Strategy Deployment for Sustainability Transitions

A Case Study and Theoretical Perspectives

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Abstract

This short paper presents a theory-based process for strategy deployment supporting businesses in sustainability transitions derived from a case study and theoretical perspectives. The case study was conducted with a medium-sized Austrian logistics company and the theoretical views include Lewin's change model, dynamic capabilities, stakeholder theory and systems theory.

Keywords

sustainability transition, strategy deployment, case study, dynamic capabilities, stakeholder theory, systems theory, Lewin's change model

Main text

1. Introduction

Sustainability transitions are "long-term, multi-dimensional, and fundamental transformation processes through which established socio-technical systems shift to more sustainable modes of production and consumption" (Markard, Raven and Truffer, 2012,

p.956). Organizations especially consider long-term impacts within their strategy. This is an important basis for approaching corporate sustainability (CS) topics as merely considering short-term outcomes could falsely portray CS measures as unprofitable or they can create poor decisions (Calabrese *et al.*, 2019; Oertwig *et al.*, 2017; Nguyen and Kanbach, 2023). If properly deployed, the operational level's strategy should ensure an efficient CS implementation (Engert, Rauter and Baumgartner, 2016; Nguyen and Kanbach, 2023). Businesses, however, are having difficulties in figuring out how to integrate sustainable practices and goals from their strategy into their daily operations (Longoni and Cagliano, 2015). This challenge also falls in line with the design implementation gap of business model innovations, i.e. the set of challenges that prevent organizations from successfully innovating their business model (Geissdoerfer, Vladimirova and Evans, 2018). Hence, this short paper focuses on the process of strategy deployment, that is, the deployment of long-term sustainability goals and strategies contributing to the change process towards sustainability transition – a topic also highly relevant in the context of sustainable business models and -innovation process. The main aim of this paper is to explain the implementation of strategy deployment for sustainability transition and the change processes involved. Therefore, the research questions addressed within this study are: 1) How can the implementation of strategy deployment for sustainability transition be explained from a theoretical perspective, and 2) which change processes are involved? For this, we conducted a case study and used theories that lend themselves to explaining the implementation of strategy deployment towards sustainability transition. The theoretical perspectives were derived from Lewin's change model, dynamic capabilities, stakeholder-, and systems theory. The case study was carried out with a medium-sized, Austrian logistics company which has implemented a strategy deployment system for sustainability. The results show the relevant aspects for a successful implementation of sustainability strategy deployment and how it may contribute to the overall change process towards sustainable development.

2. Theoretical background
2.1 Corporate sustainability

In the last years, corporate sustainability has become an important concept in companies, becoming central to corporations' strategies (Ashrafi *et al.*, 2019; Sult, Wobst and Lueg, 2023). However, there is no uniformly established definition of corporate sustainability yet, and other concepts, such as corporate social responsibility (CSR), are often considered synonymously (Gotsch *et al.*, 2023). For example, Dyllick and Muff (2016) define a company as truly sustainable as one that understands how it can create a significant positive impact in critical and relevant areas for society and the planet. Upward and Jones (2016) define a sustainable firm as an organization that creates positive environmental, social, and economic value throughout its value network, thereby sustaining the possibility that humans and other life can flourish on our planet indefinitely. What corporate sustainability definitions have in common, however, is the emphasis on creating positive impact (not on

limiting negative impacts) and the integrated view of the firm (not separate systems, as viewed in the triple-bottom-line approach).

