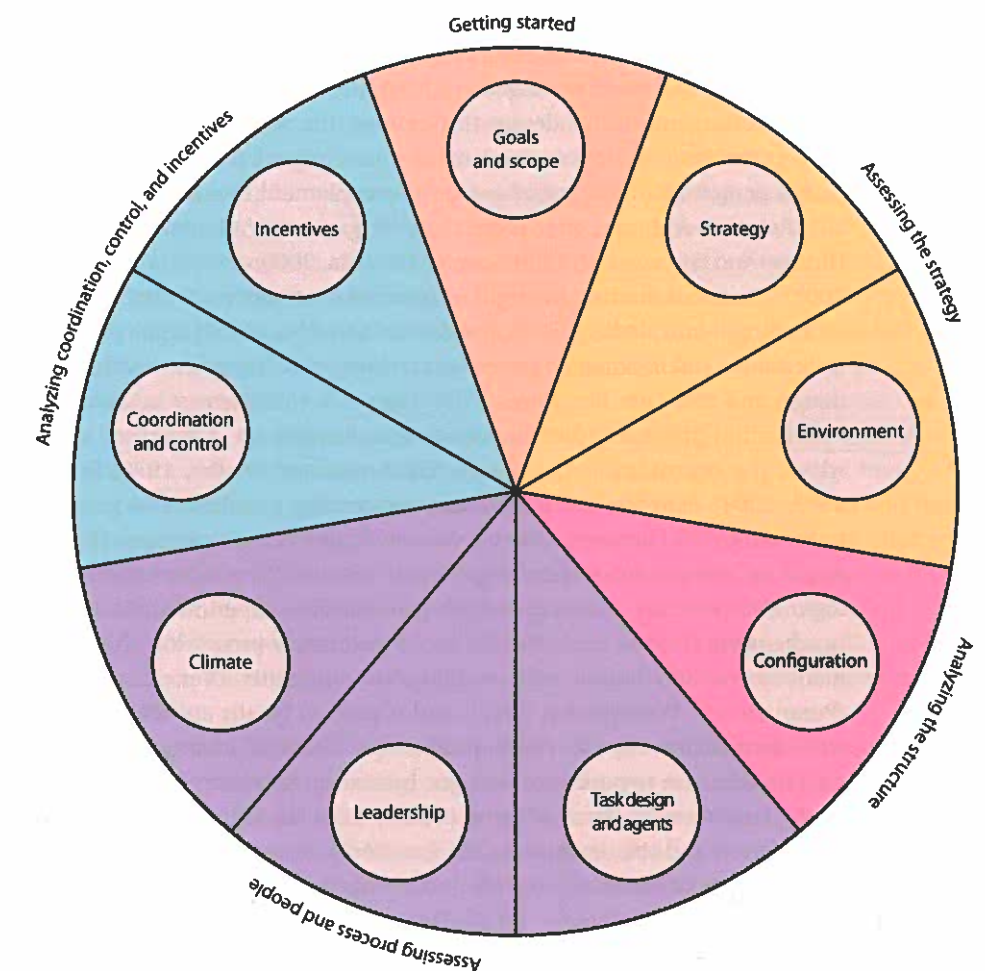


Figure 1.1 The multi-contingency model

The model is an extension of the multi-contingency model in Burton and Obel (2004), which integrates and extends the many single contingency models on strategy, size, environment, technology, and climate (Chandler, 1962; Woodward, 1965; Lawrence and Lorsch, 1967; Pugh *et al.*, 1969; Cameron and Quinn, 2011). The model is consistent with Leavitt's model (Leavitt, 1964), the organizational strategy, structure, and process model by Miles and Snow (1978), and the Star model by Galbraith (1995).

The step-by-step approach is a "how to" method for diagnosing, designing, and implementing an organization design change, based on the components and attributes in the multi-contingency model. Each step and its components provide fundamental building blocks for any organization, and we guide you through the process of assessing and analyzing each building block, as well as planning for change.

The step-by-step model presents a framework for dealing with the high degree of complexity involved in changing the architecture or design of an organization. The multi-contingency model provides a comprehensive framework for diagnosing the organizational design components and whether they are aligned or fit together.



Organizational design is an ongoing executive process that includes both short-term, routine changes and intermittent, larger-scale changes. We will address the dynamics of design, including misfit management, for both routine and larger-scale changes in the context of organizational design throughout this book. In the final chapters, we will address the issue of how to implement a new organization design. To find the right design or architecture is important, and to implement the design is even more important. Research indicates that more than 50 percent of change processes fail (see e.g. Hinings and Greenwood, 1988; Beer and Nohria, 2000; Amis *et al.*, 2004; Ford and Ford, 2009). Therefore, finding the right implementation process is vital.

Tushman and Nadler (1978) and Burton and Obel (2004) argue that the concepts of *uncertainty* and *information processing* can be used to integrate the diverse organization design and structure literatures. They suggest a contingency approach based on the information-processing paradigm to design a feasible set of structural alternatives from which the organization can choose (Tushman and Nadler, 1978; Burton and Obel, 1995, 2004). Further, the information-processing paradigm is a general theory and rather robust to changes in circumstances. It allows us to say something about “what might be” designs from knowledge about “what is.” The information-processing paradigm also provides a basis on which generalizable experimentation and observation can be done (Burton and Obel, 2018). Information-processing thinking can capture many theoretical issues, such as *bounded rationality* (Van Zandt, 1999), *learning* (Puranam and Maciejovsky, 2017), and *cognition* (Klahr and Kotovsky, 2013). As we will discuss later, it also holds promise in terms of conceptualizing the effect of digitalization on organization design, insofar as it enables translations of the effect of digitalization in terms of how it influences an organization’s ability to process information and the demand for information processing.

