4

Managing Knowledge in Bat'a Enterprises

Marek Hudik and Martin Komrska

4.1 INTRODUCTION

Hayek (1945) famously argued that the price system is a mechanism for communicating knowledge dispersed among many people. However, as developments in institutional economics and political economy have emphasized, this mechanism is not costless and is often replaced by other mechanisms, such as firms or collective decisions (Coase 1937, 1960; Buchanan & Tullock 1962; Williamson 1975, 1985). The question that thus arises is how knowledge is managed under arrangements that do not rely predominantly on the price system.

The present chapter attempts to answer this question in the context of corporations. In corporations, as in markets, knowledge is not only communicated but also produced and utilized. But while in markets these processes are organic and spontaneous, in corporations a complex set of mechanisms that address various collective action problems needs to be designed and implemented. Moreover, the types of knowledge produced and utilized in the market and in corporations differ. In markets, the relevant types of knowledge constitute the infrastructure for exchanges (Dekker and Kuchař 2021); corporations also rely on such knowledge infrastructure, but also produce and utilize other types of knowledge, especially technical knowledge (Foss and Michailova 2009).

We focus on the operation of these mechanisms in the case of Bat'a enterprises, a well-known Czech shoemaking company that experienced a dramatic growth in the early twentieth century. The focus on Bat'a enterprises is no coincidence: The company's adeptness in governing knowledge significantly contributed to Bat'a's success (Zeleny 2010). By examining the Bat'a case, this chapter aims to contribute to a broader understanding of mechanisms of knowledge governance in corporations and their limits.

Our analysis applies the Governing Knowledge Commons (GKC) framework (Hess and Ostrom 2007; Frischmann et al. 2014) in treating knowledge as a shared

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resource, where multiple stakeholders have overlapping claims on its use. The commons perspective was applied to corporations by Deakin (2012), while the associated collective action problems that complicate the production and utilization of shared resources in firms are emphasized by Bridoux and Stoelhorst (2022). The latter authors identify three governance structures that address the collective action problems in different ways. We build on their analysis and show how Bat'a enterprises employed one of these structures – the Lead Role Governance – to deal with the specific challenges of knowledge governance.

In line with Bridoux and Stoelhorst (2022), collective action problems are assumed to emerge not only among "insiders" – between employees or between employees and managers – but also among a broader set of "outsiders" – that is, stakeholders ordinarily deemed to be outside the boundaries of the firm as traditionally understood. We show that Bat'a emphasized the harmony of the interests among various stakeholders, including suppliers and consumers, and that this harmony was embedded in Bat'a's system. The case of Bat'a's enterprises is thus relevant not only for GKC literature but also the stakeholder theory more generally (e.g., Freeman et al. 2010; Phillips 2003).

One of the challenges to the commons perspective on the firm is that firms are typically hierarchical, while we tend to think of commons in terms of the community governance of shared resources (Frischmann et al. 2014). Furthermore, firms are generally considered forms of private governance, while commons refer to a structure that is neither private nor public (Kuchar and Dekker 2024). Nonetheless, as Deakin (2012) argues, corporations cannot be reduced to shareholder-owned entities, as they are also constituted by legal rules that define participation, governance, and accountability. From this perspective, the hierarchical structure of the firm is not merely a technological but also a legal phenomenon. In Deakin's (2012) view, the commons perspective of the firm offers greater descriptive accuracy and has a greater explanatory power than alternative accounts. Indeed, the hierarchical structure of the firm, including the role of managers, is something that needs to be explained rather than assumed. Moreover, firms have varying degrees of hierarchy. While there is a recent interest in decentralized structures (Foss and Klein 2022), the case of Bat'a's enterprises shows that such structures are not exclusively a recent phenomenon.

While our starting point is Hayek's (1945) analysis of the price system as the knowledge-communicating device, our focus is different. In markets, prices are usually public, and therefore there is no issue regarding access to the knowledge embodied in the prices. In contrast, knowledge in firms can be shared with or withheld from others (Grant 1996; Cabrera and Cabrera 2002). Furthermore, knowledge embodied in the price system is necessarily condensed in order to be effectively communicated. The knowledge within firms is multifaced, which gives rise to additional governance issues. Some aspects of the use of knowledge in firms are discussed by Foss (1999), who focuses on the subjective nature of knowledge. We take this discussion forward by emphasizing the collective action problems associated with the production, transmission, and utilization of knowledge.

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Various aspects of knowledge, including its various types, are discussed by Machlup (1962), who builds on the earlier contributions of Hayek (1945), Ryle (1949), and Polanyi (1958).[1] A good discussion of the role of knowledge from the management perspective can be found in Winter (1987). Drawing on these perspectives, the present chapter focuses primarily on *practical knowledge*, as this type of knowledge is routinely and actively managed in corporations. This does not mean that the other types of knowledge are irrelevant for organizations. For instance, Methot et al. (2021) show that the knowledge acquired through small talk at work enhances organizational citizenship behaviors but also disrupts employees' ability to engage in their work. In any case, we assume that practical knowledge is sufficiently independent from other types of knowledge so that it can be studied separately.