2.2 Strategy deployment

In terms of operations, this deployment process entails developing and putting into reality an operations strategy that converts the company's objectives into goals and activities that the operations department should carry out (Joshi, Kathuria and Porth, 2003). An operations management system that supports this deployment process is hoshin kanri (HoK). It provides a structure and a set of procedures to align strategy throughout the company and to measure and manage progress towards corporate strategy achievement (da Silveira et al., 2017). The most prominent factors influencing HoK implementation identified in the study by Löfving *et al.* (2021) were strategic work, long-term focus, management involvement, leadership style, change acceptance, internal communication, and management team. Further factors include customer orientation and satisfaction, commitment and responsibility, human resource allocation, measure/monitor/review, skills and training, and communication (Löfving *et al.*, 2021). A strategy deployment framework for sustainability is shown in figure 1 and involves strategy development and planning (including awareness and visioning, baseline mapping, creative solutions, deciding on priorities), deployment and implementation (execution and feedback), leading to goal achievement and standardization (Roche and Baumgartner, 2023).
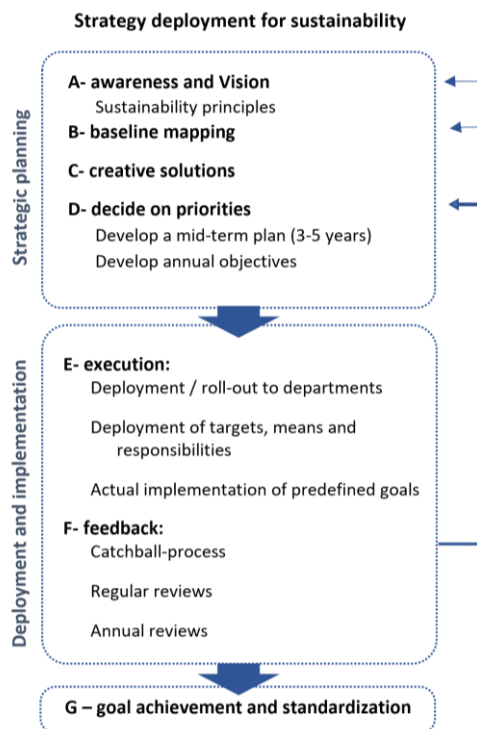

FIGURE 1: STRATEGY DEPLOYMENT FRAMEWORK TOWARDS SUSTAINABILITY
(Source: adapted from Roche and Baumgartner, 2023)

2.3 Theoretical perspectives

Lewin's change model

Lewin's change model provides a foundation for transition research. The three-step model is a suitable approach to understanding the complexity of human behavior and how it can be changed (Burnes, 2020). It includes the processes of unfreezing, moving, and refreezing. The unfreezing process usually involves reducing those forces maintaining the organization's behavior at its present level. By introducing information that shows differences between behaviors desired by members of an organization and those behaviors currently displayed, members can be motivated to engage in change activities (Cummings and Worley, 2009). The moving process shifts the behavior of an organization, department, or individual to a new level. It involves intervening in the system through changes in organizational structures and processes to develop new behaviors, values, and attitudes (Cummings and Worley, 2009). Moving occurs when the forces pressing for change are greater than those resisting change (Lewin, 1944; 1946). The refreezing process describes the changes necessary "to bring about the permanence of the new situation" (Lewin, 1943, p. 48). This step stabilizes the organization at a new balanced state (Burnes, 2020). In the business context, refreezing can be accomplished through the use of supporting mechanisms that reinforce this new state, such as organizational culture, rewards, and structures (Cummings and Worley, 2009).

Dynamic capabilities view

To maintain 'evolutionary fitness' over time (Teece, 2007), the organization must create an ability to respond rapidly and effectively to challenges and opportunities in the business environment (Teece, 2018). Dynamic capabilities are thus defined as an organization's ability to completely create, expand, or modify its resource and capability bases in order to respond to changes in its environment (Eriksson, 2014). Dynamic capabilities are the sum of abilities of a firm to effectively integrate, build and reconfigure their competences (Teece, 2014). The dynamic capabilities framework has at its core the capability hierarchy, itself a system of nested elements and activities, with ordinary capabilities lying at its base, followed by so-called 'microfoundations' or lower-level dynamic capabilities, and higher-level dynamic capabilities (Teece, 2018).

Stakeholder theory

The stakeholder perspective emphasizes the importance of managing multiple stakeholders as a continuous task of balancing various stakeholders' objectives and relationships (Sundaram and Inkpen, 2004; Freeman and McVea, 2005). The stakeholder perspective argues that organizational actions directly or indirectly bear on its various internal and external stakeholders. Therefore, these stakeholders have a legitimate claim on the organization, thus treated as ends in themselves (Goyal, 2022). Stakeholders are groups and individuals that have a valid interest in the activities and outcomes of a firm and

on whom the firm relies on to achieve its objectives (Freeman, 1984; Freeman, Harrison and Zyglidopoulos, 2018).