The multi-contingency model is tied together using the *information-processing view of the firm* (Galbraith, 1973). This view, or theoretical basis, provides you with a framework and a process for understanding a wide range of organizations in product and service industries and across global boundaries (Tushman and Nadler, 1978). The approach helps you interpret the history of organizations, assess and redesign complex organizations of today, and plan for the more information-rich organizations of tomorrow. The information-processing view is also the basis for assessing the fit and misfit relation between the organization’s components.

The discussion above argues that *organizational design* is multifaceted, with complex and interrelated components with significant performance effects. Thus, to design an organization, you need a comprehensive model based on tested theory and you need an approach to use the model. In this book, we provide you with such a comprehensive model and an approach for using it. We next describe the information-processing view and then move on to defining the *scope* of the organization and assessing its goals.

## The Information-Processing View in the Digital World

The work of an organization can be seen as information processing: observing, transmitting, analyzing, understanding, deciding, storing, and taking action for implementation. These issues may be labeled with other concepts like learning, tacit versus explicit knowledge, knowledge management, and data mining, but the basic idea is

the same. Information processing is work in modern organizations: “Who talks to whom about what, who makes which decisions based upon what information” (Marschak and Radner, 1972). Work involves information processing: individuals and information robots conduct information and knowledge-based activities. They observe, exchange information or talk, read, write, enter information in databases, calculate, and analyze. Various media are available to facilitate information processing – from pencils and face-to-face conversation to computer robots, large databases, social media, and video meetings. Organizations are information-processing entities. Therefore, we want to design organizations so that they process information effectively and efficiently. The basic design task is to create an organizational design that matches your organization’s demand for information processing with its information-processing capacity (Galbraith, 1973). Simon (1955, p. 1) is more succinct: Organizational design “is to investigate the information flows that are essential for accomplishing the organization’s objectives; then examine what these information patterns imply for organization structure.” Information channels “can be created or abandoned and their capacities and the types of signals to be transmitted over them are subject to choice; a choice based on a comparison of benefits and costs” (Arrow, 1974, p. 37). Agents, both individuals and intelligent robots, possess a capacity to process information, but “this capacity is not, however, unlimited and the scarcity of information-handling ability is an essential feature for the understanding of both individual and organizational behavior” (*ibid.*).

Underlying the theory is the proposition that “the greater the task uncertainty, the greater the information-processing demands by decision makers” (Galbraith, 1973). Further, the greater the interdependency between the tasks, the more information-processing capacity is needed. We call this interdependency complexity. Uncertainty and complexity create the need for information processing in an organization. A summary of the information-processing view in the context of our multi-contingency model is shown in Figure 1.2.

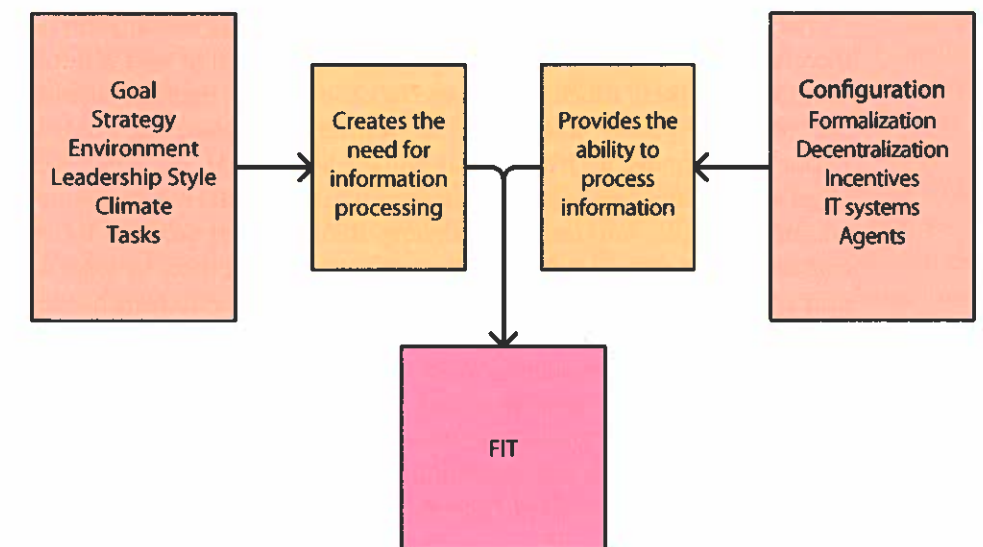


Figure 1.2 The information-processing model

Information-processing needs are due to the uncertainty and complexity of the context: Goal, Strategy, Environment, Leadership Style, Climate, and Tasks. The capacity for information processing comes from the organizational set-up: the agents in the organization, the way they are structured, evaluated, and compensated, the rules and formalization, and not the least the information systems.

Task (or work) uncertainty can arise from a firm's technology and the business environment in which the firm operates (Thompson, 1967), as well as other sources. If the information-processing demand comes from many routine and predictable tasks with an efficiency focus, then formalization in the form of rules and programs can increase the number of tasks that can be handled. As an example, an online retail store in which the shopping and purchase process is well specified can use rules and programs to increase the number of customers it processes per day. Task uncertainty is low, so the rules and programs can be used. When there are uncertainties associated with the tasks, and thus exceptions, then information processing is referred up the hierarchy to a level where an overall perspective exists. This is the traditional use of exception-based hierarchical decision-making (Galbraith, 1973). Unfortunately, such hierarchical decision-making can handle only a limited amount of uncertainty. If the uncertainty demands exceed the capacity of the hierarchy, then targets or goals have to be set for the various tasks, making the tasks somewhat independent.

Complexity is defined as the correlation among the variables in the environmental space or task space. Simon (1996) examines complexity as the degree of divisibility or decomposability using a matrix representation of the connections: The more connected or dense the matrix, the more complex the tasks; and the sparser the matrix entries, the less connected and the more divisible the tasks.

