1 Project organizing and industrial organization – transformation dilemmas

1.1 THE TREND TOWARD PROJECTIFICATION

Projectification took a quantitative as well as a qualitative step forward from the mid 1960s, when the dominance of manufacturing began to be challenged by the rapid development of service companies and firms specializing in offering business support to manufacturing firms. The number of people directly engaged in manufacturing, particularly in the developed economies, started to decrease, compensated for by an increase in the number of people employed in supportive project-based business service companies and of self-employed professionals. In addition, much of the work in the manufacturing sector started to be managed in project forms of organization outside the traditional functional product-based industrial company. Beyond these project-based organizations, service activities inside traditional industrial organizations began to use projects in their knowledge-intensive activities, such as R&D. Some years later, in the first half of the 1990s, the focus on clusters and their role in establishing business opportunities (cf. Porter 1990) became a new field for entrepreneurial behavior and project organizing. Governmental authorities, such as the Invest in Sweden Agency (now Business Sweden), which was started toward the end of the previous century, fostered an action-oriented industrial policy facilitated by a diversity of projects. This is also true for the European Union (EU), as a major actor preoccupied with economic development, and for national institutions created to support innovation and regional efforts and to respond to EU demands for special structures.

The traditional way of approaching economic activity becomes obsolete in the emergent Project Society. The traditional organization model with the (e.g. car) factory as an archetype and as a dominating

economic entity needs to be replaced. Projectification can also be seen in relation to the way we think and act. Actors going through a process of projectification of their activities may experience a "transformation dilemma" (Ekstedt et al. 1999). What are the characteristics of projects and project organizing and thinking? How does this organizational form differ from that of the traditional industrial organization? And how should institutions be changed to support managing and working in a projectified society? These types of questions are often difficult to respond to inside an organization and even more difficult to transfer to the institutions of the surrounding society. Nevertheless, they are at the heart of the transformation dilemma. Deep-rooted traditions and institutions make coping with a transformation difficult. Establishing a new organizational order and adapting to that new order do not come easily.

Projects can mean different things to different people and in different contexts. At a minimum, they seem, however, to have a specific perception of "time, task, and team" in common (Lundin and Söderholm 1995), while a fourth property of "transition" seems to be either neglected or debated (cf. Bakker 2010; Jacobsson et al. 2013a). Most of all, projects are considered to be temporary systems with an institutionalized termination or a form of temporary organization (Kenis et al. 2009), even if this feature is sometimes questioned (Müller-Seitz and Sydow 2011). For our purposes, we need to be a bit more precise, however, by indicating that a project ex ante specifies foci in terms of action to fulfill a task, time allotted, and assignment of responsibility to see that the task is fulfilled within the time specified and with the resources at hand. Ex post, as is well known, projects often do not meet the goals set in terms of responsibilities, task fulfillment, budget, and time frames (Pinto and Slevin 1998; Pinto 2002; Miller and Hobbs 2005; Priemus 2010; Flyvbjerg 2011), but this does not seem to affect the proliferation of projects.

One of the main reasons we are studying projects – regardless of the context in which a project is situated – is that they are constituted by action. Although it is likely to be the action that is linked to

a particular project, the temporary system or organization is also characterized by (temporary) structures. Composed of rules and resources, these structures enable and constrain project actions by which they are, at the same time, either reproduced or transformed (Giddens 1984). Importantly, projects are embedded in an environment of more or less permanent organizations and in an institutional context, providing project managers as well as project workers with additional resources and constraints for action. Given this, we will highlight the importance of the institutional context in which project-based action is situated.