Systems theory

Systems thinking is a way to understand the complexity of economic, social and ecological systems (Holling, 2001; Williams *et al.*, 2017). Systems theory views organizations as social systems made up of sub-systems that must inter-relate in a harmonious manner for the organization to be effective (Churchman, 1968; Teece, 2018). In the case of a business (an 'open system'), the theory also encompasses the system's interactions with its surroundings. Feedback loops enable adaptation to environmental changes. A single company, which can be analyzed as a system, is part of a larger industrial or business ecosystem, also connected with other firms in its value chain (Teece, 2018). Within the company are activities (e.g., production, marketing, etc.), each of which can be analyzed as a system linked to other systems internally and externally (Teece, 2018). Within sustainability management, systems thinking may help "identify the points at which a system is capable of accepting positive change and the points where it is vulnerable" (Holling, 2001, p.392).

3. Methods

In this research, the single-case study was chosen. A case study is an in-depth investigation of a specific event, situation, organization or social unit within its real-life context (Duff, 2020). Single case studies can be useful for longitudinal research and may be used if there are opportunities for unusual research access or special examples (Barratt, Choi and Li, 2011). The fewer the number of cases, the better the opportunity for depth of observation (Voss, Tsikriktsis and Frohlich, 2002). This case study involves a longitudinal study (8 months: workshop May/2022, participant observations during summer 2022, interviews between 09/2022-12/2022).

3.1 Case company

In recent years, logistics operations has faced many developments in the areas of operations management and operational excellence (e.g., continuous improvement, methodologies such as Lean, Six Sigma, LSS, agile, etc. (Trakulsunti *et al.*, 2023)) and sustainability (esp. in warehousing and transportation (Abushaikha, Salhieh and Towers, 2018)) at the same time. In order to align the operational performance of a logistics company with the organization's overall strategy, HoK can prove useful. For these reasons, a case company was chosen within the logistics sector, which has implemented HoK and corporate sustainability. The case company chosen for this study was a medium-sized Austrian logistics company founded in 1991. Since 2020 HoK has been implemented within their organization. Corporate sustainability and strategy deployment have been initiated through the parent company. Their clients include Austrian retailers as well as national and international manufacturers. For the company's cross-functional documentation,

visualization and communication, the company applies a strategy deployment tool, the so-called X-Matrix. The company has two CEOs, and nine department- and staff units.

3.2 Data collection

Participant observations were conducted during on-site meetings, status meetings on the achievements of projects, measures, and goals, where strategy deployment was discussed. To gain detailed insights on the company's internal processes regarding strategy deployment and sustainability, semi-structured interviews were carried out with 12 interview partners, including 5 department managers (from IT, transport logistics, technology and maintenance, commercial department, internal flow of goods), 2 staff units (quality management, procurement), and 5 employees (IT, transport logistics, internal flow of goods, technology and maintenance, commercial department). The interviews lasted 45 minutes on average and were planned with open-ended questions.

3.3 Data analysis

Interviews were analyzed applying qualitative content analysis, utilizing open coding to find themes and putting observations and situations into appropriate categories (Mayring, 2014). The software MaxQda was used for support. An appropriate coding scheme is necessary to do content analysis. To make sure that all relevant information is collected, this coding scheme should be in line with the study's research aim. For this study, the codes were developed deductively through integrating relevant literature and theories. The theoretical perspectives (introduced in chapter 2) were applied to analyze and explain the data.

4. Results

Within this section, we show the case study outcomes, i.e. the actual implementation of strategy deployment for sustainability transition, and how they can be explained by applying different theoretical perspective and how it can contribute to the overall change process, by using Lewin's change model.