To balance the information-processing demand and capacity or what we call "fit," Galbraith (1974) offers two different organizational design strategies: reduce the need for information by creating semi-independent units (structure), or increase the information capacity with greater communications, either hierarchical or lateral (coordination).

The first option is to reduce the organization's need for information processing by increasing slack resources. For example, if the organization uses a just-in-time (JIT) inventory approach, which requires precise coordination, then the organization might shift to having a buffer inventory. A buffer inventory replaces the need to process the information required for JIT. You may also use Big Data, AI, and prediction algorithms to get a better knowledge of your customers. These activities reduce the uncertainty. As another example, information-processing needs can be reduced by creating self-contained tasks that do not require coordination among them in order to deliver the firm's product or service. For example, a two-product firm can create two self-contained single-product divisions that need not communicate in order to meet their customers' needs. Of course, this strategy of reducing the need for information processing may incur high opportunity costs from loss of coordination of interdependencies. Single-product divisions may ignore interdependencies in production or marketing, which may be costly in terms of lost opportunities. Thus, reducing information needs must be balanced with the returns from coordinated activities. Digitalization, AI, and intelligent robots greatly reduce the transaction costs of added information processing, and thus the balance has shifted significantly.

A second option is to increase the organization's capacity to process information. For example, in a hierarchical organization, the hierarchical processing of information can be increased by investment in a vertical information system. An information system may increase the speed and amount of information that can be exchanged. The introduction of satellites, information computer networks, the Internet, cloud computing, AI, and integrated platform systems can increase the organization's information-processing capacity. Upgrading the skills of the workforce, hiring more educated people with broader skills, using mobile communication devices, using artificial robots, or holding face-to-face meetings where people can share information are other ways to increase information capacity. In the modern organization, intelligent robots, machine learning, and AI can increase the information-processing capacity. Information-processing capacity can also be increased by creating lateral communications across the organization. Direct contact, liaison roles, task forces, and permanent teams are other examples of strategies that will increase the firm's information-processing capacity.

The development of new information technologies, methods for organizational learning, and technologies for knowledge management require a revisit of traditional strategies for managing a firm's information-processing capacity. Interactive information networks, AI, robots, and multimedia systems, and generally the speed and amount of information that can be processed, all have served to increase the information-processing capacity of firms. At the same time, the volume of information that firms must process continues to increase. In any case, the challenge of designing the organization that best meets demands for information processing remains.

## Fit and Misfits in the Model

From an information-processing perspective, a misfit between two components in the model is characterized by a situation where the information-processing relation is not in balance. For example, if the environmental uncertainty is high and the formalization of procedures is high, we have a situation where the environment requires a high information-processing capacity, while the organization does not possess such a capacity.

The nine components in the multi-contingency model can also be represented by the nine components and their bilateral forty-four relationships as shown in Figure 1.3. The lines between the components represent the fit and misfit relations between the nine components. Misfits are misalignments within the organizational design components that can lead to deterioration in the firm's performance (Burton *et al.*, 2002). They lead to a decrease in organizational performance, either today or in the future. Misfits are thus the starting point for the implementation of change. As such, misfits are the engine of the organizational design process. If your organization changes in response to design misfits, rather than waiting for financial or other performance problems to arise, goal attainment is more likely to be achieved.

All design components are mapped onto a series of two-dimensional graphs, as we will discuss in the following chapters.



