

# Cooperative management of an initial training program: case study of a Czech production site of a Japanese globalized manufacturing firm

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## Abstract

**Purpose** – This study examines the case of an initial training, called “Dojo”, invented and implemented at a production site in the Czech Republic. It clarifies the initial training program implementation process and offers a conceptual framework for cooperative management of subsidiary activities at the site and firm.

**Design/methodology/approach** – This study conducts an in-depth analysis of qualitative data from the Czech production site over a five-year period. The theoretical base is the theorization and labeling phase of management innovation (MI), the final phase of which legitimizes a new management practice. Interview data, archival data, pictures and financial data are used for the analysis.

**Findings** – To legitimize the Dojo in the operational flow controlled by the site and firm, the Czech production site acquires validation of the Dojo from employees and board members of the Japanese and European headquarters, helping the site build trustful relationships with them. Training programs, process standardization and skills standardization of the workers offer benefits to the trainees, production site and firm.

**Originality/value** – The authors offer theoretical insights into MI at the subsidiary-level, which past studies have not differentiated at the firm-level. The authors also provide details of the implementation and management of initial training for newly hired blue-collar workers at the production site. The findings complement related literature on human resource management and operational management.

**Keywords** Initial training, Management innovation, Lean production system, Operational management, Human resource management

**Paper type** Research paper

## 1. Introduction

Finding ways to train newly hired blue-collar workers is a challenge for the automotive firms that control many overseas subsidiaries in their global network through a lean production system (LPS). The difficulty of blue-collar worker training involves the contradictory characteristics of blue-collar workers. First, they are locally hired, trained and managed by the subsidiary, yet their skill and performance levels should be coordinated to meet the LPS requirement and appropriately controlled by the subsidiary

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and firm. Second, they play different roles as manual workers and as autonomous workers. As manual workers, they perform low-skilled physical work in a standardized manner according to set instructions (Hu *et al.*, 2010; Toppinen-Tanner *et al.*, 2002). As autonomous workers, they have specialized knowledge about their jobs, proactively act with respect to problem-solving in job shops and contribute to the efficient and effective operation of an LPS (e.g. Aoki and Dore, 1994).

The first training that production workers receive before starting operations in job shops is referred to as “initial training” (Jürgens and Krzywdzinski, 2015). This training is the most basic but strategically essential for the firm, as it equips newly hired blue-collar workers, who generally have no prior experience in job shops, with fundamental skills and knowledge to perform manual work. The skills and knowledge obtained during this training serve as a foundation for advanced training, which helps low-skilled manual workers transform into high-skilled autonomous workers and allows for flexibility in the production site allocation of blue-collar workers in job shops, ensuring efficient operation of the production system (Thürer *et al.*, 2020). In essence, initial training serves as a bridge between human resource management (HRM) and operations management at the production site. Previous studies on blue-collar worker training have overlooked the importance of initial training and the role of training programs and process management in the global firm (e.g. De Vin *et al.*, 2019; Hernaes *et al.*, 2021; Lin-Hi *et al.*, 2019; Lista *et al.*, 2022). Therefore, it remains unclear how initial training is implemented and managed in the global context and how it links HRM and operations management. To address this research gap, we set the following research questions:

- RQ1. What are the contents and the teaching and learning process of initial training?
- RQ2. How does a production site implement an initial training program in a planned manner and manage it on-site and in the firm?
- RQ3. What makes the initial training program successful?

To answer the questions, we study an initial training implemented at a Czech manufacturing subsidiary (“Site A”) of a large Japanese multinational automobile parts manufacturer (“Company A”). The training program is called “Dojo”, and was a new management practice that Site A invented to solve novel problems it faced and to ensure Site A’s competitiveness and long-term success. Dojo has been implemented as the company’s regular training program while undergoing several revisions. This research borrows the conceptual framework for “management innovation” (MI), which is defined as “the generation and implementation of management practice, process, structure, or technique that is new to the state of the art and is intended to further organizational goals” (Birkinshaw *et al.*, 2008, p. 829). We consider Dojo as an example of MI, because the Dojo establishment process entails various challenges corresponding to novel trials for the Site A members. The process involves numerous actors both inside and outside of Site A. Among the four phases of the MI process conceptualized by Birkinshaw *et al.* (2008), we focused on the “theorization and labeling phase”, the final step of which involves the organization acquiring internal and external validation of the new management practice to establish it as formal practice to be used regularly within the organization. Theorization involves “building a logical rationale for the link between an organization’s opportunities and the innovative solution”; labeling involves “the selection of a name for the management practice in question, which increases its acceptability to various constituencies” (Birkinshaw *et al.*, 2008, pp. 837–838). The final phase most accurately depicts the process of formalizing a new management practice adopted within the organization. This study analyzes the subsidiary’s and firm’s phase content to ensure that the new training program is a management practice permitted by the firm.

This study provides both theoretical and practical contributions. The theoretical contributions include: (1) introducing a notion of “multiple embeddedness”, which describes a characteristic of the global firm and its network (Meyer *et al.*, 2011) in MI studies and (2) consequently, providing a conceptual framework for the theorization and labeling phase of MI to explain the control mechanism of the MI at the subsidiary-level in the global context. It also offers a practical contribution by providing an in-depth understanding of the operation and management of initial training in the global manufacturing firm. Further, this study provides theoretical and practical insights into how a production site and its parent firm manage the initial training program, process and outcomes without conflicts.

The rest of this paper proceeds as follows: in the theoretical background section, we introduced the concept of MI and discuss previous studies on MI in manufacturing firms, job shop operation and management and blue-collar worker training and initial training. In the case analysis section, we examined the case of the Dojo of Site A and Company A and provide details on its implementation and management. In the discussion and conclusion section, we answered the three research questions, providing theoretical and practical insights for MI, HRM of blue-collar workers and operations management in the manufacturing firms. We also discussed the study limitations.

## 2. Theoretical background

### 2.1 Management innovation

MI is a new challenge that emerges when an organization is confronted with a novel problem or opportunity that is difficult to address using traditional approaches. MI and technological innovation are goal-oriented activities carried out to enhance the organization’s performance (Mol and Birkinshaw, 2009); however, MI has three characteristics that differentiate it from technological innovation. First, MI is a subjective and ambiguous activity, in which both the judgment of novelty and evaluation of performance are left to the organizational members, called “internal change agents”, who lead MI (Birkinshaw and Mol, 2006; Birkinshaw *et al.*, 2008). Second, it entails a collaboration between the internal change agents and “external change agents”, who are not involved in MI but support the internal change agents (Birkinshaw *et al.*, 2008). Third, it is a ubiquitous activity that occurs when an organization, regardless of its size, role and geographic location, intends to solve a difficult novel problem with existing organizational action programs (Birkinshaw *et al.*, 2008; Damanpour, 2014). Therefore, a practice is considered an MI if it is novel to the organization (including a subunit of a large organization) that introduces it but is already known to another organization (including a parent firm of the subunit) in question and when its implementation can produce valuable performance not previously possible. Dojo corresponds to MI because it satisfies the three characteristics mentioned above.

MI in the global firm is always characterized by multiple embeddedness, which describes a condition that the global firm and its subsidiary face in the heterogeneous contexts (Meyer *et al.*, 2011). The firm must organize its network to effectively utilize the differences and similarities of the multiple host locations where its local subsidiaries operate. Furthermore, the subsidiary must balance internal embeddedness within the firm network and its external embeddedness within the host environment (Meyer *et al.*, 2011, p. 235). All activities and practices in the global firm are characterized by multiple embeddedness. Dojo is a practice that the subsidiary generates and establishes for its regular use. When the subsidiary generates a new management practice, such as Dojo, it designs the program and process and embeds the accomplished practice into the firm network and host environment.