Project management is a performance-oriented practice aiming at the constitution, coordination, and control of activities within a project (Blomquist et al. 2010). Thereby, the roles of managers and subordinates in such temporary systems are different from those of traditional industrial organizations. Project leaders have limited responsibility for long-term resource management (including that related to employees). Their leadership is focused on project results, while the administration and development of personnel are to a great extent left to line managers of permanent organizations or other institutions. The training of project managers mostly takes place on the job even if it is increasingly complemented by formal courses or certificates from professional organizations. Experience in project management has become a critical resource in most organizations today, not only in project-based industries such as construction, consultancy, and media and entertainment but also in other industries and in public organizations.

Work in a project is guided by the task or the goal. In most cases, members of a project understand the meaning or the intent of the project organization, while it is common that members of the permanent organization understand only parts of its activities and goals. It is not unusual for project employees to feel a greater sense of belonging to their profession or the project itself than to the overall organization in which they are employed (Söderlund and Bredin 2005; Braun et al. 2013). The ties to a specific workplace are

often rather weak. The rules governing the project members are related to the quality and standard of what the project will accomplish and not so much about the regulation of the activity itself. The connections to supporting work-life institutions may therefore also be weak.

There are naturally vast variations among organizations referred to as "traditional industrial organizations," but some common characteristics make them an organizational family that is quite different from project forms of organization. They are generally characterized by flow-process operations such as assembly line production. They tend to be thought of as permanent organizations – one expects them to last forever. Their long life expectancy makes it possible to make heavy investments in machinery and buildings supporting large batch and mass production activity to achieve high returns to scale. The location of activities is often stationary, mostly in a factory. This has traditionally led to strong permanent organizations surrounded by a few weak and temporary forms; a classic example is the R&D department of a manufacturing firm that typically exhibits a project organization.

Managerial bureaucracies are developed to run these big and complex industrial organizations. A hierarchy of leaders handled decisions on multi-level bases. The decision orientation has a long tradition and is described in theoretical terms by classic studies such as that by Cyert and March (1963). The decision-oriented permanent organizations have strong mechanisms for long-term knowledge formation and activities. Their rhetoric also helps them strengthen their image and organizational brand, which enables them to create projects in and around a focal organization. Strong, supportive societal institutions such as professional associations, business schools, and other educational organizations nurture the managers and leaders of these traditional industrial organizations.

Work in traditional industrial organizations is characterized by specialization and an extensive division of labor. Surrounding institutions, for example, unions, mirror the rough division between

blue-collar and white-collar workers. Employment relations are often regulated and linked to the supportive institutions. An intimate interaction between those organizations and the political and legal systems develops along the lines of the divide between Capital and Labor – a most important institutional divide. The rules have necessarily been adapted to activities taking place at specific locations. The workplace is therefore also a focal point for work-life legislation.

In sum, industrial organization is the child of the transformation from an Agrarian Society to an Industrial one, while project organization is the child of the transformation from an Industrial Society to the society of today, no matter whether this is termed an "Information," "Knowledge," "Network," or "Project Society." Our next step then is to take a closer look into the historical context in which the traditional industrial form of organizing was born and formed. We examine why this form of organizing is challenged today, and we also ask whether the role of the traditional industrial organization has changed.

1.2 THE ERA OF TRADITIONAL INDUSTRIAL ORGANIZATION

What is often referred to as traditional industrial organization started to develop under specific conditions around 150 years ago, while project organization has a much longer history. The traditional industrial organization developed to control new forces of energy such as steam and electricity that came into use, dramatically speeding up economic activities including transport and distribution, production, and consumption. We may ask to what extent those conditions prevail today. We think there has been a fundamental change in the surrounding context, but much of the thinking about organizations and organizing is still dominated by the context developed under the traditional industrial form of organizing. This occurred in part because this model of organization migrated to other parts of society, such as the public sector, even after its use declined in the industrial sector. Numerous versions of the traditional industrial model of organizing have developed, for example, the Anglo-Saxon or the Nordic

management models or others based on stakeholder participation (e.g. unions or work councils) such as the Rhineland model or the Southern European model. The Anglo-Saxon model stresses that shareholders' interests are taken care of by top management; the Rhineland model provides institutions for high worker involvement in business policy (Allertz 2009). But all these models belong to the same family, a form of organizing we compare to quite a different one, that is, project organizations.