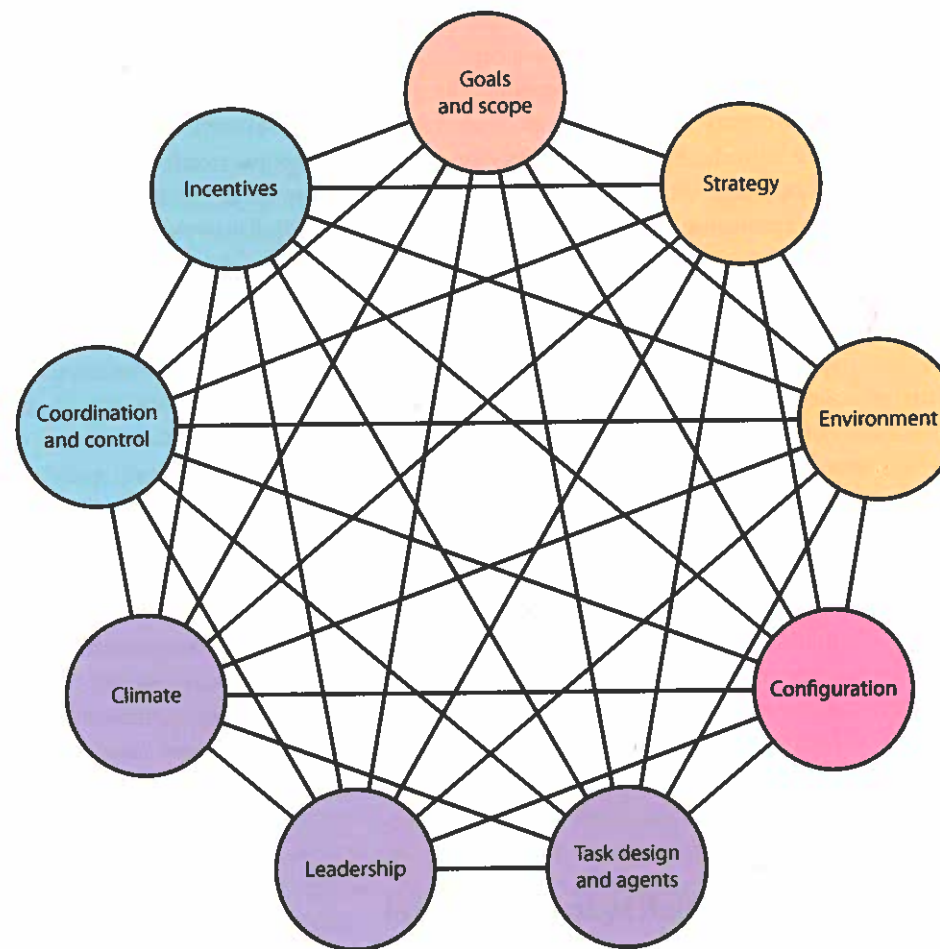


Figure 1.3 Component relations in the multi-contingency model

The two-by-twos are interlocking, such that a specific quadrant in any one graph (e.g. A, B, C, or D) corresponds to the same quadrant (A, B, C, or D) in all other graphs as a fit relation. This is shown in Figure 1.4. The components are each described by two dimensions that illustrate managerial options, information-processing needs, and capacity. The horizontal dimension in the two-dimensional graph aligns with the horizontal dimension in the other graphs and likewise with the vertical dimension. So whether a line in Figure 1.3 is a fit or misfit relation depends on whether or not the components are located in the same quadrant. Each component has a set of attributes, some of which are common and others specific. The dimensions and how they relate, as well as the attributes, will be introduced and discussed in the chapters where the components are treated.

The graphs that we provide for each design component will allow you to visualize and plot the current location of your organization and then identify the desired point to which you would like the organization to move. In this way, you can see where you are and where you want your organization to be in the organizational design space.

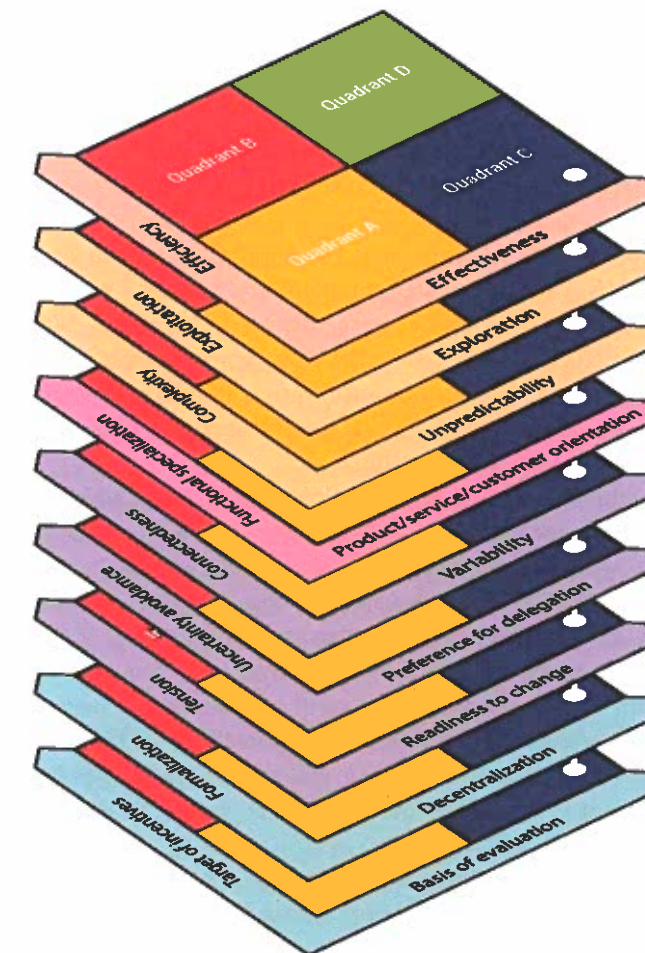


Figure 1.4 Interlocking the two-by-two component descriptions

On the website for this book, you will find a number of spreadsheet tools for all seven steps of the organizational design process. However, you can use this book on its own; the software or web-based tools are not required to complete the step-by-step approach and design your organization.

## Select an Organization for Analysis

Now, select a specific organization for your use throughout this book. We will walk through the diagnosis and design of that organization in a step-by-step fashion. The organization can be a team, department, division, an entire company, or even a set of companies (such as a holding corporation or a strategic alliance). Your choice of an organization becomes the unit of analysis for the entire seven-step design process. It is important to stick with the same unit of analysis as we go through this design process. At the end of each chapter, we will state a number of diagnostic questions for you to

answer that relate to the organization you have chosen. Your answers to the diagnostic questions will be the basis for the organization's design. We will also discuss means for obtaining answers to the diagnostic questions.

## Assess the Scope of the Organization

Let us start with a brief explanation of how you should scope your organizational design problem. This is a necessary starting point for analysis. We use the term "organization" or "firm" in the generic sense to refer to the team, business unit, company, or larger enterprise. For most readers, the organization is a business firm, but the method we present applies to non-profit firms, partnerships, joint ventures, educational institutions, hospitals, churches, government agencies – any type of organization in practically any kind of setting.

Once the organization has been chosen, it is important to state what the organization is doing. This is what we call the scope. If the organization is a consulting firm, it is important to define within which areas you are doing consulting. If you are an emergency department in a hospital, we need to know which particular types of patients are treated. For example, does the department take care of both somatic diseases and psychiatric diseases, or just one of the types? Are you a production firm, a service firm, or both? Where are you with regard to vision about being digitalized, what you are doing yourself, and how are you collaborating with other firms in an ecosystem? Are you a firm that is producing windows for buildings or producing windows as a component in a smart home? If the latter, your unit of analysis may be the ecosystem and not the individual firm.

The Danish textile company Kvadrat ([www.kvadrat.dk](http://www.kvadrat.dk)) has changed its scope from being a textile company to being a global design company. It has more or less the same activities, but the change in scope changes the way in which it looks at strategy, people, and processes. The Finnish elevator company Kone has gone from selling elevators to selling people flow. This is changing their business model with pricing on people flow – not on elevators. This means that they have to make sure that the elevators work 24/7, especially during Christmas season in shopping centers. They have optimized maintenance using sensors and have machine conversations to enhance operation and maintenance. The scope influences your assessment of the firm's environment and strategy. It influences the operations; it influences the choice of the organizational design.