The new management practice’s multiple embeddedness must be addressed in the final phase of the MI process framework, which comprises the four phases of “motivation”, “invention”, “implementation” and “theorization and labeling” (Birkinshaw *et al.*, 2008).

The first three phases involve the process of designing and testing a new management practice. The last phase formalizes the new management practice through theory linking, acquiring internal and external validation, providing a logical rationale for the link between an organization's opportunities and the innovative solution and increasing the practice's acceptability in various constituencies (Birkinshaw *et al.*, 2008). Many actors are involved in the theorization and labeling phase as the external change agents (Birkinshaw *et al.*, 2008; Birkinshaw and Mol, 2006; Wright *et al.*, 2012). When the subsidiary initiates the MI, the members of the parent firm are required to be the external change agents.

### *2.2 MI for manufacturing firms*

MI is an essential challenge for manufacturing firms when they seek to catch up with technological changes and search for new methods or ideas to maximize their current and newly introduced system. Many manufacturing firms have introduced novel management practices corresponding to MI from other organizations or generated such practices themselves. LPS, total quality management, quality circle and six sigma are well-known examples of MI that have been broadly introduced in manufacturing firms as standard operational methods (Birkinshaw and Mol, 2006; Birkinshaw *et al.*, 2008; Knights and McCabe, 2002). In accordance with the introduction of new methods, manufacturing firms have replaced their management methods and practices with new ones. This shows that technical advancement and MI are two driving forces for the manufacturing firms that search for further advancement.

Recent studies on operations research focus on the implementation phase of MI, which is mainly imported from other organizations and analyze the relationship among technological advancement, MI and firm performance through quantitative and qualitative analysis. The quantitative studies examine which factors influence a phase; they find a complicated but tight relationship among MI, technology advancement, intra- and extra-organizational factors and firm performance (Alofan *et al.*, 2020; Černe *et al.*, 2023; Ozen and Ozturk-Kose, 2023; Ozturk and Ozen, 2021; Robert *et al.*, 2019; Sahu *et al.*, 2022). The qualitative studies examine various cases of MI implementation and yield two findings. First, firms tend to introduce new management practices from other organizations or generate new ones by themselves to utilize the technologies in which they have invested. Second, psychological factors of change agents and resource limitations are major obstacles encountered during MI implementation, which, therefore, should be appropriately controlled for successful implementation of MI (Melander *et al.*, 2023; Robert *et al.*, 2019).

Previous MI studies have not addressed blue-collar worker training, although it influences the job shop operation and firm performance, which are related through the LPS. Designing an influential training program for LPS operation may be considered an MI if it generates novelties for the organization. Dojo should be developed as a novel challenge. We focused on its final phase, which should integrate the Dojo training process into the operational flow controlled by the subsidiary and the firm.

### *2.3 Necessity to differentiate two types of MI in global firms*

Following the notion of multiple embeddedness and the findings and discussion of the MI studies mentioned above, we should differentiate between two types of MI that occur in global firms—MI at the firm-level and MI at the subsidiary-level—because they have different purposes and management mechanisms.

MI at the firm level starts when the members of the firm (headquarters) generate a new practice to solve a problem that is “novel” to them and that they believe will influence the firm's operation. It aims to legitimize the new practice within the firm to further advance it. MI at the subsidiary level starts when the members of the subsidiary generate new practices to

solve local problems that are novel to them and that they believe will influence the subsidiary's operation. Its goal is to legitimize the new practice in the subsidiary and the firm and routinize it as a firm-approved management practice to further advance the subsidiary. To achieve this goal, the subsidiary acquires validation of the practice from its parent firm and embeds it in the operational flow that the firm and the subsidiary control, when the local or intra-firm environment surrounding the subsidiary changes, the subsidiary modifies the practice to meet the change.

#### 2.4 Training for blue-collar workers

Blue-collar worker training is one of the management practices deeply related to technical advancement. Manufacturing firms have invested in introducing new technologies in their production sites, which increase the need to train their blue-collar workers to let them adapt to technically advanced jobs and the job environment.

Table 1 presents a list of the research on blue-collar worker training that examine the relationship between technology and training and offers detailed insights into it. These studies focus on the training for the blue-collar workers' upskilling implemented after they are officially employed and start working within the firm. The research covers various types of training: on-the-job training (OJT), off-the-job training (Off-JT), cross-training and training with digital assistance. OJT is a form of workplace training that occurs during the performance of a job and generally involves one-on-one instructions and several learning opportunities with trial and error, wherein training and practice are strongly linked (Matsuo, 2014). Off-JT comprises all types of training not received on the job (Kovach and Cohen, 1992). Cross-training is a program "where each team member learns about and receives instruction regarding the roles and teammates, responsibilities of his or her treatment" (Hernaus *et al.*, 2021, p. 629). Training with digital assistance includes virtual reality, immersive virtual reality and simulators. These practices are often implemented as Off-JT, but they also aid trainees' learning-by-doing as part of their OJT. According to the above-mentioned training research, an appropriate combination of OJT and Off-JT ensures trainees' learning and skill gain.

The results of a search—conducted using bibliometric methods (Župič and Čater, 2015) and a hybrid search combining database search and snowballing, which uses the reference list of a paper or the citations to the paper to identify additional papers (Wohlin *et al.*, 2022)—revealed a few studies on blue-collar worker training at the manufacturing firms. These studies mention initial training implemented in large automotive firms in Japan,

Research focus	Recent research
Systematic training (OJT and Off-JT) related to lean production and its effect on upskilling of workers and lean production adoption	Kavčič and Gošnik (2016), Marin-Garcia and Bonavia (2015), Lin-Hi <i>et al.</i> (2019)
Relationship among training (OJT and Off-JT), skill advancement and workers' mobility	Jürgens and Krzywdzinski (2015), Knight and White (2017)
Balance cost of processing times of multiskilled worker training in the seru production system	Ying and Tsai (2017)
Cross-training: its method of implementation and relationship with job design or work scheduling and workers' performance	Büke <i>et al.</i> (2016), Hernaus <i>et al.</i> (2021), Nembhard (2014)
Training with digital assistance; its method of implementation and effects on skill acquisition of trainees	De Vin <i>et al.</i> (2019), Hoedt <i>et al.</i> (2017), Oestreich <i>et al.</i> (2019), Radhakrishnan <i>et al.</i> (2021)

Source(s): Table by authors

**Table 1.**  
Studies on training for  
blue-collar workers

Germany and the Czech Republic (Jaca *et al.*, 2014; Jürgens and Krzywdzinski, 2015; Losonci *et al.*, 2017; Maurtua *et al.*, 2007). They identify some common characteristics of the initial training programs, which involve a systematized short-term Off-JT program, including basic technical and theoretical training and orientation training. OJT follows immediately after Off-JT, and all trainees must complete Off-JT before their official job assignments and the start of OJT.