The rest of the chapter is organized as follows. The following section introduces a theoretical framework, while describing various collective action problems associated with the production, transmission, and utilization of knowledge within a business corporation. Three governance models addressing these problems are discussed. Next, the case of Bat'a enterprises as an example of one of these governance models is presented. The connections with Ostrom's design principles and the GKC framework are considered in the final section.

4.2 THEORETICAL FRAMEWORK

In line with the GKC framework, we think of knowledge as a resource, where knowledge is defined very broadly as a "set of intellectual and cultural resources" (Frischmann et al. 2014, 2). In the present context, we consider a firm as an institutionalized form of community governance that embodies the rules for managing these resources. Community here refers to various stakeholders, including employees, suppliers, and consumers. In our focus on practical knowledge, we follow Machlup (1962, 23) in including "all knowledge regardless of the strength of belief in it or warranty for it." In particular, we do not restrict practical knowledge to scientific or proven knowledge but include conjectures and unverified hypotheses.

4.2.1 *Collective Action Problems*

A conventional view of knowledge is that it is non-rival (Romer 1990; Grant 1996): Everyone can use a piece of knowledge, a new idea or method of production, without diminishing its usage by others. Knowledge can be even anti-rival, in the sense that its value increases the more people use it (Weber 2004). However, specific consumption or production plans that utilize knowledge can be rival. For example, everyone can learn principles of accounting without making it more difficult for someone else to learn these principles, but plans that utilize this knowledge can be

[1] A valuable summary of Machlup's views can be found in Godin (2010).

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in conflict (Hudik 2024), as accountants with similar knowledge compete for the same jobs.

Furthermore, the production of knowledge involves rival inputs, such as time and effort, which are scarce and have alternative uses (Romer 1990). Additionally, although knowledge is non-rival in consumption and application, it is excludable and therefore it can be selectively withheld, either intentionally, due to personal incentives, or unintentionally, due to communication barriers or lack of trust. This creates coordination and incentive problems that may hinder optimal sharing and integration (Grant 1996; Osterloh and Frey 2000; Cabrera and Cabrera 2002).

If the knowledge is not strongly firm-specific, it can be used in ways that do not contribute to the firm's objectives. These issues give rise to various collective action problems. A typical characteristic of such problems is the conflict between collective and personal objectives (Cabrera and Cabrera 2002). For example, individuals can use the firm's reputation to obtain political influence, rely on the firm's know-how in their own business, or engage in other forms of knowledge misappropriation (Lerner and Malmendier 2010; Colombo and Piva 2019). They can contribute to the production of firm's knowledge or pursue other goals (Holmstrom and Milgrom 1991). They can communicate knowledge to others to enhance the firm's performance or they can withhold knowledge to avoid potential conflicts within the firm (Chatterjee et al. 2021; Gonçalves et al. 2023). Such counterproductive uses of knowledge (Serenko and Bontis 2016), and counterproductive work behaviors more generally (Marcus et al. 2016; Suseno et al. 2021), can give rise to inefficiencies if an adequate governance structure is not adopted.

4.2.2 *The GKC Framework*

Collective action problems are often analyzed with game-theoretic tools (e.g., Ostrom et al. 1994; Dixit et al. 2014). Such an analysis is extremely useful in studying the incentives and the stability of outcomes within the given rules of the game. However, it has several important shortcomings. First, individuals do not always take the rules of the game as given. They can often modify them and thereby transform one game into another (Ostrom 1990; Cole and Grossman 2010; Hudik 2021). Second, the game-theoretic analysis is too general. Once we consider particular resources, such as various types of knowledge, we can impose more structure on the interactions and provide more specific results. For instance, the cost of excluding others from using a resource or the degree of rivalry in consumption determines the possible parameters of rules that can be effectively used to manage the resource.

Third, interactions in the real-world are usually complex, such that collapsing them into a simple game may not capture all the relevant aspects of interactions. There are multiple levels of analysis and decisions made at one level that are influenced by choices made at higher levels (Ostrom 1990). This complexity is especially important in the case of corporations, where many kinds of resources

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are governed. Generally speaking, a firm cannot be collapsed into a single type of collective action problem. Instead, there are different types of collective action problems within a firm, and some of them are more common or more important for its operation than others.