The formal and informal management models and contracts of work developed incrementally under the influence of institutions created in a specific historical period – that of the Industrial Revolution. The first signs of the revolution are found in eighteenth-century England. During the next century, it diffused to the United States, continental Western Europe, and Japan and reached its peak – measured by the relative share of people directly working in manufacturing – in the 1960s and 1970s. In other parts of the world, especially China, the number of people directly working in manufacturing continued to grow (Cameron and Neal 2003). Breakthroughs in energy technology – first steam power and later electricity – formed the basis of the industrial revolutions and associated developments in other fields such as mechanical engineering, metallurgy, chemistry, biology, medicine, transportation, and a wide variety of other technological areas and led to new forms of production, consumption, and social organization that together formed the Industrial Society (Castells 1996).

Historians have discussed at least three distinct phases in the development of the Industrial Society (Stine 1975; Finkelstein 1986; Magnusson 1999; McCraw 2005). The First Industrial Revolution occurred with the increased use of steam energy in the transport and textile sectors. The Second Industrial Revolution was connected to the spread of electricity, on the one hand to millions of homes, supplying them with electric lights and refrigerators, and on the other by equipping the manufacturing and transport sectors with electric and internal combustion engines. The Third Industrial Revolution

came with the breakthrough of modern information technology supporting and controlling areas such as process industries, offices, and leisure time. The latest manifestation of this technology-driven development is the Internet, which is involved in most human activity today. The First Industrial Revolution can be connected to the birth and formation of traditional industrial organizations. This organizational form then matured and spread to most activities and economic branches after the Second Industrial Revolution. This was also a period when industrial thinking and institutions supporting the Industrial Society were developed and diffused to all parts of the economy. This book focuses on how the traditional industrial organization loses its dominance and becomes part of a projectified society during and after the Third Industrial Revolution. The transformation to this society is facilitated by modern information technology (IT) not least when it comes to planning and running complicated projects and other types of temporary organizations.

The technological innovations of the First Industrial Revolution were speeding up the entire societal processing system: "Never before in history had it been necessary to control processes and movements at speeds faster than those of wind, water and animal power – rarely more than a few miles per hour" (Beniger 1986: 218). The use of the new technologies subsequently created crises of control in the systems of production, distribution, and consumption. The steam engine increased the speed of trains to many times that of other forms of transport, but the lack of adequate control systems led to deadly accidents. The general public feared using railroads for personal transportation. As a response to this "safety crisis," private railroad companies in the United States started to build bureaucratic organizations for supervision. Timetables were introduced. The business historian Alfred Chandler suggests that the Western Railroad created "the first modern, carefully defined, internal organizational structure used by an American business enterprise" (Chandler 1977: 97). He also argues that the organizational models used for safety in railroad companies became role models for building efficient organizations

when the industrial enterprise grew to be of comparable size and complexity (Chandler 1962).

This organizational model of bureaucratic control diffused to other locations such as railway stations and ports, where timetables and other control systems were established to regulate and supervise transportation activity. Prior to the Industrial Revolution, the organizing of transport and distribution was much more project-like. Each voyage of a sailing ship could be seen as a separate project. It was not unusual for the captain of the ship to be responsible for obtaining appropriate cargo as well as the crew for each trip. At the destination, he had to act as a businessman selling the cargo for profit. The captain was a de facto project manager with responsibility for the performance of the business and for hiring and leading the project members. With the emergence of steamships and timetables, a much more diversified division of labor developed. The captain of a vessel became responsible mainly for the safety of the ship and its cargo and crew at sea.