### *2.5 Necessity of training programs and process management*

The studies on blue-collar worker training provide insights into the need for training programs and process management. They show that training contributes to trainees' learning, skill advancement, mobility and adaptation to the job and job environment (e.g. Jürgens and Krzywdzinski, 2015; Lin-Hi *et al.*, 2019; Radhakrishnan *et al.*, 2021). Studies that examine the training time and cost explain the need for the systematic design of a training program to make the firm appropriately control the trainees' skill levels following its human resource development plan (Cerne *et al.*, 2023; Ying and Tsai, 2017). Those that mention initial training show that the manufacturing firms train their blue-collar workers in a planned manner before and after official job assignments. In summary, the literature indicates that training for blue-collar workers is effective when the firm appropriately designs and manages the teaching and learning process and its program. When the training program and process are designed by the subsidiary, both the subsidiary and the firm are required to manage them.

## **3. Methodology**

### *3.1 Research design*

We conducted a longitudinal single-case study to examine the initial training program called the Dojo, implemented at Site A, based on the research protocols by Corbin and Strauss (2015) and the single-case method outlined by Yin (2018). The study aims to identify the relationships between complex elements and their common patterns and obtain theoretical knowledge based on the findings (Eisenhardt, 1989; Gibbert *et al.*, 2008; Gibbert *et al.*, 2021; Yin, 2018). Our research focuses on the theorization and labeling phase, a process of acquiring internal and external validity of a new management practice developed within the organization. To clarify the complex process of MI, which involves multiple intricate elements and actors and takes time to complete, we needed a case study in which a subsidiary created a new practice from scratch and completed all the MI phases. Considering the limited accessibility of cases that meet these criteria, we chose to adopt a longitudinal single case study as the most appropriate method.

### *3.2 Case selection*

Table 2 presents key information on Site A and the Dojo. We employed purposeful sampling to select the case. A case study is an appropriate method when it is used to generate a theory rather than test a theory, or when the selected case is usually revelatory, is an extreme example, or has unusual research access (Eisenhardt and Graebner, 2007; Yin, 2018).

The case selection was conducted as follows: we first reviewed academic research (Chanaron, 2001; Imaeda and Nuka, 2006; Komatsu, 2005; Lee and Jo, 2007; Maurtua *et al.*, 2007; Miyake *et al.*, 2015), reports (European Sector Skill Council, 2016; Toyota AutoBody, 2016) and news (Nikkei Business Daily, 2007) that mentioned blue-collar worker training and gleaned two important points. First, large Japanese and European automotive firms implement their own initial training regularly at domestic and overseas production sites. Second, they tend to be implemented through a common implementation process. Next, we gathered data and information about blue-collar worker training in Japanese automotive

Site A	
Position in Company A	100% owned manufacturing site by a large Japanese automobile parts maker (company A)
History	Founded in 2001 as a manufacturing site belonging to a foreign company Acquired by company A in 2010
Location	A region in the Czech Republic
Japanese members	none
Employees	500–550 in total 350–400 blue-collar workers 80–100 engineers and specialists 20 administrative staff
Product line-up	Mass-produced bearings and customized bearings for specific customers
Major customers	European and Japanese car makers and their suppliers in Europe
Job ranks of blue-collar workers	Operator A: lowest-ranked operators who do manual work Operator B: middle-ranked operators who do manual work and something more about improving product quality Operator C: highest-ranked operators who do machine adjustments
<i>Dojo</i>	
Contents	One-month training program <ul style="list-style-type: none"> <li>• Four days of Off-JT in a training room</li> <li>• Approximately 26 days of OJT (called “Mentoring” at Site A)</li> </ul>
History	Program development started in 2010 Program formalization began in 2014 and concluded in 2016 Program updating and re-formalization began in 2017

Source(s): Table by authors

**Table 2.**  
Introduction of Site A  
and Dojo

firms from their official websites, annual reports and Japanese news and magazine articles. We found that major Japanese global automobile parts manufacturers are Keiretsu [1] companies with interlocking business relationships with a large Japanese car manufacturer that implements various types of training programs, including initial training for blue-collar workers worldwide.

Among the many foreign manufacturing subsidiaries that Keiretsu companies manage, we focused on those operating in the Czech Republic for two reasons. First, the Czech Republic has a strong presence in the automotive manufacturing sector of the European Union. Many manufacturing plants and subsidiaries of global automotive firms, including those from Germany, Japan, France and Korea, have relocated to the Czech Republic since it acquired official membership in the European Union and expanded their business worldwide (Myant, 2007). Second, many global automotive firms in the Czech Republic have been suffering from unwieldy hiring difficulties across job titles owing to falling domestic unemployment rates since 2014 (International Labour Organization, 2022). We focused on small to mid-sized manufacturing sites because we believed that the issue of initial training is more serious for such firms than for large ones that can replace blue-collar workers with robots. We focused on two Czech manufacturing sites (Sites A and B) owned by large Japanese automobile parts manufacturers belonging to the same Keiretsu group; they were established in almost the same year and had a similar organization size and narrow product line-up. Through careful examination of the two sites using archival data and informal interview data gathered in 2017 (available to one of the authors), we selected Site A. There are two reasons. First, Site A developed its own initial training program for newly hired Czech blue-collar workers, who are expected to work for a long time and be autonomous in the future without direct support from the Japanese headquarters. It is a suitable case study for

understanding the process of generating a new management practice from scratch and the linkage between the initial training program and the other training for upskilling. Second, when we conducted a pilot interview in 2017, Site A had been operating its initial training program for several years, and it underwent relatively extensive revisions in 2014–2017 to overcome novel problems that occurred when Site A started to formalize and sophisticate the initial training into a program that could ensure Site A's long-term success and development within the firm and its locale. This corresponded to MI at the subsidiary level and was in the final phase of the MI process in 2017.

Site B started developing its initial training in 2018 to overcome hiring difficulties. The training was for newly hired foreign blue-collar workers who only worked there for a couple of weeks to a month. When we interviewed a member of the site in 2018, the project was estimated to be in the invention phase. However, in 2020, the development of the training program stopped because of the start of the COVID-19 pandemic and has been suspended ever since. Comparing the two cases, we judged that only Site A's case was relevant to our research purpose and could reflect the theorization and labeling phase of MI at the subsidiary level.

### 3.3 Data collection

We used multiple data sources to enhance research quality and reliability: information gathered from longitudinal interviews with key people at Site A, internal documents, pictures, archival data and financial data (see Table 3).

We conducted three types of interviews with multiple members (Table 4): a pilot survey, a main survey and an online follow-up survey. Before starting the main survey, we analyzed the pilot interview data again and determined the method and target of the research. We asked the president of Site A open-ended questions (listed in Appendix) and for permission to conduct our main survey and publish the research findings. We explained to him by e-mail the purpose, goal and methods of the research and assured him confidentiality regarding responses. After we received his permission, we administered the main survey.