4.1 Brief description of strategy deployment implementation (case study)

Within the goal alignment process – the heart of the strategy deployment process – long- and mid-term targets are set by executives and, if necessary, adapted in consultation with department heads. In turn, the department managers decide how these goals can be implemented, with projects and measures. Employees themselves do not (yet) have much say in the process of goal alignment. The long-term targets, projects, measures, and key performance indicators (KPIs) are formalized using a strategy deployment tool (the X-Matrix); informal exchanges take place especially when concerning day-to-day business and can be handled quickly. The process of formulating annual targets into projects and measures is done in every 3rd or 4th quarter the year before. The approach towards integrating sustainability into strategy deployment begins with the definition of

sustainability strategies and goals that are, in turn, discussed with every department to decide on projects and measures on how to achieve these goals. Concerning feedback processes, the status of projects, measures and tasks is reported within the department verbally or with project management tools. The X-Matrix is mainly used for quarterly status meetings with all departments and the executives, as it also illustrates the connection to all departments. The process of reporting based on the X-Matrix varies in the degree of detail within departments and with the CEOs vary. From the observations and interviews it becomes clear that there is a varying intensity of interaction between department heads in status meetings, and that the strategy deployment system is not yet put in practice by all departments and employees. Sustainability is also of varying importance and perception to the department heads and employees, hence showing that a) a common understanding of sustainability and b) its relevance for the company and society is important; these are to be provided by the CEOs of the company.

4.2 Theoretical perspectives explaining the implementation of strategy deployment

Systems theory illustrates how organizations (inter-) act to respond to environmental complexity (Williams *et al.*, 2017). Within strategy deployment, systems theory provides the argument that an overall view of the organization is needed, and that individual areas and actors must also coordinate for the overall system (including the effective management of interdependencies within the organization). In the case company, there is an overview concerning internal processes and responsibilities. For strategy deployment towards sustainability transition to be effective, however, the company must be clear about its cause-effect relationships with its surroundings as well.

In the context of strategy deployment and dynamic capabilities, higher level capabilities play an especially relevant role. Higher-level dynamic capabilities – activities and assessments that channel other capabilities and resources to maintain external fitness – can be summarized as three clusters of innovative activities that take place simultaneously throughout the organization: sensing, seizing, and transforming (Augier and Teece, 2008; Teece, 2018). In terms of implementing strategy deployment for sustainability, the high-order dynamic capabilities play an important role. For including sustainability in the company's vision, strategy, and business model, sensing capabilities are necessary (in this case: by top management and department managers), such as environmental scanning, which brings unstructured data and disorganized information from the external environment into the organizational system (Teece, 2018). Agile frameworks such as this specific strategy deployment system, namely HoK, contribute to seizing capabilities, supporting flexible responses of the company to opportunities and threats once they have been identified and deemed important by applying feedback and reviews. In terms of transforming capabilities, the framework supports keeping elements of the organization aligned both with each other and with the strategy.

The stakeholder perspective brings in the element of internal and external coordination with stakeholders. Relevant stakeholders mentioned in the case company, were especially customers, suppliers, and employees. Within the implemented strategy deployment system, however, employees are merely properly involved on top- and department management level. Here, all employees should be involved so as to truly benefit from the strategy deployment system. Also, communicating and collaborating with suppliers and customers to address the most pressing sustainability issues would be necessary as to achieve long-term sustainability objectives and contribute to sustainable development.

The joint application of the three theoretical approaches is applied in order to provide a holistic overview. It is necessary to combine systems theory with stakeholder theory as to not overlook the relevant stakeholders at all levels of a company. Also, correctly identifying the stakeholders is important for clarifying the organization's dynamic capabilities. In addition, this combination of systems theory and stakeholder theory allows external developments that are relevant to the company to be recognized more rapidly, contributing to the agility and resilience of the company. Combined with dynamic capabilities, which allow rapid recognition and action, this results in a company that has the necessary capacity to take action towards sustainable development.

4.3 Insights on the change process

The case study provides further insights contributing to the different phases of the change process for sustainability by means of strategy deployment, summarized in table 1.

Within the unfreezing process, initiation by top-management is necessary (top-down), leading to sustainability strategy development. Here, it is also important to provide a common understanding and relevance of sustainability for the whole company. Dynamic capabilities most relevant are sensing capabilities in this process, which involve scanning of environmental conditions and relevant stakeholders. Within this process, external as well as internal stakeholders play a relevant role, as they may put pressure on the company (through legitimate claims). The systems theory perspective can help in the initiation process to identify areas where the company can contribute to positive change and where it may be most vulnerable, by not only viewing the company as a system in itself but also connected to other systems. In the case company, the unfreezing process was initiated by the top management of the company, which addressed the necessity of including sustainability within their business.