The second part of the nineteenth century saw the development of numerous innovations to control the processing in the metalworking sector. The Bessemer process increased the speed of steel production. Shop order account systems were developed to control material flows through factories. Carnegie steel plants were explicitly designed to facilitate fast throughputs (Temin 1964). Metcalfe (1885) published a book on cost control in factories. Records on the use of employees' time were introduced. At the end of the century, these processing technologies spread to the production of food (e.g. the cannery industry), soap, cigarettes, matches, and photographic film (Beniger 1986). The industrial organizations adopted hierarchical decision systems not too different from those in the military or the church – the only organizations of a comparable size at that time.

The control crises in the last part of the nineteenth century that resulted from the tremendous increase in speed were most evident in the previously mentioned industries. However, the industrial form of organizing never became dominant in all sectors of the economy. For example, in construction and shipbuilding, the older project form

persisted, a way of organizing that has not only survived until today but characterizes Project Society. A project-organized naval shipbuilding industry could be found in many countries long before the Industrial Revolution (Glete 2002). Agriculture, the activity in which most people were occupied up to the first half of the twentieth century (although there are large variations between countries), was mechanized without transforming to an industrial form of organizing. In addition, the industry-like experiment by the Soviet kolkhoz system was far from a success. Arguably, agriculture activity in general resembles neither the traditional industry model, with the possible exception of large-scale livestock breeding, nor the project model. But recurrent activities are project-like in that they are time limited and with specific outcomes, for example, seasonally determined activities that include preparing the soil, sowing, harvesting, and post-harvest festivity. Festivals in wine-growing areas still mark the end of the season; in a similar way, house builders celebrate when the roof of a house is put in place. The celebration or festival is a way of acknowledging that a project or a specific activity has finished and an objective has been accomplished. In project terminology, it represents a milestone.

The traditional industrial organization was designed to respond to the control crises of early industrialization. The ongoing development included a series of organizational innovations starting from that first step of the carefully defined internal organization of the Western Railroad in 1842. From the middle of the century, the railroads employed more accountants and auditors than any governmental agency in the United States. The companies also started to use line managers and staff executives for positions in the organization in many industries. Bureaucracies with operating departments (e.g. in billing, sales analyses, and inventory) controlled by a hierarchy of salaried managers grew in scope and complexity. Business education at the university level was introduced on a grand scale. In the United States, the Eastman Commercial College was founded in 1842. The Wharton Business School was established in 1881

(Beniger 1986). The business schools created in Germany focused initially on trade (and on difficulties in handling trade among all the small German states) and on accounting, but over time they developed into more academically focused institutions (Engwall and Zamagni 1998). The business school idea spread from Germany to Northern Europe. However, their development in the United Kingdom and in France differed. The Grandes Écoles in France originated in the eighteenth century and were designed to educate civil servants. The first business schools in the UK did not appear until the middle of the twentieth century, possibly as a response to the appearance of the weaknesses of industrialization. Nevertheless, the development of business schools as well as technical schools can be seen as having some roots in the Industrial Revolution.

At the turn of the twentieth century, leading members of the bureaucracies of big companies achieved such strong positions of power that the period from then on is often referred to as one of "managerial capitalism" (Chandler 1977). This organizational archetype was designed to offer long series of standardized products (Fordism) and services for mass consumption. The production units, the factories, employed more and more people organized in a hierarchical way, probably inspired by the organizational models of the armed forces and the church. At the peak of the Soviet empire, where the production system lacked appropriate incentives to rationalize, there were workplaces of as many as 100,000 employees (e.g. Nowa Huta in Krakow). In England, the origin of the First Industrial Revolution, with its abundance of cheap labor, the organization of the shop floor of the factories was very much influenced by the old guild system and handicraft with strong professions promoting "learning by doing," which resulted in many workers and managers being resistant to changes in the organizational order. In the United States, with its lack of trained blue-collar workers, investments in machines that replaced workers resulted in automation and productivity increases (Habakkuk 1962). The managerial methods of Frederick W. Taylor (1911) were introduced first to support the rationalization of manual work and later