The interviews were conducted in English without translators. Owing to research constraints, we could not record the interviews. Factory tours were conducted in 2018–2019; we observed the structure of job shops, machines used by blue-collar workers, types of jobs they do and their behaviors and movements in the job shops, and visited the Dojo training room. Further, we conducted an e-mail survey and online interviews with the president of Site A,

Names and types of documents	Language	Numbers of files	Word count used for coding analysis
Interview data and memos 2018–2022	Japanese and English	8	6,804 words (Japanese) 6,287 words (English)
Pictures	n/a	402	n/a
Internal documents	Czech	9	Uncountable
Newsletters 2010–2022	Czech	279	47,562 words (English)
Site-News 2016–2022	Czech	22	88,626 words (English)
Online news and magazine articles	Czech and English	3	9,947 words (English)
Company A's press releases related to Site A	Japanese	4	Not used for coding
Company A's annual reports 2009–2022	Japanese	14	Not used for coding
Financial data of Site A 2012–2021	English	1	Not used for coding

**Table 3.**  
List of materials used  
for the analysis

**Source(s):** Table by authors



Interview style	Pilot survey (2017)		Main survey (2018)		Main survey (2019)		Follow-up survey (2020–2022)	
	Interview topic and questions	Open-ended interview Interview topic Total hours	Semi-structured interview Questions Total hours	Semi-structured interview Questions Total hours	Semi-structured interview Questions Total hours	Semi-structured interview Questions Total hours	Q&A style e-mail or online interview Questions Total hours	
list of interviewees	Plant president	Introduction of Site A and its activities, including Dojo	3	The relationship between the Japanese headquarters and Site A. Team management of Dojo	1	n/a	1	Additional questions about Site A and the Japanese and European headquarters
	Human resources manager	n/a	n/a	n/a	n/a	Dojo training program content, the program's process, and implementation method.	3	n/a
	Production manager	n/a	n/a	Characteristics of the product and production system of Site A.	3	Role of the Dojo training program at Site A.		Additional questions about Dojo implementation
	Production system manager	n/a	n/a	About the jobs of blue-collar workers in the production process		Cooperative management of Dojo program and process among manager-class employees		
	Internal trainer	n/a	n/a	How to teach the Dojo content to all trainees	1	The aspects that are updated: teaching material, teaching methods, and so on	1	Additional questions about the difficulties of teaching Dojo contents and ways of overcoming the difficulties

Source(s): Table by authors

Table 4.  
Interview lists

the quality manager and the Dojo trainer. We asked them additional questions and discussed whether our findings and ideas accurately reflected the reality of Site A. All interview data were gathered in text format.

Internal documents, including confidential materials and pictures, were obtained from the main interviewees in 2018–2019. They comprised various materials used for the Dojo training program implementation and company audits. Dojo internal trainers mainly used the former to monitor progress and record training results. Site A and Company A used the latter when checking the major activities at Site A and their progress.

The archival data were gathered through an internet search. They comprised (1) newsletters released by Site A since 2010, (2) subsidiary newspapers that Site A has published for employees since 2016, which we call “Site-News”; (3) online local news and magazine articles about Site A and the Dojo training program; (4) Company A’s press releases mentioning Site A and (5) Company A’s annual reports, to understand its financial performance. Newsletters were short news items introducing events of Site A on its official homepage. Site-News comprised newspapers of approximately ten-pages, which provided news and information about Site A, its employees and Company A, including their business environment and policies for Site A’s employees. They were published quarterly from 2016 to 2018, three times in 2019–2020, and twice in 2021–2022. We downloaded them through Site A’s official website.

Financial data and stakeholder information of Site A were acquired through the Orbis database (<https://www.bvdinfo.com/en-gb/our-products/data/international/orbis>). Data from 2012 to 2021 were employed. All materials written in Czech were translated into English using Google Translate. The translated texts were checked for consistency with the interview data and statements in other materials. Company A’s financial statements and annual reports were gathered from its official website. We chose 2009 as the data collection start date because this is when Site A’s acquisition was announced.

### 3.4 Data analysis

Following the case study protocol of Yin (2018), we first provided a detailed description of the development process of the Dojo from the time of Site A’s establishment to the present. It includes the specific content and characteristics of the Dojo training program, opportunities and threats that might have caused the development and revisions of the Dojo and Site A’s relationship with Company A and other major actors that support the Dojo development and implementation and Site A’s local and global activities. We mainly used pilot interview data, Company A’s press releases and annual reports and Site A’s financial data.

Second, we conducted an inductive analysis based on Gioia *et al.*’s (2012) methodology. We used the MI process and its characteristics of the theorization and labeling phase and NVivo version 17.1 to develop codes from the data we gathered: interview data and memos, newsletters, Site-News articles, online local news and magazine articles and pictures taken during the factory tour (with the interviewees’ permission). As the materials contained text and non-text data in English, Japanese and Czech, we used in-vivo coding to correctly code the data. Based on our assessments of the correspondence between the data and theory (the MI process), higher-order codes were aggregated from our initial codes until we arrived at broad constructs; that is, we proceeded from first-order concepts, second-order themes and aggregate dimensions.

During the first-round coding, the analysis focused on the activities, episodes, significant events, their timing, efforts made by the key person, method of controlling the Dojo training program and teaching and learning process and relations between Site A and Company A. One of the authors examined the materials and developed the initial codes based on the characteristics of the theorization and labeling phase of MI and of blue-collar worker training

as skill standardization. All authors discussed the validity by reviewing all materials and results of the first-round coding again, and the author who created the codes performed the second-round coding. During the second-round coding, the author focused more on the relationships among the codes and their linkage to the four phases of the MI process, especially the theorization and labeling phase, which we assumed was an important step for the cooperative management of a training program in the subsidiary and firm. For the final-round coding to reach aggregate dimensions, we structured the data from first-order categories to second-order themes based on the MI process.

After completing all surveys, in 2022, we held an online meeting with the president of Site A to discuss the accuracy of our analysis and the research findings. The paper was approved by the president before publishing.

## 4. Findings

### 4.1 Codes in the theorization and labeling phase

Table 5 illustrates the concepts identified through the first- and second-round coding procedures from the within-case analysis. The final codes created after the two rounds of coding are theorization and labeling and embeddedness. The Dojo program theorization and labeling began in 2014 and concluded around 2016–2017. This stage comprised two codes: “theorization and labeling in the subsidiary” and “theorization and labeling within the firm”.

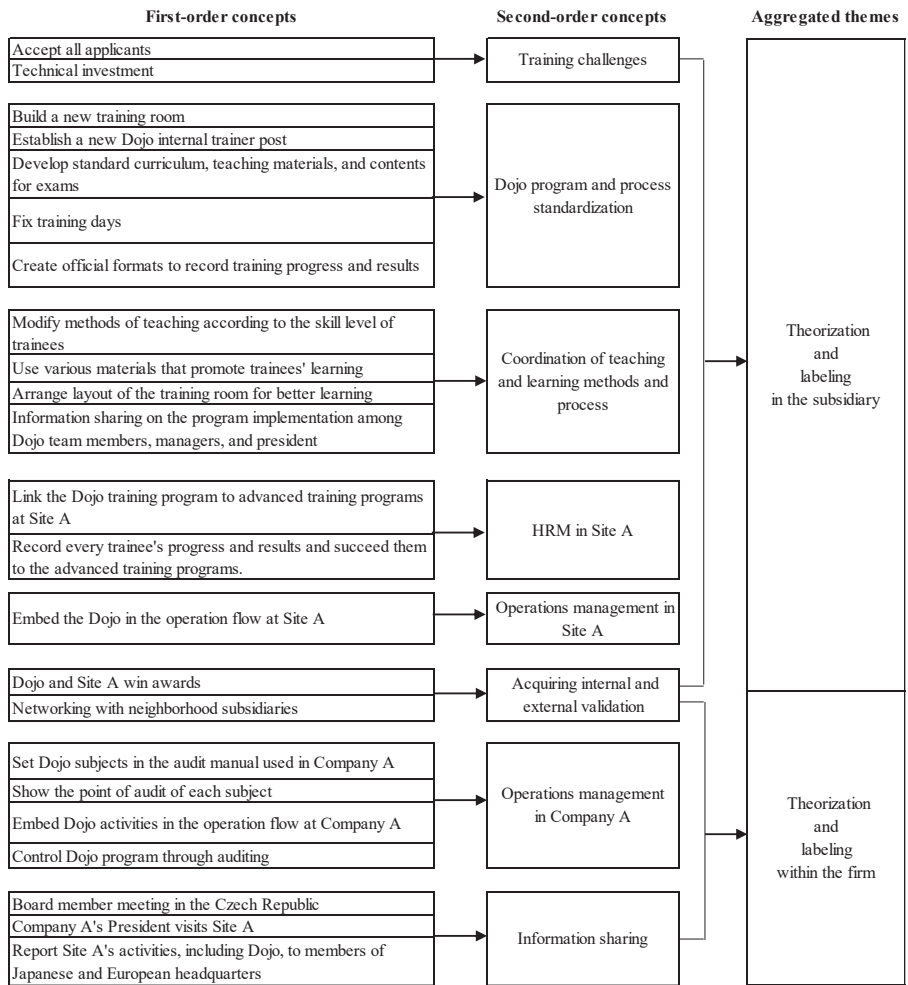
### 4.2 Theorization and labeling in the subsidiary