Within the moving process, concrete actions are taken (including projects and measures), where long-term objectives are deployed into all departments by breaking down these goals into mid- and short-term objectives. employee involvement (bottom-up); (internal) communication. Here, employee involvement is key to define necessary actions for achieving sustainability objectives, which is supported by internal communication and feedback, vertically (top-down, bottom-up) and horizontally (between departments). In the

stage, the coordination of internal stakeholders is of particular interest, involving the definition of responsibilities. The systems theory view supports the relevance of coordination within the company subsystem as well as with external stakeholders. Within the case company, the moving process was again initiated by the top management, however, within this process also the department managers- and employees were involved through feedback and discussions, in order to break down the long-term sustainability targets into achievable mid-to short-term targets.

The refreezing process with regards to strategy deployment involves established standards and tools, i.e. a management system/tool that includes KPIs and responsibilities. Especially transforming capabilities are relevant in terms of vertical and horizontal goal alignment. Internal and external stakeholders are included in information sharing. With a new equilibrium obtained in the refreezing process, new feedback loops may be established that have a positive influence on the environment and society. The case company here is in the process of adapting their management system to include sustainability KPIs and responsibilities. Here, top management again plays a crucial role as to initiate and lead the discussion to distribute the appropriate responsibilities and provide relevant KPIs. The respective departments are responsible for measuring their progress; however, top management needs to monitor the achievements and their contribution to the overall sustainability strategy.

TABLE 1: STRATEGY DEPLOYMENT PROCESSES AND THEORETICAL PERSPECTIVES.

	Lewin's change model		
	Unfreezing	**Moving**	**Refreezing**
Processes in strategy deployment for sustainability	Initiation (top-down); strategy development (incl. Sustainability principles and mid- to long-term strategic goals)	Actions (concrete measures), actual deployment in all departments, communication and feedback (horizontal and vertical), regular reviews/audits	Tools (monitoring by applying a management system, including KPIs); Standardization of processes
Theoretical perspectives			
Dynamic capabilities	Sensing: environmental scanning (incl. stakeholders)	Seizing: feedback (horizontal and vertical)	Transforming capabilities: goal alignment (horizontal and vertical)
Stakeholder theory	Pressure through internal and external stakeholders (possible claims)	Internal coordination of stakeholders (responsibilities)	Internal and external stakeholder involvement (information sharing)
Systems theory	Overall view of the firm (open system), overview of feedback loops and interdependencies	Coordination within the system	New feedback loops (new equilibrium) that support sustainable development

5. Conclusions

This research focuses on supporting sustainability transitions in companies by means of strategy deployment. We used a case study approach to illustrate the actual implementation of strategy deployment for sustainability and applied different theoretical perspectives to explain its relevance, also in terms of change processes. The results show that for the whole process and each step, different dynamic capabilities, stakeholders, and systems perspectives are necessary. Taking the theoretical perspectives into consideration, the overall strategy deployment for sustainability can support the overall change towards sustainability transition within businesses. This type of strategy deployment can also assist companies in overcoming the design-implementation gap for sustainable business model innovations, as it illustrates necessary dynamic capabilities, feedback processes, and internal/external collaboration. Additionally, it may support companies in implementing their sustainable business models, as it provides an overview, how long-term objectives and structures can be deployed and which aspects are necessary to carry out the change process.

Limitations of this study are for one with regards to the case study, which is limited to a single case, i.e. gives very narrow and non-generalizable results. On the other hand, the theories used to explain strategy deployment may be too broad and oversimplified. However, this study does not aim to be complete, but rather to provide comprehensive explanations and recommendations for businesses on how to transition towards sustainability. Limitations also need to be addressed with regard to the transition process, as we are perceiving a rather short time frame within this study. Transition processes usually need much more time, which is why certain assumptions were made in this research concerning the refreezing process; however, it would be interesting to investigate the company's process in the years to come.

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