It is important to bear in mind why you are doing the analysis. Is it a routine organizational audit, is the performance suffering where you are looking for causes, or did something change like strategy, technology, or competition and you would like to know if the design is still the right one?

As stated earlier, organizational design involves two complementary problems: (1) how to partition a big task into smaller sub-unit tasks; and (2) how to coordinate these smaller sub-unit tasks so that they fit together to realize efficiently the bigger task and organizational goals. The smaller tasks must be defined and arranged in a way that allows effective coordination. For example, the big task is broken down into divisions and departments. For a project team, the project task must be broken into individual

tasks. These smaller tasks are then integrated so that the large corporation or project realizes the desired goals. In all organizations, these fundamental, complementary problems of breaking down big tasks and putting smaller ones together are repeated again and again in many forms.

You should think about the design process as a set of cascading organizational design tasks, where you go through the step-by-step process for each task or group of tasks. Often, the best place for you to start will be at the corporate level: you should design the upper echelons first. Once that part has been designed, move on to the next levels, which could be departments or divisions, as we shall discuss in subsequent chapters. For example, you first design the divisions in a divisional organization and then you determine how the divisions should be coordinated with one another. Each division can be different from the other – one functional, another matrix. In the cascading process, it is important to consider only one "organization" at a time; do not mix the design of the whole organization as a set of divisions with the design of any one division. More formally, keep the unit of analysis consistent. This process may be replicated in an iterative fashion. The idea of equifinality (Doty *et al.*, 1993) is that for a given situation there may be more than one feasible design option from which to choose. Nevertheless, not all designs will be feasible. Therefore, you may have to go through the design cascade for more than one option.

## Assess the Organization's Goals: Efficiency and Effectiveness

Once you have specified the scope of the organization, you should start by assessing the relative importance to the organization of two fundamental goal dimensions: efficiency and effectiveness. *Efficiency* is a primary focus on inputs, use of resources, and costs. *Effectiveness* is a focus more on outputs, products or services, and revenues. These are competing priorities. Some organizations place a higher priority on efficiency, focusing on minimizing the costs of producing goods or services. Other organizations emphasize effectiveness, focusing on generating revenues or seizing leading-edge innovation in the marketplace. Within each of the efficiency and effectiveness dimensions, there may be a number of specific goals regarding areas where cost should be cut, operative activities should be improved, and new innovations and new products should be introduced, among other things.

All organizations value both efficiency and effectiveness to some degree, but the question is: Which is the dominant priority? For example, no-frills airlines such as Southwest Airlines and easyJet focus primarily on efficiency. Firms with significant R&D investment, such as 3M Company or a biotech firm, focus primarily on effectiveness. Some organizations focus simultaneously on high efficiency and high effectiveness, such as Microsoft.

Few organizations state their goal directly in terms of efficiency or effectiveness. Vestas, the leading manufacturer of wind turbines, stated its overall goal to be No. 1 in the world in modern energy. This statement means that the goal must be a comparison with the industry. The term "modern energy" signals a focus on effectiveness and new



technologies. To be No. 1, it also requires a focus on efficiency, as it must be cost competitive with Chinese firms.

Now, consider a company owned by a private equity fund that has a goal to obtain a specific rate of return on the invested capital within a given number of years. This goal signals a primary focus on cost and efficiency, with little focus on longer-term innovation. The goal also sets the time frame, which will be important for the choice of the organizational design.

Some business schools have a goal to become a Triple Crown business school obtaining all three of the AACSB, EQUIS, and AMBA accreditations. This goal sets the focus on absolute specific ends – almost disregarding the competitors. Other business schools focus on their *Financial Times* business schools ranking. The success of this goal is highly dependent on what other competitive business schools do. Thus, some goals are relative to the competition, while other goals are directed toward absolute measures. Absolute goals are inward oriented, whereas competitive goals are outward looking. You will see, as we go along, that this will also be reflected in the way organizations organize.

To access the company's goals in our model, you have to inspect the official goals and analyze them to assess if the goal has a focus on efficiency, effectiveness, or a balanced combination. Efficiency and effectiveness are also related to the scope of the organization. Focusing on cutting cost and being focused on using the resources to treat patients quickly both are labeled as efficiency, while developing a new product or service in a company like Burberry or in a hospital developing a new way of treating a particular disease is labeled effectiveness.

## The Four Prototype Designs

In Figure 1.5, the four prototype organizations that we will use as the base for discussions are depicted.

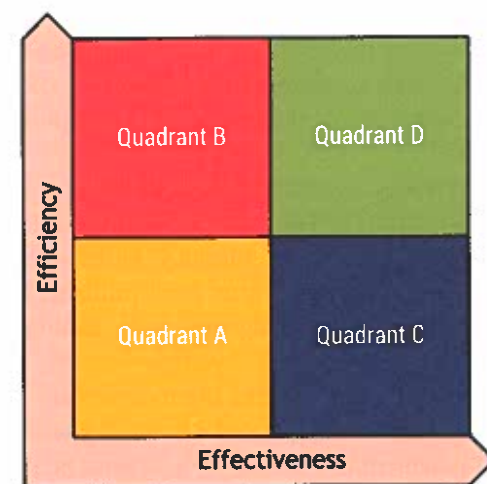


Figure 1.5 The goal space

Quadrant A represents the organization with a relatively low emphasis on both efficiency and effectiveness. It has little focus on using resources well and it has few or no specific goals related to higher-level ideas or targets and paying much attention to customer needs. Such organizations exist and some even with great success. This could be the case of a monopoly, or it could be an early start-up. An example of such an organization is the start-up company Libratone. Libratone A/S manufactures speakers. It provides on-ear wireless headphones. The company also offers covers, accessories, and repair services in Europe, North America, Japan, Taiwan, and New Zealand. It provides products through resellers, as well as through its online store. The company was founded in 2009 and is based in Herlev, Denmark. As they state on their homepage:

Libratone's goal has always been to set sound free, by creating wireless technology that can be enjoyed anywhere, anytime. Everything we make is the result of our ceaseless passion for engineering and design. Whether smart speakers or noise-canceling headphones, we innovate and push wireless potential to its limits, in order to create rich, pure sound. Sound that we bring to life with timeless, Danish design creating the perfect harmony of form and function.