To address these issues, it is useful to adopt a broader perspective represented by the GKC framework (Frischmann et al. 2014; Sanfilippo et al. 2018; Dekker and Kuchař 2021). This framework, which is derived from the Institutional Analysis and Development (IAD) framework developed by Ostrom and others in Bloomington (Ostrom 2005), draws attention to the characteristics of the relevant (knowledge) resources, the actors involved in its production and use, and the patterns of their interactions, given the rules-in-use, the attributes of the community, and a range of evaluative criteria. In comparison to the basic game-theoretical approach, this framework provides a more nuanced view of the relevant collective action problems and their solutions. In particular, the GKC framework can explain the emergence of various governance structures.

4.2.3 *Three Governance Structures*

One of the typical characteristics of firms is they are run by at least one manager. Even formally "bossless" companies develop informal hierarchical structures, with a dominant role assigned to one or several individuals (Foss and Klein 2022). Managers are thus in a privileged position to address both intra-firm and interfirm collective action problems by implementing various governance structures. Bridoux and Stoelhorst (2022) identify three such structures: Hub-and-Spoke Governance; Lead Role Governance; and Shared Governance. The three structures differ in particular in terms of their openness and control. Openness of a resource refers to the "extent to which there are barriers to possession or use" (Frischmann et al. 2014, 29). The Hub-and-Spoke Governance model exhibits the lowest degree of openness and the highest degree of control, while the Shared Governance model lies at the opposite end.

In the Hub-and-Spoke Governance model, the firm's central management acts as the "hub" that coordinates and controls the actions of various stakeholders, who are the "spokes." The firm ensures that stakeholders contribute to joint value creation by setting clear rules, monitoring compliance, and enforcing them. Centralization helps mitigate conflicts and ensures that individual actions align with the firm's overall objectives. By monitoring stakeholder activities and enforcing compliance, the firm reduces the likelihood of collective action problems and ensures that stakeholders contribute their share toward joint value creation. The firm can implement graduated sanctions for noncompliance, which discourages stakeholders from pursuing self-interested behaviors that could undermine collective goals. Centralized control ensures alignment and minimizes the risk of individual stakeholders prioritizing their own short-term interests over the collective good.

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In the Lead Role Governance model, the management of the focal firm acts as the lead stakeholder and takes a central role. However, compared to the Hub-and-Spoke model, it allows more autonomy to other stakeholders. The lead firm sets the strategic direction and facilitates cooperation among stakeholders but does not control every action. Stakeholders have more freedom to act independently compared to the Hub-and-Spoke model, which can enhance their engagement and investment in joint value creation. The lead firm's role is to guide and support rather than command, which helps in resolving conflicts and ensuring stakeholder alignment. It leverages the lead firm's influence while allowing stakeholders some level of autonomy, which can foster more genuine cooperation and commitment to shared goals.

In the Shared Governance model, stakeholders collectively govern their interactions, with no single firm or stakeholder dominating the process. Decision-making is more decentralized, with stakeholders collaboratively setting rules, monitoring, and enforcing compliance. This inclusive approach ensures that all stakeholders have a voice in the governance process, which can increase buy-in and commitment. Stakeholders monitor each other's actions and enforce compliance through mutual oversight. This decentralized monitoring helps prevent free-riding and encourages equitable contributions to joint value creation. Sanctions and conflict resolution mechanisms are developed and applied collectively, which can lead to more contextually appropriate solutions and foster a sense of shared responsibility. By involving all stakeholders in governance, this model helps align individual actions with collective interests, addressing collective action problems through collaborative effort.

Bridoux and Stoelhorst (2022) highlight that the choice of the governance model primarily depends on the complexity and the dynamism of the value creation activities. Specifically, the Shared Governance model performs best at relatively high levels of complexity, at which the Hub-and-Spoke model performs the worst. Complexity here refers to a characteristic or a set of characteristics that affect individuals' ability to understand the link between their actions and the joint value creation. The Lead Role Governance model is the most efficient at high levels of dynamism in joint value creation activities, while the other two forms are moderately efficient. We emphasize some additional aspects affecting the performance of the three models.

The Hub-and-Spoke model tends to be efficient in cases where the collective action problems resemble a Prisoner's Dilemma and the collectively optimal outcome is not the Nash equilibrium. In such cases, the issue is not only how to achieve but also how to maintain the collectively optimal outcome. The Hub-and-Spoke model furthermore requires that management can monitor the other stakeholders at low cost. It also presupposes that in order to achieve the collectively optimal outcome, the most effective method is to modify the stakeholders' payoffs through sanctions and rewards, rather than modifying the rules of the game. Finally, the

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model assumes that management is benevolent. This assumption is reasonable in a competitive market, where it is relatively easy for the stakeholders to exit the relationship with an abusive management or replace it with a new one.