4.2.1 *Dojo program and process standardization.* Site A standardized the training program and implementation process of Dojo Off-JT and OJT. Table 6 shows the content, person in charge of the training and schedule of the four-day Off-JT: two orientations implemented on the first day, basic skills training on the second day, theoretical training with practice on the third day and a final exam on the fourth day. Table 7 shows the stream of OJT (called “mentoring” at Site A) implemented immediately after Off-JT. OJT is a learning process wherein trainees confirm whether they have mastered their learnings in Off-JT under the supervision of two mentors and internal trainers. It contains three phases, with each spanning approximately a week. Tables 6 and 7 explore the contents and process of the initial training and answer the first research question.

Training program standardization involves defining the elements of the training program, adjusting them such that they are smoothly linked to each other and integrating them into a program repetitively used in the organization. With the assistance of the other managers and the internal trainer, the human resources manager designed a standardized Dojo training program. A new Dojo internal trainer post was established. An experienced blue-collar worker was appointed to this post and was responsible for all issues related to the execution of the program, including Off-JT and OJT.

Site A set up a new Dojo Off-JT training room outside the production area. It comprises four desks for four to eight people, some whiteboards for lectures, the same manufacturing and measurement machines used in the manufacturing lines and other equipment and gadgets to teach the trainees how to move heavy boxes in the job shop or what might happen if they misuse the machines. The purpose of creating a new Dojo training room was to bring the trainees closer to the real working conditions without them moving around the workplace during training. This allows trainees to focus solely on their training and prevents any negative impact on production results and quality.

Training process standardization was achieved when Dojo Off-JT and OJT were implemented following the formats shown in Tables 6 and 7 and using the three formats that



**Table 5.**  
Coding structure

the human resources department developed to monitor and record the progress and results of the Dojo training program. These are the “Employee Cover Card”, the official exams and the Skill Check Sheet. The Employee Cover Card is a sheet of paper, similar to a clinical record, made for each trainee to record the progress and results of all Dojo training activities. Site A maintains the cards as an official training record for later advanced training. The official exam is held on the final day of Dojo Off-JT. It consists of a quality test with about 12 questions, including multiple-choice questions, written tests, calculations and production tests. The Skill Check Sheet includes 20 basic skills learned through the Dojo training program. It is used on the final day of the Dojo OJT.

The exams are used as selection tools. Trainees who successfully pass the exam after Off-JT officially become members of Site A and move on to the OJT process the following day. Those who fail are not officially employed but are allowed to join OJT with complete

	Training subjects	Implementation day	Person in charge
Orientation (1) Introduction of Site A and its management rules	Occupational health and safety training Environmental Management System (based on ISO 14001) training Initial employee training Payroll part	1st day	Member(s) of the Health and Safety Department  Member(s) of the Human Resources Department
Orientation (2) Introduction of the production area and the production system	Introduction of Company A's lean system Introduction of quality system Technology needed for assembling jobs Factory tour Personal protective equipment – how to wear glasses, gloves, goggles, helmets, etc	1st day	Internal trainer
Basic skill training	Training for drawing and workplace documentation How to deal with scraps How to handle products	2nd day	
Theoretical training with practice (1) of measuring products	Notation of measuring station operator, statistical process control, etc Product measurement/gauges, gauges control	2nd or 3rd day  3rd day	
Theoretical training with practice (2) of documentation writing	How to write data into the control system used in job shops Workplace documentation, Help Chain, Bekido and Choko forms, Production board		
Theoretical training with practice (3) of appropriate behaviors in the production area	Packaging of finished products and packing regulations 5S (storing, setting-in-order, shining, standardizing and sustaining the discipline)		
Final exam	All trainees take written tests about all Dojo subjects	4th day	

**Note(s):** Bekido used in Company A is a term that shows manufacturing-line efficiency  
Chokko used in Company A is a term that shows first-pass-good rates  
**Source(s):** Table by authors

**Table 6.**  
Off-JT subjects and list of trainers in charge of each day

monitoring if they agree to retake the exam a week later. If they fail it, they have to leave Site A. Then, a skill check is carried out to judge whether the trainee should proceed to the next phase. The final skill check and a practical test are carried out by an internal trainer and two mentors, respectively, at the end of all Dojo training activities. One mentor records the results.

Phase	Skills to be checked	Person who checks the skill
Phase 1	Type, method and time of use of personal protective equipment	Shift Leader
	Learning about the location of switches, emergency buttons and valves in the workplace	Shift Leader
	Familiarization with workplace risks and measures to prevent or minimize them	Shift Leader
Phase 2	Quality training – statistical production management	Internal Trainer
	Practical training for crane operator and binder	Shift Leader
	Practical training for operators of handling equipment	Shift Leader
Phase 3	Basics of machine and machine operation, introduction to operating instructions	Technologist
	Packaging of finished products and packing regulations	Technologist
	Maintenance and cleaning of the machine, handover of the workplace	Technologist
	Basics of the parts inspection procedure, component sorting and mounting of bearings	Technologist
Test	Practical test to close mentoring	Mentor

**Table 7.**  
OJT training subjects  
and list of trainers in  
charge of each phase

**Source(s):** Table by authors

*4.2.2 Coordination or teaching and learning process.* Three types of coordination are carried out in the theorization and labeling phase: coordination of training and teaching methods to complete training in a planned manner, coordination of the training environment to support trainees' learning and information sharing among core members to ensure Dojo training program implementation. All coordination is done to ensure the routine operation of the Dojo training program conducted by multiple actors, including the president, managers, internal trainers and mentors.

In the Off-JT and OJT process, the internal trainer customized the teaching methods and training hours according to the progress of each trainee to ensure all trainees finish Off-JT and OJT in 30 days. The internal trainer mentioned in the interview that they attempted various formal and informal coordination while cooperating with other members involved in the Dojo training program.

I was passionate about how to make the training room as close to reality as possible. So, I gradually brought various props (meaning gauges, various stands, drawings, and other objects from production) to ensure that the environment is as close to reality as possible.

Coordination after the Dojo training program is conducted through job assignments, if necessary. One interviewee explained how this was done.

If, even after the Dojo, the newcomer does not show visible positive progress in their knowledge, mutual communication between the human resource and production departments will be established with regard to a possible transfer of the operator to a more suitable job position.