([www.libratone.com/us](http://www.libratone.com/us))

In that sense, Libratone has never focused on efficiency and they have always charged a high price. On the other hand, they have a focus on engineering and design, but not on customers and their wishes – thus, not on effectiveness.

A firm in quadrant B has its focus on utilization of the smallest amount of resources necessary to produce its products or services. Firms here continue to do what they have done in the past, refining for continued improvement. Such companies often exist well in stable environments, where they can defend their position with a low-cost focus.

A good example is LEGO, the Danish plastic brick children's toy company. It has kept its focus on toy bricks for decades. Prior to 2000, LEGO was making a handsome profit and was a growth company for many years. It protected its position with aggressive marketing, defending patents, copyrights, and trademarks, and with an ongoing process of automating the production as much as possible. During the period 2000 to 2004, LEGO struggled to make changes to meet new demands for electronically based toys; LEGO had gone for a number of years with an inconsistent and continually shifting strategic focus, with consequent severe financial losses. In 2004, Jørgen Vig Knudstorp became the new CEO. He realized that LEGO had to return to a renewed focus on LEGO's core product: the interchangeable plastic brick. He stated in an interview: "By 2004, when I became CEO, things had gone awfully wrong at the LEGO Group. To survive, the company needed to halt a sales decline, reduce debt, and focus on cash flow. It was a classic turnaround, and it required tight fiscal control and top-down management." LEGO then became very successful; in 2014, it recorded its highest profit ever and, in 2013, LEGO for the first time became the largest toy manufacturing company in the world. By 2015, things changed again and the growth stopped. The global market for traditional toys, in which LEGO operates, saw low, single-digit growth during 2017. In 2017, the revenue in established LEGO markets declined, as a result of a clean-up of inventories. Despite the revenue decline, overall consumer sales remained flat. However, in China, there was strong, double-digit

growth in revenue, where LEGO continued to expand its presence through retail channels, e-commerce, and digital platforms. Since 2004, LEGO have had a strong focus on efficiency and a lesser focus on effectiveness.

Firms in quadrant C are just the opposite. Here, the organization has a higher focus on effectiveness, but a lower focus on efficiency. This means that the organization focuses on its product and service goals, but takes less care with the efficient use of resources. This could be the case in highly volatile environments, or in situations where the organization constantly develops new ideas and has a first-mover advantage with high prices and with costs of resources as a secondary concern.

Qingdao Haier is a leading global household appliance manufacturer headquartered in Qingdao, China. Qingdao Haier designs, manufactures, and sells a wide range of household appliances: refrigerators, freezers, washing machines, air conditioners, water heaters, kitchen appliances, and small household appliances, with a comprehensive offering of smart household appliances. In addition, Qingdao Haier operates a logistics business focused on the distribution of large items across China. As stated in Haier's annual report 2017, Haier adheres to its philosophy that "Successful enterprises move with the times," and is devoted to creating an evergreen enterprise full of vitality. If you read Haier's recent annual reports and their current website, you will find that the focus is on effectiveness and very little on efficiency. Haier has a strong focus on being able to change gracefully – being agile. As we shall discuss in subsequent chapters, Haier made many significant organizational design changes to become the world's largest manufacturer of appliances.

The final goal position is quadrant D, where there is an emphasis on both efficiency and effectiveness. Firms in this quadrant confront competitive, complex, and volatile environments that require both product innovations and low costs in order to compete successfully. Organizations in quadrant D pursue the dual goals of efficiency and effectiveness with equal vigor. As stated above, Microsoft is such a company.

Many companies have to focus, to some degree, on both efficiency and effectiveness. Most organizations are affected by different and opposite drivers, and some drivers by themselves go in different directions. The focus on sustainability – now promoted by the UN 17 Sustainable Development Goals – have both efficiency and effectiveness drivers embedded. We will discuss the sustainable organization in Chapter 10.

The goal position of the organization affects its information-processing requirements. Information requirements are much greater if the organization's primary goal is effectiveness rather than efficiency. Efficiency information is internally focused; effectiveness information is more external and varied. Efficiency and effectiveness also require different managerial approaches from environmental scanning and incentives – thus, demand different organizational designs. Further, human skills and capabilities are also different depending on the focus on efficiency and effectiveness. Both high efficiency and high effectiveness will demand high information-processing capacities; the means to create these capacities are very different. This will be much clearer as we go through the steps in the design process.

Most executives want to obtain the right balance between efficiency and effectiveness, and almost everyone agrees that modern organizations should focus on both dimensions. But how do you obtain a balance? Some scholars have argued that organizations focus on efficiency and effectiveness sequentially by going through an

evolutionary period with a focus on efficiency disrupted by revolutionary periods of change where effectiveness is the focus (Tushman and Romanelli, 1985). The balance is thus achieved over time rather than simultaneously. Many managers, on the other hand, argue that the efficiency–effectiveness foci are ongoing simultaneously, although the emphasis can vary.

A different approach could be that one sub-unit of the organization is efficient and another effective; one sub-unit runs the current operations, while another focuses on innovation. Many corporations use that approach. However, such an approach may not work. A well-known failure is Xerox's experience of placing its operations in Rochester, New York, and its research at Xerox PARC in Palo Alto, California. These were separate business units that did not coordinate with one another. As a result, other firms, not Xerox, brought the Windows-based operating system and the Ethernet network protocol to the market. Although Xerox simultaneously achieved both effectiveness and efficiency, the company failed to obtain the proper balance.