At the other extreme is the Shared Governance model. This more democratic model tends to be efficient when the market is not competitive and it is not easy for the stakeholders to exercise the exit option, and hence, the benevolence of management is difficult to achieve. The Shared Governance model is applicable in cases where monitoring by management is more costly than mutual monitoring of stakeholders via peer pressure. Collectively optimal outcomes are achieved not only through sanctions and rewards but also by tinkering with the rules of the game.

The Lead Role Governance model tends to be efficient in cases where there is a possibility of coordination failures, that is, in collective action problems with multiple equilibria. Management coordinates the activities in a way that helps to achieve the collectively optimal equilibrium. As in the case of the Shared Governance model, stakeholders have large autonomy, which corresponds to the situation where exit is costly and has to be replaced by stakeholder voice. Furthermore, monitoring by management is costly and the community thus relies on mutual monitoring and peer pressure.

While the Shared Governance model seems like the closest to the sort of commons arrangements famously studied by Ostrom (1990), Bridoux and Stoelhorst (2022) argue that the shared governance of shared knowledge can also successfully evolve under the Lead Role Governance model. In the following section, we show how the Lead Role Governance model was used to this effect by Bat'a enterprises in the early twentieth century.

4.3 THE CASE OF BAT'A ENTERPRISES

Bat'a shoe company stands out as one of the most compelling success stories in Czech business history. It was founded in 1894 in the poor agrarian village of Zlín in the eastern part of today's Czech Republic (formerly part of the Austro-Hungarian Empire). Its founder, Tomáš Bat'a, came from a family that had been making shoes for several generations, even though the shoemaking craft had long been perceived as socially inferior and poorly compensated. Over the span of less than forty years, under Tomáš Bat'a's leadership, the small shoemaking workshop blossomed into one of Central Europe's largest enterprises, employing 31,000 individuals by 1932, the year when the founder passed away.

During this period, Bat'a was one of the pioneers of globalization, managing to penetrate fifty-six countries on four continents. Its unique management system allowed it to flourish not only in its main business of shoe manufacturing but also in other industries, such as tire production, engineering, chemical manufacturing, agriculture, construction, and more (Pokluda 2015).

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The company earned respect not only for its business success, high profitability, and above-average wages for employees but also for its socially responsible business activities, which were unusual for the time. It provided social housing for its employees and offered multilevel education, healthcare services, and public transportation. It employed people with disabilities and had its own social fund, which collected funds for charitable activities. The popularity of the company's founder and CEO, Tomáš Bat'a, eventually transcended the boundaries of the company, allowing him to stand in local elections in 1923 and become the mayor of Zlín. In the present chapter, we mainly focus on the organization and management system of the company as it was established under Tomáš Bat'a. Although the company experienced significant growth following its founder's passing, its operational principles remained largely unchanged.

4.3.1 *The Lead Role Governance Model of Bat'a Enterprises*

We argue that the remarkable success of the Bat'a enterprises was largely due to its organizational structure. The Bat'a system exemplified the Lead Role Governance model, as outlined in the previous section, where the company's leadership played a major role in designing rules, policies, and strategic decisions, but allowed significant degrees of autonomy to employees and other stakeholders. Bat'a applied these principles in its approach to knowledge management, which encouraged employee participation in the creation, transmission, and acquisition of knowledge. The system rested on two foundational pillars: a system of autonomous workshops and a corporate education system.

The organization in terms of autonomous workshops was characterized by an internal pricing and incentive system within the company, where departments conducted transactions with each other, thus pushing them toward greater efficiency. The internal pricing system quickly revealed poor managerial decisions and potential sources of loss within the company. Thanks to weekly accounting reports, this information was regularly accessible not only to management but also to all employees. Additionally, the profit-sharing scheme for employees motivated even ordinary workers to propose new, more productive work processes. Successful examples of these innovations could then be rapidly disseminated to other departments through the company's internal communication system.

The corporate education system was designed to enhance both technical expertise and soft skills across the company's diverse workforce. This program bridged gaps in educational backgrounds, equipping employees with the knowledge and capabilities needed to excel in their roles. The education system also served as a vehicle for transmitting not only technical knowledge but also the company's core values, fostering a cohesive corporate culture. Bat'a's education initiatives extended beyond traditional training, encompassing various modes of communication to ensure that

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shared knowledge and values permeated every level of the organization. This dual focus on technical proficiency and cultural alignment helped sustain productivity and innovation while reinforcing a shared sense of purpose.

4.3.2 *Autonomous Workshops*

Bat'a introduced a self-management system for workshops, characterized by the organizational and accounting decentralization of individual production departments. Echoing the sentiments of the company's founder, the primary objective was to establish a system that would autonomously incentivize the efficient functioning of the company "which – like the law gravity – will never fail" (Bat'a 1926). This innovative approach involved the separation of workshops from other company departments that were not directly engaged in the production. This separation facilitated independent transactions of goods between workshops and with other departments for purchases or sales. Consequently, each workshop gained the capability to assess its profitability on a weekly basis, a metric intricately linked to the material involvement of individual employees.