*4.2.3 Training challenges.* Theorizing the Dojo training program became more difficult after around 2017 when Site A started hiring applicants regardless of age, educational background and job experience. Factors that hindered the theorization of the program were the declining skills and motivation of trainees over the years and technical advancement in the automotive industry; these factors increased variability among trainees, which is challenging to control.

Site A has been hiring only Czech speakers since its foundation as part of a strategy to develop highly skilled operators who can manufacture customized products; this gave Site A

its competitive advantage. It regularly accepted four to eight Czech trainees in one Dojo program and trained them accordingly. Hiring difficulties since 2014 raised concerns about the increased number of workers with challenges in both basic skills and motivation, which might have reduced the competitiveness of Site A. This fear became a reality in 2017 when Site A started recruiting more blue-collar workers than before and expanded technical investment. This made the Dojo implementation more difficult. Therefore, the internal trainers and managers had to spend more time in meetings to coordinate the training program and process.

The internal trainer mentioned in the interview that he devised ways of teaching in the Off-JT and OJT, so that all trainees could master the required skills and knowledge step by step in a planned manner:

In most cases, the job seekers were not mechanics, but, for example, construction workers, waiters, cooks, or florists. Thus, our effort was to retrain these employees to work as production operators so that a cook who knew the recipe for cooking dumplings would learn to produce items according to our production drawings and control plans.

I devote additional time to a trainee in ongoing mentoring and try for an individual approach. I communicate with the mentor what the operator's weak points are and I will ensure he receives support through specific further training. I provide supervisors and the production manager with information in the form of personal assessments, which I use to evaluate the performance of employees and their behavior during the training period.

#### 4.3 Theorization and labeling within the firm

4.3.1 Role of the skill board and standard audit manual. As Site A is an overseas unit of a large multinational firm of Company A, the Dojo training program and its implementation process need to be appropriately embedded in the activity flow and management system at Site A as well as in those of Company A. The skill board and the standardized audit manual help the integration. Site A creates and adopts the former in its job shops, whereas the Japanese and European headquarters use the latter to monitor production and operation at every production site. The Japanese headquarters delegates authority to the European headquarters to modify the text and audit subjects in the manual to suit the local context.

Figure 1 presents a sample of the skill board. It contains the names of the blue-collar workers who work in the job shop, a list of the skills required for operation in the job shop and information about workers' current skill levels. The names of those who finish the Dojo training program are put on the board when they start working. All blue-collar workers in the same job shop get information from the board on who possesses requisite skills for production, who needs more training and who needs more attention.

		List of jobs that workers do in the job shops							
		Job 1	Job 2	Job 3	Job 4	Job 5	Job 6	Job 7	Job 8
Names of the workers assigned jobs in the job shops	Worker A	■ ■ ■ ■	■ ■ ■ ■	■ ■ ■ ■	■ ■ ■ ■	■ ■ ■ ■	■ ■ ■ ■	■ ■ ■ ■	■ ■ ■ ■
	Worker B	■ ■ ■ ■	■ ■ ■ □	■ ■ ■ □	■ ■ □ □	■ □ □ □	■ ■ ■ ■	■ ■ □ □	■ ■ □ □
	Worker C	■ ■ ■ ■	■ ■ ■ ■	■ ■ ■ ■	■ ■ ■ □	■ ■ ■ □	■ ■ ■ ■	■ ■ ■ □	■ ■ ■ □
	Worker D	■ ■ ■ ■	■ ■ □ □	■ ■ □ □	■ ■ ■ □	■ ■ ■ ■	■ ■ ■ ■	■ ■ ■ ■	■ ■ ■ ■

- □ □ The worker can do the job with full support.
- ■ □ The worker can do the job with some support
- ■ ■ The worker can do the job without support
- The worker cannot do the job, needs retraining

Source(s): Figure by authors

Figure 1.  
Image of the skill board

The standardized audit manual lists various activities to be audited. It includes the audit area, mission of every audit area, key performance indicators, audit categories and subcategories, related activities, audit checkpoints and ideal audit frequency. Every area has two to eight categories with approximately 10–20 subcategories, each of which has two to five subjects that indicate the specific activities that workers, engineers and managers should perform, the points of the audit, and the goals to be achieved. Every subject has a goal and score for the production site. The degree of achievement can be determined by adding the score for each subcategory and category.

Table 8 presents a sample of the audit manual, which categorizes the jobs for Site A. It has four audit areas: logistics, environment, plant conditions and maintenance. Dojo activities are classified into one or two categories in each area. Under logistics, Dojo subjects related to logistics and error prevention are linked to the two categories of “inventory/warehouse management and customer logistics” and “internal logistics” for standardizing work. Under environment, Dojo subjects are placed in the “environment control” and “chemical” categories. Dojo training is expected to disseminate the environmental message from Company A among its employees and provide them with correct information regarding how to treat chemicals used in the production area and how to protect themselves to ensure appropriate employee actions and behaviors in the production area. Under plant conditions, the Dojo training is linked to the “inside plant” category, aiming to satisfy elevated levels of safety, production quality and logistics and make the Dojo training area clean and safe. Under maintenance, Dojo training is placed in the “organization” category, which has 20 subcategories for the maintenance area and methods. The Dojo training is expected to teach employees the correct maintenance process and methods.

Based on the audit manual, Site A judges the achievement of its activities, including Dojo training. This enables Site A to directly control all its activities in a standardized manner. Company A indirectly controls Dojo training and other activities at Site A using the manual. The members of the Japanese and European headquarters refer to the manual whenever required to assess the progress of the activities that Site A manages. This makes the cooperative management of Dojo activities within the firm possible; the subsidiary is responsible for the local management of the Dojo training, whereas the headquarters manages its global management.

*4.3.2 Acquisition of internal and external validation.* To obtain approval for the Dojo and activities at Site A, the president of Site A actively used internal and external media and external evaluations, in addition to providing explanations to the blue-collar workers and the Japanese and European headquarters. The aims, content and results of the Dojo were disseminated to employees through newsletters (Site-News) via the subsidiary and advertised widely through local newspapers and magazines. The Dojo garnered significant recognition as an exceptional training program, achieving accolades at both the local level within the town where Site A operates and on a national scale in the Czech Republic in 2017–2018. Site A won multiple intra-firm awards and local awards after 2017. These internal and external evaluations were disseminated on the subsidiary’s website and in newsletters and through feedback to the board members of the Japanese and European headquarters.

In addition, Site A has built a local network with neighborhood manufacturing subsidiaries, which belong to major European multinational firms. The purpose of the network is information sharing to solve common problems in the lean production operation; blue-collar worker training is one of the crucial issues shared by subsidiaries. The presidents of the five subsidiaries arrange meetings for their managers to discuss how to solve problems for the further advancement of the subsidiaries and the region within which they operate.