Organizational scientists have argued that pursuit of efficiency and effectiveness must be present everywhere in the organization at all times. In a thorough study of ten multinational firms, researchers found that successful business units were able to simultaneously develop capacities related to *both* efficiency and effectiveness (Gibson and Birkinshaw, 2004). Aschenbrücker and Kretschmer (2018) find that the controlled interplay of decentralized decision-making and formalized processes and goals is an effective way to manage the challenges of pursuing an innovation strategy balancing both exploitative and exploratory activities.

Generally, organizational ambidexterity – which represents the optimal balance between effectiveness and efficiency – is difficult to obtain (ibid.). Put in terms of our diagram in Figure 1.5, this means in quadrant D. As we shall see, this requires the most complex organizational design to develop and maintain, and so not all firms are able to take this approach. Many firms find themselves in quadrants B and C for this reason. Nonetheless, if your organization can be both highly effective and highly efficient, then you are in the best position to compete successfully in the marketplace if you are facing a highly volatile environment.

To summarize, the choice of a goal state in relation to efficiency and effectiveness has profound consequences for the information-processing demands and capacity of an organization. The efficiency–effectiveness goal state for your firm significantly affects your choice of the proper organizational design.

## Misfits and Balancing Competing Design Dimensions

The organization design process consists of two important questions: Where are you, and where do you want to be? With regard to organizational goals, there are two things for you to consider about your unit analysis. First, where is the firm in Figure 1.5? Second, where would the organization like to be in this design space?

Let us use Figure 1.6 to think through these questions. Suppose that the organization is currently at point C in the diagram. Your focus is on effectiveness. Suppose that the competitive environment has changed such that the firm now must compete more on efficiency. Thus, you might desire to move the organization to the quadrant of



point D. However, before making this change, a more comprehensive review of the organization's design is needed. You need to diagnose the consequences of such a change. This means working through the first five steps in our organizational design approach and determining where each major design dimension is located in the two-dimensional organizational design space. For example, it may be that the organization's configuration and work processes, for the most part, lie in the quadrant of point C (thus explaining your firm's success in achieving effectiveness). Suppose the business strategy and the competitive environment (which we will consider in Chapters 2 and 3) lie in the quadrant of point B. Consequently, there are misfits in the organizational design. That is, the design components do not all lie within the same quadrant. To address the misfit problem, you have a choice: either move the structure and work processes toward the quadrant of point B (thus aligning the organizational dimensions together in the same area of the design space), or change all of the design dimensions such that they move toward point D. The latter is a much more significant management change than the former, and you should carefully evaluate the implications of this design option before deciding on a plan. Our step-by-step approach will provide you with a framework for assessing the consequences of various change strategies and their effects on goals, strategy, configuration, leadership and people, agent and task design and coordination, control, and incentives.

As noted earlier, the quadrant associated with point D is often in today's world an ideal location in the organizational design space. Indeed, much of the managerial hype of the day suggests to managers that all firms should be located in this place. But the organizational design space of point D is costlier than a singular focus of either efficiency or effectiveness, and so may not be appropriate for all firms. Balance is a key theme of this book; organizational design entails developing design components that are in alignment, thus avoiding misfits that lead to performance decrement.

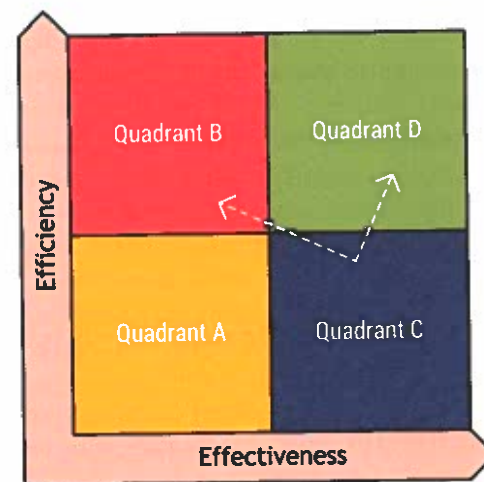


Figure 1.6 Making changes in the efficiency/effectiveness space

Several studies (Obel, 1993; Burton *et al.*, 2002; Håkansson *et al.*, 2012a) have shown that proper alignment of an organization's design results in superior

performance. In many instances, this means operating within the quadrants associated with points B or C and developing organizational design components that support an acceptable trade-off between the dual goals of efficiency and effectiveness. Although the quadrant associated with point D may be ideal, it is not always the most suitable goal for management due to design constraints. Organizations that operate within the quadrants associated with points B and C can be extremely successful. Only quadrant A is to be avoided in the long run unless the firm operates in a highly protected environment, is a very small organization, or is living through the early period of a start-up venture. Organizations that find themselves in quadrant A of the design space usually should plan for change, and our seven-step approach, as we shall see, can help to identify the necessary changes and how to proceed.

Again, many executives may wish their organization to be high in both efficiency and effectiveness – to be an ambidextrous organization. This is possible and may be desirable, but this design space is difficult to develop and maintain, especially if the organization's design components currently lie outside of this quadrant.

It is important for you to work through all of the steps of our design process and their subcomponents to determine a good fit among the many components of your organization's design. A partial approach, completing only some steps but not others, will be suboptimal. For example, if you assess the organization's strategy, but not its processes or coordination, you cannot see what is necessary for the strategy to be effectively realized. Only when the picture of the organizational design is complete does it become meaningful.

## DIAGNOSTIC QUESTIONS

To begin the organizational design process, choose the unit of analysis and keep that fixed throughout the step-by-step method: the top management layer of a large firm, a small firm, a division within a large firm, a department, or a project. Thus, we recommend starting with the whole firm by taking a cascade approach from top to bottom to obtain a complete analysis. Start at the executive level of the organization, go through the seven-step design process, and then repeat the process for each major department or business division. You may have to iterate more than once. Of course, the task of your design approach may not be the total firm. But our advice is to start at the top of the unit you are considering. It is essential that all of the information relevant to assess the different design variables is brought together and diagnosed in an integrated fashion. To enable an organizational audit, what is essential is that all information is available to be dealt with once the diagnosis process begins. Therefore, it may be necessary to define the information gathering as a project, with clear allocation of project responsibilities and milestones for the data retrieval. Depending on the organization and its situation, the information-gathering project may take many forms and shapes.