Since 1924, the company has implemented a profit-sharing system for the majority of its regular employees. The workshops were sufficiently small for everyone to be able to make an identifiable contribution to the outcome. Each employee was thus informed about their individual contribution to the company. At the same time, this approach provided an incentive for employees to enhance the firm's profitability, whether through the introduction of innovative production methods or through heightened industriousness.

If a workshop exceeded the planned output volume using the same amount of purchased materials (e.g., through reduced waste), it resulted in a profit. This profit, directly tied to the performance of individual employees, was reflected in their remuneration. The close relationship between employee efforts and financial gains not only fostered a sense of ownership and motivation but also aligned individual interests with the overall success of the company.

The higher level of autonomy granted to workshop managers also entailed increased responsibility. Unlike regular employees, they not only had a share of the profits but also bore a share of any losses incurred (Hodáč 2015). As Cekota (2016, 176) put it:

> It was a system that informed fifty-two times a year not only the top management of the company about the whole and all its parts but also the managers and employees of each unit about their results. The speed of information and its publication created a dynamic force to intervene exactly where it was needed. Losses, if they occurred, could thus be stopped at the outset.

The system of autonomous workshops illustrates that collective action problems characterized by potential misalignment between personal and collective goals

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can be mitigated when individual incentives are linked to the firm's overall performance. Bat'a's approach transformed the workplace into a cooperative environment where employees saw their own success as tied to the firm's success. At the same time, the system imitated the market in the sense that it provided signals through profits and losses and thereby helped to effectively manage resources.

While profit-sharing schemes were already in place in some American companies during that period (Langlois 2023), drawing inspiration from them, Bat'a introduced a distinctive approach. Unlike the conventional company-wide profit-sharing model prevalent at the time, typically distributed annually, Bat'a sought to create a system where every employee could actively and directly influence the outcome. Consequently, profits were calculated at the level of individual workshops and on a weekly basis (Urbanová and Dundelová 2012). Bat'a's overarching objective was to instill a sense in each employee that they could significantly shape the results. His vision entailed employees viewing their respective workshops as if they were the owners of their own businesses. This perspective not only encouraged a profound understanding of individual roles but also prompted employees to delve into the broader workings of their workshops and the company as a whole (Rybka 2016).

The decentralized self-management model proved immensely successful to the extent that even the communist regime that came to power in 1948 following the socialist revolution endeavored to implement it in large state-owned enterprises (Křeček 2015). This underscores the enduring impact and replicability of Bat'a's innovative approach to employee engagement and ownership.

The system of autonomous workshop represents a culmination of efforts to manage knowledge within the company as it encouraged its production and sharing. We now focus on the second pillar of Bat'a's governance, namely, the education system.

4.3.3 *Corporate Education System*

Given its significant size, even by European standards, Bat'a recognized the critical role of knowledge management in sustaining efficiency and productivity. We contend that Bat'a's success can be attributed, in part, to its exceptional ability to cultivate and expand knowledge in a markedly more intensive manner than was customary in corporate practices during that era.

The engagement with knowledge encompassed various levels, the foremost being technical knowledge and know-how, specifically in the context of workflows. Bat'a placed great importance on education. Beyond learning by doing, the company instituted a comprehensive internal training framework. This encompassed an extensive network of in-house educational establishments, ranging from foundational educational levels to specialized training units concentrating on specific business skills.

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A critical organizational component in this regard was the Bat'a School of Labor, established in 1925 as a crucial element of the company's training infrastructure (Pokluda 2018). This three-year study program targeted young employees, typically around fourteen years old, seamlessly integrating factory work with academic pursuits. During their training, participants were exposed to a diverse array of tasks during their factory assignments, rather than being confined to a singular role. Upon successful completion of the program, participants were strategically placed based on their performance, with the option to continue their education within Bat'a schools (Rybka 2016). The significance of the Zlín apprenticeship's success and its instrumental role in the company was underscored by the replication of similar schools in Bat'a's foreign branches during the late 1930s (see Pokluda et al. 2020).

Beyond the formal training in company schools, there was also a model of lifelong learning, which allowed those already employed to further deepen or expand their knowledge or broaden their skill sets. In addition to technical courses and lectures spanning various disciplines, a notable emphasis was placed on language acquisition, particularly English (Pokluda 2018). Leveraging its extensive presence in international markets, the company actively promoted and facilitated its workforce to acquire foreign work experience through short-term internships. This approach not only enriched individual employees but also contributed to the company's overall global competence and adaptability.