Audit area	Category	Subcategory including the dojo training program	Scores given to each subcategory *	Scores achieved by the production site *
Logistics	#1 Production control		10	10
	#2 Material control		10	10
	#3 Inventory/warehouse management and customer logistics	Dojo training for standardized work	5	5
	#4 Internal logistics	Dojo training for standardized work	5	5
	#6 Packing and transportation		2	1
	#7 Global logistics		2	1
	#8 Corporate philosophy (called "Company A's way")		2	2
	Environment	#1 Environmental control	Dojo as a tool for sharing the environmental message from Company A with employees	5
#2 Chemicals		Dojo as evidence that employees have relevant information about risk and protection	5	4
#3 Waste treatment			2	2
#4 Emergency preparedness			2	2
Plant conditions	#1 Outside plant		5	0
	#2 Welcome room		5	0
	#3 Top management		5	5
	#4 Inside plant	Dojo training for safety, quality, agility and logistics Maintain a high level of 5S in the Dojo area	3 2	3 0
Maintenance	#1 Organization	Dojo training for maintenance	2	0
	#2 Management		2	1
	#3 Self-management		2	2
	#4 Preventive maintenance		3	3
	#5 Overhaul activity		3	3
	#6 Reporting		3	3
	#7 Spare parts		2	2

**Note(s):** \*Numbers in the cells are provisional figures and do not represent the real scores

**Source(s):** Table by authors

**Table 8.**  
List of audit area categories and subcategories in which the Dojo training program is included in the audit manual

These efforts helped demonstrate the importance of the Dojo and Site A to employees and to the headquarters, which had insufficient information about the subsidiary's activities. This approach ensured the successful implementation of the Dojo.

4.3.3 *Information sharing between site a and company a.* Site A and Company A share information through meetings held at the Japanese or European headquarters or in the Czech Republic. Whenever they meet, Site A reports its activities and progress, including those related to Dojo training, to a member of the Japanese headquarters. Archival data from Site-News in 2016 indicates their mutual trust:

The Japanese owner once again reaffirmed his confidence in the management of our plant when he appointed the current plant director to the post of president. This trust is closely related to the excellent results achieved by the plant and is also a recognition of our employees' teamwork.

## 5. Discussion

### 5.1 Theorization and labeling phase ensures cooperative management of the dojo

Figure 2 shows a conceptual framework for the theorization and labeling phase of MI at a subsidiary and how it leads to cooperative management of a new management practice, which links human resource management and operational management in a subsidiary and a firm.

The final goal of MI at the subsidiary-level is to establish the regular use of a new management practice in the subsidiary. To achieve its goal, the subsidiary acquires permission from the members of the headquarters to employ MI as an official management practice used in the subsidiary and embed it in the operational flow that the subsidiary and firm control. In the theorization and labeling phase of the Dojo in the subsidiary, Site A legitimizes the teaching and learning methods of the Dojo while updating them, formalizes the Dojo training program and process, embeds them in the operational flow that Site A and Company A control and acquires intra-subsidary validation of the Dojo through award-winning and information sharing with its members. These trials combine HRM and operational management in the subsidiary, which

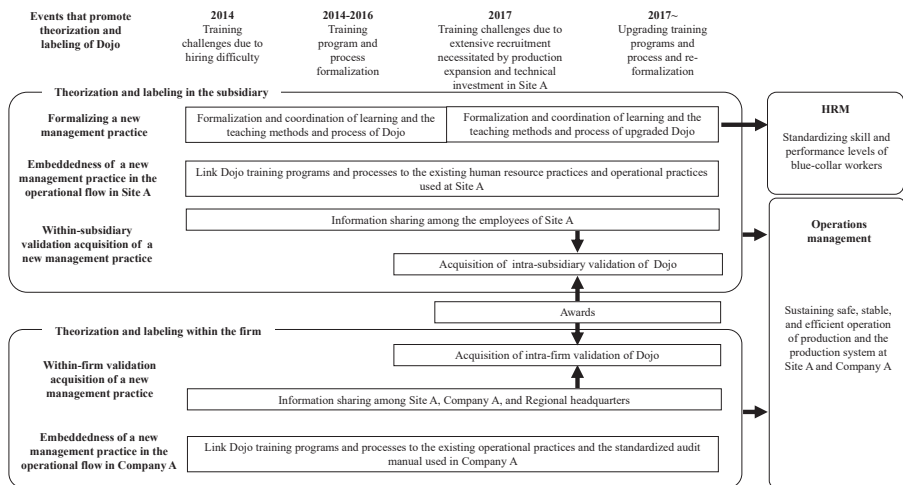


Figure 2. A conceptual framework for the theorization and labeling phase of MI at a subsidiary

Source(s): Figure by authors

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supports operational management within the firm. In the theorization and labeling phase of the Dojo within the firm, Company A shares information with Site A and the European headquarters about the Dojo and other activities at Site A, while it supervises Site A's formalization of the Dojo in the operational flow that the firm controls. This offers intra-firm validation of the Dojo at Site A and ensures cooperative operational management of Site A.

### *5.2 Role of standards and standardization*

The goal of the Dojo is to help all blue-collar workers acquire the same standardized skill base as manual workers. The skill base is a necessary qualification for blue-collar workers; only those with the skill base may work in the production area, share information with other workers and keep producing the same item in a uniform manner. Training programs and process standardization help the Dojo trainers and trainees achieve this goal. As shown in [Tables 6 and 7](#), the Dojo subjects cover basic technical and non-technical skills and knowledge related to the LPS, product, and assembling jobs. The Dojo subjects are “the standards” that all blue-collar workers are required to maintain. In other words, technological standards—which are the specifications of the product—and the production system define the framework of the initial training.

Using a case study of two overseas subsidiaries of a Japanese automotive firm, [Aoki \(2020\)](#) clarifies that material artifacts, such as tags, lines on the floor and signboards, were used for the smooth, safe and stable operation of the LPS. These artifacts play multiple roles at the production site to trigger social interaction among frontline employees and stimulate them to focus on learning and performance. The skill board and the standardized audit manual used at Site A play the same role.

The skill board depicts the tasks assigned to the job shop and the skill levels of every blue-collar worker working together. The jobs and job environment of the LPS are highly systematized and include the risk of accidents and injuries. Information sharing about co-workers' skill levels through a standardized format encourages mutual support to sustain a high level of safety and efficient operation in the job shop. The two material artifacts promote the stable operation of the LPS and flexible coordination among managers and blue-collar workers. The standardized audit manual records and checks the completion level of various activities related to production, logistics and management of the LPS and production site. The manual states the achievement levels of every audit subject. As the managerial class of Site A and the Japanese and European headquarters are the primary readers, they understand the data and how the subsidiary activities operate, identify issues for discussion and make appropriate decisions to improve subsidiary and firm performance.

### *5.3 Role of coordination and information sharing*

The standardized training program and process must be coordinated when it is regularly implemented in the organization. The case analysis shows that the members of Site A often create opportunities for information sharing. The internal trainer and the managers of Site A often have formal and informal meetings to share information about the progress of Dojo and discuss the issues and possible solutions. The HRM manager revises the materials. The internal trainer judges the skill level and progress of the trainees and customizes the teaching methods to ensure that all trainees complete the Dojo subjects within the assigned timeframe. The combination of the training program with process standardization and coordination through information sharing among the core members of Site A allow for the implementation of Dojo in a planned manner. This praxis answers the former part of the second research question: how does a production site implement an initial training program in a planned manner?

The president of Site A has regular meetings with the board members of the Japanese and European headquarters to explain the operational progress and results of Site A and discuss the issues they should cooperatively manage. The Dojo results, including the award-winning outcomes, are reported in the meetings. The members of Company A have opportunities to check the progress and results of Site A's management practices, including the Dojo, which are listed in the standard audit manual. The members of Company A are often unaware of other events or issues that are not listed in the manual. They learn them through meetings with the members of Site A. The combination of standardized information sharing through the audit manual and unstandardized information sharing through the meetings ensures the cooperative management of the Dojo at Site A and Company A. This praxis answers the latter part of the second research question: how does a production site manage it (an initial training program) on-site and in the firm?