Next, assess where the organization is located on the efficiency/effectiveness diagram of Figure 1.7. Write down the arguments for the location using the vocabulary of your organization. You will need that later when you consider making changes. The information related to organizational goals will usually be obtained from interviews with the CEO or top management group. Often, the organization's mission and vision statements will also serve as relevant indications of how the organization aims to balance efficiency and effectiveness. Further material from annual reports, prospectuses, and websites should be inspected.

Answer the questions below.

1. What is the unit of analysis for the step-by-step approach?
2. What does the organization do? What is its major work activity?
3. How does the organization score on efficiency?
  - a. Does the firm discuss the relation between the input of resources and the output of products and/or services: does the firm want to utilize its resources well? Scale 1 to 5
  - b. Does the firm discuss (and value) the relation between the effort spent by employees and what they produce: does the firm want to make good use of the employees' skills? Scale 1 to 5
  - c. Does the firm support employee skills development and learning for enhancing productivity? Scale 1 to 5
  - d. Does the firm's leadership articulate its concern for a strong relationship on the above? Scale 1 to 5
  - e. Calculate the average score to get the score on effectiveness.

1	2	3	4	5
very low		moderate		very high

4. How does the organization score on effectiveness?
  - a. How close does the firm want to be to its customers; does it meet the customer needs precisely – present and anticipated? – products versus service? Scale 1 to 5
  - b. How close does the firm want to be to social demands, including its regulators; does it want to meet environmental needs and sustainability goals – present and anticipated? Scale 1 to 5
  - c. How close does the firm want to be to its suppliers, including outsourcers: does it want to relate to supplier needs and concerns – present and anticipated? Scale 1 to 5
  - d. How close does the firm want to be to its financiers and stockholders; does it value its relations with its owners, banks, and financial institutions – present and anticipated? Scale 1 to 5
  - e. Calculate the average score to get the score on effectiveness.

1	2	3	4	5
very low		moderate		very high

5. Plot the organization in the efficiency/effectiveness graph of Figure 1.7.

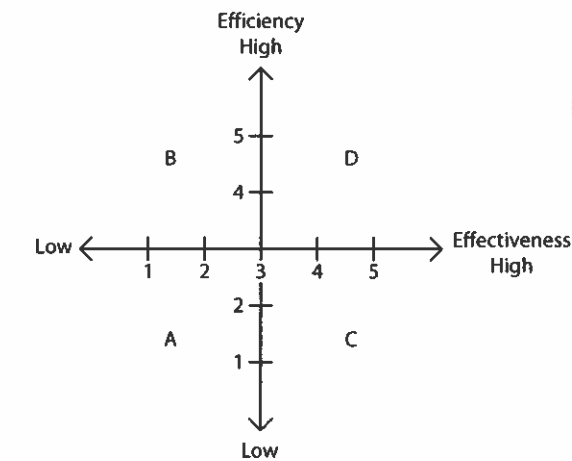


Figure 1.7 Locate your organization on the goal space

This will be the first data point in the interlocking two-by-twos. In the next chapter, the position in the other two-by-two will be found.

## SUMMARY

The multi-contingency model with nine components was presented and its relevance discussed. The basic idea of viewing the organization from an information-processing perspective was stated and the concept of balance and fit between the nine components was introduced.

Then our step-by-step approach for organizational design based on the multi-contingency approach (Burton and Obel, 2004) was stated. We discussed the scope of the design process, which includes the choice of the unit of analysis and deciding where your organization is and/or would like to be located on the efficiency/effectiveness diagram. Further, a series of questions that you should answer for the organization (unit of analysis) have been provided as the starting point for the organization's design.

## GLOSSARY

**Agility:** a property of an organization that will allow it to adapt with quick easy grace.

**Digitalization:** the use of digital technologies to change a business model and provide new revenue and value-producing opportunities.

**Effectiveness:** an organization's goal priority that contrasts with efficiency; a focus on outputs, products or services, generating revenues, or seizing leading-edge innovation in the marketplace.



**Efficiency:** an organization's goal priority that contrasts with effectiveness; a focus on inputs, use of resources, and costs, especially minimizing the costs of producing goods or services.

**Fit:** organizational design components that all lie within the same quadrant, thus balancing the firm's efficiency and effectiveness. Further, the information-processing capacity of the firm is balanced with the demand to enhance performance.

**Information processing:** to talk, read, write, enter information in databases, calculate, analyze, interpret, and decide in order to coordinate and control the organization's activities in the face of uncertainty.

**Misfits:** organizational design components that do not all lie within the same quadrant, thus threatening the firm's efficiency and effectiveness.

**Multi-contingency model:** the design model that consists of nine components – goals/scope, strategy, environment, configuration, leadership, climate, task design and agents, coordination and control, people – and incentives which fit together.

**Organization:** An organization is a social unit of people with a relatively identifiable boundary that is structured and managed to meet a collective goal.

**Organizational ambidexterity:** the optimal balance between effectiveness and efficiency.

**Organizational design:** the complete specification of strategy, structure, processes, people, coordination and control, and incentive components of the firm.

**Organizational goal:** what the organization wants to accomplish, stated in terms of efficiency and effectiveness.

**Scope:** the activities of the organization or what it is doing (and not doing).

**Uncertainty:** an incomplete description of the world.

**Unit of analysis:** the organization that is being designed, whether a team, business unit, department, division, firm, or larger enterprise; the unit of analysis must be held constant throughout the step-by-step design process.

## STEP

# 2

## Assessing the Strategy