Bat'a recognized that cultivating a sense of community requires more than just imparting technical skills. To foster healthy relationships within and beyond the workplace and to encourage participation in pro-growth initiatives, individuals need an understanding of how societal mechanisms function. This insight also aligns with "Tocqueville's challenge" (Ostrom 1997), which emphasizes the importance of equipping individuals with a capacity to actively engage in collective action and self-governance. By addressing this challenge, Bat'a's approach contributes to the creation of resilient, self-organizing communities, much like those envisioned in the Ostrom Workshop's studies of governance. As part of his educational initiatives, Bat'a strove to communicate that embracing a pro-business and pro-entrepreneurial mindset facilitates widespread prosperity. Bat'a (2016) recounted that he himself was raised in a society where socialist ideology prevailed. During his childhood, the notion of being a prominent factory owner was not deemed morally acceptable.

Bat'a's subsequent philosophical stance was markedly shaped by his travels to Germany and the United States. Shortly after establishing his business, Bat'a traveled to Frankfurt am Main, marking his initial exposure to a capitalistic mode of production. He recounted his astonishment upon witnessing factory workers who appeared not to be exploited by capitalistic proprietors. On the contrary, he observed individuals enjoying improved living standards and better health compared to Zlín. Wages were higher and working conditions more favorable, as machinery handled

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the most arduous mechanical aspects of the production process. Since then, Bat'a began to value the capitalistic mode of production and developed a heightened interest in the management systems of affluent Western countries.

Consequently, in 1904, Bat'a organized a trip to the United States for himself and a select group of Bat'a workers (Pokluda 2015). The objective was to secure employment as ordinary workers in the United States manufacturing industry and glean insights into the workings of these enterprises. Bat'a observed a stark contrast in the mindset of ordinary individuals in the United States and the Czech lands. In the United States, success was lauded, and affluent individuals were regarded as exemplary figures. Children were instilled with the belief, from a tender age, that they held their destinies in their own hands and should strive to accumulate capital at the earliest opportunity. This stood in stark contrast to the anti-capitalistic sentiment prevalent in Central Europe.

Bat'a recognized that prevailing misconceptions about capitalism and the market system were stifling the growth potential of Czech society. As part of his educational endeavors, Bat'a disseminated several speeches and even authored a book titled *Wealth to All* (Bat'a 1926), which, among other topics, elucidated the significance of entrepreneurship, wealth creation, and free trade. He realized that awareness of the benefits of free trade was actually one of the types of knowledge whose dissemination can have the most significant impact within both the company and the community.

4.3.4 *Communication*

Tomáš Bat'a believed that fostering a sense of belonging among employees necessitated a comprehensive understanding of the company's overall functioning, including its management. Indeed, the sense of belonging is crucial to overcoming collective dilemmas in systems that do not rely on external monitoring (Kandel and Lazear 1992). The first step toward achieving this was to make the company's economic results accessible to all employees. At the same time, regular updates on economic developments and company news were disseminated through the company magazine *Communication*, which commenced publication in May 1918 and was distributed on a weekly basis to employees at no cost (Pokluda 2018).

Later, the dissemination of specialized knowledge was further enhanced with the introduction of company-specific trade magazines, including *Technical Advisor*, *Shoe-Leather-Gum*, *Salesmen's Magazine*, and *Pioneer of Successful Business*. These publications served as conduits for conveying specific expertise and bringing the best practices from various departments directly to the employees, thereby fostering a culture of continuous learning and knowledge exchange within the company.

The company realized that information had to flow not only from the top down, from management to employees, but also from the bottom up. Traditionally, information about employee satisfaction, job challenges, and their expectations

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were funneled to top management through lower-level managers. However, Tomáš Bat'a foresaw the potential limitation of this approach in a large organization, where some information might remain concealed due to challenges in its transfer to the central level.

To address this issue, Bat'a implemented the role of "personnel clerks" to facilitate a more efficient upward flow of local information regarding the functioning, challenges, and atmosphere of each department. These personal officers, serving as representatives of the Personnel Department, spent most of their working week directly within individual workshops, assuming various roles to gain an in-depth understanding of the work processes (Končitíková 2022). This hands-on approach enabled them to acquire continuous firsthand insights into the workflow, identify obstacles to efficiency, gauge the shop floor atmosphere, and comprehend the most pressing issues perceived by employees.

Moreover, these personnel officers engaged in regular interviews with individual employees. These sessions went beyond soliciting feedback, as the officers actively assisted employees in their career paths and helped plan activities in their personal lives. This multifaceted interaction not only strengthened the bond of trust between the employees and the company but also facilitated a more nuanced and comprehensive understanding of the workforce dynamics.