#### *5.4 Dojo outcomes*

Institutionalizing the Dojo training program through theorization and labeling provides many benefits to Site A, Dojo trainees and Company A. Such benefits prove that the Dojo has yielded successful outcomes.

Site A obtains two benefits: first, the training reduces the average number of training days per person. Second, the program makes training more manageable for Site A by stabilizing the training days. According to the material obtained from the interviews, there were 104 training days in 2015, which decreased to 60 days in 2016. Since 2017, Site A has stabilized the number of training days at approximately 30 days. According to the interview data, managers first tried to reduce the number of training days, in the mistaken belief that this would improve the operation of Site A. Focusing on reducing training days would not only hinder trainees from acquiring skills but also make it difficult to proceed with the training as planned, which would in turn increase costs. Stabilizing the training days was found to be more beneficial than reducing them, as it reduces the total Dojo training cost.

Trainees benefitted from the Dojo training program in two ways: first, it built their skill and knowledge base for advanced training. Second, it gave them an unobstructed vision of their career development and the process to achieve it. These benefits come from Site A's human resource policy, which links the pay system, promotion rules and job ranks. It makes all blue-collar workers aware of the skill and knowledge level they should acquire for promotion, the types of training that they should undergo and when and their expected salary when they move to higher positions. This is beneficial for Site A because it improves workers' work motivation, job performance and willingness to stay in the organization for a long time.

Company A indirectly controls blue-collar workers and their performance in the subsidiary through audits. In many cases, the parent company sends expatriates to its foreign subsidiaries to supervise local workers and activities. Company A sent expatriates to Site A for several years after the acquisition. However, it soon stopped this and delegated the authority of managing activities to local Site A managers. Company A cannot directly manage local workers and activities; however, from Site A's audit results, it can acquire knowledge regarding the whole scope of Site A's activities, including Dojo training, without direct involvement in the subsidiaries' activities.

## **6. Conclusion**

### *6.1 Contributions*

Regarding the first research question, the case study demonstrates that the Dojo consists of short-term Off-JT and OJT; it explains how the subjects and implementation process are systematically designed to help all trainees learn the techniques and theories necessary for

assembling in a limited period. This requirement satisfies the common characteristics of the initial training programs explained in previous studies (Jaca *et al.*, 2014; Jürgens and Krzywdzinski, 2015; Losonci *et al.*, 2017; Maurtua *et al.*, 2007). The second question addresses intended implementation of the training program and its cooperative management in the subsidiary and the firm, as explained in the discussion section. It is made feasible through an appropriate combination of the standardization of training programs, process and audit subjects and coordination among the organization members in the different echelons of Site A and Company A. To address the third question (namely, regarding the factors impacting the Dojo's success), we focus on the strong leadership of the president of Site A – the internal change agent who has led the Dojo from its inception to its conclusion. This individual serves as an organizer of the Dojo training team in Site A, a coordinator who links the subsidiary and the home and regional headquarters in Company A and a communicator who explains what the Dojo is and its outstanding results to various stakeholders in the Czech Republic. These dedicated efforts contribute to the Dojo's success.

This study makes the following theoretical contributions. First, we introduced the notion of multiple embeddedness in the MI studies and provide deep insights into the theorization and labeling phase of the MI at the subsidiary-level. The notion of multiple embeddedness is broadly introduced in many studies on the global firm (e.g. Meyer *et al.*, 2011), but few MI studies use it in their studies. Our first theoretical contribution is introducing it in the field of MI literature and clarifying the cooperative management mechanism of the subsidiary and the firm on the MI at the subsidiary-level in the global context. This approach provides insights for MI researchers, especially those interested in the management of multinational firms.

Second, we proposed a mechanism that links HRM and operations management in the manufacturing firm; the standard skill base acquired through the initial training is recognized as a key factor. This result provides insights for researchers in HRM and operations management, focusing on efficient job shop operation and control. The skill base supports operations management by overcoming resource constraints and enables smooth job assignment of the newly hired blue-collar workers in the job shops (e.g. Thürer *et al.*, 2020). It supports HRM by actualizing a successful connection between basic training and advanced training programs, which contributes to blue-collar workers' skill and career development through training (e.g. De Vin *et al.*, 2019). We showed the importance of the initial training, which works as a foundation of the subsidiary activities supported by HRM and operations management.

This study makes two practical contributions. First, our study clarifies the content, subjects and methods of teaching and implementing initial training, and the link between initial training, jobs and advanced training provided by the production site. The Dojo case demonstrates how to coordinate newly hired blue-collar workers' skill differences through standardized training and what materials and teaching methods effectively promote trainees' learning. This provides practical insights for human resource managers who experience challenges related to training blue-collar workers and for general managers. This is also theoretically important, especially in HRM research for blue-collar workers. Most studies on this topic have focused on advanced training and learning mechanisms to acquire unstructured skills and knowledge and none have directly focused on initial training as the major research target. Thus, our study fills this gap in knowledge.

Second, our study explores the collaboration among members of Site A, general managers of Japanese and regional headquarters, and local actors; the president of Site A leads the collaboration. The findings offer practical insights for general managers leading or supervising local subsidiaries and demonstrate how to maintain a balance between subsidiary autonomy and control.

### 6.2 Limitations

Our study has the following limitations. First, we adopted a single case study research framework, which might not be generalizable. The case study method is effective only for clarifying questions that begin with “how” and generate new theoretical insights (Yin, 2018). Thus, future research should compare other cases to strengthen the findings and insights of this study.

Second, this research did not analyze all processes of MI at the subsidiary-level. MI is an ambiguous and subjective process that generally takes a long time to complete. In the case of the Dojo program, it took at least four to six years from the time Site A first developed the Dojo to its institutionalization as a formal activity. The invention phase of the Dojo started when Site A merged with Company A in 2010. However, according to our pilot interview with the president of Site A (a change agent of MI), the facility has been struggling to solve its training difficulties caused by multiple reasons since 2003, when Site A was founded as a greenfield investment of a foreign company. Thus, it is unclear when the initial plan for the Dojo started. To clarify the full process of MI at the subsidiary level, data before 2010 should be employed to investigate what happened to Site A and its local operation.

Third, this research used multiple data for the analysis but relied on archival data, especially articles from Site-News, an intra-subsidary newspaper published for Site A’s local employees. While these data were helpful, it is important to note that they are promotional materials specific to the site. Members of Site A provide positive news about the site through Site-News and its official homepage. One reason they do so is to enhance its local reputation in the labor market in the EU area. Site A is a small to mid-sized manufacturing subsidiary located in a local area of the Czech Republic. If it hires enough quality blue-collar workers, it must attract them away from its many rivals, who are larger than Site A and have enough resources to offer higher salaries than those of workers in Site A. Our analysis, based on company promotional materials by members of Site A, might have overestimated the Dojo program and its outcomes, which is a limitation of this research. However, we ensured its objectivity by explaining the background of how and why the texts were created and by whom.

### Note

1. Keiretsu are “large clusters of companies that dominated the Japanese economy between the 1950s and the early 2000s, characterized by cross-shareholding and long-term transactional relationships among their constituents, such as those between assemblers and suppliers” (Britannica, <https://www.britannica.com/money/topic/keiretsu>. Accessed July 25, 2023).

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**Appendix**

**Open-ended questions in a pilot survey**

Please introduce Site A and its major business.

Please introduce your career in Site A and before, if you had job experiences in other organizations.

Please introduce training programs that Site A implements for your employees.

Please explain the Dojo: its stream, its history, purpose, contents and any episodes related to the Dojo.

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