The results of individual departments, inclusive of the disbursed profits, were disseminated weekly to all employees within the company, instigating a form of healthy competition and rivalry among the departments. At the same time, the stimulation of new innovations and the activation of local knowledge were actively fostered through the establishment of the Research Department. Its aim was to concentrate, document, and evaluate employee-generated ideas and inventions aimed at enhancing the company's operational efficiency. Successful ideas were not only financially rewarded but were also showcased in the company-wide newspaper to inspire dynamic engagement among other employees. According to Pokluda et al. (2020), Bat'a Company surpassed industry averages in innovations and their practical implementation due to this organizational design. This success was underpinned not only by the aforementioned Research Department but also by specialized research in engineering, chemistry, agriculture, and education.

Engineering research, in particular, yielded one of the most remarkable success stories in the field of shoe manufacturing productivity – the Bat'a moving belt introduced in 1927. The implementation of the automated processes resulted in an astounding 73 percent increase in production that year. This strategic integration of research initiatives, coupled with a robust rewards system for innovative ideas, fortified Bat'a's position as an industry leader in innovation and practical implementation.

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4.4 BAT'A'S KNOWLEDGE COMMONS

Bat'a's governance structure, as described in the previous section, aligns with the Lead Role Governance model proposed by Bridoux and Stoelhorst (2022). This model grants considerable autonomy to employees and stakeholders, while maintaining central strategic direction and rule-setting responsibilities within management. Bridoux and Stoelhorst derive their governance models from Ostrom's pioneering work but do not explicitly apply the GKC framework. Analyzing the Bat'a case explicitly through the GKC framework enhances our understanding of the characteristics and management of knowledge in Bat'a's organizational structure.

Table 4.1 categorizes the key elements of knowledge governance at Bat'a along the dimensions emphasized in the GKC framework, namely: resource characteristics, goals and objectives, creation, communication, and governance mechanisms. Table 4.2 characterizes Bat'a in terms of Ostrom's design principles.

Bat'a's system recognized that important bits of knowledge were dispersed among numerous individuals throughout the organization (Foss 1999). To effectively harness and manage this dispersed knowledge, Bat'a implemented a decentralized governance structure based on autonomous workshops, which operationalized principles of congruence between appropriation rules and local conditions (Ostrom 1990; Hess and Ostrom 2007). The workshops incentivized grassroots innovation, experimentation, and continuous improvement by linking individual efforts directly to tangible outcomes (Urbanová and Dundelová 2012; Rybka 2016). Weekly profit-and-loss reports ensured transparency and enabled quick feedback, motivating individual contributions that aligned closely with broader organizational objectives.

Bat'a also addressed the non-rivalrous nature of knowledge highlighted by the GKC literature (Frischmann et al. 2014) by implementing mechanisms of knowledge creation and communication. For instance, Bat'a's corporate education initiatives, like the Bat'a School of Labor, provided learning opportunities that systematically reinforced knowledge-sharing and innovation across the enterprise (Pokluda 2018). Furthermore, regular internal publications such as the company magazine exemplified how Bat'a maintained open, continuous channels for effective knowledge-sharing.

The partial excludability of knowledge posed significant challenges in its governance, as individual motivations alone may not always lead to voluntary sharing (Cabrera and Cabrera 2002). Bat'a proactively addressed this by institutionalizing transparency and open knowledge exchange. The internal magazines and dedicated personnel officers facilitated bottom-up and top-down communication, creating an environment where knowledge-sharing became embedded in routine organizational practices rather than depending solely on individual initiative.

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TABLE 4.1 *Knowledge governance in Bat'a*

Resource	Resource characteristics	Goals and objectives	Creation	Communication	Governance
Knowledge	Dispersed among individuals Non-rival or anti-rival Some excludable (e.g., technical knowledge), some non/excludable (e.g., company culture)	Potential misalignment between personal and collective goals Potential heterogeneity of values	Learning-by-doing R&D Grassroots engagement Imitation	Profits and losses Training Written materials Personal communication	Autonomous workshops Education system

TABLE 4.2 *Ostrom's design principles applied to Bat'a*

Design principle	Application to Bat'a enterprises
DP1: Clearly defined boundaries should be in place	Workshops had clearly defined boundaries, making it clear who contributes to value creation and at what stage of production process
DP2: Rules-in-use are well matched to local needs and conditions	All the rules were developed through gradual learning within the Bat'a organization itself; they were not adopted from external sources and were fully adapted to the local environment
DP3: Individuals affected by these rules can usually participate in modifying the rules	The rules of work processes and basic procedures were defined centrally, but all employees in Bat'a's factories were encouraged to come up with innovative ideas; the company's management was open to feedback, and employees had plenty of channels through which they could propose changes
DP4: The right of community members to devise their own rules is respected by external authorities	Each workshop had the freedom to introduce its own internal procedures, provided that it was able to meet the plan set by the central management
DP5: A system for self-monitoring members' behavior has been established	A self-monitoring system was the very essence and central pillar of Bat'a's management model; individual workshops had full autonomy in organizing their work and were motivated to maximize efficiency, as any improvement in the production process exceeding the plan was directly reflected in employee rewards through the established profit-sharing system
DP6: A graduated system of sanctions is available	Workshop leaders and company management were involved not only in profit sharing but also in sharing losses; penalties were applied automatically if workshops failed to meet the set plan; this was assessed on a weekly basis, with both profits and losses reflected directly in employees' wages
DP7: Community members have access to low-cost conflict-resolution mechanisms	The work organization system, based on internal weekly accounting, was designed to detect any errors or inefficiencies at an early stage; if conflicts arose, the company could quickly identify in the data; the final say in resolving them rested with the top management; since the company's director was also its sole shareholder, authoritative and irreversible decisions could be made in a very short time
DP8: Nested enterprises – that is, appropriation, provision, monitoring and sanctioning, conflict resolution, and other governance activities – are organized in a nested structure with multiple layers of activities	Bat'a management system was a multilayered decentralized structure comprising a large number of autonomous self-governing workshops contributing both locally and collectively to Bat'a's knowledge governance system

Note: Based on Hess and Ostrom (2007).

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The autonomous workshop model featured clear rules that helped to align the incentives of workshop employees and the company management. The alignment was further reinforced by Bat'a's profit-sharing rule, which fostered a strong alignment of personal and collective goals, reducing the risks of knowledge withholding and enhancing collaborative productivity (Cekota 2016). In line with Ostrom's design principles (Ostrom 1990, 2005; Hess and Ostrom 2007), these rules also defined clear boundaries between workshops as production units determining who contributes to the value creation in a particular workshop.

However, the system led to potential conflicts among workshops that were to some extent in competition. These potential conflicts were addressed through a strong company culture that emphasized shared values and collective success. The ethos instilled by Tomáš Bat'a himself underscored entrepreneurship, personal accountability, and mutual prosperity, reinforced by slogans such as "One company – one interest – one goal" (Zeleny 1988). This explicit cultural alignment ensured cohesion and cooperation across the enterprise, reducing conflicts arising from internal competition.

Finally, the participatory governance model at Bat'a significantly enhanced employee empowerment, aligning with the GKC's principles (Hess and Ostrom 2007; Frischmann et al. 2014). Employees directly participated in decision-making processes, gaining transparent access to operational results, which amplified their sense of ownership, agency, and commitment to collective outcomes. Overall, Bat'a's case demonstrates how strategic management of knowledge commons, informed by clear governance principles, can lead to sustained organizational success.

4.5 CONCLUSION

Bat'a Company is often regarded as one of the most successful examples of entrepreneurship in the Czech lands. In this chapter, we aimed to argue that its extraordinary success was not primarily due to harder work or the exceptional empathy of its founder, Tomáš Bat'a. Instead, we have shown that Bat'a's success was deeply rooted in an effectively structured management system centered around the production and use of shared knowledge.

We examined how knowledge resources were managed in Bat'a and suggested that the firm adopted what Bridoux and Stoelhort (2022) described as the Lead Role Governance model that granted high autonomy to workshops and individual employees, while leaving the strategic decisions with the company's management. This decentralized knowledge governance model facilitated efficient problem-solving and cultivated a culture of continuous learning and knowledge exchange across all levels of the organization, while at the same time mitigating various collective action problems associated with the creation, communication, and utilization of knowledge (Hess and Ostrom 2007). It was this combination of

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decentralization and knowledge-sharing that played a crucial role in shaping Bat'a's innovative spirit and success during its glorious period.

Another cornerstone of Bat'a's success was education, and specifically its emphasis on lifelong learning. By investing in the continuous development of employees' skills and capabilities, the company not only enhanced their individual capabilities but also created a culture of knowledge-sharing. Tomáš Bat'a actively shaped its corporate culture to influence broader societal values. He became a public advocate for free trade, entrepreneurship, and personal responsibility. We contend that the successful penetration of the idea of shared benefit between employers and employees was another factor behind the company's success. Combined with above-average wages, a profit-sharing system, and a range of non-monetary benefits, this approach significantly contributed to a deeper sense of well-being and job satisfaction among workers. By emphasizing that every employee was also, in a sense, a capitalist, Bat'a cultivated a workplace culture where individuals felt genuinely valued and aligned with the company's broader mission.

Overall, the system of profit and loss within the framework of the workshop self-management system provided and disseminated information about economic activity and the efficiency of production processes within the company. Corporate education helped build essential work habits and procedures, while enlightenment regarding entrepreneurial values engaged a larger number of people in the production process and helped align individual interests with those of the company. The Bat'a model offers valuable inspiration for contemporary companies seeking long-term success through effective knowledge management and employee empowerment.

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